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Representativeness bias and investment decision making: Evidence from India's Stock Market

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Abstract: ***The purpose of this article is to examine the influence of representativeness bias on investment decision making. To testing the relationship between representativeness bias and investment decision making, we design a structured questionnaire and distributed among target investors. We deployed regression analysis to examine the proposed relationship using the IBM SPSS. We also used exploratory factor analysis to valide the internal consistency of latent variables. Our findings show that in a developing country like India, representativeness bias has a favorable impact on irrational investment decisions. In terms of psychology, this indicates that cognitive heuristic bias can stifle the quality of investing decision-making in emerging markets. The study's findings revealed that in an emerging country like India, the investment decision-making process is based on quick and frugal principles that do not produce superior outcomes for investors.***

Keywords: Representativeness bias, investment decision, India.

I. INTRODUCTION

Recent financial market events have highlighted the distinctions between traditional and behavioural finance. People, institutions, and even markets are assumed to behave rationally in traditional finance (Baker and Filbeck, 2013). Behavioral finance, on the other hand, questions this assumption of rationality, claiming that investors consistently stray from optimal financial decision-making. Behavioral finance examines behaviour in diverse market situations that deviates from normal assumptions and demonstrates that markets are inefficient (Shiller, 2003).

Individual investors' vulnerability to certain behavioural oddities, according to Daniel et al. (1998), can be a barrier to maximising wealth. Cognitive illusions or biases are terms used to describe such irregularities in judgement. Understanding how different behavioural biases connect to investment decision making is crucial because reasoning errors are difficult to overcome. A increasing corpus of evidence argues that the financial knowledge is important to improve customer behaviour connected to financial products and services. Takeda et al. (2013), for example, focus on the financial literacy or knowledge of investors. Others argue that individual differences in disposition bias are linked to financial literacy (Dhar and Zhu, 2006).

Another line of inquiry looks at demographic factors to explain disparities in investment behaviour (Barber and Odean, 2001). However, there is very little research on the relationship between financial literacy and numerous demographic traits of individuals and behavioural biases. As a result, the purpose of this paper is to investigate the impact of representativeness bias on investment decision-making. The following is how the rest of the article is structured. The second section looked back at previous research. Research technique and data analysis are covered in sections 3 and 4, respectively. The conclusion and managerial implications are presented in Section 5.

II. LITERATURE REVIEW

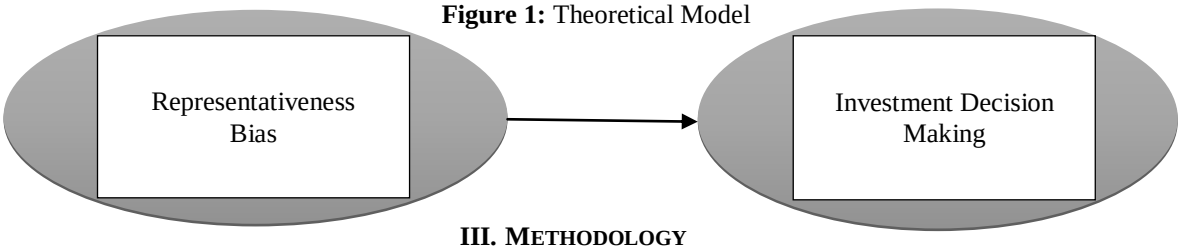
The degree of similarity between an event and its parent population is known as representativeness (DeBondt and Thaler, 1995). When a person is willing to make broad generalisations about another person or phenomenon, such as stocks, based on only a few characteristics, they are using this heuristic (Bazerman and Moore, 2012; Nisbett and Ross, 1980). This is because investors make investing judgments based on mental shortcuts and rules of thumb, and may invest in a firm only on the basis of its qualities, such as management style, past returns, or popularity, among others. However, due to the lack of any supporting information, pattern detection can be shaky. Investors who are prone to representativeness may make biassed decisions, such as putting too much weight on recent experience and ignoring the long-term average rate (Ritter, 2003). By focusing on recent advances, investors may make erroneous assumptions about the company's long-term growth rate (Waweru et al., 2008).

Large number of studies have on conducted to examine association between representativeness bias and investment decisions; some of them indicated a positive association between representativeness bias and investment decisions, implying that investment decisions improved as a result of representativeness prejudice. Toma (2015) looked into the impact of behavioural bias on individual investor decisions on the Romanian stock exchange and discovered that representativeness bias influenced investment decisions positively. He claimed that due to representativeness bias, individual investors' returns rose.

In addition, Irshad et al. (2016) discovered a link between representativeness bias and investment decisions. Ikram (2016) discovered that representativeness bias influenced individual investors' decisions on the Islamabad stock exchange in a positive way, implying that representativeness prejudice enhanced individual investors' returns. Some academics disagree with the notion that representativeness bias influences investing decisions. Representativeness bias causes investors to make trading blunders or poor trading decisions, leading to irrational behaviour.

Due to representativeness bias, Chen et al. (2007) concluded that Chinese investors make trading mistakes or make poor trading decisions. Companies engage in poor investments due to the problem of representativeness, according to Lakonishok et al (1994). According to Athur (2014), representativeness bias has a negative impact on investment decisions. Representativeness bias, according to Yaowen et al. (2015), reduces decision-making. Waweru et al. (2008) discovered that institutional investors' financial decisions on the Nairobi Stock Exchange were influenced by representativeness bias. Onsomu (2014) describes how representativeness bias affects individual investors' decisions at the Nairobi Securities Exchange in a study.

Figure 1: Theoretical Model



III. METHODOLOGY

We obtained data from individuals who participate in the stock market since the goal of this study is to look into the relationship between representativeness bias and investing decision-making. Furthermore, our respondents live near the Delhi-NCR border. We created a structured questionnaire to obtain the relevant data, which includes statements on availability bias and investment decision making. The scale developed by Nada and Moa'mer (2013) was used to assess representativeness bias. In addition, Scott and Bruce (1995) devised a scale to assess investment decision-making. The questionnaires were distributed to respondents both online and offline. To draw an equal number of male and female respondents for the study, we used quota and convenience sampling methods. We gathered the responses of 480 people for this article. The data was analyzed with help of IBM SPSS V24.

IV. EMPIRICAL RESULTS

4.1 Demographical profile of respondents

The demographic profile of responders is shown in Table 1. According to our findings, 50 percent of respondents were male, followed by an equal number of female respondents. The data show that 58.33 percent of respondents were between the ages of 25 and 50, followed by 27.08 percent who were under 25 year and the remaining respondents who were over 50 year. Similarly, our findings show that 70.83 percent of respondents have more than 3 years but less than 10 years of investing experience, followed by 22.92 percent of investors with fewer than 3 years and the remaining investors with more than 10 years of investment experience. Furthermore, our findings show that investors had prior trading and investment experience. Furthermore, 54.17 percent of investors were undergraduates, 37.50 percent were post-graduates, and the remaining investors had various degrees or diplomas, according to our findings. As a result, our findings indicate that investors are well-informed.

Table 1: Demographical Profile of respondents

Variables	Category	N	%
Gender	Male	240	50.00
	Female	240	50.00
Age	<25 years	130	27.08
	25-50 years	280	58.33
	>50 years	70	14.58
Investment experience	< 3 years	110	22.92
	3-10 years	340	70.83
	>10 years	30	6.25
Educational Qualification	UG	260	54.17
	PG	180	37.50
	Others	40	8.33

Notes: N=480
Source: The survey.

4.2 Factor analysis

Before dissecting the results, it was necessary to thoroughly examine the testing adequacy for further evaluation. 09 items were perceived from an overview of related literature to investigate the variables that demonstrate availability heuristic and investment choice making, 4 items for representativeness bias, and 5 things for investment decision making. It is a common belief that model size should be plentiful in many seasons of things, and examiners chose the model size of 480 respondents as the most important aspect of test size. As a result, Table 2 displays the KMO and Bartlett's Test results. The value of KMO is 0.777, which is greater than 0.70, indicating that the sample size is sufficient for further study. The basic correlation between inactive elements was also confirmed by Bartlett's Test of Sphericity, which is used to examine the relationship between inactive factors. The findings of Bartlett's Test of Sphericity confirm that there is a strong relationship between assertions.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.777
Bartlett's Test of Sphericity	Approx. Chi-Square	4250.646
	df	36
	Sig.	.000

Table 3 shows the overall variance explained by factor analysis findings. The representativeness bias and investment decision-making were explained using all of our 09 items. We used components extraction eigenvalues larger than 1 in this post. The findings of the factor analysis suggest that there are two factors for the 09 items. Furthermore, the results of Table 3 revealed that a total of two factors explained a total of 79.914 variation. The exploratory component technique was applied in

this study with the help of Principal Component Analysis, Varimax with Kaiser Normalization was used to pivot, and rotation was accomplished in three iterations.

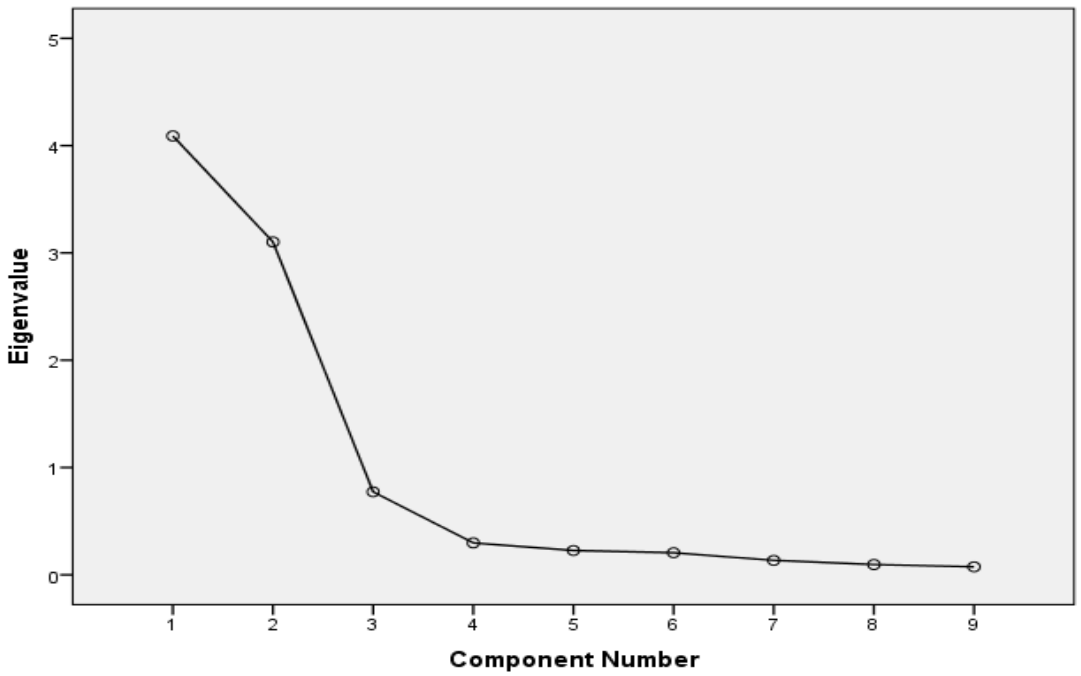
The scree plot is shown in Figure 2. To extract the components, we employed eigenvalues bigger than one. As a result, Figure 2 depicts two extracted factors with eigenvalues greater than one. The results of the rotated component matrix are shown in Table 4. Our findings suggest that the first variable, investment decision making, accounted for 41.053 percent of the variance. The second factor was representativeness bias, which accounted for 38.861 percent of the variance. As a result, our findings demonstrate that a total of two components emerged, demonstrating investment decision making and representativeness, and explaining a total of 79.914 variance. Cronbach's alpha values also confirm the reliability of latent variables. Cronbach's alpha values for investment decision making and representativeness bias are 0.911 and 0.948, respectively, which are higher above the threshold of 0.70 (Nunnally, 1978).

Table 3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.090	45.443	45.443	4.090	45.443	45.443	3.695	41.053	41.053
2	3.102	34.470	79.914	3.102	34.470	79.914	3.497	38.861	79.914
3	.773	8.591	88.504						
4	.298	3.306	91.811						
5	.227	2.517	94.328						
6	.206	2.287	96.616						
7	.135	1.497	98.112						
8	.095	1.061	99.173						
9	.074	.827	100.000						

Extraction Method: Principal Component Analysis.

Figure 2: Scree Plot



4.3 Representativeness bias and investment decision

As discussed earlier, Figure 1 hypnotized that representative bias is significant predicator of irrational investment decision making. Therefore, to test the influence of representativeness bias on investment decision making, we deployed regression analysis technique. Table 5 shows the results of regression analysis. Table 5 shows that results of regression analysis validate that representativeness bias positively influence investment decision making ($\beta = 0.137$, $p < 0.01$). Moreover, it is implied that if

the value of representativeness bias increments by 1 unit, then irrational investment decision making also increments with 0.089 units. The positive relationship between representativeness bias and irrational investment decision making implied that the increase in representativeness bias also increases the irrational investment decision making. Therefore, our findings support the results of Lakonishok et al (1994), Yaowen et al. (2015), Onsomu (2014) and Toma (2015) who provided that representativeness is significant predicator of irrational investment decision making.

Table 4: Internal Consistency of latent variables

Variables	Items	DecMak	RepBias	Cronbach's Alpha
Investment Decision Making (DecMak)	DecMak5	.915		0.911
	DecMak4	.899		
	DecMak1	.883		
	DecMak3	.810		
	DecMak2	.771		
Representativeness Bias (RepBias)	RepBias3		.954	0.948
	RepBias2		.935	
	RepBias4		.928	
	RepBias1		.909	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 3 iterations.				

Table 5: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.097	.097		42.312	.000
	RepBias	.089	.030	.137	3.023	.003
a. Dependent Variable: DecMak; Adjusted R^2= 16.8%						

Source: The authors' calculations

V. Conclusion and Managerial Implications

The impact of heuristic-driven biases like representativeness bias on irrational investment decision-making in a rising economy like India is demonstrated in this paper. Investors frequently employed heuristics elements when making investment decisions, according to the findings of the study. In particular, reliance on cognitive heuristic-driven biases such as anchoring and representativeness led investors to make less-than-optimal investment decisions. Our findings show that in a developing country like India, representativeness bias has a favourable impact on irrational investment decisions. In terms of psychology, this indicates that cognitive heuristic bias can stifle the quality of investing decision-making in emerging markets. As a result, our findings back up the findings of Lakonishok et al. (1994), Yaowen et al. (2015), Onsomu (2014), and Toma (2015), who found that representativeness is a strong predictor of irrational investment decisions. The study's findings revealed that in an emerging country like India, the investment decision-making process is based on quick and frugal principles that do not produce superior outcomes for investors.

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Annexure A: Survey Questionnaire

Section A

Socio-Economic Profile of Investor (tick)

1. Gender:
   - Male ◯
   - Female ◯
2. Age (years):
   - < 25 ◯
   - 25-50 ◯
   - Above 60 ◯
3. Investment Experience (years)
   - <3 ◯
   - 3-10 ◯
   - > 10 ◯
4. Educational Qualification:
   - UG ◯
   - PG ◯
   - Others ◯

Section B

This section of questionnaire has been developed to measure representativeness bias; please specify (√) your opinion on each of them:

Strongly disagree (SD) = 1; Disagree (D) = 2; Neutral (N) = 3; Agree (A) = 4; Strongly Agree (SA) = 5

Codes	Items	SD	D	N	A	SA
RepBias1	I tried to avoid investment in companies with a history of poor earnings					
RepBias2	I rely on past performance to buy stocks because I believe that good performance will continue					
RepBias3	Good stocks are firms with past consistent earnings growth					
RepBias4	I buy hot stocks and avoid stocks that performed poorly in the near past.					

Section C

This section of questionnaire has been developed to investment decision making; please specify (√) your opinion on each of them:

Strongly disagree (SD) = 1; Disagree (D) = 2; Neutral (N) = 3; Agree (A) = 4; Strongly Agree (SA) = 5

Code	Items	SD	D	N	A	SA
IDM1	When making an investment, I trust my inner feelings and reactions.					
IDM2	I generally make investments that feel right to me.					
IDM3	When making investments, I rely upon my instincts.					
IDM4	When I make an investment, it is more important for me to feel the investment is right than have a rational reason for it.					
IDM5	When I make Investment, I tend to rely on my intuition.					

