

**THE INVESTOR'S RATIONALITY: AN EPISTEMOLOGICAL ANALYSIS OF THE  
SCIENTIFIC LITERATURE IN THE FIELD OF MANAGEMENT**

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## INTRODUCTION

The rationality factor has received attention from scientific research, since it integrates one of the eight epistemic dimensions (SERVA, 2017; LADRÓN DE GUEVARA CORTÉS; TOLOSA; ROJO, 2023). In this context, Popper (2013) advances in epistemological propositions by citing critical rationalism. Critical rationalism can be defined as scientific progress, which refutes outdated theories with theories that more satisfactorily cover the current context, in this way, every user experience that does not fit the current theory can be discussed and reformulated (FARIA, 2022). Kahneman and Tversky (2012) when basing the Prospect Theory (TP) made several observations on how each individual responded to the financial world and the rationality factor. Considering that the investor's rationality is based on two fundamental pillars, the first being the Expected Utility Theory (TUE) (BERNOULLI, 1954), and the second being the Efficient Market Hypothesis (EMH) (FAMA, 1970), Kahneman and Tversky (2012) used critical rationalism to advance the perception of the theory, as what was envisioned by Prospect Theory is that investors are not always rational, contrary to the pillars of investor rationality.

In this scenario, investor rationality has been the agenda of public policies not only because of its impact on the global economy (ALIYEV; HE, 2023), but also by the behavioral change brought about by the advent of the popularization of investments (GUPTA; GOYAL, 2022). The theme of rationality, previously passive within epistemology, has become recurrent in management research (DE BRUIJN; ANTONIDES, 2020; HASHMI *et al.*, 2021; LUSARDI; MITCHELL, 2014; SERVA, 2017), however, when searching for the words “epistemology”, “financial” and “rationality” in the Scopus database, only 6 articles were identified that have both words in the title, abstract or keywords, the search occurred on May 19, 2023. In this way, a gap to the antecedent of rationality is glimpsed, it is approached, however, in a solo way in scientific research.

Herbert Simon (1955) reformulated this concept for bounded rationality, where there is a need for empirical studies to support thinking, however, this thinking is accompanied by the fragility of the power to make a prediction. After four years Simon (1959) takes up the concept to include that rationality derives from people's behavior, this is based on observation. During his academic career Simon dedicated himself to exploring rationality in the economic world, brought up questions about the individual decides which is the best investment when the expected utility is unknown to him? (SIMON, 1989).

To Cunha (2022), the discussion about rationality and its use in administrative theories and critical theories remains until the present day. In this way, understanding and mapping the epistemological pathways of rationality in the field of finance and the impact of scientific research on the evolution of rational thinking is an opportunity to contribute to the debate and theoretical advances on the subject. The mapping of works that encompass the epistemology, finance and rationality constructs can be useful in several aspects, such as, for example, supporting the formulation of public policies aimed at the public considered vulnerable, such as the elderly, in addition to providing relevant information for comparison between countries.

In this scenario, this research innovates in at least three aspects. First, because the central issue is investor rationality. Second, for mapping the existing research in a general way and not centralized in the production of a single country. Third, for being a pioneer in associating rationality, finance, and epistemology.

## **THEORETICAL FRAMEWORK**

In 1995, Charles Taylor (1995) began the chapter of the book entitled “Overcoming Epistemology” reporting that epistemology had already been felt with pride, however, it is currently in a degraded state. For the author, epistemology is based on the foundation enterprise, that is, the “service” of epistemology is to make knowledge valid, in this sense its usefulness is to provide/create tools to validate this knowledge. This connection between epistemology and the line of what is knowledge or not, is glimpsed through the rationalist perspective, which in turn was portrayed by Popper (2004) in a unique way.

However, the question raised by Darsie (1999) which implies that rationalism is not always at the service of epistemology makes each individual reflect on the logic of each observed phenomenon. In this tangle about the search and definition of what knowledge is, what rationality is, epistemology enters as a “science” to answer these questions (HEIDELBERG, 2018). However, Taylor (2003) cites that epistemology is not necessarily a rationalist enterprise.

In this panorama, the dichotomy of analysis of the phenomena glimpsed through epistemology is visualized. In the context of this work, the question presented about investor rationality is based on the question presented by Santos and Barros (2011) when they ask whether it is reason or emotion that determine the financial behavior of Brazilian investors. Santos e Barros (2011) also point out that it was possible to identify an excess of confidence on the part of the interviewees who judged that their ability to make rational investment decisions is greater than their peers.

According to Serva (2017), the study of epistemology within administration in Brazil began in the 1990s. However, research still emerges in 2023 that report the need to address and reinforce the research agenda that addresses epistemological discussions about the content and knowledge that is produced within the field of administration (ANDION, 2023). Why has the discussion on epistemology within management made little progress in over 30 years? For Silveira, Roazzi and Souza (2023) the answer to this question derives from another question: is management a science? For the authors, how management appropriates knowledge and methods from other areas such as sociology, psychology, and economics, in addition to its object of study being a study without neutrality and objectivity, makes it judged as a non-scientific area and, due to this, epistemological questions are not carried out within its theme.

In this way, when analyzing the theory of investor rationality itself, the pillar of the present work, it is noted that it was born in the connection of psychology (KAHNEMAN; TVERSKY, 1979; KAHNEMAN; KRUEGER, 2006; WOYCIEKOSKI; STENERT; HUTZ, 2012; KAHNEMAN; TVERSKY, 2012). Unfortunately or fortunately, we have not found any work that clarifies that the joining of two areas to form a third and the theories that derive from these cannot be considered as science. In this way, the relevance of the present work is identified based on the assumption that administration is a science (DAMKE; WALTER; DAMIÃO DA SILVA, 2010) and verify the state of the art of the discussion on investor rationality from an epistemological perspective in the field in question.

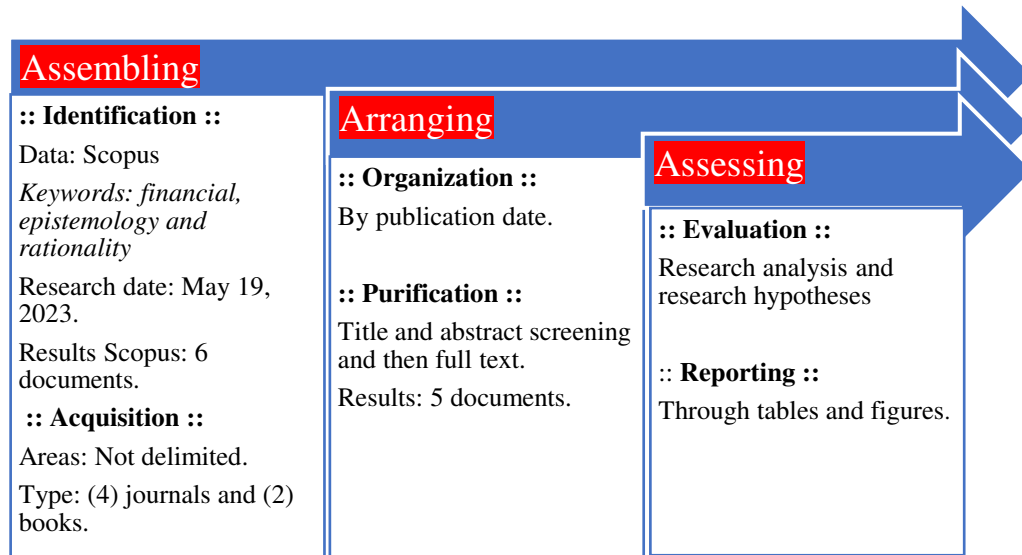
## **METHODOLOGY**

This article used an approach inspired by the structure of Paul *et al.* (2021), which uses the three-step method: assembling, arranging, and assessing of findings in one or several databases.

The assembling stage involves identification and acquisition of literature and covered the identification of previous research on financial, rationality and epistemology. This article focuses on papers published in the Scopus database. The keywords “financial”, “epistemology” and “rationality” correlated with the Boolean operator “and” were used in the search. In this

way, 6 unique works were identified, as shown in Figure 1. The areas were not delimited given the multidisciplinary of the subject. The research was carried out without time limitation until May 19, 2023, and was conducted by two researchers.

Figure 1 – Protocol SPAR-4-SLR - Adapted for Reviewing Articles applied to the theme of Epistemology, Finance and Rationality based on Scopus.



Source: From the authors (2023).

The second step is arranging, which involves the organization and selection of papers based on the eligibility criteria. As seen in Figure 1, one of the findings was excluded because it did not fit within the scope of the proposal. The paper was about a chapter of a book on Luther's psychoanalysis. In this way, it was excluded from the sample for not having the objective of approaching the subject of financial, rationality and epistemology.

The last step is Assessing, which covers the evaluation and reporting phases. This research analysis and hypothesis was conducted to verify the state of the art of the discussion on investor rationality from an epistemological perspective in the field in question. In this sense, the TCCM framework of Paul and Rosado-Serrano (2019) subsidized the present research for a holistic analysis, based on theoretical perspectives (T), context (C), characteristics (C) and methodology (M).

## RESULTS ANALYSIS

In Figure 1, the methods used to map scientific research that aims to investigate the financial rationality, or of the investor, within epistemology were demonstrated. After applying the SPAR-4-SLR Protocol, 5 documents were identified, which are discussed in Table 01.

According to Table 01, it is observed that academic production in areas that relate to research terms began in 2012. Considering that investor rationality and behavioral finance gained relevance after the Kahneman and Tversky awards (AMORIM, 2019) with prospect theory in 2002, studies slowly began to be developed after this milestone. However, in Brazil, according to Table 01, a single relevant work was identified on the issue of investor rationality connected with epistemology.

Table 01 - Results of the documents found after the application of the SPAR-4-SLR Protocol in the Scopus database

Year	Article	Author	Journal	Citations
2012	Rationalities of ignorance: On financial crisis and the ambivalence of neo-liberal epistemology	Davies, W., McGoey, L.	<i>Economy and Society</i> 41(1), pp. 64-83	103
2013	The university and the epistemological pluri-diversity: The construction of knowledge in terms of other non-western centered epistemological paradigms	Tavares, M.	<i>Revista Lusofona de Educacao</i> (24), pp. 53-79	1
2013	The global financial crisis: Essay on the possibility of substantive change in the discipline of finance	Gendron, Y., Smith-Lacroix, J.-H.	<i>Critical Perspectives on Accounting</i> 30, pp. 83-101	40
2016	Financial literacy and financial incomprehensibility (Book Chapter)	Remmele, B.	<i>International Handbook of Financial Literacy</i> pp. 39-55 <i>Journal of the Royal</i>	10
2022	Illiberal economies: ambivalence and critique in an alternative investment scheme	Hayden, T.B., Muir, S.	<i>Anthropological Institute</i> 28(4), pp. 1211-1233	1

Source: From the authors (2023).

Following the TCCM framework of Paul and Rosado-Serrano (2019), and for a better understanding of what each of the findings is about, Table 2 was constructed, which addresses the general theme of each one.

According to Table 2, the academic production of impact appeared in 2012 (DAVIES; MCGOEY, 2012) with an article written after the Subprime crisis that addresses the implications of financial ignorance makes irresponsibility receive benefits from the archaic epistemological model looking at finances. In this same context, the 2016 article (REMMELE, 2016) reports that financial knowledge with a focus on how people are understanding, that is, how epistemological thinking is being developed and absorbed by the population remains intact. In this way, it is noted that after 4 years between one work and another, the studies remain incipient. One answer to this gap may be the evolution of university debates, which made several topics unfeasible, as addressed by the only Brazilian article listed in Table 02 (TAVARES, 2013).

Regarding the context, the corresponding author's countries were exclusively from Europe and America, more specifically from Brazil, Canada, Germany, Mexico, and the United Kingdom, all of them with only one author. Hence, there are opportunities to research in other continents to fill the gap in this subject.

Table 02 - Results of the documents found after the application of the SPAR-4-SLR Protocol in the Scopus database with the general theme

Year	Article	General Theme
2012	Rationalities of ignorance: On financial crisis and the ambivalence of neo-liberal epistemology	The actors involved in the Subprime crisis justified ignorance or “good faith” in the acts that triggered the crisis. The article proposes an epistemological analysis of crises and knowledge.
2013	The university and the epistemological pluri-diversity: The construction of knowledge in terms of other non-western centered epistemological paradigms	It brings arguments that the university should pay attention to the epistemological dialogues that were unfeasible to go in search of a broad and holistic education.
2013	The global financial crisis: Essay on the possibility of substantive change in the discipline of finance	It demonstrates that finance theory rests on an antiquated view of epistemological positivism.
2016	Financial literacy and financial incomprehensibility (Book Chapter)	Financial understanding remains intact in the business academic world. The work advances by proposing financial epistemology for understanding the distinct levels of the financial world.
2022	Illiberal economies: ambivalence and critique in an alternative investment scheme	It aims to address everyday economic biases, indicating the importance of society to develop and address different epistemological structures to characterize and understand the economy.

Source: From the authors (2023).

In relation to the characteristics, most studies were related to financial crises (DAVIES; MCGOEY, 2012; GENDRON; SMITH-LACROIX, 2015; REMMELE, 2016), neoliberalism (DAVIES; MCGOEY, 2012; TAVARES, 2013) and education (REMMELE, 2016, TAVARES, 2013). Future lines of research could explore the geographical characteristics of financial, rationality and epistemology, as well as the difference in the academic and everyday world. Regarding the methodology, all the articles were theoretical which only Hayden and Muir (2022) bring up testimony of some participants of an investment scheme to better understand what led them to enter it.

## CONCLUSION/CONTRIBUTION

This research innovates and, in at least four respects, firstly because it is a pioneer mapping in relating investor rationality in the field of administration with the theme of epistemology. Second, for using two different protocols as a mapping method in the literature. Third, due to the proposal to advance on issues related to behavioral finance in the economy and development of a country. And finally, the fourth, for being concerned with demonstrating the lack of research that questions the rationality of the investor.

This paper summarizes the knowledge of epistemology related to rationality and finance, providing a comprehensive review. Our study revealed that the focus of those papers is solely on theoretical studies from Europe or America, showing a need for more research in other countries. However, we carried out the research in only one database, which can be considered a limitation of the study.

As can be seen throughout this study, epistemology in the field of investor rationality or even in the fields of finance is rare (GENDRON; SMITH-LACROIX, 2015; HAYDEN; MUIR, 2022), in this sense, this study advanced by demonstrating the incipience of the works.

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