Effect of Age on Financial Decisions

Shruti Maheshwari
Research Scholar
Banasthali Vidhyapith

Dr. Manish Mittal
Principal
Acropolis Faculty of Management and Research

Abstract

There are different views with reference to age as an influential demographic factor in decision making. Some studies claimed age is just a number and does not represent any constraint or limitation. On the contrary some studies proof that cognitive abilities of an individual declines as he age. The present study is an attempt to analyze the impact of this crucial demographic variable on investment decision making of the individual investors. Five investment characteristics are being included namely investment objective, time horizon, selection parameter, comparison benchmark and portfolio revision. Data is collected from respondents all over India. Chi square test and fisher exact test is been used to analyze the data. The study concludes that age does have an impact over financial decisions of investors. The reported variations in investment preference may be due to varying cognitive abilities or the difference in need and priorities of individuals at different stage of life.

Key words: *investment objective, age, investment horizon, chi square test*

INTRODUCTION

Investing is a lifelong process. Age, as it is said is just a number. Every individual experience different life cycle stages as they age. Their needs and requirements change with progressing age. The responsibilities they shoulder change their priorities in life. These changes get reflected in an individual's financial decision also. The co relation of investment strategy and risk appetite also changes as a person age. An individual's ability to analyze, process and retain information is at its peak around 20 years of age. This is known as fluid intelligence. But his crystallized intelligence which is defined as experience and knowledge actually builds with age. Their financial judgments, social skills and general well being improve with age.

The process of saving and investment is always motivated by some objective. These objectives are defined based on attitude, perception and situation of an individual throughout their lives. Therefore at every stage of your life, you will need a different investment strategy and the one of the factor that will influence your strategy would include age.

With respect to investment, individuals in 20's and early 30's are in their golden age of investment. As investors in this category has long years ahead of them to save and invest. As a long span of time is available with them investors can invest with long term objective, take more risk of investing in to unconventional financial products. Senior investors and old investors have a different decision making style and choice of investment products.

Therefore, at each stage of your life, not only you need a different investment strategy but the factors that will influence your strategy include age, risk capacity and investment amount. The present study has been undertaken to analyze the impact of age as a influencing factor on financial decisions of individual investors.

LITERATURE REVIEW

Wang and Hanna (1997) observed that relative risk aversion decreased as people aged (i.e., the proportion of net wealth invested in risky assets increases as people age) when other variables are held constant. Research concluded very important observation that risk tolerance increased with age probably due to the fact that their investment in risky asset class provide decent returns and therefore rejected the constant life-cycle risk aversion hypothesis.

Agarwal et.al (2009) studied financial decisions of individual investors over their life cycle. They primarily focused on financial mistakes committed by investors in financial market. To identify this they studied database of 10 types of credit transactions like fee payment, interest, use of credit card etc. Their findings highlighted that middle aged investors make fewer mistake in comparison to young and old investors. They revealed that cost minimizing performance in financial market occurs around the age 53 years. They suggested various strategies to regulators based on their findings, laissez-faire, disclosure, nudges, financial "driver's licenses," advance directives, fiduciaries, asset safe harbors, and ex post and ex ante regulatory oversight.

Charles and Kasilingam (2013) focused on various demographic biases. They have studied various demographic variables which have an impact on behavioral biases that later on effects the financial decisions. To analyze they considered 742 individual investors that invest or trade on Indian stock market. The collected data was analyzed using SPSS software and applying statistical tools like cross tabulation and correspondence analysis. The study concluded that age is the most influential factor amongst all other factors that has a bearing on investment decisions of individual investors.

Jain & Mandot (2012)conducted their research in Rajasthan India and concluded that there is a negative correlation between Marital Status, Gender, Age, Educational Qualification and Occupation of the investors' also there is a positive correlation between Cities, Income Level and Knowledge of the investors' with level of risk.

Lusardi (2012) studied in United States the level of financial literacy among the older population. He observed that financial illiteracy is very common and it is more commonly found in older women. Moreover, older individuals display poor outcomes in both asset and debt management and thus take poor investment decision which are cause of concern.

Choi et al., (2014) observed in particular, a substantial negative relationship between age and the consistency of choices with economic rationality. As per the research study conducted in 2014 people over 55 years are less rational than younger investors. Specifically, older people's choices are much more likely to violate transitivity.

Edelman (2015) contradicted to the results presented by many researches that say that there is a phenomenon of cognitive decline due to reduction of fluid intelligence as you age. He presented new research of University of California which proposes that the financial knowledge and expertise that one has imbibed in his lifetime through experience and learning offsets the natural decline in individual's cognitive ability. In case of financial decision making the crystallized intelligence has proved to be more important that fluid intelligence. Hence the accumulated knowledge over weigh the natural decline. The article concludes that neuroscience as well as behavioral finance both must be considered in the discovery of human mind and its influence on financial decision making.

Onsomu (2015) studied investors of Nairobi Securities Exchange, Kenya in order to know the relationship between age and investment decisions. The study analyzed affect of behavioral biases on an individual based on their age. The analysis tools used in the study were descriptive statistics, Chi-square test, and cramer's V. The study concluded that age of the investor has significant association with over confidence bias. While an insignificant association with representativeness, confirmation bias and disposition effect at 5% level of significance.

Gamble et.al (2015) analyzed the impact of cognition on financial decision making of aging individuals. Declining cognition of 377 individuals was studied over the period under review. Three aspects of financial decision making were considered namely financial literacy, confidence and responsibility for participant's financial decisions. The study revealed that declining cognition is associated with decline in financial literacy and getting help with their finances. Declining cognition and declining financial literacy although had no impact on individual's confidence on their financial knowledge.

Arora and Kumari (2015) identified the effect of demographic variables that is age and gender on risk taking ability of investors through behavioral biases loss aversion and regret. The research was conducted on 450 investors from northern part of India. Path analysis was use to test the collected data The results reported from the study were investors in age bracket 41 to 55 years showed more aversion to loss and regret.

Lachs and Han (2015) observed in their research that age-associated financial vulnerability is quite common pattern of risky behavior related to money. It exposes elderly people at substantial risk for a considerable loss of resources that might result in dramatic changes in their quality of life and is inconsistent with choices the person made when they were younger. They also concluded that older people are not able to manage their own financial affairs.

Chougule (2017) discussed basic rules that are applicable to every individual investor's at different stage of life. Having a disciplined saving habit is an important initial step of a successful investment strategy. The next step suggested was to make an investment plan. Investment plan largely depends on investor's age, amount of funds they wish to invest and their risk capacity. Lastly it was concluded that a successful investment depends on your life stage and approach to financial management. Three discipline of investment process are setting a goal, investing wisely and monitoring the investment at appropriate time interval.

Research Methodology

Research Objectives

The objective is to study the impact of age of investor over various decisions related to investment in financial products.

A self administered questionnaire was used to collect data. The questionnaire was prepared keeping in view the targeted class of investors in terms of desirable characteristics of good sampling research design. High level of validity was ensured through pilot test of the questionnaire with 55 respondents. Their views were incorporated in the final questionnaire.

Convenient sampling method was used to select the respondents. The participants were contacted directly or through internet. The data from the targeted sample was collected during January- June 2015. The total number of questionnaires distributed was 300. We received 158 fully responded questionnaires. Thus the response rate was 52.66%. In terms of geographical location, the questionnaire was distributed to investors across India.

This research is concerned with investigating differences in the investment decision making based on age of investors.

As per the need of the present study, chi square test and Fisher Exact test seem to be most appropriate method for analysis. The analysis of data was carried out using Statistical Package for the Social Sciences (SPSS) 20.0 for Windows. Following are the hypothesis being tested:

1) H0: There is no impact of age on choice of investment objective of investors
2) H0: There is no impact of age on criterions considered by investors in choosing a financial product.
3) H0: There is no significant difference between investors belonging to different age bracket in the benchmark used to compare portfolio.
4) H0: There is no impact of age on the time duration investors consider to revise their portfolios.
5) H0: There is no impact of age on investment time horizon preferred by investors.

Data Analysis

Investment Objective

As it can be seen in Table 1 the analysis of investment objective reveals that the most preferred investment objective is capital appreciation followed by future security, regular income and tax benefit.

To test the impact of age on choice of investment objective Chi-square test was applied (Table 2). The outcome of test statistics suggests that null hypothesis is rejected at 5% level of significance which indicates that there exists a difference in the choice of investment objective amongst investors of belonging to different age brackets. Most of

the investors in age bracket 18-25 years consider capital appreciation as primarily important. Investors in age bracket 26-35 years give preference to capital appreciation and future security. Investors of age 36-45 years consider future security as most important. Equal number of investors in age bracket above 45 years has preferred capital appreciation as well as future security.

Table 1: Cross Tabulation - Age and Investment Objective

What is your investment objective				Age		
		18-25 years	26-35 years	36-45 years	Above 45 years	Total
Capital Appreciation	Count	26	18	9	6	59
	% within Gender	47.27	36.73	28.13	27.27	37.34
Regular Income	Count	8	9	5	5	27
	% within Gender	9.09	10.20	15.63	27.27	13.29
Tax Benefit	Count	5	5	5	6	21
	% within Gender	9.09	10.20	15.63	27.27	13.29
Secure Future	Count	16	17	13	5	51
	% within Gender	29.09	34.69	40.63	22.73	32.28
Total	Count	55	49	32	22	158
	% within Gender	100	100	100	100	100

Table 2: Chi Square test – Age*Investment Objective

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.447[a]	9	.022
Likelihood Ratio	20.630	9	.014
Linear-by-Linear Association	.571	1	.450
N of Valid Cases	158		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 1.15.

Investment Horizon

The time period for which investor is ready to keep his funds invested into a financial product is known as investment horizon. Majority preferred long term over short term investment horizon.

Table 10 presents the result of chi-square test applied to test the statistical significance of age and investment horizon. The result suggests that null hypothesis is rejected and there is a relationship between age and investment horizon. Young investors below 35 years of age prefer long term horizon while investors above 35 years chose short term investment horizon.

Table 9: Cross Tabulation: Age and Investment horizon

What is the time horizon of your investment?				Age		
		18-25 years	26-35 years	36-45 years	Above 45 years	Total
Short term	Count	26	11	26	13	76
	% within Gender	47.27	22.45	81.25	59.09	48.10
Long term	Count	29	38	6	9	82
	% within Gender	52.73	77.55	18.75	40.91	51.90
Total	Count	55	49	32	22	158
	% within Gender	100	100	100	100	100

Table 10: Chi Square test – Age*Investment Horizon

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.055[a]	3	.018
Likelihood Ratio	9.826	3	.020
Linear-by-Linear Association	5.458	1	.019
N of Valid Cases	148		

a. 0 cells (0.00%) have expected count less than 5. The minimum expected count is 4.82.

Benchmark to compare portfolio performance

Investors generally expect a return based on a benchmark considered by them. They plan their investment strategy and are satisfied with their investment rate of return if it meets or beats the benchmark targeted by them. Table 3 illustrates various benchmark preferences of the respondents. Most of the respondents set their own personal targets may be based upon their past experience or some analysis and future expectation. The next choice indicated was interest on saving and bank fixed deposit which is assumed to be risk free return. Next is stock market return and return achieved by family/friends.

Chi-square test was applied to analyze the impact of age on benchmark return considered by investors to compare their portfolio performance. The outcome of the test reveals that there is a significant difference in investors of different age category, as the null hypothesis is rejected at 5% level of significance. Most of the investors in age bracket 18-25 years prefer to set their own personal targets. Majority of investors in age bracket 26-35 years compare their portfolio performance with return on market index. 36-45 years investors mainly consider return on saving & fixed deposit. Equal investors above 45 years choose return on saving deposits and personal targets.

Table 3: Cross Tabulation – Age and Comparison Benchmark

What do you use as benchmark to compare your portfolio performance?		Age				
		18-25 years	26-35 years	36-45 years	Above 45 years	Total
Interest on saving and fixed deposit accounts	Count	13	14	11	6	44
	% within Gender	23.64	28.57	34.38	27.27	27.85
Return on market index sensex or nifty	Count	8	16	7	5	36
	% within Gender	9.09	10.20	15.63	22.73	12.66
Investment return achieved by family/friends	Count	5	5	5	5	20
	% within Gender	9.09	10.20	15.63	22.73	12.66
My own personal targets of returns	Count	29	14	9	6	58
	% within Gender	52.73	28.57	28.13	27.27	36.71
Total	Count	55	49	32	22	158
	% within Gender	100	100	100	100	100

Table 4: Chi-square test – Age*Comparison Benchmark

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.511[a]	9	.030
Likelihood Ratio	19.094	9	.024
Linear-by-Linear Association	2.624	1	.105
N of Valid Cases	158		

a. 0 cells (0.00%) have expected count less than 5. The minimum expected count is .23.

Selection Parameter

An investment product is evaluated based on several selection parameters and chosen if the financial instrument meets the investor's requirement. Table 5 displays the parameters reported by investors as primarily important criteria before taking a financial decision. Return is the crucial parameter for majority of investors followed by risk, tax benefit, expense structure and simplicity. Majority of investors in all age categories considers return on financial instrument as most crucial parameter.

Since the expected count of 12 cells was less than 5 Fisher exact test was applied to test the association between age and selection parameter (Table 6). It can be said from the test result that null hypothesis is accepted and there exist no difference in selection parameter considered by investors while making an investment decision.

Table 5: Cross Tabulation – Age and Selection Criterion

What is your criterion in selection of investment avenue?		Age				
		18-25 years	26-35 years	36-45 years	Above 45 years	Total
Return %	Count	27	24	21	7	79
	% within Gender	49.09	48.98	65.63	31.82	50.00
Risk Profile	Count	21	13	6	6	46
	% within Gender	38.18	26.53	18.75	27.27	29.11
Expense Structure	Count	3	2	3	0	8
	% within Gender	5.45	4.08	9.38	0.00	5.06
Simplicity of financial instrument	Count	2	4	0	2	8
	% within Gender	3.64	8.16	0.00	9.09	5.06
Tax benefit	Count	2	6	2	7	17
	% within Gender	3.64	12.24	6.25	31.82	10.76
Total	Count	55	49	32	22	158
	% within Gender	100	100	100	100	100

Table 6: Fisher Exact test – Age*Selection Parameter

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22.517[a]	12	.032
Likelihood Ratio	22.328	12	.034
Fisher's Exact Test	17.918	1	.375
Linear-by-Linear Association	.788		
N of Valid Cases	158		

a. 12 cells (60.00%) have expected count less than 5. The minimum expected count is .34.

Portfolio Revision

The time interval after which an investor makes certain revision in his portfolio is referred to as portfolio revision. Majority of surveyed investors preferred to revise their portfolios daily. The next time frame chosen by investors is quarterly.

Chi square statistics was used to identify influence of age of preference of investment horizon. The result suggests that null hypothesis was rejected at 1% level of significance which means that age is an important factor determining the time to maturity of a financial product preferred by investors. Majority of investors in age bracket 18 to 25 years preferred to revise their portfolio daily. Investors with 26 to 35 years of age mainly revise between quarterly. Investors above 36 years preferred prefer to revise yearly.

Table 7: Cross Tabulation – Age and Portfolio Revision

How often do you revise your portfolio?				Age		
		18-25 years	26-35 years	36-45 years	Above 45 years	Total
Daily	Count	27	15	6	5	53
	% within Gender	49.09	30.61	18.75	22.73	33.54
Quarterly	Count	5	24	5	5	39
	% within Gender	32.73	10.20	50.00	31.82	29.11
Yearly	Count	18	5	16	7	46
	% within Gender	32.73	10.20	50.00	31.82	29.11
More than a year	Count	5	5	5	5	20
	% within Gender	9.09	10.20	15.63	22.73	12.66
Total	Count	55	49	32	22	158
	% within Gender	100	100	100	100	100

Table 8: Chi Square test: Age*Investment horizon

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.349[a]	9	.000
Likelihood Ratio	25.570	9	.002
Linear-by-Linear Association	10.217	1	.001
N of Valid Cases	148		

a. 0 cells (0.00%) have expected count less than 5. The minimum expected count is .46.

Conclusion

Social science has documented that as people age their cognitive skills decline. The same phenomenon has been researched in the field of financial decision making. Investors are assumed to vary in their cognitive and thus decision making abilities according to their age. Also their priorities and requirements tend to change with their age. As age is a factor that signals the stage of life cycle in which an individual ideally is.

The present research attempted to identify such association between age of investors and financial decisions. Five investment characteristics namely investment objective, time horizon, benchmark comparison, selection parameter and portfolio revision was studied. The analysis found that all these investment characteristics are influenced by investor's age except selection parameter. Investors irrespective of their age gave choice to return on financial product as their prime investment criteria. Therefore it can be concluded that age of investors have an influence over investor's financial decision making.

From the above study it can be inferred that demographics and other psychological factors influence the investment decisions and decision making process. An in-depth study of each of these variables will give a valuable insight to the issuers, marketers, financial advisors and regulators. This would give an understanding of why a pattern investment pattern is displayed by investors. It would be easy to categorize them, understand their needs and provide them a product that matches their requirement.

References

1. Agarwal S, Driscoll J C. and Gabaix X and Laibson David (2009), "The Age of Reason: Financial Decisions over the Life-Cycle with Implications for Regulation", *Brookings Papers on Economic Activity*, Vol. 40, pp. 51–117.
2. Arora M and Kumari S (2015), **"**Risk Taking in Financial Decisions as a Function of Age, Gender: Mediating Role of Loss Aversion and Regret", *International Journal of Applied Psychology*, Vol.5, No.4, pp.83-89.
3. Charles A and Kasilingam R (2013), "Does the Investor's age Influence Their Investment Behaviour?", *Paradigm*, Vol.17, No. 1-2, pp.11-24.
4. Choi S, Kariv S, Muller W and Silverman D (2014), "Who is (More) Rational?", American Economic Review, Vol.104, No.6, pp. 1518-1550.
5. Chougule A L (2017), "Investing through life's stages: Know the basics", The Free Press Journal, available at http://www.freepressjournal.in/finance/investing-through-lifes-stages-know-the-basics/1103807, accessed on 23 November 2017.

6. Edelman R (2015), "How Does Aging Affect Your Financial Decisions?" *Inside Personal Finance*, available at https://www.edelmanfinancial.com/education-center/articles/how-does-aging-affect-your-financial-decisions
7. Gamble K J, Boyle P A, Yu L and Bennett D A (2015), "How Does Aging Affect Financial Decision Making?", *Centre for Retirement Research at Boston College*, Vol.15, NO.1.
8. Jain D and Mandot N (2012), "Impact of Demographic Factors on Investment Decision of Investors in Rajasthan", *Journal of Arts, Science & Commerce*, Vol.3, No.2, pp.81-92.
9. Lachs M S and Han S D (2015), "Age-Associated Financial Vulnerability: An Emerging Public Health Issue", *Ann Intern Med*., Vol.163, No.11, pp.877-878.
10. Lusardi A and Mitchell O S (2014), "The Economic Importance of Financial Literacy: Theory and Evidence", *J. Econ Lit*, Vol.5, No.1, pp 5-44.
11. Onsomu Z N (2015), "Effect of Age on Investor Decisions", *International Journal of Innovative Research & Development*, Vol. 4, No.12, pp. 120-123.
12. Wang H and Hanna S (1997), "Does Risk Tolerance Decrease With Age?, *Financial Counseling and Planning*, Vol.8, No.2, pp.27-32.