THE IMPACT OF HEURISTIC FACTORS ON MILLENNIAL'S BEHAVIOR TOWARDS INVESTMENT MANAGEMENT WITH REFERENCE TO SOUTH ZONE OF GUJARAT STATE: AN EMPIRICAL APPROACH

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Abstract

The conventional finance theory posits that investors act rationally, adhering to fundamental principles of risk and return when making investment choices. In contrast, behavioral finance contends that investors are inherently irrational, swayed by psychological factors that introduce biases into their decisions. Behavioural finance is the link between economics and psychology that helps us understand why investors make illogical decisions. Psychology investigates into various aspects of human behavior, offering explanations for deviations from traditional economic assumptions. This study seeks to investigate behavioral factors, specifically focusing on Heuristic factors that impact the investment performance of millennial investors in the context of the south zone of Gujarat State. The primary objective of this paper is to explore the impact of Heuristic factors on investment decisions made by millennials. Descriptive research was employed, involving a sample of 160 respondents from the South region of Gujarat state. Structured questionnaires were used for data collection using a 5-point Likert scale. The internal consistency and reliability of the questionnaire were assessed using Cronbach's Alpha Test. The study examined millennials' behavior and investment choices related to heuristic factors, employing exploratory factor analysis. The analysis identified five factors—overconfidence, anchoring, representativeness, availability bias, and gambler's fallacy—pertinent to the investment behavior of millennials in the South Zone of Gujarat state. The findings suggest that heuristic factors moderately influence the investment behavior of millennials.

Keywords: Financial Investment, Millennials, behavioural finance, behavioural factors Investment Decision, Investment Behaviour

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INTRODUCTION

In the continually changing realm of finance and investment, the decision-making procedures of both individuals and institutions play a pivotal role. The intricacies of financial markets, combined with the inherent uncertainties associated with investments, require investors to make decisions that can profoundly impact their financial health. In light of this, the exploration of behavioural biases in the decision-making processes related to investments has become a crucial area of research. Successful decision-making in investments necessitates a combination of strong financial acumen and a comprehensive understanding of human nature. To maximize returns, three essential skills are vital: a positive vision, foresight, and the determination and energy to execute decisions. Investors exhibit diversity stemming from various demographic factors such as socioeconomic background, qualifications, age, and gender. This diversity makes it challenging for shareholders to rely solely on decisions made by others, as there is no universally optimal decision-making approach for everyone (Jenis and Mann, 1977). Investment decisions are not solitary actions; rather, they are shaped by a multitude of cognitive mechanisms, encompassing factors like anchoring, availability effects, overconfidence, and herding behavior. Understanding how these biases function and interact is crucial for researchers, regulators, investors, and financial specialists. These deviations from rational decision-making have significant effects on market stability, asset valuations, portfolio performance, and even the potential existence of systemic problems. This research aims to examine the rationality of working millennial investors investing in the economy. Based on **Raines (2002)** research, Millennials are referred to as baby boomer children and the generation who were born between the years 1980 and 2000. Known as "digital natives," they have grown up in a time where technology has advanced quickly. Studies indicate that Millennials are forming the investing world and that the way they grow older is changing how investors invest. The study delves into five recognized Heuristics biases, including Overconfidence, Representativeness, Availability bias, Anchoring, and Gamblers' Fallacy. The research focuses

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on assessing these factors' impact on millennial investors' decision-making process in the south zone of Gujarat state.

LITERATURE REVIEW

Traditional financial theories presuppose that when making economic investments, investors act and think logically. According to **Andrikopoulos (2005),** "Traditional finance theory refers to a substantially simplified model of human behaviour wherein a person is free to obtain perfect information about a particular condition, perfect rationality, and perfect self-interest. The main justification for this assumption's creation is the complexity and unpredictable nature of human behavior, as well as the fact that it cannot be properly predicted or explained by other factors alone. On the contradictory **Joo and Durri (2015)** state that Behavioral finance is based on the premise that decision-makers do not always act rationally. As stated by **Waweru et al. (2008)**, analyzed behavioral finance theories have their roots in cognitive psychology, which postulates that human decision-making is susceptible to a number of cognitive illusions. **Kahneman (2011)** researched that heuristics variables are defined as a rule of thumb, how investors arrive at a decision or conclusion whenever confronted with diverse scenarios, while the available information is inadequate. As the same **Masomi, S. R., & Ghayekhloo, S. (2011),** findings show that behavioral factors like heuristics factors and prospect factors do influence the investment decision-making process of the investors. **Parthasarathy(2016),** analyzed that Every generation has its positive aspects, there are significant disparities between Generations X and Y when it comes to investing and saving behaviors. Some of the few perks that Generation X enjoys but that Generation Y does not have in today's environment include retirement benefits and job security. In terms of stable finances, Generation X is more secure than Generation Y. Thus, these two generations' investing approaches don't differ all that much. **Lubna Ansari, Sana Moid (2013),** studied the comprehension of investment patterns and awareness of salaried class investors as the primary subject of this research. The primary goal of the study was to identify young professionals' investment activities. According to the research, the younger generation is dependent on age but independent of gender. Their investment displays for the expansion prospectus and for getting more income. **Raheja, Saloni, and Lamba, Bhuvan (2014),** Based on an analysis conducted, a young investor should always take their financial situation into account before making any judgments on investments that could be sensitive to market volatility. Therefore, the study recommends young investors exercise emotional restraint when it comes to market swings, as these can ultimately result in poor decisions. According to **Gupta and Naveen Jain (2008),** millennials with employed status are more inclined to investments. Additionally, studies show that Millennials take risks and have a variety of objectives in mind while making investing selections.

RESEARCH GAP

Based on empirical findings from past research, it is evident that individual investors do not consistently exhibit "perfect rationality." Their investment decisions are influenced by behavioral and cognitive biases, leading to a state of "bounded rationality." Consequently, when conducting investment analysis and striving for optimal investment decisions, investors need to incorporate behavioural factors alongside traditional financial theories and models.As theory is less clear and early investigations demonstrated contradictory results about the direction of talking relations. A considerable amount of research has been done on this relationship in developed nations, although analysis has rarely included the millennial investor in the consideration of the investment decisions. The millennials occupy a major part of the economy for investment. There aren't many studies that quantify investor prejudices and concentrate on how these biases affect investing success. An adapted questionnaire was used in the study to examine this relationship within the setting of Gujarat state.

OBJECTIVES

- To identify heuristic factors influencing millennial behavior affecting investment decisions.
- To identify the impact of the heuristic factors on millennials' investment decisions

RESEARCH METHODOLOGY

SAMPLE FRAME:
In this research, we have taken Gujarat as the universe and the data was collected based on the five clusters of the Gujarat region as per the census data 2011("Census of India," 2011). The Gujarat state is divided into five major zones i.e. Central Zone, North Zone, South Zone, Saurashtra Zone, and Kutch Zone, for research purpose we have taken the South region of Gujarat which consists of major cities like Bharuch, Ankleshwar, Valsad, Vapi, Rajpipla, Bardoli. The data was assembled through the survey of a sample size consisting of 160 working millennials in the south region of Gujarat State, which is drawn through convenient sampling.

RESEARCH DESIGN:

The study was conducted descriptively. The study was based on primary data from a structured Questionnaire. In this research, the study was conducted on the working millennials in the south region of the Gujarat state. The structured questionnaire examines the financial behavior of 160 working millennials. The behavioral factor heuristics include the questions of Representativeness, Gambler's Fallacy, Overconfidence, Ability Bias, And Anchoring. The 5 Likert scale is used through five options of Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree, and also conducted reliability test to find out the consistency of the questionnaire.

DATA ANALYSIS AND INTERPRETATION

The data was analyzed and interpreted using SPSS software. Heuristic factors of millennials' investor perspective were analyzed through exploratory factor analysis. The Cronbach alpha test was run for the internal reliability of measurements. The impact levels of behavioral variables on investment decisions are explored by calculating each variable's sample mean values.

Table 1: Demographic profile of the respondent			
Demographic Profile	**Particular**	**No of respondents**	**Percentage**
Gender	Male	66	41.3
	Female	94	58.3
	Transgender	0	0
Total		**160**	**100**
Age	26 to 30	73	45.6
	31 to 35	34	21.3
	36 to 40	53	33.1
Total		**160**	**100**
Marital Status	Married	90	56.3
	Unmarried	70	43.8
Total		**160**	**100**
Family Size	Up to 3 Members	21	**13.1**
	3 to 5 Members	106	66.3
	Above 5 Members	33	20.6
Total		**160**	**100**
Education Qualification	Graduate	46	28.8
	Post Graduate	100	62.5
	Professional	14	8.8
Total		**160**	**100**
Occupation	Private Job	83	51.9
	Professional	56	35.0
	Entrepreneur	21	13.1
Total		**160**	**100**
Monthly Income	Up to 20000	41	25.6
	20001-30000	33	20.6
	30001-45000	32	20.0
	450001-60000	26	16.3
	Above 60000	28	17.5
Total		**160**	**100**
Annual Savings	Up to 50000	55	34.4
	50001- 100000	50	31.3
	100001-200000	30	18.8
	200001-500000	25	15.6
Total		**160**	**100**
Source: Primary Data analysis through SPSS			

The above table shows the demographic profile of the south zone of the Gujarat state. We have collected 160 data from the different cities of the South region. According to the data presented in Table 1, it can be inferred that nearly 58.8% of the total respondents are female, indicating a higher participation of female investors in the region compared to males. The table further highlights that 45.6% of the respondents fall within the age range of 26 to 30 years, followed closely by those aged 36 to 40 years (33.1%). The majority of participants in the study (56.3%) are married, and 66.3% have families consisting of 3 to 5 members. Additionally, the educational distribution reveals that 62.5% of respondents are post-graduates, 28.8% are graduates, and only 8.8 % possess professional skills. Examining employment status, the study indicates that 51.9% of respondents are engaged in

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private jobs, 35% are professionals, and 13.1% are entrepreneurs. Regarding financial aspects, 25.6% of millennials in the region have a monthly income of up to 20000, predominantly in the early stages of their careers. Furthermore, 20.6% of respondents receive a monthly income between 20000 and 30000. In terms of annual savings, the majority (34.4%) report savings ranging up to Rs. 50,000, while 31.3% have annual savings below 50,000 to 100000 and less percentage recorded in the annual savings between 200000 to 500000.

RELIABILITY TEST:

Initiating the evaluation of quality criteria involves first scrutinizing factor loadings, followed by the establishment of construct reliability and construct validity, as outlined by Sarste dt et al. in 2017. Reliability denotes the consistency observed in numerous measurements of variables, reflecting the degree to which an experiment or measuring instrument produces consistent results through repeated trials. Reliability pertains to the consistency or dependability of a measurement scale in accurately assessing what it is intended to measure **Polit & Hungler, (1995).** The internal consistency approach was applied in this study to evaluate the consistency between variables inside summated scales to determine reliability. Using primary data, the study calculated the Cronbach's alpha coefficient of dependability.

Table 2: Reliability test of the collected data

Reliability Statistics

Cronbach's Alpha	N of Items
.814	76
(Source: Author's working using SPSS software)	

Table 2 displays the findings for both composite reliability and Cronbach alpha. The Cronbach's Alpha is 0.814. According to Hair et al. (2014), Cronbach's Alpha reliability statistics are deemed satisfactory as long as they exceed 0.600. it shows that our questionnaire is reliable.

FACTOR ANALYSIS:

To find a comparatively small number of unique heuristic factors that relate sets of several interrelated variables, factor analysis (FA) was used (Norusis, 2008). This method works well for grouping several interrelated variables into smaller components. The Principal Component Method is used in factor analysis to reduce the 20 variables to explanatory factors. KMO and Bartlett's tests are used to methodically streamline the variables, determine a bell-shaped normal distribution for the primary data, and evaluate how well sampling was done for data reduction.

KAISER-MEYER-OLKIN MEASURE

Factor analysis is undesirable since the KMO statistical significance ranged from 0 to 1, where 0 denotes a big sum of partial associations, which is a dispersion of the correlation trends (Norusis 2008). In contrast, a score close to 1 indicates a rather compact series of interactions, and factor analysis would produce dependable single variables. Additionally, the Barlett's test for sphericity was run to demonstrate the presence of correlations and support the suitability of factor analysis.

Table 3: KMO and Bartlett's Test of the collected data

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.749
Bartlett's Test of Sphericity	Approx. Chi-Square	2250.922
	df	190
	Sig.	.000

According to Table 3, the Kaiser-Meyer-Olkin (KMO) statistic evaluates the sample adequacy and indicates if the model's answers are adequate. It should be near to 0.5. This sample adequacy metric is used to compare partial correlation coefficients with observed correlation coefficients in order to assess the applicability of component analysis. Factor analysis is indicated by a high value (above 0.5); Kaiser suggests that scores between 0.6 and 0.7 are mediocre. The KMO statistic in this study, which is shown in Table, was 0.749, indicating acceptability and supporting the suitability of factor analysis (Lintner, 1998).

ROTETED COMPONENT MATRIX

For the purpose of data reduction and summarizing, exploratory factor analysis (EFA) is used to analyze the field data obtained from the 160 respondents on the aforementioned 20 variables. All variables were kept in the EFA, and five factors were chosen suitably. The five characteristics that emerged were labelled as follows: (1) Representativeness; (2) Overconfidence; (3) Availability bias (4) Anchoring; and (5) Gambler fallacy. These elements are displayed in Table 4.

Heuristic Factors	Component				
	1	2	3	4	5
Overconfidence1		.695			
Overconfidence 2		.843			
Overconfidence 3		.896			
Overconfidence 4		.716			
Anchoring1				.868	
Anchoring 2				.544	
Anchoring 3				.622	
Anchoring 4				.914	
Representativness1	.963				
Representativeness 2	.972				
Representativeness 3	.977				
Representativeness 4	.962				
Availability Bias 1			.821		
Availability Bias 2			.799		
Availability Bias 3			.833		
Availability Bias 4			.519		
Gambler Fallacy1					.531
Gambler Fallacy 2					.838
Gambler Fallacy 3					.898
Gambler Fallacy 4					.570

Table 4: Rotated component Matrix
Rotated Component Matrix

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Explanation of Table 4:
The various variables that are arranged into interconnected components, such as Overconfidence, Anchoring, Representativeness, Gambler Fallacy, and Availability Bias, are contained in the heuristic factors, as shown in Table 5. Factor loadings below 0.5 have resulted in the exclusion of certain variables from the analysis. According to the results, five components together account for the heuristic factors that influence investment decisions and are consistent with the updated theories: Availability Bias, gambling fallacy, Anchoring, overconfidence, and Representativeness. Which is as below

Observation of the five factors:
Group 1: Representativeness Variables: No item was eliminated from the model since each variable's loading factor was greater than 0.5. The four observable variables were coupled with loading factors that were comparatively high, 0.963, 0.972, 0.977 and 0.962. The working millennial investor's introspection, and conviction that these variables are based on past performance of representative investment decisions in the market and making conclusions about all investments based on trend analysis of representative securities.
Group 2: Overconfidence variables: Since the loading factor for every variable was more than 0.5, none of them was removed from the model. The four observable variables (0.695, 0.843, 0.896, and 0.716) were included in the loading factors. These variables correlate with the ability to perform better than others and believe on their perspective for the investment decisions.
Group 3: Availability Bias variables: These four Variables observed are loaded more than 0.5 (0.821, 0.799, 0.833, 0.519) correlated with knowledge of recent records, prefer to buy local securities and as well as with confidence in friends and advertisements they are investing.
Group 4: Anchoring Variables: This observation group correlates with working millennial investors' evaluation of current investment based on comparable issues from past experiences.
Group 5: Gambler fallacy Variables: This is the last group of factor loading of the variables. These variables are also loaded above the 0.5 (.531, 0.838, 0.898, and 0.570). These variables are also correlated with the working millennial's belief and their reflection about the good and poor investment returns.

IMPACT OF HEURISTICS FACTOR ON MILLENNIALS' BEHAVIOUR
Determining the impact levels of heuristic variables on investment decisions entails computing the sample mean values for each variable. Since these factors are measured on 6-point scales, their means provide important markers for determining how much of an impact they have on making investment decisions in accordance with the guidelines. Below is a condition for the various levels of impact the Heuristics factors have on investors, as utilized by Kimani 2011, Tarjanne 2020, and Loh 2016.

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- The mean value of 2 indicates a very low impact on millennials' investing decisions
- The mean value between 2 – 2.9 indicates a low impact on investment decisions
- A mean value between 3 – 3.9 is anticipated to have a moderate influence on investment choices.
- The mean value between 4 – and 4.9 indicates a high impact on investment decisions
- The mean value between 5 – 5.9 indicates a very high impact on investment decisions

Table 5: Impact of Heuristic factor on millennials' behavior

	Minimum	Maximum	Mean	Std. Deviation	Impact
Representativness1	1	5	3.97	.907	Moderate
Representativeness 2	1	5	4.01	.911	High
Representativeness 3	1	5	3.98	.914	Moderate
Representativeness 4	1	5	3.99	.876	Moderate
Overconfidence1	1	5	3.66	.984	Moderate
Overconfidence 2	1	5	3.51	1.058	Moderate
Overconfidence 3	1	5	3.54	1.033	Moderate
Overconfidence 4	1	5	3.42	1.006	Moderate
Availability Bias 1	1	5	3.34	1.155	Moderate
Availability Bias 2	1	5	3.58	1.102	Moderate
Availability Bias 3	1	5	3.56	1.131	Moderate
Availability Bias 4	1	5	3.28	1.187	Moderate
Anchoring1	1	5	3.36	1.162	Moderate
Anchoring 2	1	5	4.02	1.163	High
Anchoring 3	1	5	3.58	1.163	Moderate
Anchoring 4	1	5	3.35	1.167	Moderate
Gambler Fallacy1	1	5	3.39	1.065	Moderate
Gambler Fallacy 2	1	5	3.56	1.142	Moderate
Gambler Fallacy 3	1	5	3.48	1.133	Moderate
Gambler Fallacy 4	1	5	3.73	1.015	Moderate

Table 5 Explanation:

The provided table illustrates the influence of various heuristic factors on the decision-making of millennials. Mean values were employed to determine the impact. SPSS analysis revealed that among the main four Anchoring variables and Representativeness bias has a high impact. One variable of Anchoring significantly affects millennials, with a high mean value of 4.02, indicating a substantial impact on their investment decisions. The results indicate that the current price of the securities helps the millennials for the forecasting future for the investment. Another variable from the representativeness with the high value (4.01) also having a high impact in the relation to past history of the investment having an impact on the millennial's decisions. Beside from two variables, millennials generally hold a neutral stance regarding their decisions. And they are having the moderate impact on the investment decisions.

FINDINGS

The study sheds light on the Millennials' investment habits in Gujarat state's south area. The bulk of the respondents to the study are women millennials married and between the ages of 26 to 30, which suggests that they are in their initial years of growth this is evident from the research findings. More respondents had post-graduate positions in the private sector. The majority of respondents, according to the research, earn up to 20,000. However, their yearly savings only amount to below Rs.50, 000 indicating a lower level of investment in relation to the respondents' low income. The Factor Analysis identified five variables from the 20 statements related to heuristic factors: Representativeness, Overconfidence Availability Bias, Anchoring, and Gambler's Fallacy. The analysis revealed that only two factors, Anchoring and Representativeness exhibit a high impact, specifically in the statement related to the current price of the security helps me to forecast its future price and the same representativeness variable of past history influences millennial's present investment decisions. All other variables demonstrate a moderate impact on investment decisions. The majority of investors express confidence in their ability to outperform others, indicating its significant influence on their rational thinking about investments.

CONCLUSION

The purpose of this study is to investigate the heuristic factors and aspects of individual investor investing. This study aimed to determine, evaluate, and assess the impact of heuristics bias on the investment behaviour (factor analysis) of millennial investors. After ensuring that the data was adequate, 20 statements that represented

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millennials' behavioral patterns and impacts were analyzed using factor analysis and descriptive analysis. Five factors that influence investment behaviour were extracted using the varimax method of factor rotation. These factors include representativeness bias, overconfidence, Availability Bias, Anchoring Bias, and Gambler fallacy bias. The analysis concludes that there is some degree of irrationality in millennial's behaviour. And it shows a moderate impact for the majority of the heuristics factors on millennials' behaviour for investment management.

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