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Identifying the Components of Complexity and Biases Cognitive Related to the Financial Decisions of Academic Entrepreneurs with the Qualitative Research Approach of Grand Theory

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Extended Abstract

Aim

Academic entrepreneurs possess distinct characteristics and cognitive structures that influence their mentality, interpretations, and business decisions. The uncertainty inherent in entrepreneurial activities (Baron, 2007), along with certain cognitive and perceptual traits of entrepreneurs, can illuminate many of the complexities and biases in financial decision-making among academic entrepreneurs. In scenarios characterized by insufficient information, information overload, and time pressure, entrepreneurs' overconfidence often enables them to make swift decisions. Consequently, their assumptions, beliefs, and perceptions about the nature of relationships and the business environment gradually shape and direct their cognitive frameworks (Mobaraki, Nori, & Ahmadi Kafshani, 2016). Additionally, the limited capacity of the human mind—particularly among entrepreneurs—to collect and process new information, along with the natural tendency to minimize cognitive effort in decision-making, are significant factors contributing to decision-making complexities and biases.

Methodology

This research employs a qualitative methodology, categorized as practical and exploratory. The first step involves describing and analyzing relevant studies to identify the components of complexity and cognitive biases in the financial decisions of academic entrepreneurs through a literature review. The second stage consists of in-depth semi-structured interviews with knowledgeable entrepreneurs at the University of Tehran.

The statistical population includes all academic entrepreneurs at the University of Tehran who work in the scientific and technological centers of entrepreneurial companies, selected based on their experience and backgrounds. Two sampling methods—purposive and snowball sampling—were utilized. Ultimately, 16 qualitative interviews were conducted with university entrepreneurs at Tehran University.

The researcher adhered to ethical guidelines, ensuring participants' freedom to choose whether or not to engage in the study, maintaining confidentiality of information, and respecting the privacy of subjects, given the research's significance and necessity. A paradigmatic coding model was introduced for analyzing the data derived from grounded theory, which facilitated the development of this model through a systematic coding process comprising three stages: open, axial, and selective coding.

Findings

In this research, academic entrepreneurs mentioned a broad range of codes related to the complexities and cognitive biases in financial decision-making during interviews. The first stage involved coding key excerpts from the interviews, where researchers carefully read through each conversation line by line to highlight significant points emphasized by the participants. To summarize and identify the main categories of complexity and cognitive biases associated with financial decision-making, a total of 133 codes were extracted from interviews conducted in Tehran and at the Science and Technology Park of the University of Tehran in 2023.

Through the combination and categorization of examples drawn from the interview texts, several sub-components emerged, including: "differentiation," "integration," "complexity of conditions and the financial decision process," "overconfidence and optimism," "availability," "effectiveness," "anchoring," "adjustment," "planning error," and "illusion and concentration of control over financial issues." Additionally, by further combining and categorizing these sub-components, two main components were identified: "financial cognitive complexity" and "intellectual and bias."

Conclusion

The cognitive approach in entrepreneurship research is relatively newer than other approaches. It emphasizes the use of cognitive psychology methods to study the behavior of entrepreneurs. Rather than focusing solely on personality or behavior, this approach significantly explores cognitive behavior. In addition to examining entrepreneurs' behavior, it is also effective in studying their interactions with the surrounding environment.

The key point of this approach is to analyze the entrepreneur's behavior using cognitive methods in relation to their environment. In other words, this approach serves as a tool to examine both the positive and negative aspects of entrepreneurs' cognitive behavior (Sadeghi and Kazemi, 2015).

Research increasingly shows that entrepreneurs differ from non-entrepreneurs in terms of cognitive processes (Haynie et al., 2010). Recent studies emphasize that the decision-making process of entrepreneurs is inherently complex. Therefore, entrepreneurs need a sufficient level of cognitive complexity to make decisions in dynamic and complex environments. Cognitive complexity has been identified as a factor that enables entrepreneurs to apply more optimal approaches and solutions when faced with decision-making challenges. This cognitive element is considered two-dimensional, influenced by the entrepreneur's personality and psychological characteristics, as well as by the environment and the specific conditions of the decision problem (Mobaraki et al., 2012).

Cognitive biases, rooted in unconscious mental processes, create "predictable deviations from rationality." These biases lead decision-makers to process information incorrectly, resulting in poor decisions and judgments (Moshtaghi and Yazdani, 2016). However, if individuals gain better control over their mistakes, they will likely achieve greater success in making financial decisions and be better equipped to address upcoming challenges. Conversely, cognitive errors can disrupt the information processing process, preventing individuals from obtaining accurate information (Mousavi et al., 2017).

Based on theoretical frameworks and research findings, decision-makers are advised to become aware of their own cognitive biases and complexities, in addition to other factors affecting judgment and decision-making. If they encounter challenges in these areas, it is prudent for them to proceed cautiously in the decision-making process and consider cognitive training aimed at reducing their cognitive biases and complexities. This awareness of cognitive scope is considered a significant factor in enhancing analytical processing systems in decision-making, and it can even help to minimize cognitive biases.

When the decision-making environment for academic entrepreneurs is highly uncertain, certain positive aspects of cognitive biases act as enhancers for innovative activities. To foster entrepreneurship, it is recommended to leverage positive facets of cognitive biases, such as the ability to manage adverse events. Injecting optimism and confidence into the business community should be pursued as a policy for promoting entrepreneurship at both national and local levels. For future

research directions, attention to several topics can be beneficial. First, this study examined only two cognitive factors; future research could explore how other cognitive factors, such as the illusion of control, risk tolerance, and motivation, impact the initiation of innovative activities. Second, the analysis in this study was conducted at the individual level; considering factors like environmental dynamism could provide a more robust explanation of the relationship between cognitive bias, cognitive complexity, and entrepreneurship.

Keywords: Academic Entrepreneurs, Complexity and Biases Cognitive, Financial Decisions, Grand Theory.

Ethical Considerations

In this research, ethical considerations such as obtaining informed consent from participants, protecting the audio recordings of the meetings, and ensuring confidentiality were observed. At the beginning of each interview, the objectives of the research were explained, along with assurances regarding the confidentiality of the discussed content. Participants were informed of their right to leave the interview and withdraw from the research at any time. It was also clarified that the information collected would be used solely for research purposes, without disclosing any identifying details of the participants.

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Conflict of Interest

The authors declare that this article has no financial support or conflicts of interest.

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