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THE RELATIONSHIP BETWEEN BEHAVIORAL BIASES AND STRATEGIC DECISION-MAKING: EMPIRICAL EVIDENCE FROM EMERGENT MARKET

ABSTRACT

The purpose of this study was to investigate the effect of managers' behavioral biases on strategic decisions. Specifically, this paper examines the impact of, overconfidence, risk aversion, control illusion, and emotional intelligence on the diversification decision. The data were collected from Tunisian managers. It uses a Sample of 111 respondents representing different segments of Tunisian companies. The logistic regression analysis was utilized to control the impact of behavioral biases on decision-making. Findings suggest that managers have different attitudes toward decision-making. While overconfidence and control illusion negatively affect decision making, risk aversion, and intelligence emotions show a positive effect on decision-making. Empirically, the authors' results can serve as a reference for decision-makers to clarify data on the psychological role. Theoretically, the researchers found that the differences between the results are due to the quality of data collection or to the method of evaluation of the decision-making strategy.

Keywords: behavioral biases, decision-making process, overconfidence, risk aversion, control illusion, emotional intelligence

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INTRODUCTION

In the past decades, Behavioral finance has attracted increasing attention (Sharma and Kumar, 2020). It has emerged by combining emotional and cognitive biases and they are influenced by investors and the decision-making process (Syed and Mohsin, 2014) (Syed, Fiza, Jawad, and Sayema, 2022). The strategic decision-making process at a corporate level is quite complex and many theories try to explain how such decisions can be taken to achieve the best outcome possible (Pavlos and Andreas, 2020). Financial literature theories have been showing the evolution of the subject. Nowadays, two different trends are considered complementary by some authors: the traditional finance theory and the behavioral finance theory (Ackert, 2014).

Previous studies of the decision-making phase of the firm have largely looked at the determinants of diversification (Ahyar Diah and Yusriadi, 2021). Research has linked the decision-making of managers to international psychological bias (Hersing, 2017). Studies primarily show the importance of the entrepreneur's cognition (Pavlos and Andreas, 2020). Despite these advancements, strategic decision-making has so far received very limited theoretical and empirical attention (Johanson and Igor, 2016). Strategic Decision-Making (SDM) processes are those processes followed by managers (Said, Rob, and Ioannis, 2020).

The present research aimed at identifying and investigating the behavioral factors affecting strategic decision-making (diversification). Also to create an integrated and comprehensive view of these factors and take a step towards the development of organizations in the Tunisian context.

To investigate the relationship between decision-making and behavioral biases we drew on a sample of 111 SMEs from Tunisian companies. The motivation for analyzing this issue in a developing country such as Tunisia is because Tunisia is part of the North African context, and one of the Arabic countries, and it is an interesting case study (Hamdia and Abdelaziz, 2019). Also, a relatively small country with many SMEs and comparatively few local growth opportunities has been deeply impacted by a severe economic crisis since the Jasmine revolution of 2011 (Karamti and Najla, 2022). Due to these characteristics, our study is likely to have theoretical and empirical implications that could be applied to many similar countries in Europe and other parts of the world.

To present a conceptual model of behavioral biases affecting diversification, this study was carried out using a systematic review of qualitative reviews. In the following, theoretical literature on decision-making, behavioral and organizational factors, and diversification, models are explored. Then, the methodology of this research, the conceptual model,

behavioral biases of managers, and their strategic decisions. The researchers' purpose is to answer the following question: What are the behavioral biases affecting decision-making? Managers are not fully aware of behavioral biases. Also, their effect on the strategic decision-making process, especially in emerging economies. It will be useful for them to become aware of these biases and to gauge the impact of their own cognitive and emotional factors on their strategic decision-making processes (Baker, Kumar, and Singh, 2018). One of the major reasons they are suffering from behavioral biases is when making strategic decisions. Socio-political factors can create uncertainty in a very volatile market. They are probably one of the main reasons why they will benefit from behavioral biases when making strategic decisions. Given that, the leaders are extremely conservative in their strategic decisions.

Thus the present study planned to seek answers to a question such as: Do behavioral biases affect the strategic decision-making process? Our article includes four behavioral biases which are overconfidence, risk aversion, control illusion, and emotional intelligence, and treats them independently to study their differential effect on the strategic decision-making of managers. Understanding the differences between these biases may help the manager understand their new opportunity selection behavior, as well as help them make better decisions. Our work contributes to existing research showing that in an emerging economy managers' behavioral biases affect their strategic decision-making. In this study, we combine the theoretical fields of managers' behavioral biases with strategic decision-making. Thus the study makes a theoretical contribution by providing if the managers' strategic decision-making process is affected by their behavioral biases. Since studies conducted in Western countries and Asian countries can not be generalized to emerging countries and may not apply to the Tunisian context, due to the difference in contextual paradigm. It turned out that this is one reason why this research will provide a contextual contribution. Most studies focus on developed cultures and well-developed markets, and very little is known about the profiles and conduct of managers in emerging markets. This present study also contributes to filling this gap in the literature by considering how behavioral biases influence strategic decision-making. This paper is organized as follows: In the next section, we discuss previous studies regarding the relationship between managers' behavioral biases and the strategic decision-making process and develop the hypotheses of our study. In the fourth section, we describe the data collection method and how we operationalized our construct measures. The results of our study and discussion are presented in section five. Section six presents the conclusions and contributions of this

article to the field of strategic management. Thus we discuss the implications of our results and avenues for future research.

LITERATURE REVIEW

Cognitive biases are an ever-present ingredient of strategic decision-making. Then, understanding how biases influence strategic decision processes should help managers become more effective in achieving their goals (T. K. and BING, 1999). The relationship between a manager's behavioral biases and decision-making is explained by two economic-based theories: the traditional finance theory and the behavioral finance theory (Machado, Nobre, and Chaves Nobre, 2022). Syed, Fiza, Jawad, and Sayema (2022), suggests that behavioral finance literature has vast scopes for exploring divergent factors. Behavioral finance studies the cognitive effect on decision-making, an effect ignored by classic financial theories (Baker, Kumar, and Singh, 2018). Although cognitive effects alter a party's decision-making. They are subject to biases, and systematic and unintentional deviations of judgment by the individual behaviors of decision-makers that are different from expected rational behaviors. Also, ethical leadership has a significant positive influence on employee creative behavior (Eleck and Krishna, 2023), to explain these systematic deviations, there are several cognitive biases related to the behavior of leaders (Charness and Sutter, 2012). The systematic effect of deviations from rationality can occur in both personal and business investing. Companies need to understand that success is entirely dependent not only on sustaining high or excellent skills at all charges (Shayrine and Pulidindi, 2023) but also on behavioral evidence of the economic agent on investment decision-making. This evidence is difficult to explain and must be considered (Deshuai, 2022), several studies have it applicable in the field of finance and business markets. Considering that non-financial aspects influence the decision-making of managers, the present research focuses on how individual characteristics, notably behavioral biases, can affect these investment decisions, from the perspective of Behavioral Finance.

A review of the manager's behavior

By developing a better understanding of the types of cognitive biases that influence decision-making, steps can be taken to manage these biases (Hersing, 2017). Financial management behavior covers the domains of cash, savings, credit, and investment management (Bapat, 2020). Also, The importance of psychological aspects is recognized in the theory of planned behavior excellence (Tahereh, Behzad, Mohammad, and Hassan,

2020). According to planned behavior theory, among other factors, attitude shapes behavior intentions and behaviors (Soyeon and Bonnie, 2010).

Organizational behavior management practitioners and researchers are concerned about finding some behavioral patterns. Regarding the appropriate ways to practice organizational behavior in the main organizations seeking excellence (Tahereh, Behzad, Mohammad, and Hassan, 2020). This empirical analysis of the factors influencing manager's behavior in the Tunisian context relies on the cognitive approach. Also, Behavioral factors include human factors and human relationships in the organization (Tahereh, Behzad, Mohammad, and Hassan, 2020). Not many studies have been pursued in Asia or Africa, particularly in the Tunisian stock market. This current study aims to examine behavioral issues in Tunisia. Specifically, this paper investigates how behavioral biases (overconfidence, Illusion of control, Risk aversion, Emotional intelligence) affect decision-making.

Corporate finance and decision making

Decision-making can be defined as the process of choosing a particular alternative from many available alternatives (Shibley, Barbara, Rudolf, Trevor, and Robert, 2001).

John (2022), suggests that different decision-making structures aggregated individuals' heterogeneous information, and potentially conflicting objectives, differently. Diversification is one of the major components of investment decision-making under risk or uncertainty (Gilles, 2020). Entrepreneurs are distinguished in this early literature by specific characteristics. These characteristics influence their decision to recognize opportunities and mobilize the resources required to start their businesses (Karamti and Najla, 2022). This marks the birth of portfolio theory. Since then, several portfolio selection rules Nawrocki (2014) and Seyed (2019), argue that behavioral factors include human factors and human relationships in organization diversification. Which form behavioral norms, informal communication, and specific patterns as the core of the organization. These content factors are considered to be dynamic and the living parts of organizations; any factor and variable directly related to human resources are in this category). Tahereh (2020) in a study aimed at identifying and investigating the behavioral factors affecting talent management. He creates an integrated and comprehensive view of these factors and takes a step toward the development of organizations in Iran. The author improved the understanding of effective behavioral concepts on potential resources. This is to drive talent management to the desired status and become an appropriate tool for achieving organizational goals. Thus even decision-makers who intend to make optimal decisions are

bound to make satisficing (rather than maximizing or optimizing) decisions in complex situations, within their data processing and cognitive limitations.

DEVELOPMENT OF HYPOTHESES

Overconfidence bias and strategic decision-making

Many studies were conducted on overconfidence bias and strategic decision-making (Maqsood, Syed, and Yasar, 2020). Overconfidence, optimism, and other perception biases impact choices in personal, economic, and political life. According to Syed and Mohsin (2014), overconfidence increases with the investor's investment experience. High market returns make investors overconfident and as a result, investors trade more frequently. The Past information leads an investor to become overconfident and the result says that the overconfidence bias affects the investor's decision about the Karachi Stock Exchange. The entrepreneurship literature has identified confidence bias as a key mechanism underlying two well-known empirical regularities associated with erroneous decision-making (John, Ming, Hart and Daniel, 2022). Ulrike and Geoffrey (2008), in a study examining the effect of overconfidence on the frequency of mergers, is therefore ambiguous. The authors argue that overconfident leaders are unambiguously more likely to make strategic decisions only when they have sufficient internal resources. According to Syed and Sayema (2022), the authors confirmed the importance of individual investors and their behavior in the stock market. The three main facets of overconfidence bias have a significant influence on risk propensity. Availability, anchoring, overconfidence, and representativeness are heuristic-driven biases that entrepreneurs rely on due to bounded rationality, to reduce the risk of losses in unpredictable situations (Mohammad and Razieh, 2021). Also, According to Robinson and Marino (2015), overconfidence positively affects venture creation decisions. In This study, the authors contribute by providing substantiation for the relationship between overconfidence and venture creation decisions. Equally important, the empirical evidence in this study is the first to provide support for the partially mediating role of risk perceptions. The findings presented help to provide some insights into understanding why entrepreneurs tend to be more overconfident. Than non-entrepreneurs, particularly, since overconfidence is positively associated with the decision to start a new venture (Robinson, Anthony, Marino, and Louis, 2015).

Thus, this study hypothesized that:

Hypothesis 1: There is a positive effect of overconfidence on diversification decisions.

Illusion of control bias and strategic decision-making

The illusion of control is the strongest predictor of risk propensity and investment performance (Syed, Fiza, Jawad, and Sayema, 2022). The investment performance is positive in the presence of an illusion of control. In the account for the illusion of control, the investors prefer to invest in risky securities and, in turn, influence their investment performance. In this sense, an illusion of control bias can influence investors to take higher risks. That, to get a higher return from the market and finally affect their investment performance. According to Seyed (2019), who analyzed the main behavior factors that influence the investment decision of individual investors in the Islamabad Stock Exchange (ISE), the result shows that overconfidence and illusion of control biases significantly impact investor decision-making in ISE. According to Sefrin (2007), studies defined the control Illusion as « the tendency of people to believe they can control and influence outcomes that in reality, they do not influence »¹. In his study, Illusions of control prevail in Pakistan society due to they create market inefficiency the main reason behind the anomalies in Pakistan's economy. A lot of research focused on the overconfidence of individual investors from developed markets through experimental and questionnaire studies. In this paper, we will use questionnaires to check the effect of managers' behavior on the illusion of control biases. The Questionnaire method is considered the best method to check the attitude of the managers in behavior finance (Bengtsson, Persson, and Willenhag, 2005). The study carried out by Ejova, Delfabbro, and Navarro (2009), reflects that the illusion of control is inversely related to the performance for all relevant performance measures. In a study on the illusion of control, it was found that traders who were prone to strong illusions of control performed significantly worse in analysis, risk management, and business profits. They also won much less.

Thus, the present study hypothesized that :

Hypothesis 2: There is a positive effect of Control illusion bias on diversification decisions.

Risk aversion bias and strategic decision-making

Uncertainty and risk are quintessential features of decision-making. The economic models consider that the notion of risk aversion is a fundamental feature of the problem of choice under uncertainty (Giancarlo and David, 2001). The uncertainty theory relates to individual risk aversion to the wealth that an individual possesses. Using the theory of uncertainty,

¹ Voir Shefrin, H. (2001). Behavioral corporate finance. Journal of Applied Corporate Finance

Mas-Colell, Whinston, and Green (1995) pointed out that individuals tend to exhibit lower risk. Their study starts taking a risk once its income crosses the threshold level. According to standard financial theory, an investor is considered a rational person who identifies and uses relevant information and is efficient in making the best decision (Syed and Mohsin, 2014).

Then, That's why the third hypothesis was constructed as follows:

Hypothesis 3: Risk aversion bias does not have a positive effect on diversification decisions.

Emotional intelligence bias and strategic decision-making

Salovey and Mayer (1990) coined the term “emotional intelligence” in 1990 (Hersing, 2017). The possibility of an irrational decision increases with the increase in emotional tumult (Moon, 2021). Studying this concept, Hersing (2017) stipulates that emotional self-awareness is important for recognizing the subtleties of one's own emotions, their development, and the impact they have on cognition and behavior. Within the decision-making site, all three subscales offer relevance to a debiasing strategy. According to Moon (2021), leaders who apply emotional intelligence (EI) skills are better poised to challenge internal biases and assumptions to improve decision-making. In his study, the author analyzed the mediating roles of EI and leadership styles in risk perceptions using statistics and where applicable, Chi-square testing. The results of the analysis confirmed the role of EI in filtering deleterious internal biases and confirmed EI's presence as a success factor in leadership and decision-making².

Thus, this study hypothesized that:

Hypothesis 4: There is a positive effect of emotional intelligence bias on diversification decisions

RESEARCH METHODOLOGY

Sample selection

In this paper, given that overconfidence, illusion of control, risk aversion, and emotional intelligence are likely to affect the managers' diversification decision, our task is to find out whether this influence is positive or negative. This study uses a qualitative approach to help researchers understand people and what they say and do, considering both data collection and data analysis. The research method used is a questionnaire. We used 37 questions in the

² Effect of Emotional Intelligence and Leadership Styles on Risk Intelligent Decision Making and Risk Management
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questionnaire that were included correctly to research questions and objectives (Saunders, Lewis, and Thornhill, 2012). Qualitative techniques are suitable in this context because they are used to explore the meanings, individuals, or groups attached to a person or social problem (Wolor, 2023). To answer the questions already posed in our hypotheses, the following plan was observed: we started with the presentation of data, then we started our study variables, and finally, we exhibited our models.

Our empirical study is based on qualitative research. We use the questionnaire as a method of data collection. The sample size is generally small in qualitative research depending on the richness of data information, diversity of participants, breadth of research questions, methods of data collection, and type of sampling strategy (Moser and Korstjens, 2018). The selection of participants is based on potential managers and most are informative and can provide information. We use a preliminary sample of 111 Tunisian listed firms over the period 2019 to 2021. First, we exclude 23 financial firms as they are subject to different regulations and market trading mechanisms. In addition, we exclude 27 insufficient data on psychological characteristics and 7 firms for asset revaluation. The number of participants in this study was 111 managers who fully completed the questionnaire. The study was carried out in September 2021. Participant observation is a method of collecting data through the participation and observation of groups or individuals. We provide a summary of the sample size, completed questionnaire, and response rate in Table 1. Taking the requirements ensuring the validity of such research into consideration, they were all completed, the results were statistically significant, and reflected the current situation in the Tunisian financial market. Our survey consists of two sections. The first section aims to obtain some information about the background of the respondents. Respondents are asked questions concerning demographic characteristics such as age, gender, and income. The second section focuses on obtaining a score that measures their behavioral attitude. The survey consists of three sections.

Table 1. Summary of responses to the distributed questionnaires

Description	Number
Initial BVMT sample	55
Financial firms excluded	-23
Other non-financial firms	113
Insufficient data on psychological characteristics	-27
Insufficient data for assets revaluation	-7
Final sample	111

Variables and measurements

Dependent variable

As previously stated, the variable we aim to clarify is diversification. Moreover, we have opted for a binary variable constructed from a score calculated based on the number of activities carried out by the company. Therefore, a binary variable takes the value 1 if diversification is strong and 0 if it is weak. We opted also for the calculation of the average diversification during 3 years ($DIV(2019) + DIV(2020) + DIV(2021) / 3$) then, we proceeded by ranking the strong and weak qualifications through the calculation of the median values we found. Let 0 be a low diversification and 1 a high diversification. The diversification of companies and impact of behavioral biases. Table 2 gives an overview of all variables included in the analyses. The theories, discussed under the theoretical framework, are considered as the factors of the manager's behavioral biases that may have a significant impact on Tunisian managers' decisions. According to recent scientific studies, a correlation was captured between decision-making strategy and saving behavior (Palalic, Ramadani, Mariam Gilani, and Gërg, 2021). These theories are thus the independent variables of this research to measure the relationship with the dependent variable, which is the decision-making managers. The dependent variable is as follows: diversification decision, this variable is a binary variable that takes the value 1 if diversification is strong and 0 if it is weak. We opted also for the calculation of the average diversification during three years. Then, we proceeded by ranking the strong and weak qualifications through the calculation of the median values we found. Let 0 be a low diversification and 1 a high diversification. The empirical analysis was made exportation to the SPSS.

Independent variables

The diversification of companies was explained by three cognitive determinants. Table 1 provides a detailed description of each variable. Our independent variables are overconfidence, risk aversion, control illusion, and emotional intelligence.

To measure the manager's behavioral biases, we take the same steps as most studies have used an adaption of the original questionnaire elaborated by Meyer and Allen (1991). This instrument is chosen because of its validity and its multidimensional character shown by several types of research (overconfidence, illusion of control, risk aversion, emotional intelligence). However, the cognitive role of the manager alone does not influence the decision to diversify within the firm. There are other elements, such as the company's debt, size, financial structure, and performance, which intervene in the determination of the

strategic choices and mainly the decision to diversify within the company. For testing the research model, regression analysis is used. This statistical technique is a valuable statistical tool whose first purpose is to understand the relationship between dependent and independent variables so that a line, projecting the best relationship between the two variables, is found (Render, Stair, and Hanna, 2012).

Control variables

In order to manage the impact of cognitive factors., we added three control variables to our models. Based on our literature review, Table 1 outlines the variables we identified as potentially impacting a company's diversification: indebtedness, size, and ROE.

Table 2. Variables and measurements

Category	Variables	Measurements
Dependent variables	Diversification (DIV)	The value 1 if diversification proves to be high, and if it is low
Independent variables	OVC, IC, RAV, IE	A score calculated based on the items
Control variables	Leverage (LEV)	Total debt /total assets ratio
	Size (S)	Natural Logarithm of Total Assets
	Return on Equity (ROE)	Net Income/Total Equity

Data analysis

This paper aims to identify the behavioral factors affecting decision management. Our empirical study is based on qualitative research. We use a questionnaire as a method of data collection. Our questionnaire consists of two main parts: The questionnaire investigated the perception of behavioral biases at different levels and their perceptions of the diversification proficiencies needed by decision-makers in organizations. The questionnaire was designed to assess the perception of the behavioral bias concept associated with behavioral finance in different economic activities and decision-making categories. Qualitative research was developed. Interviews were held with eight managers or entrepreneurs who usually make investment decisions in real assets within their organizations. Interviews were transcribed and content analysis was used to analyze the data.

Models to estimate

Our research aimed to determine the impacts of each sub-model of diversification decision measures. Using a tool, we were able to obtain partial impacts and then compared each sub-model and variable based on their effects. In the following section, we present the complete models that need to be estimated.

$$\text{Div} = a_0 + a_1 \text{OVC} + a_2 \text{IC} + a_3 \text{RAV} + a_4 \text{IE} + a_5 \text{LEV} + a_6 \text{SIZE} + a_7 \text{ROE} + \varepsilon$$

EMPIRICAL ANALYSIS AND RESULT AND DISCUSSION

In this section, we present the empirical results of the estimates and discussions,

Descriptive statistics

The descriptive frequencies analysis was performed on the general background information of the respondents with the use of SPSS. The main characteristics of the explanatory variables of the model are summarized in Table 2.

Table 3 presents a summary of descriptive statistics for the variables considered in the study models (overconfidence, Illusion of control, Risk aversion, and Emotional intelligence).

Table 3 displays the level of the respondents' psychological explanatory variables. As explained in the literature review, the behavioral bias score is obtained from the sum of the basic and advanced bias scores.

Table 3. Descriptive statistics of the independent variable

	Diversificati on degree 2019	Diversification degree 2020	Diversification degree 2021	Diversification degree
Mean	0.5676	0.5495	0.5766	0.5645
Statistic	p = 0.000		p = 0.000	p = 0.000
Min	0.0000	0.0000	0.0000	0.0000
Median	1.0000	1.0000	1.0000	1.0000
Statistic	p = 0.480		p = 0.083	p = 0.000
Max	1.0000	1.0000	1.0000	1.0000
SD	0.49766	0.49980	0.49634	0.4979

Table 4 provides descriptive statistics for the regression variables, including the mean, standard deviation, minimum, and maximum. It presents the mean and standard deviation of respondents' responses. OVC has a mean value of 0.5315 with a standard deviation of 0.50127, while these figures are 0.5676 and 0.49766, respectively, for IC. This table shows that the average risk aversion level is relatively low (0.45), indicating that the manager's psychology can be considered weak. The scores for OVC, IC, RAV, and IE vary between 0 and 1. This means that companies prefer certain dimensions to others.

Table 4. Descriptive statistics of dependent variables

Variables	Mean	Min	Median	Max	SD
OVC	0.5315	0.0000	1.0000	1.0000	0.50127
IC	0.5676	0.0000	1.0000	1.0000	0.49766
RAV	0.4505	0.0000	0.0000	1.0000	0.49980
IE	0.7387	0.0000	1.0000	1.0000	0.44131

Multi-varied relationship between the manager’s behavioral biases and the diversification decision

Table 5 shows the correlation between dependent and independent variables. The figures represent a positive correlation between the independent variables. OVC is positively related to IC with a Pearson correlation of $r = 0.75$ and the significance value is less than 0.001; thus suggesting a genuine relationship between the two independent variables. Similarly, there is a positive correlation between OVC and IE (0.688). However, the correlation between OVC and RAV is very close to zero thus suggesting a weak and almost nonexistent relationship. Other independent variables seem to have this positive relationship with each other but almost no relationship with diversification. Therefore, to present the relationship between diversification and the explanatory variables, we integrated the control and explanatory variables into the model.

Table 5. Correlation among the variables

	OVC	IC	RAV	IE	LEV	SIZE	ROE
OVC	1.000						
IC	0.750*	1.000					
RAV	0.003	0.718**	1.000				
IE	0.688**	0.609**	0.552**	1.000			
LEV	,115	-0,281**	-,264**	,051**	1.000		
SIZE	-,064	0,513**	,496**	,140**	-,262**	1.000	
ROE	-,006	-0,369**	-,350**	-,128	-,133	,009	1.000

This study aims to investigate the impact of Behavioral biases on diversification decisions. Table 6 provides evidence of the basic results. The results of this test are presented in Table (6) below. The logistic regression was established to verify the major factors for positive saving behavior. We control for the individual psychological characteristics: overconfidence, risk aversion, control illusion, and emotional intelligence level. Besides, we control decision-making with these biases. The estimations conducted using the logistic regressions for the present study are displayed in Table 6; they are in support of the research studies mentioned above, therefore, confirming that word-of-mouth communication does influence a manager's decision. The results for significance must be less than 0.01.

The relationship between overconfidence and diversification decision

The results of the regression analysis are reported in Table 6. Our results indicate, as predicted, that overconfidence (OVC) has positive and non-significant impact on diversification decisions (0.185). Which enabled us to accept our first hypothesis (H1). These findings are not aligned with those given by (Seyed, 2019) and (Robinson, Anthony, Marino, and Louis, 2015) which suggested overconfidence positively affects venture creation decisions.

The relationship between control illusion and diversification decision

As can be seen from Table 6 and by our expectations, the estimated coefficient of control illusion has a positive and non-significant impact on diversification decision (0.848). Which enabled us to accept our first hypothesis (H2). These findings are not aligned with those

given by (Ejova, Delfabbro, and Navarro, 2009), (Seyed, 2019) (Syed, Fiza, Jawad, and Sayema, 2022) who concluded that IC does not influence decision-making.

The relationship between risk aversion and emotional intelligence

However, the results for (RAV) and (IE) are 0.002 and 0.003 respectively and have a significant positive influence on decision making. Risk aversion and emotional intelligence explain the Tunisian managers' decision-making Table 6 presents the results of the main hypothesis with the support of the results of the sub-hypotheses. The variables that make this impact are reflected in emotional intelligence and risk aversion.

Table 6. Coefficients and significance level for logistic regression analysis

N=111	Coefficient a	Std. dev.	Wald	Sig	R ² Nagelkerke	Test of specification
constant	0.168	0.513	0.107	0.744		
OVC	0.564	0.426	1.757	0.185		
IC	1.234	0.539	5.239	0.848		X ² =24.513
RAV	1.659	0.538	9.526	0.002	0.266	
IE	1.409	0.473	8.855	0.003		p=000
SIZE	0.548	0.512	1.144	0.055		
ROE	-0.923	0.481	3.685	0.637		

Discussion

Human behavior which is perceived as irrational is often a consequence of internally induced emotional reactions in the face of uncertainty (Moon, 2021). The paper reviews behavioral biases and theories for decision-making and generates testable recommendations. A philosophy that understands and accepts the information as retrieved when necessary is the central two-dimensional goal of emotional management. Science and skilled methods highlight the importance of digital evidence and technology in emotional and knowledge management (Ekbia and Hara, 2008). Obvious and tacit wisdom is embedded in seemingly contradictory psychological concepts Emotion management focuses on relationships with diverse people, which leads to social understanding as a summary of what people and processes are (Ahyar Diah and Yusriadi, 2021). The idea of this article developed from the existing literature and was tested using the regression analysis technique. The findings of this study prove that behavioral biases worsen the strategic decision-making process because managers who are suffering from behavioral biases can't make rational decisions. The findings of the article indicate that overconfidence and control illusion have a positive and

non-significant effect on the strategic decision-making process. Psychologically, this means that overconfidence as a behavioral bias deteriorates the quality of the strategic decision-making process because managers who have a high level of confidence cannot make rational decisions. The results of the article don't match the findings of (Syed, Fiza, Jawad, and Sayema, 2022) who assert that overconfidence bias has a significant positive influence on venture capitalists' strategic decision-making. The current article also provides empirical evidence for the positive and significant effect of risk aversion and emotional intelligence on the strategic decision-making process. Psychologically, this means that the manager with these biases can make better decisions. Confident managers tend to make inappropriate or risky decisions related to corporate activities, which can have a negative consequence on their returns. Then, risk aversion, and emotional intelligence were found to have significant and positive influences on the strategic decision-making process. It means that, due to these biases, managers make rational decisions, which affect their entrepreneurial strategic decision-making process.

Table 7. Summary results of proposed hypotheses

N	Hypotheses	Result
H1	Overconfidence bias significantly influences diversification decisions.	not Supported
H2	Control illusion bias significantly influences diversification decisions.	not Supported
H3	There is not a significant relationship between Risk aversion bias and diversification decisions.	Supported
H4	Emotional intelligence bias significantly influences and diversification decision	Supported

CONCLUSION AND IMPLICATION

The purpose of this paper was to investigate how individual emotional biases (overconfidence, risk aversion, control illusion, and emotional intelligence) affect the strategic decision-making process in an emerging economy such as the Tunisian context. The literature dealing with the impact of managerial characteristics on corporate policies emphasizes the importance of individual bias on the effectiveness scope of decision-making choices (Baker, Kumar, and Singh, 2018) (Tahereh, Behzad, Mohammad, and Hassan, 2020). The authors argue that managers are a fundamental part of firms and their characteristics

influence the strategy and organizational outcomes. Individual managers' characteristics affect how they interpret the situations they face and the decisions they make, having an impact on organizational performance (DeGeorge and Fayolle, 2009).

Using 111 firms observations from Tunisian listed firms over the period 2019-2021 and after controlling for firm-level characteristics, we find that managers have different attitudes toward decision making they presented behavioral biases, the results of this study showed that the behavioral dimension affects the managers. When it refers to insecurity in deciding, managers allow themselves to question their decision-making ability, by either regret or consulting an external agent, while managers hold themselves to conservative decisions. Strategic decision-making requires a coherent set of information, technical studies, risk assessments, formulations of financial and economic balance sheet parameters, etc., so that the investment mentioned can suggest the recommended. However, decision-making is not only made by objective factors

This study may extend the literature on behavioral finance by highlighting the complementary relationship between organizational theory and behavioral biases. It also draws attention to the importance of the psychological dimension in the decision-making that these factors influence decision-makers and expected results. Therefore, this research attempted to shed light relationship between behavioral biases and decision-making. Moreover, the objective of understand the effects of behavioral biases present in the strategic decision-making of leaders. The results highlight that there are signs of behavioral biases influencing diversification decision-making

Our study contributes to the literature in several ways. First, it adds to the literature that examines the manager's behavioral biases that influence decision-making (Baker, Kumar, and Singh, 2018) (Tahereh, Behzad, Mohammad, and Hassan, 2020) (Palalic, Ramadani, Mariam, and Gërg, 2021). Until recently, very few studies have looked at the effect of psychological biases on decision-making (Tahereh, Behzad, Mohammad, and Hassan, 2020). Thus, our study offers new evidence and is theoretically valuable for exploring the understanding of investment decision-making from the perspective of biased individuals as it highlights the indistinct presence of behavioral biases in managers. However, the triggers for those biases are diverse: when it refers to overconfidence in deciding, managers allow themselves to question their decision-making ability, by either regret or consulting an external agent, while managers hold themselves in conservative decisions. Second, it extends the dynamic links between behavioral biases and decision-making strategy. Unlike prior studies that only examined the direct relationship, this study went further to

investigate how behavioral biases influence decision-making. The study is also valuable for practice as the awareness of behavioral biases is the first step in mitigating their negative effects on decision-making.

Limitations and future directions

Despite of these contributions, this study has some limitations that could be addressed in future research studies. However, various biases can influence decision-making. The inclusion of other behavioral biases in the analysis could likely produce other interesting results. Future studies need to take into account other variables that could affect decision-making.

This study used only two proxies that may be related to the availability of the subject to divulge information about managers and the possibility of answers that do not correspond to the reality of the subject, thus withholding important data for the development of the research to hide the identity of the subject or his flight. Also, this study used a sample of Tunisian-listed companies. It may not be representative of the population of Tunisian managers. Thus, we could not generalize our findings, particularly to all companies. Other limitations are the gender imbalance of research participants, which may reflect the predominance of men in decision-making positions, and the possibility of researcher-led response induction, despite the extreme caution of the researcher in this matter. There is the possibility of over-explanation in every question, and this can shed light on what the researcher expects as an answer and, thus, induce the interviewee's response, harming the research results. For future research, it is preferable to increase the number of participants, taking into account the size of the company, the structure of the company, and the environmental dynamics to explore the variation of the factors triggering behavioral biases in samples of managers.

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