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Retail Investors' Investment Patterns in Mutual Funds

The impact of socio-economic factors on the Mutual Funds' investment pattern in India with reference to the frequency and time period of investments of retail investors is attempted. The paper also recognizes the financial objectives and, proposes a model facilitating the investment behavior of the retail investors. The Principal Component Analysis (PCA) and Chi-square test were conducted to evaluate both the significant demographic impact on investment patterns as well as the pertinent perception of the investors towards particular mutual fund/s selection. The study reveals that mutual fund is now being considered as one of the important investment options among the investors irrespective of their gender and age. The findings further support the impact of educational and income levels on the preference of investment in mutual funds. The study also reveals that the investors are inclined more towards this investment avenue mainly due to its ease of investing, higher returns and the minimum risk associated with investing in mutual funds.

Keywords: *Investment – Mutual fund – Retail investors – PCA – Demography*

Introduction

An investment refers to the allocation of funds to the different asset classes with the expectation of generating attractive returns considering the respective risks as well as other attributes of the asset. The investments made by the household sector finance the government as well as the corporate sectors. The introduction and growth of the banking

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system in India in the twentieth century and the rise of the developed and organized capital market after India's Independence gave rise to ample investment avenues, such as Fixed Deposits (FDs), Mutual Funds, Public Provident Fund (PPF), Bonds, Equity Shares, Real Estate, etc., This constitutes the distinct characteristics that play a pivotal role in the investment decisions made by an individual. The different investment avenues cater to the varied requirements of the investors depending on the degree of risk aversive profile of an individual (Verma, 2008).

The choice of investment alternatives is found to be affected by the personality of an individual – conservative, moderate or aggressive. At one end are the investments in FDs and PPF which provide risk-free returns and these are considered as secured-investment options, while the other options, such as the equity shares, mutual funds, debt funds are market- linked, making them volatile. The latter are preferred mostly by investors with a higher risk appetite. The distinct investor-behavior towards different investment avenues is a crucial parameter towards better understanding of the factors prompting the choice of the investment options.

The mutual fund option has emerged as one of the preferred investment avenues by the retail investors who consider it safe, although the degree of preference is different for closed-ended and open-ended equity schemes (Gupta, 1992). It is designed to provide innumerable benefits to investors ranging from professional management of funds to diversification of portfolio, ease of investing, liquidity, tax benefits and transparency. Among all the attractive factors, tax benefit is found to be the most significant when investing in mutual fund (Singh & Vanita, 2002; Sikdar & Singh, 1996). Mutual funds are managed by professional fund managers who utilize their expertise and experience to buy, sell and track the fund. The mitigation of risk in the portfolio is effected through diversification of portfolios thereby safeguarding the investors from decrease in return from some securities in the portfolio. Easy accessibility of purchase or ease of redemption of mutual funds is an added advantage to the investors. Redemption of mutual funds can be done at any time, except ELSS (Equity Linked Saving Scheme), providing quick liquidity to the investors. ELSS is a tax saving mutual fund scheme providing tax benefits even up to 1.5 lakhs under Section 80CC of the Income Tax Act.

The various mutual fund schemes are strictly regulated by the Securities and Exchange Board of India (SEBI) to protect the interests and rights of the investors. The guidelines of SEBI provide transparency of information to the investors allowing them to make informed decisions. For instance, the fund houses indicate the level of risk associated with the various fund schemes by the use of color codes – brown indicates high risk; blue, low risk and yellow, moderate risk.

According to the data released by the Association of Mutual Funds in India (AMFI), the retail participation has increased more than threefold during the last nine years (AMFI data – 4 .03 cr in March 2014 to 14.57 cr in March 2023). The retail investors account for 91.1% of the total Mutual fund accounts as on March 31, 2023 as per AMFI data. The contribution of retail investors, including high net-worth investors recorded AUM worth Rs. 23.27 lakh crore as on March 31, 2023, representing more than 50% of the MFs' AUM (40 lakh cr). Improvement in investor-education, creating financial awareness and their informed decision making on distinct investment vehicles is attributed to the timely adoption of technology and investor-protection initiatives by the SEBI and other financial Institutions.

The enabled-financial behavior of the retail investor influences the selection of the schemes (Rajeshware & Moorthy, 2002). The informed decisions are arrived at by the investors on the basis of "expectations" indicated from the mutual fund's scheme brochures. These expectations are influenced by their perception which results in the decision/action to purchase mutual funds. Thus, the investor's behavioral aspect plays a crucial role in the fund selection. This is defined as 'Behavioral Finance', which is also an application of psychological impact on financial decision making.

Tax savings, higher returns, low risk, ease of investing and liquidity are some of the driving motives influencing the investment-decision making in favour of purchase of mutual funds. Higher returns are considered as the main objective of investment in mutual funds among the higher income group of investors (Reddy & Sudhakar, 2016; Raju & Sachin, 2018). The next most significant components of investors' preference for mutual funds' purchase are tax rebates, liquidity, customer service quality and flexibility (Das et al., 2008; Ivkoviæ & Weisbenner, 2009).

The most preferred mode of investment is found to be the Systematic Investment Plan (SIP) as the contribution is as low as Rs.500. Lump sum investment is considered the next choice of the investors (Mehrotra & Kandpal, 2018). Most of the investors prefer a 3 to 5-year horizon of investment in mutual funds. According to the latest report by the RBI, the net financial savings of households have increased to 7.6% of disposable income in 2019-20 due to moderation of financial liabilities than investment in financial assets. The increased participation of new investors in the capital market is reflected in the SEBI data which shows the opening of close to 6.3 million new demat accounts during April-September 2020. According to CEIC data, the gross savings rate in India was at 30.2% in March 2022, which is one of the highest indicators globally. The participation of investors has increased manifold during the last couple of years. Designing this wide range of investment instruments according to the attributes demanded by the investors may help improve the deeper penetration and higher participation in the long run. As per the AMFI data, the Asset under Management (AUM) of the Indian mutual fund financial service has grown more than 400% during a span of 10 years – from April 2013 to March 2023, with a maximum participation by retail investors. Even though the saving rates in India are high, the participation in mutual fund by retail investors is quite low. The full potential of the mutual fund schemes in India can be realized by more active participation of retail investors.

2. Literature Review

The empirical researchers and their studies across the world have highlighted the behavior of individual investors. The study by Eisenhaeur (2001) on the impact of demographic factors on risk-averse behavior of the investors found that age, gender, employment and religion directly affect the risk-aversive behavior of the investors, while their social status, education and the number of children were less pertinent. The gender differences towards risk appetite factors studied by Dwyer (2002) discovered that the female preferred less risky asset creation compared to the male counterpart owing to the (possible) disparity in knowledge and financial dependence. In order to examine the preferences and perceptions towards investing in mutual funds along with the factors responsible for the redemption, Singh and Chander (2004) conducted a survey of 400 investors in Delhi, Mumbai and Punjab. Factor analyses were done to determine the

significant factors responsible for investment decision in mutual funds. Their study revealed the preference of the middle-income group towards the mutual fund choice as an investment avenue was greater due the tax rebate availability under Section 80C of the I-T Act. Their lack of financial awareness about the asset management company's redemption policy was also the reason for their apprehension of and disinclination to invest in mutual fund.

The study conducted by Verma (2008) was aimed at examining the relationship between investment choice and the demographic profile of the investors. Primary data were collected from a sample size of 500 through a personal survey. It was observed that age, occupation, gender and education along with personality trait played a significant role in the selection of investment avenues. That age, gender and income factors played a significant role in determining the attitude of investors towards different investment options was the findings by Parihar et al. (2009). Saha and Dey (2011) conducted a study on a sample of 100 investors in Kolkata in order to gauge the perception of the investors responsible for investment decisions and also to measure the awareness level for investing in mutual funds. The factors perceived by the investors while investing in mutual funds were also analyzed by them.

Futual fund investment was not considered to be risky on the basis of the study conducted by Singh and Vanita (2002). Tax saving was found to be one of the most important reasons for salaried and self-employed individuals' investment in mutual fund according to Sikdar and Singh (1996). The past performance of the mutual funds indicated by the returns, asset size and cost of transaction was found to be a significant criterion for investment by investors in the study conducted by Bogle (1992), Ramaswamy and young (2003) and Pollet and Wilson (2008).

According to Saha and Dey (2011), factors of principal protection and liquidity played an important role in the decision making process. Rajeshware and Moorthy (2012) utilized Principal Component Analysis (PCA) to study the financial behavior influencing the investing decisions of retail investors so as to group them into specific market segments for designing of appropriate marketing strategies. The risk perception of the investors towards mutual fund affects the decision making as per the study by Sindhu and Rajitha (2014). An individual's income and occupation, which reflect on one's lifestyle, play an

important role in influencing the mutual fund investment decision as deduced by Panjali and Kasilingam (2015).

Mehrotra and Kandpal (2018) studied the penetration pattern of investment in mutual funds in selected regions in India. The study concluded that 'SIP' was the most preferred mode of investment, and, 3 to 5-year period as the best preferred investment horizon.

3. Research Objective

- To determine the major demographic and socio-economic variables influencing the selection of mutual fund investment.
- To analyze the effects of demographic variables on investment patterns of the investors
- To determine the predominant perception of investors towards mutual fund.
- To develop an appropriate model to determine the antecedents influencing the choice of mutual fund investment in India.

4. Research Methodology

This study aims to find out the factors leading to the general attitude and willingness of the investors towards in mutual fund investment. Hence it is an attempt to evaluate the attitude of investors demographically and socio-economically towards investment in mutual funds along with the predominant variables influencing the perception of mutual fund investors. The paper also tries to develop a model to determine the antecedents influencing the choice of mutual fund in India.

Primary data was collected using a structured questionnaire comprising close-ended questions to get insights into customer preferences while investing in mutual funds. A non-probability convenience sampling method was employed to collect the responses. These have been recorded on the basis of a structured questionnaire by conducting a survey on 423 respondents in Kolkata and Delhi. The questionnaire was divided into two sections. The first section deals with demographic and socio-economic variables, such as gender, age, and educational qualifications, while the second section considers investment-specific factors, such as risk, return and liquidity. Initially the Chi-square test

was conducted to assess the association between investor's preference towards mutual funds across demographic and socio-economic variables. Cramer's V-test was used to measure the strength of the association. The second part deals with mutual fund's specific independent variables. It was subjected to Principal Component Analysis (PCA) to check the major determinants affecting the choice of investment avenues. The responses related to the investment-specific factors have been recorded on a 5-point Likert scale with "1" being the lowest rank and "5" being the highest rank. Finally a model has been proposed which might provide the asset management companies as well as the regulators an insight into the understanding of the investors' preferences and requirements.

- ***Hypothesis:*** Socio-economic and demographic variables are independent of the preference towards investment in mutual fund.

5. Data Analysis and Interpretation

- Relationship between socio-economic and demographic variables and investment in mutual fund

The investment in mutual fund is affected by demographic variables like, gender, age and educational levels. The reason is the adverse attitude of the investors towards the new financial investment products even though these generate better returns than the traditional investment options. In order to evaluate the relationship between socio-demographic variables, the contingency table and chi-square tests along with Cramer's V-test were conducted to determine the strength of association.

Table 1: Socio-Economic and Demographic Profiles of Respondents

Attributes	*Category*	*N*	*N%*
Gender	Male	302	71.39%
	Female	121	28.61%
Age	Below 30	46	10.8%
	30-40	184	43.49%
	40-50	101	23.8%
	50-60	69	16.31%
	Above 60	23	5.4%
Education	Higher Secondary	32	7.50%
	Graduate	291	68.79%
	Post-Graduate	100	23.64%
Annual Income	2 - 6 lakhs	116	27.4%
	6 -10 lakhs	244	57.6%
	More than 10 lakhs	63	14.89%

Gender and Best Investment Option

Among the male respondents, the preference for mutual fund investments is slightly higher (31.12%) than female respondents (29.75%); the p-value of chi-square (545.221) and Cramer's V are found to be significant at 5% level of significance. Therefore, it may be inferred that gender is a significant factor while making investment decisions in various investment schemes. It is also observed that female investors mostly find fixed deposit more attractive as compared to mutual fund. The Cramer's V-value (0.723) indicates that the strength of association between investment and gender is strong (Table 1). It can be inferred that the gender plays a significant role in deciding on the investment avenues.

- ***H_0:*** There is no significant relationship between gender and the preference towards different investment options.
- ***H_1:*** There is a significant relationship between gender and preference for different investment options.

Table 2: Relationship between Gender and Best Investment Option

	Investment Options					
Gender	***Equity Shares***	***Fixed Deposits***	***Gold***	***Mutual Funds***	***Real Estate***	***Total***
Male	45	77	18	94	68	302
Female	9	48	14	36	14	121
Total	54	125	32	130	82	423
	Pearson chi-square = 545.221 p = 0.000 Cramer's V = 0.723 p = 0.000 Likelihood-ratio chi-square = 529.084					

Gender and Frequency of Investment in Mutual Funds

It is observed that both genders were indifferent as to the frequency of the investment which is regular or not, as most of the respondents of both the genders preferred "anytime", as compared to fixed monthly, quarterly or annual investment. The chi-square statistic (545.221) is found to be statistically significant at 5% level of significance,

indicating the significant association between gender and frequency of investment. The strength of association between the genders and frequency of investment are found to be significant and strong (Cramer's V= 0.723).

- ***H_0:*** There is no significant relationship between gender and frequency of Investment in mutual fund.
- ***H_1:*** There is a significant relationship between gender and frequency of investment in mutual fund.

Table 3: Relationship between Gender and Frequency of Investment in Mutual Funds

	Investment Options				
Gender	***Anytime***	***Monthly***	***Quarterly***	***Yearly***	***Total***
Male	133	80	38	51	302
Female	54	34	15	18	121
Total	187	114	53	69	423
	Pearson chi-square = 522.64 p = 0.000 Cramer's V = 0.708 p = 0.000 Likelihood-ratio chi-square = 510.517				

Gender and Time Horizon of Investment in Mutual Funds

The male respondents also were almost equally in favor of 1-3 years (39%) and more than 3 years (38.74%) investment-time horizons, while most of the female respondents (47.9%) preferred 1-3 year-period of investment. Chi-square ($p<0.05$) and Cramer's V-statistic ($V =0.708$) reveal significant and strong association between gender and time horizon.

Therefore, it is observed that gender plays a significant role in both the selection and the investment options and the frequency of investment along with the preference towards time period of investment. Both male and female prefer different approaches when they are given the choice to investment in mutual fund.

- ***H_0:*** There is no significant relationship between gender and time horizon of investment in mutual fund.

- ***H_1:*** There is a significant relationship between gender and time horizon of investment in mutual fund.

Table 4: Relationship between Gender and Time Horizon of Investment in Mutual Fund

	Time Horizon			
Gender	***Less than 1 year***	***1-3 years***	***More than 3 years***	***Total***
Male	67	118	117	302
Female	29	58	34	121
Total	96	276	151	423
	Pearson chi-square = 528.144 p = 0.000 Cramer's V = 0.711 p = 0.000 likelihood-ratio chi-square = 515.062			

Age and Best Investment option

Respondents (36.5%) below 40 years of age preferred mutual fund more than those above 40 years (25.38%). While in terms of statistical significance, preference towards investment in mutual fund was found to be statistically significant across groups identified. The p-value of chi- square ($p<0.05$) statistically failed to reject the alternative hypothesis of non-independence between the preference and age at 5% level of significance. The Cramer's V-value is weak. but significant for rejecting the null hypothesis of independence between preference and age at 5% level of significant. From the results obtained, one can infer that the preference towards investment in mutual funds is influenced by age, but not as strongly as in the case of gender.

- ***H_0:*** There is no significant relationship between age and preference towards mutual fund investment.
- ***H_1:*** There is a significant relationship between age and preference towards mutual fund Investment.

Table 5: Relationship between Age and Best Investment Option

	Investment Options					
Age	***Equity Shares***	***Fixed Deposits***	***Gold***	***Mutual Funds***	***Real Estate***	***Total***
Below 30	13	8	2	19	4	46
30-40	26	48	6	65	39	184
40-50	11	40	8	28	14	101
50-60	2	19	10	17	21	69
Above 60	2	10	6	4	1	23
Total	54	125	32	130	82	423
	Pearson chi-square = 575.775 p = 0.00 Cramer's V = 0.470 Likelihood-ratio chi-square = 556.037 p= 0.00					

Age and Frequency of Investment in Mutual Fund

It is observed that most of the respondents, except those above 60 years of age, preferred to invest anytime, followed by the monthly investment options. It indicates that, though most of the investors preferred the frequency of investment 'anytime', they are moving towards monthly investment, thereby indicating the preference for Systematic Investment Plan (SIP). The Cramer's V-statistic (0.512) shows a moderately strong and statistically significant ($p<0.05$) association between age and frequency of investment in mutual fund.

- ***H_0:*** There is no significant relationship between age and frequency of investment in futual fund.
- ***H_1:*** There is a significant relationship between age and frequency of investment in mutual fund.

Table 6: Relationship between Age and Frequency of Investment in Mutual Fund

	Frequency of Investment				
Age	***Anytime***	***Monthly***	***Quarterly***	***Yearly***	***Total***
Below 30	32	8	2	4	46
30-40	65	58	20	41	184
40-50	45	34	17	5	101
50-60	41	11	7	10	69
Above 60	4	3	7	9	23
Total	187	114	53	69	423
	Pearson chi-square = 547.821 p = 0.00 Cramer's V = 0.512 Likelihood-ratio chi-square = 530.626 p= 0.00				

Age and Time Horizon of Investment in Mutual Fund

Most of the respondents (77.3%) preferred investment of more than 1 year duration. A small difference (between 3.8% and 38.6%) is observed between the time horizons of 1-3 and more than 3 years respectively for respondents aged below 50 years of age It shows that the investors are gradually moving towards longer-time horizon to reap higher benefits from long-term investment in funds. Chi-square ($p<0.05$) and Cramer's V–statistic ($V =0.445$) reveal significant but weak association between age and time horizon. From these significant and weak associations it may be inferred that age and time horizon factors play a significant role as these are associated but are not strong enough to assert their influence on investment.

- ***H_0:*** There is no significant relationship between age and time horizon of investment in mutual fund.
- ***H_1:*** There is a significant relationship between age and time horizon of investment in mutual fund.

Table 7: Relationship between Age and Time Horizon of Investment in Mutual Fund

	Time Horizon			
Age	***Less than 1 year***	***1-3 years***	***More than 3 years***	***Total***
Below 30	15	13	18	46
30-40	54	68	62	184
40-50	12	41	48	101
50-60	8	42	19	69
Above 60	7	12	4	23
Total	96	176	151	423
	Pearson chi-square = 547.821 p = 0.00 Cramer's V = 0.445 Likelihood-ratio chi-square = 530.62 p= 0.00			

Education Level

Educational level was found to have a significant relationship with preference for investment in mutual fund. Respondents having higher educational levels (graduate and above – 96.9%) were more likely to invest in mutual funds, while respondents with lower qualification (up to higher secondary) were more likely to invest in other financial assets. The association between the education level and preference towards investment in mutual fund indicate a significant relationship ($p < 0.01$) at 1% level of significance. Cramer's V-value (0.4764) is significant ($p<0.01$) and found to be moderately associated with the educational level. The result infers that education level plays a significant role as a deciding factor in investing in mutual fund.

- ***H_0:*** There is no significant relationship between education level and preference towards mutual fund investment.
- ***H_1:*** There is a significant relationship between education level and preference towards mutual fund investment.

Table 8: Relationship between Education Levels And Best Investment option

	Investment Options					
Education	***Equity Shares***	***Fixed Deposits***	***Gold***	***Mutual Funds***	***Real Estate***	***Total***
Higher Secondary	1	14	4	3	10	32
Graduate	40	89	21	86	55	291
Post-graduate	13	17	9	40	21	100
Total	54	125	32	130	82	423
	Pearson chi-square = 575.775 p = 0.00 Cramer's V = 0.4764 Likelihood-ratio chi-square = 556.037 p = 0.00					

Education Level and Frequency of Investment Option

The higher secondary and graduate respondents (53.12% & 45.36% respectively) mostly prefer anytime investment as compared to monthly, quarterly and yearly investment options. The next most preferred option for all education levels is the monthly option, followed by yearly and quarterly options. This indicates that the graduate and higher secondary investors mostly do not prefer SIP route, rather they are investing irregularly. The statistically significant Chi-square and Cramer's V-value indicate significant association between education level and frequency of investment option but not strongly.

- ***H_0:*** There is no significant relationship between education level and frequency of investment option.
- ***H_1:*** There is a significant relationship between education level and frequency of investment option.

Table 9: Relationship between Education Level and Frequency of Investment Option

	Frequency of Investment				
Education	***Anytime***	***Monthly***	***Quarterly***	***Yearly***	***Total***
Higher Secondary	17	7	3	5	32
Graduate	132	69	39	51	291
Post Graduate	38	38	11	13	100
Total	187	114	53	69	423
	Pearson chi-square = 547.821 p = 0.00 Cramer's V = 0.507 Likelihood-ratio chi-square = 530.626 p = 0.00				

Education Level and Time Horizon of Investment

- The respondents (82%) having post-graduate degrees prefer a time horizon of more than 1 year as compared to graduate respondents (76.63%). followed by higher-secondary education (73.33%) respondents. Less than 1-year is the least preferred time horizon among all the education levels, indicating their preference for more than 1-year time horizon for which the post-graduate respondents have the highest inclination. The Cramer's V-statistic (0.581) reveals a strong and significant ($p<0.01$) association between education level and time horizon – at 1 % level of significance
  - ***H_0:*** There is no significant relationship between education level and time horizon of investment option.
  - ***H_1:*** There is a significant relationship between education level and time horizon of investment option.

Table 10: Relationship between Education Level and Time Horizon of Investment in Mutual Fund

	Time Horizon			
Education	***Less than 1 year***	***1-3 years***	***More than 3 years***	***Total***
Higher Secondary	10	15	7	32
Graduate	68	121	102	291
Post Graduate	8	40	42	100
Total	96	176	151	423
	Pearson chi-square = 529.150 p = 0.00 Cramer's V = 0.581 Likelihood-ratio chi-square = 516.114 p = 0.00			

Income Level and Best Investment Option

Respondents (34.9%) who have an annual income of more than 10 lakh are found to have greater preference towards mutual-fund investment, followed by those having an annual income between 6-10 lakh (30.7%), and between 2-6 lakh (28.4%). It is also observed that respondents (35.2%) and (30.7%) who are in the income brackets between 6-10 lakh income prefer fixed deposits more than mutual fund. The mutual-funds agents could utilize this vital information and canvass for business opportunities amongst this category of potential investors. The results of hypothesis testing in Table 8 chi-square test statistic (534.573) indicate a significant relationship between income level and investment options ($p<0.01$). The Cramer's V-statistic (0.506) reveals a strong and significant relationship at 1 percent level of significance.

- ***H_0:*** There is no significant relationship between income level and preference towards mutual fund investment.
- ***H_1:*** There is a significant relationship between Income Level and preference towards mutual fund investment.

Table 11: Relationship between Income Level and Best Investment Option

	Investment Options					
Income Level	***Equity Shares***	***Fixed Deposits***	***Gold***	***Mutual Funds***	***Real Estate***	***Total***
2 - 6 lakh	20	23	6	33	34	116
6-10 lakh	35	86	18	75	38	244
More than 10 lakh	7	16	8	22	10	63
Total	54	125	32	130	82	423
	Pearson chi square = 534.573 p = 0.00 Cramer's V = 0.506 likelihood-ratio chi square = 520.054 p = 0.00					

Relationship between Income Level and Frequency of Investment option

The respondents (48.77%) belonging to the 6-10 lakh income group are found to prefer anytime investment the most as compared to those (23.77%) who opt to invest in monthly quarterly (12.3%) and yearly (15.16%). The 2-6 lakh income group preferred mostly the anytime investment option (44.8%) and the next-preferred option was monthly (28.4%). It is observed that respondents (36.5%) having more than 10 lakh prefer monthly investment more than those (25.39%) preferring anytime investment. This indicates that they prefer Systematic Investment plan (SIP) rather than investing irregularly. The statistically significant Chi-square ($p<0.01$) and Cramer's V-value (0.508) indicate significant and strong association between income level and frequency of investment option.

- ***H_0:*** There is no significant relationship between income level and frequency of investment option.
- ***H_1:*** There is a significant relationship between income level and frequency of investment option

Table 12: Relationship between Income Level and Frequency of Investment Option

	Frequency of Investment				
Income	***Anytime***	***Monthly***	***Quarterly***	***Yearly***	***Total***
2 - 6 lakh	52	33	17	14	116
6-10 lakh	119	58	30	37	244
More than 10 lakh	16	23	6	18	63
Total	187	114	53	69	423
	Pearson chi-square = 539.178 p = 0.00 Cramer's V = 0.508 Likelihood-ratio chi-square = 524.457 p= 0.00				

Relationship between Income Level and Time Horizon of investment in Mutual Fund

The respondents of all the income levels were observed to prefer 1-3-year horizon of investment in mutual funds – the income group (58.73%) having more than 10 lakh prefer the most – followed by 6-10 lakhs income group (39.75%) and 2-6 income group (36.2%). The second- most preferred time horizon was more than 3 years, indicating that, though investors have started investing in mutual fund having long-term time horizon, still the second option was the investment for more than 3 years. The Cramer's V-statistic (0.590) reveals a strong and significant ($p<0.01$) association between income level and time horizon at 1 per cent level of significance.

- ***H_0:*** There is no significant relationship between income level and time horizon of investment option.
- ***H_1:*** There is a significant relationship between income level and time horizon of investment option.

Table 13: Relationship between Income Level and Time Horizon of Investment in Mutual Fund

	Time Horizon			
Income	***Less than 1 year***	***1-3 years***	***More than 3 years***	***Total***
2 - 6 lakh	18	42	56	116
6-10 lakh	71	97	76	244
More than 10 lakh	7	37	19	63
Total	96	176	151	423
	Pearson chi-square = 544.709 p = 0.00 Cramer's V = 0.590 Likelihood-ratio chi-square = 528.608 p= 0.00			

It is observed that while the preference towards investment in mutual funds was a top priority for male respondents, it was the second priority for female respondents. The female respondents were majorly inclined to fixed deposits, which fact may be due to their risk aversive approach or lack of financial awareness. Anytime investment was mostly preferred by both the genders, but a difference was seen in the preference for the frequency of investment. Choice of the irregular investment-option pattern is a concern for the industry which requires proper portfolio guidance. Most of the female respondents (47.9%) preferred the 1-3-year period of investment, while nearly all the male respondents were equally inclined towards 1-3-year and above. It is observed that gender factor plays a prominent role in the investment pattern of an individual.

Though most of the respondents (77.3%) preferred an investment of more than 1 year, those in the age group of 30-40 years show a weak association between the age groups, while selecting the three periods and time horizons of investment. Educational levels and time horizons of investment in mutual fund reveal a strong and significant association, while the association between the income level, frequency and time horizon is found to be stronger.

Predominant factors of perception of individuals towards investment in mutual fund

Along with demographic factors, the perception of the investors selecting investment avenues plays a significant role. The characteristics of financial instruments, like return on investment, risk, ease of investing, liquidity, tax saving, etc., affect the mobilization of funds in different categories. This study therefore attempts to assess the impact of the predominant factors influencing the individual investors towards investing in mutual fund. Hence, such variables are also a part of this study, which adopts Principal Component Analysis (PCA) to capture the common component of the variables and reduce the variables while preserving the information.

Principal Component Analysis (PCA)

Principal Component Analysis (PCA) is a statistical technique which converts a set of possibly correlated observations into a set of linearly uncorrelated variables using orthogonal trans-formation. The resultant variables are called Principal Components. It is used for exploratory data analysis and for making predictive models. It visualizes the genetic distances and the relatedness between the sets within the populations. In this study, PCA has been conducted by eigen value decomposition of a correlation matrix. The results so obtained have been discussed in terms of *Component Scores*. The component scores are occasionally referred to as *factor scores* and *loadings*. The *factor scores* denote the transformed variable values that correspond to a particular data-point, while the *loadings* are the weights by which each standardized initial variable should be multiplied in order to get the component scores. After subjecting the data in question to factor analysis, the results are discussed below.

Kaiser Meyer Olkin (KMO) test is done to measure the suitability of the data for Factor Analysis. It measures sampling adequacy of each variable in the data set as well as the sampling adequacy of the entire data set. The lower the proportion of variance among the variables, the more suited it is for factor analysis. The KMO-measure for the data set is 0.677 with Bartlett's test of sphericity at $p<0.05$ which indicates that the dataset is consistent in nature (see the figure below)

Table 14 : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.677
Bartlett's Test of Sphericity	Approx. Chi-Square	146.595
	df	10
	Sig.	.000

The factor analysis of the data yields the following results:

The total variance given in the table has also been displayed in the following figure.

Table 15 : Total Variance Explained

Component	*Initial Eigen Values*			*Rotation Sums of Squared Loadings*		
	Total	*% of Variance*	*Cumulative %*	*Total*	*% of Variance*	*Cumulative %*
1	1.787	35.732	35.732	1.780	35.609	35.609
2	1.014	20.275	56.007	1.020	20.397	56.007
3	.794	15.883	71.890			
4	.773	15.454	87.344			
5	.633	12.656	100.000			

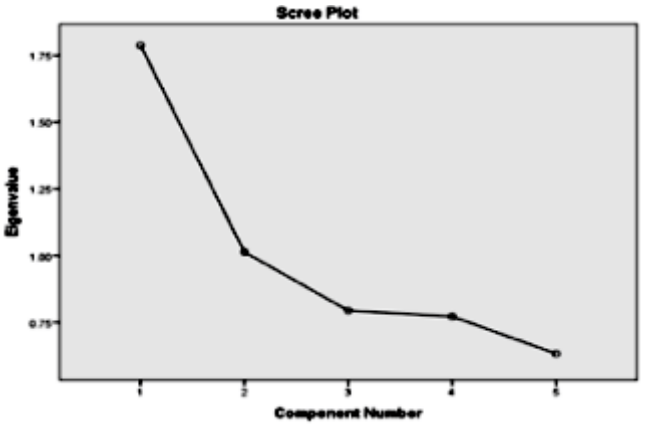
Extraction Method : Principal Component Analysis

From the above table it is evident that 56.007% of the total variance has been explained by this method. Of the total variance explained Factor 1 explains 35.732% and Factor 2 explains 20.275% of the variance. Rest of the factors can be discarded as they are insignificant.

Scree Plot

A scree plot can be defined as a simple plot consisting of a line segment that shows the fraction of variance in the data that is represented by each of the principal components. From the above scree plot it can be deduced that Factors 1 and 2 have the most number of factor loadings and have eigen values greater than 1.

Figure 1: Scree Plot



Rotated Component Matrix

The figure constituting the Rotated Component Matrix is illustrated in the subsequent page.

Table 16 : Rotated Component Matrix[a]

	Component	
	1	*2*
Return on investment	.637	.183
Risk	.038	.963
Liquidity	.627	.116
Ease of investing	.751	-.027
Tax saving	.644	-.213

From the above table it can be seen that:

(a) Factor 1 comprise the variables – ease of investing, tax saving, return and liquidity – that have a factor loading of more than 0.6. It explains the 35.732 percent of the variations.

(b) Factor 2 has the risk component as the significant loading variable; it accounts for the 20.275 percent of the variations.

- Factor 1 has been renamed as *Comprehensible Fiscal Savings and Returns (CFSR).*
- Factor 2 has been renamed as *Volatility*.

Therefore, we can propose a model in which we can denote that

Preference towards MF investment = f (Volatility, CFSR).

6. Conclusion

The study reveals that mutual-fund investment is now being considered as an important investment option among the investors, irrespective of their gender and age. The findings support the impact of educational qualification and income level on the preference for investment in mutual funds schemes. This may be attributed to the increase in the financial awareness level of the educated public along with the convenient accessibility of investment options through online and offline marketing offerings. The more educated and qualified investors are inclining more towards this avenue mainly due to its ease of investing and hope of better returns which is observed to have significant loading to Factor 1 when PCA was performed. The investors are also found to consider risk factor (Factor 2) as a significant component while making investment in mutual funds.

The study successfully identifies the antecedents to customer preferences while investing in mutual funds. It attempts to map these antecedents to the dependent variables in order to understand the factors affecting the preference of customers when they decide to invest in mutual funds. This study also adds a new dimension to the research on mutual fund which is a departure from the existing literature. Such analysis will help the market analysts and the investment bankers to create market segments and get useful insights into consumer investment psychology. This will also assist them to predict the consumer behavior while they make such investments.

Such analysis will also help in further research and help support the bankers and analysts to create helpful instruments that would assist them to increase the market growth and also facilitate the penetration into new market arenas as mutual funds are often treated with skepticism in Indian markets. Lastly, the study can be extended to other assets, and, further comparisons can be made on various other parameters. The effect of socio-demographic variables on investment pattern is a new area which has been explored in this paper. The research is an attempt to create a model to determine the antecedents influencing the choice of mutual fund investment in India. Identification of prominent

factors, considering Chi-square test and proposing models by PCA, is the novelty of this study

Research Implications and Limitations

This study will help market analysts and investment bankers to create market segments and get useful insights into consumer investment psychology. This will also assist them to predict the consumer behavior while they make investment decisions. It will also facilitate the penetration into new financial the market as MFs are often treated with skepticism even now in India.

The study can be extended to other assets, and, further comparisons can be made on various other parameters. Due to scarce resources, the study was limited to certain areas. The unexplored areas could pave the way of research for further study.

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Annexure

Questionnaire

Respected Sir/Madam

I am Preeta Varma, Research Scholar, pursuing Ph.D. on the topic entitled "Retail Investors' Investment Patterns In Mutual Funds" under the guidance of Dr. Chinmoy Jana, Professor, Department of Management, IISWBM, Calcutta University, Kolkata.

I kindly request you to fill up this questionnaire with your valuable attention and cooperation, which will help me complete my research work effectively and efficiently. The information provided by you will be kept confidential and will only be used for the said research.

Thank you

1. Name: _____
2. Gender: (1) Male [ ] (2) Female [ ]
3. Age: (in Years)

   (1) Below (30 [ ] (2) 30-40 [ ] (3) 40- 50 [ ] (4) 50-60 [ ] (5) Above 60 [ ]
4. Educational Qualification:

   (1) Higher Secondary [ ] (2) Graduate [ ] (3) Post Graduate [ ]

5. Annual income:

   (1) 2 - 6 lakh [ ] (2) 6-10 lakh [ ] (3) More than 10 lakh [ ]

6. Which investment option do you feel is the best for Investing?

   (1) Equity shares [ ] (2) Mutual funds [ ] (3) Fixed Deposits [ ] (4) Gold [ ] 5) Real Estate [ ]

7. If you invest in mutual fund – how frequently do you invest in mutual fund?

   (1) Anytime [ ] (2) Monthly [ ] (3) Quarterly [ ] (4) Yearly [ ]

8. You would prefer to invest for how long?

   (1) Less than 1 Year [ ] (2) 1-3 years [ ] (3) More than 3 Years [ ]

Please tick the box below that reflects your response to each of the statements below with:

1= very low, 2= Low, 3= Moderate, 4= High 5=Very high

Attributes	1	2	3	4	5
09. On the basis of RETURN, How do you rate mutual fund? 10. On the basis of RISK, How do you rate Mutual Fund? 11.On the basis of LIQUIDITY, How do you rate Mutual Fund?					
12. On the basis of EASE OF INVESTING, How do you rate mutual fund?					
13. On the basis of TAX SAVING, How do you rate mutual fund?					