



**MAPPING RISK-RETURN PERCEPTIONS ACROSS INVESTMENT TYPES:
SOCIO-DEMOGRAPHIC INSIGHTS FROM GUJARAT STATE USING NON-
PARAMETRIC METHODS**

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Abstract

This study examines how investor demographics (gender, age, income, education, occupation, and region) influence perceived risk and return of various investment types in Gujarat, India. We surveyed 573 investors about their risk-return ratings for bank deposits, post office schemes, mutual funds, equity shares, debt fund instruments, precious metals (gold/silver), and real estate. Using Mann-Whitney U and Kruskal-Wallis tests, we tested for differences in perceptions across demographic groups. Results show that government-backed schemes (fixed deposits and post office savings) are viewed as the safest but with the lowest returns, whereas equity shares are seen as highest risk with the highest return. Notably, perceptions for mutual funds and shares vary significantly by demographics – age, income, occupation, and gender all influence these ratings. These findings underline distinct socio-demographic segmentation in investor attitudes. Therefore, personalized financial literacy initiatives and product designs tailored to different demographic segments are needed to align investment offerings with investors' risk preferences.

Key words: Investor behavior, risk-return perception, socio-demographic factors, non-parametric analysis

Introduction

In order to make safe people financial future, they must pass through a wide range of financial instruments in the complex world of investments (Popat & Pandya, 2018). Both investors and financial institutions must have a detailed understanding of the elements that affect investor behavior and decision-making. Investment decisions are heavily influenced by a number of

factors such as psychological biases, demographic traits, and financial literacy levels (Rawal & Chowdhury, 2018). Conventional economic models, which assume that investors are logical agents who make their decisions on risk assessments and projected returns, are regularly deviated from by these factors. Rather, emotions, cognitive constraints, and social pressures often impact real-world investment decisions, leading to less-than-ideal results (Bhavani & Shetty, 2017; Dewan et al., 2019). Due to its unique economic and cultural features, the state of Gujarat offers an interesting place to study investing behavior. Gujarat has an ample middle class and a flourishing financial sector, making it one of India's most industrialized and developed states (Patel & Nayak, 2024). The high rates of involvement in the stock market and other investment vehicles are indicative of the state's citizens' long history of entrepreneurship and investment. Gujarat's social norms and cultural diversity also influence investing preferences; some populations are more receptive to modern financial products, while others choose more conventional assets like real estate and precious metals like gold and silver.

Literature Review

To understand investor behavior and financial literacy is important in today's technically advanced world, as it can be benefited to both individuals and nations economically (Agarwal, 2020). This study's main objective is to look into how demographic factors and financial literacy relate to behavioral biases among Indian individual investors (Baker et al., 2018). Individual investors' poor financial literacy has been noted to influence their choices (HC & Gusaptono, 2020). Instead of depending solely on arbitrary advice and viewpoints from other investors a person can make effective use of these financial products and services by weighing the risks and rewards involved and ultimately choosing those that suit their requirements and situation (Popat and Pandya 2018). Financial literacy includes knowledge of concepts like compound interest diversification risk and returns and the different types of investments that are available (Savaliya 2024). Informed decision-making avoiding fraud and reaching financial objectives are all made possible by increased financial literacy (Asmara & Wiagustini 2021). Defiantly behavioral biases are frequent mistakes in reasoning that can affect financial choices. These biases can lead to investors making irrational decisions and performing poorly in the market. They include loss aversion anchoring herd mentality and overconfidence. Although the effect varies depending on the type of behavioral bias it has been demonstrated that financial literacy has a negative impact on behavioral biases. Information processing biases are most affected belief perseverance biases are moderately affected and emotional biases are least affected (Youssef et al. (2021). In addition to potentially playing a significant role in investment prediction financial literacy can mitigate the relationship between behavioral biases and investment decisions. Additionally demographic variables that affect investment behavior include age gender income education and occupation. Risk tolerance investment horizons and access to financial information are all impacted by demographic factors which can also affect investor behavior. Wealthier investors might have greater access to sophisticated investment products whereas younger investors might be more risk-taking (Adil et al. (2021). This is because it gives people the information and abilities they need to recognize and get rid of their biases and make logical decisions based on facts rather than feelings (Suresh 2021). Investment decisions are influenced by a variety of factors including demographics and financial literacy (Andersson 2023). Investment choices and risk tolerance are influenced by age gender income education and cultural background (Bawre and Kar 2019). Wealthier investors might be more

inclined to invest in more complicated financial products while younger investors might be more willing to take chances than their older counterparts. Having a solid grasp of financial principles enables people to plan for the future make wise financial decisions and negotiate the intricacies of the financial world. This includes skills like investing debt management saving and budgeting (Savaliya 2024). By making prudent financial choices people can achieve long-term financial stability and accomplish their goals. Individuals with a high level of financial literacy are more likely to participate in desirable financial behaviors, such as deposits, mutual funds, and stocks, compared to those with lower financial literacy (Xu et al., 2022).

Barber and Odean (2001) analyzed 35,000 households over five years and found that men trade 45% more than women but earn 1.4% lower net returns, driven by overconfidence and under-diversification. Rawal and Chowdhury (2018), in a study of Faridabad retail investors, report that female investors exhibit significantly lower risk tolerance and prefer fixed-income instruments such as bank FDs and post office schemes, whereas male investors allocate more to equities and mutual funds. Jani et al. (2012) emphasised that investors perception has positive as investment option in mutual funds.

Grable and Lytton (1999) developed a comprehensive risk-tolerance instrument across 2,000 U.S. adults, demonstrating a clear inverse relationship between age and risk tolerance: younger cohorts show greater willingness to bear volatility. Dewan, Gayatri, and Dewan (2019) studied 400 corporate and individual investors in South India, finding that investors under 35 allocate 60% of their portfolios to equity-oriented schemes, while those above 50 allocate over 70% to debt instruments.

Popat and Pandya (2018) surveyed 350 Gandhinagar investors and observed that government employees display the highest preference for risk-free avenues (postal schemes, FDs), while business professionals allocate up to 40% of assets to equities. Sharma, Jain, and Sharma (2015) examined 300 middle- and high-income investors in Delhi and showed that annual income above INR 1 million corresponds to significantly higher allocations in diversified mutual funds ($p < .01$).

Kaur and Kansal (2018) measured financial literacy among 500 Indian investors, revealing that postgraduate participants score 30% higher on risk–return comprehension tests and hold more diversified portfolios. Patel and Nayak (2023) applied the Theory of Planned Behavior to 400 investors in Gujarat and confirmed that higher education levels strengthen the attitude–behavior link, leading to greater adoption of equity schemes.

Lachhwani and Oza (2024) conducted a questionnaire survey of 1,164 investors across five Gujarat cities and found that herd behavior (measured by copying others' trades) correlates more with cultural norms than with demographics; 32% exhibited high risk appetite, but herd behavior remained independent of age, gender, or education. Mishra (2022) explored investor sentiments toward mutual funds among 100 Ahmedabad respondents, concluding that urban investors rely heavily on expert advice and exhibit moderate risk aversion, especially in sector-specific funds.

Shivangi (2024) compared young (≤ 35) and senior (≥ 60) investors in Saurashtra ($n = 110$), demonstrating that risk perception significantly predicts return expectations ($\beta = 0.45$, $p < .01$), with young investors showing higher risk tolerance but similar return expectations. Statman (2000) provides a foundational behavioral finance perspective, arguing that loss aversion,

mental accounting, and framing effects cause systematic deviations from expected utility theory in risk–return assessments.

Patel et al. (2021) showcased in their study that investors preferred investment in mutual fund by online mode and main objective of investment in mutual fund is retirement planning. Patel and Patel (2026) found that gender, age group, income, and education qualification of respondents have significantly influenced the choices of investment avenues and also impacted perception about risk and return of the investment avenues.

This highlights the importance of addressing the identified research gaps and implementing targeted interventions to promote financial literacy and mitigate the adverse effects of behavioral biases in the investment decision-making process.

Theoretical Framework and Model Development

This section situates our study within established behavioral-finance and social-psychology theories, justifies the inclusion of demographic antecedents, and presents a conceptual model linking those antecedents to investors' risk and return perceptions and, ultimately, to investment choice.

Prospect Theory (Kahneman & Tversky, 1979) departs from expected utility theory by stressing that individuals: In the investment context, Prospect Theory predicts that two investors with identical objective payoffs may perceive risk and return differently depending on their reference points and sensitivity to loss. This underpins our focus on risk perception, capturing how threatened an investor feels by downside volatility, and return perception, capturing the attractiveness of upside potential.

Ajzen's (1991) Theory of Planned Behavior (TPB) explains how attitudes, norms, and perceived control shape behavioral intentions, which in turn guide actual behavior. Three core TPB constructs apply here: Attitude (A): An investor's overall evaluation of an investment avenue here operationalized as the joint effect of risk perception and return perception. Subjective Norms (SN): Social pressures or community norms that influence investment choices (e.g., family or peer expectations). Perceived Behavioral Control (PBC): The investor's confidence in their ability to understand and manage an investment avenue often a function of financial literacy and previous experience (Patel & Nayak, 2023).

TPB suggests that a positive attitude toward an avenue (high perceived return, low perceived risk), supportive norms, and high PBC will strengthen the intention to invest, which is the proximal antecedent of actual investment behavior.

TPB further posits that background factors demographics, personality, knowledge indirectly influence attitudes, norms, and PBC (Ajzen, 1991). In our model, six demographic characteristics serve as exogenous inputs:

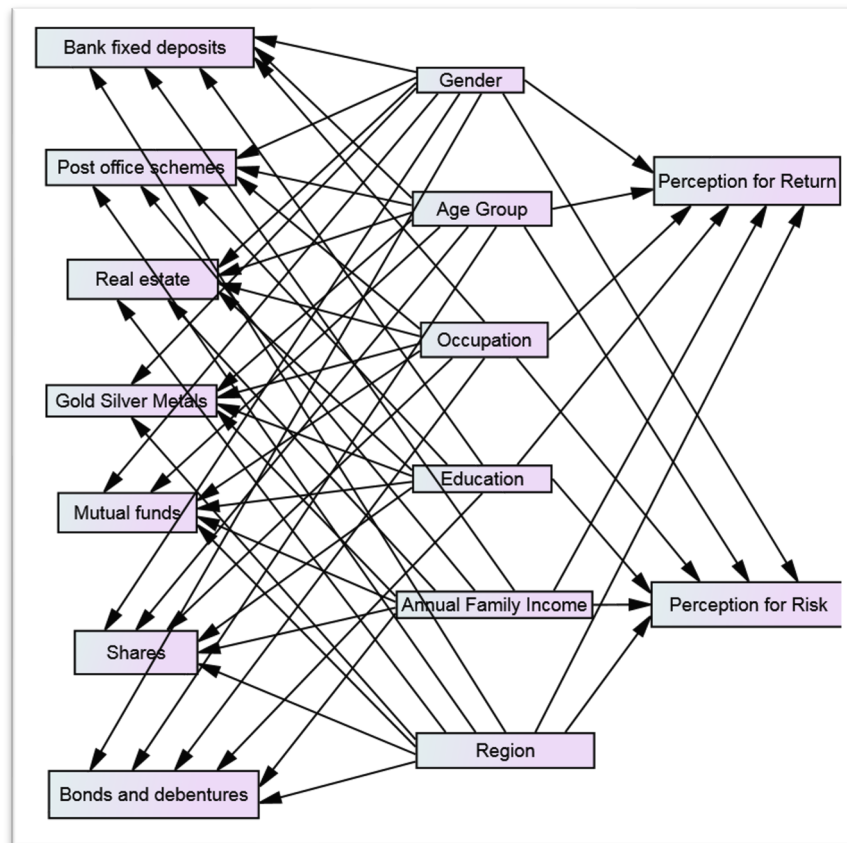


Figure: Conceptual Model

Objectives

The aims of the study were to evaluate the perception of investors towards various investment avenues in Gujarat and to examine the difference between demographic profiles (age, gender, income, occupation, education) and investor perceptions of different investment avenues.

Methodology

Research Design

This study uses a quantitative research design, using a structured questionnaire to collect primary data from investors across Gujarat.

Sample

A total of 573 respondents were selected using stratified random sampling to ensure representation across genders, occupations, different age groups, level of education, income category and regions within Gujarat. In order to conduct the study, data were collected from 573 respondents in Gujarat through a structured questionnaire, which helped collect information on demographic characteristics and perception of risk and return across different investment avenues such as bank deposits, post office schemes, real estate, precious metals (gold/silver/metal), mutual funds, equity shares, debt fund instruments. Perceptions of risk and return were measured on a 5-point ordinal scale ranging from 'Very Low' (1) to 'Very High' (5). Due to the ordinal nature of the data and non-normal distribution, non-parametric tests were used. The collected data was analyzed by adopting descriptive statistics, the Mann Whitney Test, and the Kruskal-Wallis Test to draw meaningful conclusions.

Hypotheses

A series of null hypotheses (H0) were formulated to test for significant differences in risk-return perceptions across demographic groups and investment avenues.

Data Analysis

A total of 573 respondents from Gujarat participated in this study. The sample included diverse representation across age, gender, occupation, education, income, and regional backgrounds, ensuring robust and generalizable findings

Table 1: Different Avenues of Investors Perception for Return

Investment Avenues	Very Low	Low	Medium	High	Very High	Total	Mean	Std. Deviation
Bank deposits	140	187	200	32	14	573	2.29	.977
	24.4	32.6	34.9	5.6	2.4	100.0		
Post office schemes	61	193	234	70	15	573	2.62	.922
	10.6	33.7	40.8	12.2	2.6	100.0		
Real estate	32	50	201	177	113	573	3.50	1.075
	5.6	8.7	35.1	30.9	19.7	100.0		
Precious metals	33	51	191	221	77	573	3.45	1.021
	5.8	8.9	33.3	38.6	13.4	100.0		
Mutual funds	32	52	187	216	86	573	3.47	1.033
	5.6	9.1	32.6	37.7	15.0	100.0		
Equity Shares	28	63	163	163	156	573	3.62	1.138
	4.9	11.0	28.4	28.4	27.2	100.0		
Debt Fund Instruments	62	141	253	94	23	573	2.78	.979
	10.8	24.6	44.2	16.4	4.0	100.0		

The table above shows investors’ perceptions of returns across various investment avenues. Equity shares have the highest mean return score of 3.62, indicating they are most rewarding investment option and it is followed by real estate (Mean = 3.50), mutual funds (Mean = 3.47) and other investment avenues. In contrast, bank deposits are perceived as the least attractive in terms of returns, with the lowest mean score of 2.29 among all investment options.

Table 2: Different Avenues of Investors Perception for Risk

Investment Avenues	Very Low	Low	Medium	High	Very High	Total	Mean	Std. Deviation
Bank deposits	441	60	57	8	7	573	1.39	.818
	77.0	10.5	9.9	1.4	1.2	100.0		
Post office schemes	463	53	44	10	3	573	1.32	.734
	80.8	9.2	7.7	1.7	.5	100.0		
Real estate	74	130	185	126	58	573	2.94	1.169
	12.9	22.7	32.3	22.0	10.1	100.0		
Precious metals	114	114	224	97	24	573	2.66	1.103
	19.9	19.9	39.1	16.9	4.2	100.0		
Mutual funds	52	115	179	146	81	573	3.16	1.167
	9.1	20.1	31.2	25.5	14.1	100.0		
Equity Shares	19	83	64	166	241	573	3.92	1.186

	3.3	14.5	11.2	29.0	42.1	100.0		
Debt Fund Instruments	110	157	148	83	75	573	2.75	1.285
	19.2	27.4	25.8	14.5	13.1	100.0		

The table highlights investors perception for risk amongst different investment avenues. Equity shares have highest mean score 3.92 indicates that investors perceived highest risk and it is followed by mutual funds (mean=3.16), real estate (Mean=2.94) and other investment avenues. Investor perceived least risk in Post office schemes as mean score 1.32 is lowest in all investment avenues.

H₀A: There is no significant difference in the mean rank scores of investors’ perception toward return from different investment avenues among male and female investors.

Table 3: Mann-Whitney test of Perception of Return towards Different Investment Avenues among Male and Female Investors

Mann-Whitney Test								
Ranks								
Gender		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Bank deposits	Male	41	285.4	118747.0	32011.00	118747.00	-.383	.702
		6	5	0	0	0		
	Female	15	291.1	45704.00				
	Total	57						
		3						
Post office schemes	Male	41	283.7	118036.0	31300.00	118036.00	-.813	.416
		6	4	0	0	0		
	Female	15	295.6	46415.00				
	Total	57						
		3						
Real estate	Male	41	291.2	121175.5	30872.50	43275.500	1.053	.292
		6	9	0	0			
	Female	15	275.6	43275.50				
	Total	57						
		3						
Precious metals	Male	41	280.4	116653.0	29917.00	116653.00	1.631	.103
		6	2	0	0	0		
	Female	15	304.4	47798.00				
	Total	57						
		3						

Mutual funds	Male	41 6	293.1 3	121941.0 0	30107.00 0	42510.000	- 1.514	.130
	Female	15 7	270.7 6	42510.00				
	Total	57 3						
Equity Shares	Male	41 6	296.0 7	123165.5 0	28882.50 0	41285.500	- 2.211	.027
	Female	15 7	262.9 6	41285.50				
	Total	57 3						
Debt Fund Instruments	Male	41 6	286.9 2	119359.0 0	32623.00 0	119359.00 0	-.020	.984
	Female	15 7	287.2 1	45092.00				
	Total	57 3						

The table depicts the mean rank scores of investors' perception based on gender, along with the corresponding test statistics: Wilcoxon W, Z-score, Mann-Whitney U and two-tailed significance values for return from different investment avenues. P value for equity shares is less than 0.05 so in case of equity share null hypothesis is rejected and p value for all other investment avenues exceeds 0.05 the null hypothesis cannot be rejected. This indicates that there is no statistically significant difference in the mean rank scores of investors' perception toward return from different investment avenues between male and female investors except shares.

H₀B: There is no significant difference in the mean rank scores of investors' perception toward risk from different investment avenues among male and female investors.

Table 4: Mann-Whitney test of Perception of Risk towards Different Investment Avenues among Male and Female Investors

Mann-Whitney Test								
Ranks								
Gender		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asym p. Sig. (2-tailed)
Bank deposits	Male	416	286.82	119315.50	32579.500	119315.500	-.059	.953
	Female	157	287.49	45135.50				
	Total	573						
Post office schemes	Male	416	282.84	117661.00	30925.000	117661.000	-1.427	.154
	Female	157	298.03	46790.00				
	Total	573						
Real estate	Male	416	279.78	116390.00	29654.000	116390.000	-1.751	.080
	Female	157	306.12	48061.00				
	Total	573						
Precious metals	Male	416	290.18	120714.00	31334.000	43737.000	-.780	.435
	Female	157	278.58	43737.00				
	Total	573						
Mutual funds	Male	416	293.69	122173.00	29875.000	42278.000	-1.622	.105
	Female	157	269.29	42278.00				
	Total	573						
Equity Shares	Male	416	299.37	124539.50	27508.500	39911.500	-3.075	.002
	Female	157	254.21	39911.50				
	Total	573						
Debt Fund Instruments	Male	416	279.26	116171.00	29435.000	116171.000	-1.870	.062

	Female	157	307.52	48280.00				
	Total	573						

The table indicates the mean ranks of investors based on gender, along with the corresponding test statistics: Mann-Whitney U, Wilcoxon W, Z-score, and two-tailed significance values for risk from different investment avenues. P value for equity shares is less than 0.05 so in case of equity shares null hypothesis is rejected and p value for all other investment avenues exceeds 0.05 the null hypothesis cannot be rejected. This indicates that there is no statistically significant difference in the mean rank scores of investors' perception toward risk from different investment avenues in mutual funds between male and female investors except equity shares.

H₀C: There is no significant difference in the mean rank scores of investors' perception toward return from different investment avenues among Age group of investors.

Table 5: Kruskal-Wallis Test of Perception of Return towards Different Investment Avenues among Age Group of Investors

Kruskal-Wallis Test						
Ranks						
Age in Years		N	Mean Rank	Chi-Square	df	Asymp. Sig.
Bank deposits	23 years or less	55	291.05	12.734	3	.005
	24-39 years	439	294.65			
	40-55 years	69	257.02			
	56 years or more	10	135.90			
	Total	573				
Post office schemes	23 years or less	55	291.95	3.362	3	.339
	24-39 years	439	281.84			
	40-55 years	69	306.38			
	56 years or more	10	352.65			
	Total	573				
Real estate	23 years or less	55	214.70	19.559	3	.000
	24-39 years	439	301.00			
	40-55 years	69	269.97			
	56 years or more	10	187.50			
	Total	573				
Precious metals	23 years or less	55	223.38	13.389	3	.004
	24-39 years	439	294.34			
	40-55 years	69	302.90			
	56 years or more	10	204.90			
	Total	573				
Mutual funds	23 years or less	55	274.18	2.707	3	.439
	24-39 years	439	283.91			
	40-55 years	69	312.20			

	56 years or more	10	319.05			
	Total	573				
Equity Shares	23 years or less	55	258.30	4.520	3	.211
	24-39 years	439	285.32			
	40-55 years	69	317.68			
	56 years or more	10	307.00			
	Total	573				
Debt Fund Instruments	23 years or less	55	287.73	1.024	3	.795
	24-39 years	439	286.73			
	40-55 years	69	281.21			
	56 years or more	10	334.65			
	Total	573				

Kruskal-Wallis Test performed to know the return from various investment avenues and significant difference with age of the investors. In case of Bank deposits, Real estate, precious metals p value is less than 0.05 thus, null hypothesis is rejected and for other investment avenues p value is more than 0.05 so null hypothesis cannot be rejected for Post office schemes, mutual funds, equity shares and debt fund instrument. Thus, age of investors and return from different investment avenues null hypothesis partially accepted.

H₀D: There is no significant difference in the mean rank scores of investors’ perception toward risk from different investment avenues in mutual funds among Age group of investors.

Table 6: Kruskal-Wallis Test of Perception of Risk towards Different Investment Avenues in Mutual Funds among Age Group of Investors

Kruskal-Wallis Test						
Ranks						
Age in Years		N	Mean Rank	Chi-Square	df	Asym p. Sig.
Bank deposits	23 years or less	55	320.99	10.170	3	.017
	24-39 years	439	282.44			
	40-55 years	69	276.67			
	56 years or more	10	371.30			
	Total	573				
Post office schemes	23 years or less	55	356.26	30.264	3	.000
	24-39 years	439	285.43			
	40-55 years	69	249.77			
	56 years or more	10	232.00			
	Total	573				
Real estate	23 years or less	55	228.76	24.316	3	.000
	24-39 years	439	305.10			
	40-55 years	69	222.27			
	56 years or more	10	259.45			
	Total	573				

Precious metals	23 years or less	55	263.44	12.659	3	.005
	24-39 years	439	296.79			
	40-55 years	69	233.42			
	56 years or more	10	356.55			
	Total	573				
Mutual funds	23 years or less	55	230.72	8.462	3	.037
	24-39 years	439	293.29			
	40-55 years	69	284.41			
	56 years or more	10	338.25			
	Total	573				
Equity Shares	23 years or less	55	251.78	3.722	3	.293
	24-39 years	439	290.79			
	40-55 years	69	295.88			
	56 years or more	10	253.05			
	Total	573				
Debt Fund Instruments	23 years or less	55	247.31	7.304	3	.063
	24-39 years	439	293.05			
	40-55 years	69	268.57			
	56 years or more	10	367.00			
	Total	573				

Kruskal-Wallis Test executed to identify the risk from various investment avenues and significant difference with age of the investors. For equity shares and debt fund instrument p value is more than 0.05 thus, there is no significant difference between age of the investors and risk associated with different investment avenues and null hypothesis cannot be rejected. While other investment avenues like Post office schemes, Bank deposits, Real estate, precious metals and mutual funds p value is less than 0.05 thus, null hypothesis is rejected. There is a significant difference between age of the investors and risk associated with different investment avenues.

H₀E: There is no significant difference in the mean rank scores of investors' perception toward return from different investment avenues among Occupation of investors.

Table 7: Kruskal-Wallis Test of Perception of Return towards Different Investment Avenues among Occupation of Investors

Kruskal-Wallis Test						
Ranks						
Occupation		N	Mean Rank	Chi-Square	df	Asymp . Sig.
Bank deposits	Government Service	60	267.94	7.434	5	.190
	Private Service	288	288.79			
	Business	72	261.68			
	Professionals	80	287.91			
	Homemaker	16	362.97			
	Other	57	307.40			
	Total	573				

Post office schemes	Government Service	60	330.41	23.501	5	.000
	Private Service	288	293.03			
	Business	72	241.87			
	Professionals	80	256.97			
	Homemaker	16	405.66			
	Other	57	276.68			
	Total	573				
Real estate	Government Service	60	307.22	5.940	5	.312
	Private Service	288	288.49			
	Business	72	306.79			
	Professionals	80	278.51			
	Homemaker	16	278.91			
	Other	57	247.39			
	Total	573				
Precious metals	Government Service	60	284.13	22.488	5	.000
	Private Service	288	307.82			
	Business	72	287.21			
	Professionals	80	283.94			
	Homemaker	16	202.19			
	Other	57	212.67			
	Total	573				
Mutual funds	Government Service	60	266.94	3.128	5	.680
	Private Service	288	297.34			
	Business	72	283.60			
	Professionals	80	283.21			
	Homemaker	16	266.16			
	Other	57	271.36			
	Total	573				
Equity Shares	Government Service	60	277.18	8.708	5	.121
	Private Service	288	294.03			
	Business	72	314.76			
	Professionals	80	284.08			
	Homemaker	16	260.09			
	Other	57	238.38			
	Total	573				
Debt Fund Instruments	Government Service	60	241.17	14.723	5	.012
	Private Service	288	279.27			
	Business	72	287.22			
	Professionals	80	330.56			
	Homemaker	16	348.88			
	Other	57	295.54			
	Total	573				

To know the significant difference between occupation of investors and return perception from different investment avenues Kruskal-Wallis Test executed. The P value for post office schemes, precious metals and debt fund instrument is less than 0.05 so, null hypothesis is rejected and they have significant relationship with occupation of investors and return from investment avenues. In contrast, for other investment avenues viz., bank deposits, real estate, mutual funds and equity shares p value is more than 0.05 so, null hypothesis cannot be rejected and these factors have no significant relationship with occupation of investors and return from investment avenues.

H₀F: There is no significant difference in the mean rank scores of investors’ perception toward risk from different investment avenues among Occupation of investors.

Table 8: Kruskal-Wallis Test of Perception of Risk towards Different Investment Avenues among Occupation of Investors

Kruskal-Wallis Test						
Ranks						
Occupation		N	Mean Rank	Chi-Square	df	Asym p. Sig.
Bank deposits	Government Service	60	243.83	33.988	5	.000
	Private Service	288	276.22			
	Business	72	311.14			
	Professionals	80	279.06			
	Homemaker	16	383.84			
	Other	57	340.39			
	Total	573				
Post office schemes	Government Service	60	259.42	24.385	5	.000
	Private Service	288	274.62			
	Business	72	311.29			
	Professionals	80	285.08			
	Homemaker	16	346.94			
	Other	57	333.80			
	Total	573				
Real estate	Government Service	60	274.67	12.190	5	.032
	Private Service	288	276.33			
	Business	72	312.72			
	Professionals	80	324.63			
	Homemaker	16	341.25			
	Other	57	253.38			
	Total	573				
Precious metals	Government Service	60	243.27	22.503	5	.000
	Private Service	288	281.95			
	Business	72	326.28			
	Professionals	80	295.76			
	Homemaker	16	420.22			
	Other	57	259.25			

	Total	573				
Mutual funds	Government Service	60	313.63	20.221	5	.001
	Private Service	288	276.18			
	Business	72	341.28			
	Professionals	80	294.93			
	Homemaker	16	316.53			
	Other	57	225.68			
	Total	573				
Equity Shares	Government Service	60	279.69	24.660	5	.000
	Private Service	288	292.31			
	Business	72	353.93			
	Professionals	80	250.18			
	Homemaker	16	292.47			
	Other	57	233.46			
	Total	573				
Debt Fund Instruments	Government Service	60	251.94	28.928	5	.000
	Private Service	288	286.62			
	Business	72	333.83			
	Professionals	80	273.81			
	Homemaker	16	442.94			
	Other	57	241.41			
	Total	573				

To measure the significant difference in occupation of investors and risk perception from different investment avenues Kruskal-Wallis Test conducted. The P value for all investment avenues like post office schemes, Bank deposits, Real estate, precious metal, mutual funds, equity shares and debt fund instrument are less than 0.05 so, null hypothesis is rejected and they have significant difference in occupation of investors and risk from differnt investment avenues.

H₀G: There is no significant difference in the mean rank scores of investors’ perception toward return from varied investment avenues among Education of investors.

Table 9: Kruskal-Wallis Test of Perception of Return towards varied Investment Avenues among Education of Investors

Kruskal-Wallis Test						
Ranks						
Education		N	Mean Rank	Chi-Square	df	Asymp. Sig.
Bank deposits	HSC or less	12	125.00	30.185	3	.000
	Graduation or less	75	237.86			
	Post-graduation or less	366	309.90			
	Doctorate	120	264.06			
	Total	573				
	HSC or less	12	155.42	16.868	3	.001

Post office schemes	Graduation or less	75	245.81			
	Post-graduation or less	366	301.24			
	Doctorate	120	282.46			
	Total	573				
Real estate	HSC or less	12	198.88	4.583	3	.205
	Graduation or less	75	294.55			
	Post-graduation or less	366	291.44			
	Doctorate	120	277.54			
	Total	573				
Precious metals	HSC or less	12	215.42	12.665	3	.005
	Graduation or less	75	248.99			
	Post-graduation or less	366	285.83			
	Doctorate	120	321.50			
	Total	573				
Mutual funds	HSC or less	12	198.50	4.640	3	.200
	Graduation or less	75	287.10			
	Post-graduation or less	366	285.58			
	Doctorate	120	300.12			
	Total	573				
Equity Shares	HSC or less	12	249.50	4.608	3	.203
	Graduation or less	75	273.08			
	Post-graduation or less	366	282.65			
	Doctorate	120	312.73			
	Total	573				
Debt Fund Instruments	HSC or less	12	194.75	11.868	3	.008
	Graduation or less	75	243.24			
	Post-graduation or less	366	294.16			
	Doctorate	120	301.74			
	Total	573				

To study the significant difference in level of education and return perception of different investment avenues Kruskal-Wallis Test performed. It shows bank deposits, post office schemes, precious metals and debt fund instruments have p values less than 0.05 thus, null hypothesis rejected and there is a significant difference with level of education and return perception of different investment of these four avenues. While other three investment avenues such as real estate, mutual funds and equity shares do not have significant difference with level of education and return perception of different investment as their p value is more than 0.05. So, null hypothesis cannot be rejected.

H₀H: There is no significant difference in the mean rank scores of investors' perception toward risk from varied investment avenues among Education of investors.

Table 10: Kruskal-Wallis Test of Perception of Risk towards varied Investment Avenues among Education of Investors

Kruskal-Wallis Test

Ranks						
Education		N	Mean Rank	Chi-Square	df	Asymp. Sig.
Bank deposits	HSC or less	12	360.88	5.145	3	.161
	Graduation or less	75	276.35			
	Post-graduation or less	366	285.54			
	Doctorate	120	290.72			
	Total	573				
Post office schemes	HSC or less	12	296.50	5.164	3	.160
	Graduation or less	75	282.75			
	Post-graduation or less	366	294.00			
	Doctorate	120	267.35			
	Total	573				
Real estate	HSC or less	12	324.96	4.509	3	.211
	Graduation or less	75	306.66			
	Post-graduation or less	366	276.54			
	Doctorate	120	302.81			
	Total	573				
Precious metals	HSC or less	12	175.42	6.920	3	.074
	Graduation or less	75	301.71			
	Post-graduation or less	366	289.90			
	Doctorate	120	280.11			
	Total	573				
Mutual funds	HSC or less	12	453.25	13.785	3	.003
	Graduation or less	75	280.02			
	Post-graduation or less	366	287.24			
	Doctorate	120	273.99			
	Total	573				
Equity Shares	HSC or less	12	257.46	1.802	3	.615
	Graduation or less	75	307.31			
	Post-graduation or less	366	284.41			
	Doctorate	120	285.17			
	Total	573				
Debt Fund Instruments	HSC or less	12	336.75	6.050	3	.109
	Graduation or less	75	318.43			

Post-graduation or less	366	285.83			
Doctorate	120	265.95			
Total	573				

The above table shows significance difference in the mean score towards level of education and risk perception amongst different investment avenues. Only mutual fund is having p value less than 0.05, which indicates that there is a significance difference in level of education and risk perception of investment avenues. So, null hypothesis is rejected. All other investment avenues are having p value more than 0.05, so null hypothesis cannot be rejected. Hence, there is no significance difference in mean score towards education and risk from different investment avenues.

H₀I: There is no significant difference in the mean rank scores of investors' perception toward return from varied investment avenues among Annual Family Income of investors.

Table 11: Kruskal-Wallis Test of Perception of Return towards varied Investment Avenues among Annual Family Income of Investors

Kruskal-Wallis Test						
Ranks						
Annual Family Income		N	Mean Rank	Chi-Square	df	Asymp . Sig.
Bank deposits	Rs.2,50,000 or less	97	306.12	14.358	6	.026
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	305.76			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	277.39			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	231.13			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	292.70			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	251.14			
	Above Rs. 15 lakhs	34	294.44			
	Total	573				
Post office schemes	Rs.2,50,000 or less	97	336.56	30.728	6	.000
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	307.70			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	280.02			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	232.71			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	253.48			

	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	215.29			
	Above Rs. 15 lakhs	34	229.78			
	Total	573				
Real estate	Rs.2,50,000 or less	97	255.82	22.505	6	.001
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	324.29			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	292.47			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	249.19			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	260.04			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	307.04			
	Above Rs. 15 lakhs	34	239.09			
	Total	573				
Precious metals	Rs.2,50,000 or less	97	247.42	16.195	6	.013
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	314.93			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	294.49			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	269.59			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	304.04			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	259.64			
	Above Rs. 15 lakhs	34	247.44			
	Total	573				
Mutual funds	Rs.2,50,000 or less	97	247.31	28.719	6	.000
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	320.24			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	284.08			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	252.82			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	359.68			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	310.36			
	Above Rs. 15 lakhs	34	229.38			
	Total	573				

Equity Shares	Rs.2,50,000 or less	97	223.52	64.639	6	.000
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	315.32			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	321.67			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	225.28			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	399.70			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	315.04			
	Above Rs. 15 lakhs	34	192.46			
	Total	573				
Debt Fund Instruments	Rs.2,50,000 or less	97	268.04	13.920	6	.031
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	320.55			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	271.84			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	258.70			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	275.23			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	282.32			
	Above Rs. 15 lakhs	34	287.75			
	Total	573				

The above table depicts P value for all investment avenues such as bank deposits, post office schemes, real estate, precious metals, mutual funds, equity shares and debt fund instrument is less than 0.05 so, null hypothesis is rejected and they have significant difference in the mean rank score of annual family income of investors and return from investment avenues.

H₀J: There is no significant difference in the mean rank scores of investors' perception toward risk from varied investment avenues among Annual Family Income of investors.

Table 12: Kruskal-Wallis Test of Perception of Risk towards varied Investment Avenues among Annual Family Income of Investors

Kruskal-Wallis Test						
Ranks						
Annual Family Income		N	Mean Rank	Chi-Square	df	Asymp . Sig.
Bank deposits	Rs.2,50,000 or less	97	340.63	29.320	6	.000
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	286.07			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	262.38			

	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	257.93			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	290.66			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	274.68			
	Above Rs. 15 lakhs	34	303.28			
	Total	573				
Post office schemes	Rs.2,50,000 or less	97	351.51	44.133	6	.000
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	270.51			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	290.76			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	251.54			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	279.80			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	253.89			
	Above Rs. 15 lakhs	34	272.79			
	Total	573				
Real estate	Rs.2,50,000 or less	97	311.58	16.373	6	.012
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	270.86			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	314.71			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	279.22			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	290.27			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	277.18			
	Above Rs. 15 lakhs	34	210.12			
	Total	573				
Precious metals	Rs.2,50,000 or less	97	307.09	17.788	6	.007
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	269.05			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	314.04			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	284.75			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	291.16			

	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	321.79			
	Above Rs. 15 lakhs	34	205.07			
	Total	573				
Mutual funds	Rs.2,50,000 or less	97	305.12	11.913	6	.064
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	274.07			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	310.46			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	262.60			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	326.46			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	247.18			
	Above Rs. 15 lakhs	34	245.44			
	Total	573				
Equity Shares	Rs.2,50,000 or less	97	274.04	15.054	6	.020
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	296.16			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	287.48			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	277.39			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	358.11			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	325.93			
	Above Rs. 15 lakhs	34	216.60			
	Total	573				
Debt Fund Instruments	Rs.2,50,000 or less	97	348.32	39.174	6	.000
	More than Rs.2.5 lakhs to Rs. 5 lakhs	189	302.94			
	More than Rs.5 lakhs to Rs. 7.5 Lakhs	140	238.10			
	More than Rs.7.5 lakhs to Rs. 10 lakhs	71	264.87			
	More than Rs.10 lakhs to Rs. 12.5 lakhs	28	344.84			
	More than Rs. 12.5 lakhs to Rs. 15 lakhs	14	290.46			
	Above Rs. 15 lakhs	34	221.97			
	Total	573				

From the above table it is observed that the P value for all investment avenues such as bank deposits, post office schemes, real estate, precious metals, equity shares and debt fund instrument except mutual fund is less than 0.05 so, null hypothesis is rejected and they have significant difference in mean core rank except mutual funds with annual family income of investors and risk from different investment avenues.

H₀K: There is no significant difference in the mean rank scores of investors' perception toward return from different investment avenues among regions of investors.

Table 13: Kruskal-Wallis Test of Perception of Return towards Different Investment Avenues among regions of Investors

Kruskal-Wallis Test						
Ranks						
Region	N	Mean Rank	Chi-Square	df	Asymp. Sig.	
Bank deposits	Central	230	293.61	4.091	3	.252
	North	116	297.05			
	Saurashtra	123	288.57			
	South	104	259.31			
	Total	573				
Post office schemes	Central	230	298.01	3.261	3	.353
	North	116	287.56			
	Saurashtra	123	266.51			
	South	104	286.26			
	Total	573				
Real estate	Central	230	274.15	15.676	3	.001
	North	116	325.80			
	Saurashtra	123	254.91			
	South	104	310.11			
	Total	573				
Precious metals	Central	230	279.36	14.122	3	.003
	North	116	297.34			
	Saurashtra	123	254.83			
	South	104	330.42			
	Total	573				
Mutual funds	Central	230	302.84	4.962	3	.175
	North	116	284.09			
	Saurashtra	123	280.29			
	South	104	263.15			
	Total	573				
Equity Shares	Central	230	289.41	2.241	3	.524

	North	116	302.81			
	Saurashtra	123	273.87			
	South	104	279.57			
	Total	573				
Debt Fund Instruments	Central	230	310.20	19.684	3	.000
	North	116	295.87			
	Saurashtra	123	284.17			
	South	104	229.15			
	Total	573				

The above table highlights the significant difference in the mean rank scores of investors' perception toward return from different investment avenues among regions of investors. Real estate, precious metal and debt fund instruments only have p value less than 0.05. So, null hypothesis is rejected and it shows there is a significant difference in the mean rank scores of investors' perception toward return from different investment avenues among regions of investors. Whereas other investment avenues namely bank deposits, post office schemes, mutual funds and equity shares have p value more than 0.05. therefore, null hypothesis cannot be rejected and there is no significance difference in the mean rank scores of investors' perception toward return from different investment avenues among regions of investors.

H₀L: There is no significant difference in the mean rank scores of investors' perception toward risk from different investment avenues among regions of investors.

Table 14: Kruskal-Wallis Test of Perception of Risk towards Different Investment Avenues among regions of Investors

Kruskal-Wallis Test						
Ranks						
Region		N	Mean Rank	Chi-Square	df	Asymp. Sig.
Bank deposits	Central	230	270.77	8.806	3	.032
	North	116	298.53			
	Saurashtra	123	308.04			
	South	104	285.15			
	Total	573				
Post office schemes	Central	230	282.23	1.256	3	.740
	North	116	295.81			
	Saurashtra	123	284.63			
	South	104	290.52			
	Total	573				
Real estate	Central	230	283.48	9.542	3	.023
	North	116	307.95			
	Saurashtra	123	253.91			
	South	104	310.54			
	Total	573				
	Central	230	285.18	13.251	3	.004

Precious metals	North	116	331.30			
	Saurashtra	123	260.93			
	South	104	272.45			
	Total	573				
Mutual funds	Central	230	292.13	1.178	3	.758
	North	116	273.53			
	Saurashtra	123	291.82			
	South	104	284.99			
	Total	573				
Equity Shares	Central	230	297.08	1.976	3	.577
	North	116	281.84			
	Saurashtra	123	273.61			
	South	104	286.30			
	Total	573				
Debt Fund Instruments	Central	230	305.28	6.623	3	.085
	North	116	284.12			
	Saurashtra	123	280.26			
	South	104	257.75			
	Total	573				

The above table highlights the significant difference in the mean rank scores of investors' perception toward risk from different investment avenues among regions of investors. Bank deposits, Real estate and precious metals only have p value less than 0.05. So, null hypothesis is rejected and it shows there is a significant difference in the mean rank scores of investors' perception toward risk from different investment avenues among regions of investors. Whereas other investment avenues namely post-office schemes, mutual funds, equity shares and debt fund instruments have p value more than 0.05. therefore, null hypothesis cannot be rejected and there is no significant difference in the mean rank scores of investors' perception toward risk from different investment avenues among regions of investors.

Conclusion

This study provides a complete analysis of investor behavior and risk-return perception across various investment avenues in Gujarat. The evidence from Gujarat investors confirms a clear risk–return spectrum across asset classes: equity shares top both risk and return profiles, while fixed-income and postal schemes occupy the low-risk/low-return end (Patel, B., & Modi, V., 2017). Critically, demographic factors shape these perceptions. Older investors, higher-income individuals, and professional occupations tend to perceive risk-return differently than others. This heterogeneity suggests that one-size-fits-all approaches to investor education and product offerings are suboptimal.

For investors, recognizing one's own demographic-linked biases can improve portfolio choices (e.g. balancing riskier and safer assets). For policymakers, our results support the design of *targeted* financial literacy programs (for example, demographic-specific training for youth, women or low-income groups) to close knowledge gaps and build confidence (Mujawar, S., 2023). Financial institutions should also adapt their services: by tailoring products and advice to distinct demographic segments, they can meet diverse needs more effectively (Berry, S.,

2024). In sum, understanding socio-demographic drivers of risk-return perceptions can help stakeholders craft more inclusive, targeted strategies that promote better-informed investment decisions.

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