World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:16, No:03, 2022

Behavioral Analysis of Anomalies in Intertemporal Choices Through the Concept of Impatience and Customized Strategies for Four Behavioral Investor Profiles With an Application of the Analytic Hierarchy Process: A Case Study

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Abstract : The Discounted Utility Model is the essential reference for calculating the utility of intertemporal prospects. According to this model, the value assigned to an outcome is the smaller the greater the distance between the moment in which the choice is made and the instant in which the outcome is perceived. This diminution determines the intertemporal preferences of the individual, the psychological significance of which is encapsulated in the discount rate. The classic model provides a discount rate of linear or exponential nature, necessary for temporally consistent preferences. Empirical evidence, however, has proven that individuals apply discount rates with a hyperbolic nature generating the phenomenon of intemporal inconsistency. What this means is that individuals have difficulty managing their money and future. Behavioral finance, which analyzes the investor's attitude through cognitive psychology, has made it possible to understand that beyond individual financial competence, there are factors that condition choices because they alter the decision-making process: behavioral bias. Since such cognitive biases are inevitable, to improve the quality of choices, research has focused on a personalized approach to strategies that combines behavioral finance with personality theory. From the considerations, it emerges the need to find a procedure to construct the personalized strategies that consider the personal characteristics of the client, such as age or gender, and his personality. The work is developed in three parts. The first part discusses and investigates the weight of the degree of impatience and impatience decrease in the anomalies of the discounted utility model. Specifically, the degree of decrease in impatience quantifies the impact that emotional factors generated by haste and financial market agitation have on decision making. The second part considers the relationship between decision making and personality theory. Specifically, four behavioral categories associated with four categories of behavioral investors are considered. This association allows us to interpret intertemporal choice as a combination of bias and temperament. The third part of the paper presents a method for constructing personalized strategies using Analytic Hierarchy Process. Briefly: the first level of the analytic hierarchy process considers the goal of the strategic plan; the second level considers the four temperaments; the third level compares the temperaments with the anomalies of the discounted utility model; and the fourth level contains the different possible alternatives to be selected. The weights of the hierarchy between level 2 and level 3 are constructed considering the degrees of decrease in impatience derived for each temperament with an experimental phase. The results obtained confirm the relationship between temperaments and anomalies through the degree of decrease in impatience and highlight that the actual impact of emotions in decision making. Moreover, it proposes an original and useful way to improve financial advice. Inclusion of additional levels in the Analytic Hierarchy Process can further improve strategic personalization.

Keywords : analytic hierarchy process, behavioral finance anomalies, intertemporal choice, personalized strategies
Conference Title : ICBFDMF 2022 : International Conference on Behavioral Finance and Decision Making Processes
Conference Location : Prague, Czechia
Conference Dates : March 21-22, 2022

Open Science Index, Economics and Management Engineering Vol:16, No:03, 2022 publications.waset.org/abstracts/147181.pdf