

Behavioural Biases of Entrepreneurs in Capital Investment Decisions

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Abstract

One of the very fundamental assumptions in all economic analysis is that man behaves rationally and this enables him to make prudent business models. However, when it comes to decision making, paradoxically, it has been observed that entrepreneurs are very heuristic and much biased in their entrepreneurial decisions. This paper explores the available literature to identify the general behavioural biases among individual entrepreneurs; it further examines the biases that creep into the entrepreneur's mind set during their capital investment decisions.

Keywords: Behavioural Biases; Overconfidence; Representativeness; Capital Investment; Decision Making.

Introduction

Behavioural finance is a fusion of cognitive variables in psychological theory and concepts in business finance. Traditional economists always assume perfect rationality in human behaviour in all economic analysis, especially in crafting business ideas. Under any business environment, diligent and precise decision is the key to ultimate success. Western researchers have observed that under uncertain and risky environment, entrepreneurs use mental shortcuts, emotions and cognitions than the real fact analysis for decision making. This results in grant success of certain enterprises and total failure of some others, despite their investment in the same industry and the fact of their facing the same customer and business characteristics. European psychologists have analyzed the impact of behavioural biases of individual investors in the stock market, and that of managers and entrepreneurs in financial decisions. However, very few attempts have ever been made in India to look into the relationship between the aforesaid variables and its impact on making prudent and accurate business decisions. This

paper is divided into two parts- firstly it explores the available literature on the behavioural biases in entrepreneurial decisions, secondly, it examines the presence of overconfidence and representativeness biases among entrepreneurs in Kerala in their crucial investment decisions.

Objectives of the Study

1. To analysis the available literature onvarious behavioural biases and its effects on the entrepreneurial decisions.
2. To make an empirical examination of the presence of overconfidence and representativeness biases among entrepreneurs in Kerala.

Methodology

The study is based on a sample of hundred entrepreneurs selected from Malappuram District. The data were collected with the help of a convenient and a random sampling frame by administering a structured questionnaire. Descriptive Statistics-mean and standard deviation was used to describe the demographic profile and presence of overconfidence and representativeness biases of the entrepreneurs in their capital investment decisions. Appropriate tests such as Chi-square and One Way ANOVA were applied to determine the statistical relationship between the parameters.

It is anticipated that the findings of the study

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will have much implications in analyzing the present day business models and in streamlining the complex investment decisions.

Part I

Behavioural Biases in Entrepreneurial Decision

Decision making is an intellectual activity. However, in an uncertain and ambiguous environment, Behavioral psychologists argue, that entrepreneurs use their heuristics and stereotypes to make financial decisions. Michell et al. (2002) defined entrepreneurial cognition as “the knowledge structure that people use to make assessments, judgments or decision involving opportunity evaluation and venture creation and growth”. At the initial stages of their learning curve and under uncertain environments, entrepreneurs’ decisions, especially at the startup phase of their activities, are proved to be heuristic and biased (Busenits & Barney, 1997).

Behavioural biases are the methods to think differently and use of intuitions, mental actions and shorter alternatives to take decisions. Behavioural biases are the mental shortcuts used to make judgments (Simon et al. 2009), which help in effective decision making (Buzenits and Barney, 1997). Behavioural bias can be divided into decisions, social and error biases in psychological context (Baron 2007; Kahneman and Tversky, 1972), whereas, the biases related to corporate entrepreneurial orientation are decision biases. Moreover, decision biases can be further divided into cognitive and emotional biases (Maccoun, 1998; Nickerson, 1998).

The literature is presented in two sections- studied biases and unstudied biases; both are relevant in entrepreneurial decision making.

Biases Studied in the Entrepreneurial Decisions

1. *Over confidence*: Over confidence is the most prominent faith in oneself. When entrepreneurs take a decision, they are much confident about their intuitions and skills and their decisions are based on faith. Entrepreneurs perceive a subjective certainty higher than the objective accuracy (Busenitz, 1999; Gudmundsson & Lechner, 2013). Bazerman (1994) was one of the pioneers to study over confidence in the field of business decisions.

Effect on Entrepreneurs

- ❖ Decreases risk perception (a mediator), thereby increasing new venture decisions (Simon et al., 2000).
 - ❖ Boosts up the evaluation of opportunities (Keh et al., 2002).
 - ❖ Decreases risk perception and consequentially induces riskier behaviors and decisions of entrepreneurs (Grichnik, 2008).
 - ❖ Overestimate their performance when tasks are difficult and underestimate their performance when tasks are easy (Moore & Healy, 2008).
 - ❖ Increases the probability of risky decisions like business expansion and branching out. (McCarthy et al., 1993).
 - ❖ Maintains a low level of liquidity, which increases the chance of failure (Hayward et al., (2006).
 - ❖ Short period decisions; reduce the chance of failure and overconfident decisions in long period increase the chance of failure (Craig R. Everett and Richard J Fair child, 2015).
2. *Representativeness*: Making decisions based on their past experience, performance of related activities, the performance of similar enterprises is the phenomenon known as representativeness. Entrepreneurs think that their prior knowledge is good for evaluating new investment opportunity. Entrepreneurs use familiar situation as a cognitive shortcut for making decisions (Wadson, 2006). Representativeness is a cognitive bias that means judging probabilities on the basis of resemblance (Tversky et al., 1974; Grether, 1980).

Effect on Entrepreneurs

- ❖ The entrepreneur should be the representative, especially at the time of financial distress (Bora Ramiah et al., 2014).
 - ❖ Encourages over estimation of low probability of occurrence of events, it impairs the quality of managerial decision making, especially for the startups. (A. Wickham 2015).
3. *Self-Serving*: Take credit for success while denying responsibility for failure (Rogoff et al., 2004). (Heider 1985): That is, people tend to attribute the successful outcomes from the decisions of their own credit and bad outcomes to external factors.

Effect on Entrepreneurs

- ❖ Entrepreneurs with self-serving bias is better to risk management (Bora Ramiah et al., 2014).
4. *Anchoring*: Entrepreneurs estimate their future return based on anchor and take decisions. This is a tendency to anchor or attach our particular thoughts to a reference point even though it may have no logical relevance to the decision at hand (Amos Tversky and Daniel Kahneman, 1974).

Effect on Entrepreneurs

- ❖ Affects decision about future investment (Bora Ramiah et al., 2014).
5. *Loss aversion*: It is the pervasive phenomenon in human decision making under risk and uncertainty, according to which people are more sensitive to losses than gains (Amos Tversky and Daniel Kahneman, 1991).
 - ❖ Affects asset management (Iqbal & Ali butt; 2015).
 6. *Mental Accounting*: Entrepreneurs use the mental accounts of their wealth which have an impact on asset management decisions. Mental accounting describes the tendency of people to place particular events into different mental accounts based on superficial attributes (Richard Thaler 1980).

Effect on Entrepreneurs

- ❖ Current Asset placement decision in enterprises (Bora Ramiah (2014).
 - ❖ Entrepreneurs use this bias to diversify their investments to reduce financial risk.
7. *Illusion of control*: The illusion of control refers to one's belief that he/she has influence over the outcomes of uncontrollable events (E.Langer, 1975).

Effect on Entrepreneurs

- ❖ Illusion of control and risk propensity was found to be positively correlated with the progress of a new venture (De Carolis et al. 2009).
- ❖ Tempts people to overestimate their ability to control events (Langer, 1975).
- ❖ Entrepreneurs seem to have control over people and situations (Keh, et al., 2002).
- ❖ Leads to an overestimation of one's skills,

consequently, his ability to cope with and predict future events are impaired (Simon, et al., 1999).

- ❖ May lead to risky decisions through performing overly optimistic estimates (Duhaime and Schwenk, 1985).
 - ❖ Higher level of illusion of control takes low quality decisions (Carr & Blettner).
8. *Over Optimism*: Entrepreneurs believe that their future performance will be much better than that in past and present.

Effect on Entrepreneurs

- ❖ Forecast and improves firms' chance of survival (Anna Chiara et al.).
- ❖ Overestimates the likelihood of positive events and underestimates the likelihood of negative events (Sharot, 2011).

Unstudied Biases Relating to Entrepreneurship

1. *Availability Bias*: People are intended to base their decisions more on recent information rather than any detailed study of past events and thereby become biased to that latest news (Tyler, 1982)
2. *Disposition Effect*: Investor selling assets, when price has increased while retaining for too long those assets that have dropped in value (Shefrin, 1985)
3. *Cognitive Dissonance*: This is the conflict between prior understanding and the new piece of information. Cognitive dissonance is the mental suffering that people experience when they are presented with the evidence that their belief has been wrong (Shiller,1998)

The review shows that there have been many studies about the behavioural biases through the diverse range of activities in entrepreneurship. Overconfidence and Illusion of control are the most studied biases among respondents in foreign countries.

Part II

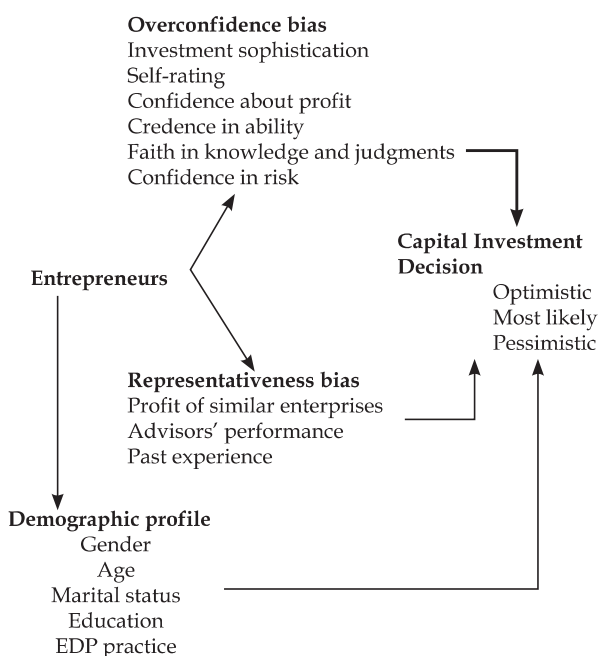
Biases among Entrepreneurs in Capital Investment Decision

It's very difficult for an ordinary capital investor to identify, evaluate and take a prudent investment decision. However, most entrepreneurs are of the view that, they are very intelligent, have special skills in identification and evaluation, are rational

and their decisions are better than that of others. But human minds are irrational and use intuitions and shortcuts to take decisions in a competitive and uncertain business environment.

In this section, the most prominent biases under Michel Pompean’s classification - overconfidence and representativeness are analyzed to examine their presence among Keralite entrepreneurs in their capital investment decisions.

Structure of the Study



Presence of Behavioral Biases among Entrepreneurs in Kerala

The presence of overconfidence and representativeness bias in the capital investment decisions is identified by calculating the mean values of sample mean of each variable. If the value of mean score of overconfidence bias and representativeness bias identification statements come more than 60 percent (3) they are to be considered as biased. Tables 1 & 2 describe the mean value and standard deviation of each statement under overconfidence and representativeness bias among the selected 100 entrepreneurs in Kerala.

Table 1: Presence of Overconfidence Biases among Entrepreneurs in Capital Investment Decision

Statements	Mean	Std. Deviation	Biased if
Investment sophistication	3.7800	.78599	>3
Self-rating compared to other entrepreneurs	3.4600	.89239	>3
Confidence about profit making	3.4600	.79671	>3
Credence to ability to identify opportunity	3.6800	.72307	>3
Faith in knowledge and judgments	3.6900	.67712	>3
Confidence in risk	3.8800	.81995	>3
Overconfidence total	21.9500	2.50404	>3

Source: Computed from Primary Data.

In the above table 1, over confidence is identified in terms of 6 dimensions and representativeness bias with 3 dimensions. The analysis shows that all dimensions have a score of more than 3, thus the entrepreneurs in Kerala show overconfidence and representativeness in their capital investment decisions.

Table 2: Presence of Representativeness Biases among Entrepreneurs in Capital Investment Decision

Statements	Mean	Std. Deviation	Biased if
Decisions on the basis of similar enterprises’ profits making	3.9100	.76667	>3
Decisions based on advisors’ performance	3.3200	.78983	>3
Decisions based on past experience	3.7300	.72272	>3
Representativeness total	10.9600	1.61383	>3

Source: Computed from Primary Data.

Association between Demographic Factors and Capital Investment Decision.

H0: There is no significant association between demographic profile and capital investment decisions.

H1: There is a significant association between demographic profile and capital investment decision.

Table 3: Association between Demographic Profile and Capital Investment Decisions.

Demographic Profile	Types	Numbers/ Percentage	OCID		RCID	
			Chi-square	p	Chi-square	p
Gender	Male	75	.681	.711	.067	.967
	Female	25				
Age	Below 30	6	9.13	.166	7.426	.283
	30-40	28				
	41-50	43				
	Above 50	23				
Marital status	Yes	96	3.646	.162	.449	.799
	No	4				
Educational qualification	Up to +2	31	10.95	.090	3.49	.745
	Degree	49				
	PG Professional	12 8				
EDP program	Yes	51	3.739	.154	3.197	.202
	No	49				

Source: Computed from Primary Data.

The test of significance in difference between demographic factors and capital investment decision shows that the difference is insignificant at 5 percent level of significance. It implies that, demographic factors like gender, age, marital status, education and entrepreneur’s participation of Entrepreneurial Development Program do not make any difference in their biased capital investment decision (Table 3).

Association between Behavioural Biases and Capital Investment Decision

Chi-Square test has been applied to determine whether there is a significant association between the behavioural biases and capital investment decision. Each variable under overconfidence bias and representativeness bias were tested at 5percent significant level.

H0: There is no significant relationship between behavioural biases and capital investment decision (overconfidence and representativeness biases)

H1: There is a significant relationship between behavioural biases and capital investment decision (overconfidence and representativeness biases).

Table 4: Association between dimensions of overconfidence Biases and capital Investment decision

Dimensions	Capital Investment Decision	
	Chi square Value	p value
Investment sophistication	51.118	<.001
Self-rating	39.589	<.001
Confidence in profit making	24.058	.002

Credence in the ability in opportunity identification	34.435	<.001
Faith in knowledge and judgments	13.056	.0420
Confidence in risk	11.436	.178

Source: Computed from Primary Data.

The analysis of table 4 rejected the null hypothesis and shows a significant relation in capital investment decision regarding dimensions of over confidence bias. It is clear that entrepreneurs in Kerala are overconfident about profit making, their ability in identification of opportunities, knowledge and judgments in capital investment decisions. On asked about their personal perception of their level of investment sophistication, it was reported by the majorities that perceive it as unsophisticated and their self-rating compared to other entrepreneurs is above average. It means that they are not wellaware about the complexities and risk involved in their investment due to their over confidence. But the p value of 0.178 shows there is no association between capital investment decision and confidence in risk.

Table 5: Association between dimensions of representativeness Bias and capital Investment decision

Dimensions	Capital Investment Decision	
	Chi square Value	P value
Profits of similar enterprises	64.885	<.001
Advisors’ performance	55.874	<.001
Past experiences	25.867	<.001

Source: Computed from Primary Data.

The chi-square test for independence shows a significant association in capital investment decision regarding representativeness bias. It implies that entrepreneurs take capital investment decisions by resorting (representativeness error) to the profits of similar enterprises, advisors' performance and past experiences (Table 5).

Analysis of significant difference between behavioral Biases and capital Investment decisions.

One way analysis of variance test is conducted to find out the difference between capital investment decisions and behavioural biases of entrepreneurs. The capital investment decision is divided into three categories of statements for analyzing the influence of behavioural biases in capital investment decisions. Strongly agree and Agree score considered as optimistic (scale value ≥ 3). Neutral considered as most likely decision takers (scale value = 3) and Disagree and Strongly disagree are pessimistic in decision (scale value ≤ 3).

H0: There is no significant difference between capital investment decision and behavioural biases.

H1: There is a significant difference between capital investment decision and behavioural biases.

Conclusion

Western scholars used behavioural biases theories to analyze its effects on various decision making phenomena in entrepreneurial activities. The studies show that how heuristics and mental short cuts affect entrepreneurs in their business decisions.

It may be noted that all the biases identified in the area of finance are not equally important in entrepreneurship. Over confidence, self-serving, anchoring, mental accounting, representativeness, illusion of control and loss aversion were the biases previously studied and found to be more prevalent. However, the impact of availability bias, disposition effect and cognitive dissonance in the area of entrepreneurship were not studied much, especially from an Indian context.

This study made an attempt to analyze the presence of over confident bias and representativeness bias in managerial decision making. The first part of the study identified the biases among entrepreneurs and its probable impact on capital investment decisions.

Table 6: Significant Difference between Capital Investment Decision and Behavioural Biases

Behavioural Biases	Capital investment decision			F value	p value
	Optimistic	Most likely	Pessimistic		
Overconfidence	22.4778 (2.01248)	18.00000 (.70711)	16.4000 (.54772)	34.288	<.001
Representativeness	11.6711 (1.11221)	9.0000 (.00000)	8.00000 (.00000))	86.289	<.001

Value in bracket explains standard deviation
Source: Computed from primary Data.

The result of the above analysis shows there is a significant difference (at the 5 percent level of significance) in capital investment decision based on the overconfidence bias (F value =34.288, Value $\leq .001$) and representativeness bias (Value = 86.289, Value $\leq .001$) (Table 6).

The result of the Post Hoc Test explains the significant differences among capital investment decisions in overconfidence bias and representativeness bias. Here the optimistic decision makers are significantly differing from most likely and pessimistic decision makers. However, the most likely and pessimistic decision makers are more or less of same nature in terms of over confidence and representativeness biases.

The second part of the study found a significant relationship among different variables of behavioural biases of entrepreneurs in their capital investment decisions. It may be noted that no significant relationship was observed between demographic factors of entrepreneurs in their capital investment decisions. Behavioural biases and capital investment decisions are significantly associated with each other, Analysis of variance between behavioural biases and capital investment decision also showed a significant association between over confident bias and representativeness bias in different levels of capital investment decisions. It was revealed from the study that entrepreneurs in Kerala frequently make use of mental shortcuts and emotions to simplify their

complex investment decision problems and clear their vagueness in decision making.

References

1. Baron RA. Behavioural and Cognitive Factors in Entrepreneurship. Strategic Entrepreneurship Journal. 2007.
2. Bora Ramiah VYZ. A Behavioural Finance Approach to Working Capital Management. The European Journal of Finance. 2014.
3. Bryant P. Self- Regulation and Decision Heuristics in Entrepreneurial Opportunity Evaluation and Exploitation. 2007. www.emeraldinsight.
4. Butta NT. Do Behavioural Biases Impact Corporate Entrepreneurship, Agency Cost and Firm Performance: Evidence from Developed and Developing Economies. Pakistan Journal of Commerce and Social Science. 2015.
5. Croft K. The Role of Heuristics in Entrepreneurial Decision- Making. 2013.
6. Farsi JY. Identifying Decision Making Biases in Entrepreneurial Opportunity Exploitation Decision. International Business Research. 2012.
7. I. Cuet J. (n.d.). New Venture Decision -A Literature Review of the Entrepreneurial Heuristics and Biases.
8. Invernizzi AC. Entrepreneurial Overconfidence and its Impact on Performance. SAGE journals. 2016.
9. Iqbal S. Impact of Behavioural Biases on Working Capital Management of Manufacturing Sector of Pakistan: A Non Parametric Investigation Approach. Journal Poverty, Investment and Development. 2015.
10. Jahangir Yadollahi Farsi NI. Effect of Experience on Applying Entrepreneurial Decision Heuristics. Global of Human Social Science. 2012.
11. Keith M, Hmieleski RB. Entrepreneurs Optimism and New Venture Performance: A social Cognitive Perspective. Accadamy of Management Journal. 2009.
12. L. Zacharakis A. The Nature of Information and Overconfidence on Venture Capitalists Decision Making. Journal of Business Venturing. 2001.
13. Lowe RA. Over Optimism and Performance of Entrepreneurial Firm. Management Science. 2006.
14. Lowell W, Bosenits JB. Differences Between Entrepreneurs and Managers in Large Organisations: Biases and Heuristics in Strategic Decision Making. Journal of Business Venturing. 1997.
15. McCarthy AM. Reinvestment Decision by Entrepreneurs: Rational Decision Making or Escalation of Commitments. 1993.
16. Nouri P. Heuristics and Biases in Entrepreneurial Marketing: Some New Insight. International Journal of Entrepreneurship. 2017.
17. Palma PJ. Entrepreneurial Behaviour. 2009. <http://www.Researchgate.net/publication>.
18. Simon M. The Relationship Between Overconfidence and the Introduction of Risky Product: Evidence from a Field Study. The Accadamy of Management Journal. 2003.
19. Siti Aisyah Hidayathi MD. Behavioural Finance and its Impact on Corporate Performance (Study on Small and Medium Enterprises in Lombok Island. International Journal of Business and Management Invention. 2014.
20. Taktak S. Why Entrepreneurs Overconfidence Affect its Project Financial Capability: Evidence from Tunisia using Bayesian Network Method. Business Excellence and Management. 2013.
21. Wickham PA. The Representativeness Heuristics in Judgement Involving Entrepreneurial Success and Failure. 2003. <http://www.emeraldinsight.com/researchregister>.
22. Yadipour R. Decision Making in an Entrepreneurial Finance: A Behavioural Perspective. The Journal of Entrepreneurial Finance. 2009.