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A study on the impact of investment experience, gender, and level of education on overconfidence and self-attribution bias

K.C. Mishra [a], **Mary J. Metilda** [b,*]

[a] *Sambhram Academy of Management Studies, Bangalore, India*
[b] *RV Institute of Management, Bangalore, India*

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Abstract This paper aims at studying the impact of investment experience, gender, and level of education on two specific biases—overconfidence and self-attribution, and exploring the relationship between the two biases. Data collected from a sample of 309 mutual fund investors were analysed. The results show that overconfidence is higher among men than women and increases with investment experience and education. Self-attribution increases with education, but there is no significant association between self-attribution bias and gender, as also between self-attribution bias and investor's experience. The findings also show a significant association between self-attribution and overconfidence.

Introduction

Standard finance theory and economic models draw heavily upon two basic assumptions, namely, rationality and market efficiency. The assumptions of traditional economists portray humans as rational beings who always strive to maximise their utility. Fama (1965) defined "efficient market" as a market with (1) a large number of rational profit maximisers competing with each other to predict future values of individual securities, and (2) in which important current information is almost freely available to all participants. The proponents of behavioural finance continuously challenge this assumption and believe that numerous factors, including both rational and irrational thinking, drive investor behaviour. They believe that market price is not always a fair estimate of the underlying fundamental value of the firm, and that investor psychology can drive market prices and fundamental value very far apart (Shefrin, 2000). Empirical research and studies on investor behaviour have shown the existence of irrational thinking in investor decision making. Behavioural scientists brought in their knowledge of human behaviour to explain the reasons for over- and under-valuation of shares in the market. The paper Prospect Theory: An Analysis of Decision under Risk by Amos Tversky and Daniel Kahneman is considered a seminal work in behavioural finance (Kahneman & Tversky, 1979). Further, Shefrin and Statman's "Explaining Investor Preference for Cash Dividends" (Shefrin & Statman, 1984), De Bondt and Thaler's "Inefficiency in Asset Pricing" (1985), and Shiller's study on stock market bubbles and feedback theory (Shiller, 2000) have contributed significantly in understanding cognitive biases and their role in investment decision making.

* Corresponding author. Tel.: 9886941912.
E-mail address: ma19ty@gmail.com (M.J. Metilda).
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Investor biases

Shefrin (2007) defines bias as a predisposition towards error: It is a prejudice or a propensity to make decisions while already being influenced by an underlying belief. Psychologists have long studied the type of errors people are prone to in decision making. Studies emphasise that individuals are affected by psychological factors such as cognitive biases in their decision making, rather than being rational and wealth-maximising (Forbes, 2009).

This paper is an attempt to study the impact of investment experience, gender, and the level of education on two specific biases, overconfidence and self-attribution. It also aims at studying the relationship between overconfidence bias and self-attribution bias. The sections of this paper are arranged in the following order. The first section describes both overconfidence bias and self-attribution bias with their implications to the investor. This is followed by a review of earlier papers showing the impact of gender, experience, and level of education on overconfidence and self-attribution biases. The third section describes the methodology and questionnaire for the study. The fourth section includes the results, followed by discussion and conclusion.

Overconfidence bias

Overconfidence can be summarised as unwarranted faith in one's intuitive reasoning, judgments, and cognitive abilities (Pompian, 2006). Psychologists find overconfidence to be an all pervasive human characteristic (De Bondt & Thaler, 1995). Fischhoff, Slovic, and Lichtenstein (1977) observed that people are poorly calibrated when estimating probabilities. Events which they think are certain to occur actually occur only 80% of the time, and events they think are impossible occur approximately 20% of the time. Shefrin (2000) describes overconfidence with an example of driving. A research group was asked about their driving ability, and between 65 and 80% of the respondents rated themselves above average. Montier (2002) conducted a study of 300 professional fund managers in which 74% believed that they had delivered above-average performance and the remaining 26% believed that their performance was average. Almost all the respondents believed that their performance was average or better. In both these studies, overconfidence was measured through better than average effect which is an inclination in people to exaggerate their talents. On nearly any dimension that is both subjective and socially desirable, most people will see themselves as better than average (Myers, 1996).

Camerer and Lovallo (1999) found that overconfidence and optimism lead to excessive business entry, i.e., more people who are overconfident and optimistic about their relevant skills enter new business and quit later due to business failures. Barber and Odean (2000) note that overconfident investors overestimate the precision of their information and thereby the expected gains by trading. They also noted that individuals turned over their common stock investments about 70% annually.

Behavioural implications of overconfidence

Prior research suggests that investors are overconfident about their abilities to predict the future and they overestimate their ability to evaluate a company as a potential investment. Shefrin (2000) suggests that they may be blind to any negative information that can indicate that stocks should not be bought or sold. According to Barber and Odean (2001), overconfident investors trade excessively and this leads to poor returns. They underestimate the downside risk because they pay no heed to historical investment statistical performance, which results in poor portfolio performance; they also hold undiversified portfolios.

Self-attribution bias

Self-attribution is a cognitive phenomenon by which people tend to attribute success to innate aspects such as talent and foresight, and attribute failures to situational factors. Individuals would take credit for successes and blame external factors for failures (Bradley, 1978). An example could be students attributing higher grades to their own intelligence and hard work, and citing unfair grading when they obtain lower grades. According to Heider (1958), in ambiguous situations, attributions are influenced by a person's "needs and wishes". Technically, self-attribution bias consists of

1. Self-enhancing bias—this refers to the tendency of people to claim an irrational degree of credit for their success
2. Self-protecting bias—this refers to the irrational denial of responsibility for failure

The self-attribution bias has a cognitive and a motivational component. According to Miller and Ross (1975) it is the limited information processing capacity of individuals that drives the self-attribution bias, which explains the cognitive component. The motivational approach argues that people make internal attributions for success and external attributions for failure to maintain their self-esteem and feel good about themselves (Zuckerman, 1979). The two motives for self-attribution are self-enhancement and self-presentation. The self-enhancing motivation helps individuals protect their self-esteem by creating causal explanations that serve to make them feel better. The self-presentation motivation refers to the drive to convey a desired image to others (Schlenker, 1980). Studies provide evidence to the existence of self-serving bias among students (Dunn, 1989). Studies by Daniel, Hirshleifer, and Subrahmanyam (1998), and Gervais and Odean (2001), formally introduced the self-attribution bias into standard learning models.

An investor who is susceptible to the self-attribution bias would attribute the rise in the value of an investment that is purchased to his/her being investment or business savvy and to bad luck or some external factor if it comes down in value.

Does self-attribution lead to overconfidence?

Studies have shown strong association between self-attribution and overconfidence. According to Hirshleifer (2001), overconfidence and self-attribution are static and dynamic counterparts. Self-attribution causes individuals to learn to be overconfident rather than converge on an accurate self-assessment. Billet and Qian (2005) explored managerial