ASSESSING THE IMPACT OF MACROECONOMIC ANNOUNCEMENT ON INVESTOR'S PERCEPTION: BASED ON GENDER & AGE PARAMETERS

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ABSTRACT

The concept of investor perception, decision making and rationality have had a long standing in the study of Behavioral Finance. Given the vastness of the concept in Behavioral Finance, it is still considered an emerging science. The purpose of the particular research is to analyse investor perception during macroeconomic announcement owing to gender and age of investors for which data has been collected with help of questionnaire by using purposive sampling technique from 200 individual investor participants of SENSEX and NIFTY.

Keyword: Macroeconomic Announcements, Investor Perception, Indian Stock Market, Investor Behavior, Individual Investor, Gender, Age.

I. INTRODUCTION

The extension of merits of investigating the various factors influencing perception of individual investor have long standing in the literature of previous researches as the findings have significant implications. Since 1960's, theories attempting to explain investor perception in regards to gradual release of various types of information in the market environment and their influence on its movements have long been in discussion and scrutiny. Different investors react differently to same type of news or sometimes may show a similar behavioral pattern, it is one of the most complicated subjects of unravelling the human mind. Investments are driven by various psychological objectives and a constant stimulus is rippled in perception of individual investors by the influence of newly injected macroeconomic announcements from time to time.

Investor perception is process, by way of which an individual selects the most opportune investments to the best of their knowledge which will provide most satisfaction of their objectives **(Rao & Patel, 2020)[17]**. And this knowledge of individual investors to be successful is largely dependent on information available. The traditional paradigm suggests the individual investors to be rational, meaning that they make updates in their decisions with the reception of fresh information **(Barberis & Thaler, 2003)[1]**. Any efficient market is one which, the available information is clearly visible in its market prices, which is ideal in a market providing signals for

satisfactory allocation of resources **(Fama, 1970)**[7]. There has been evidence suggesting financial markets in the informational role has been impaired due to fluctuations in investor beliefs **(Benhabib et al., 2016)**[2]. Financial markets are always considered as perfect barometer of where a country's economic developments are headed because there exists a strong inter-dependence between the two **(Mazuruse, 2014)**[14]. Thus, even if a market is operating efficiently, individual investors denoted as significant subsets may not be efficient in utilizing all the available public information **(Winsen, 1976)**[21]. Macroeconomic announcements form a large part of this publicly available information, which has been scrutinized in different studies under different combinations of announcements considered, observed frequencies of these announcements, financial instruments and markets and time period of the study but rarely with reference to individual investors as primary subject in the matter. Thus, the purpose of the study is to shine the light on the analysis of the impact of macroeconomic announcement on investor perception based on different demographic parameter such as gender and age.

II.   OVERVIEW OF PREVIOUS RESEARCHES

Information released on macroeconomic announcements can be used to establish association with forecasting of market prices, based on intuitions. Even though certain signals of macroeconomic nature are still unproven yet financial analysts ranked these signals in association with market price forecasting as high influential **(Zielonka, 2002)**[22]. And deem some macroeconomic determinants to be of value for prediction of market movements **(Lorie et al., 1985)**[12]. Individual investors sometimes fail to understand the adequacy of the information now so readily available. Present and anticipated macroeconomic announcements are capable of motivating investment decisions **(Khan et al., 2017)**[11]. Individual investors are continuously processing the newly injected information **(Veronesi, 2000)**[20]. Constantly upgrading their knowledge of the market economy; what is happening and what could happen in foreseeable future. They do so to reassess their pledge to investments, and may so decide to hold further, invest more or sell their positions **(Smith, 1971)**[18].Earlier studies have marked that individual investors respond in different ways to different nature of news, good and bad. But a consideration of influence of macroeconomic announcements over investor's perception is still lacking **(Ikizlerli et al., 2019)**[8]. It can be said that, good and bad, macroeconomic announcements have the tendency to induce trading reactions among individual investors**(Nofsinger, 2001)**[16].

In regards to new information, depending on individual investors socioeconomic characteristics such as age, investor perception varies **(DaSilva & Giannikos, 2006)**[5]. Choices and perception of individual investors have the potential to differ according to their demography **(Chin, 2012)**[3]. Demographic traits such as gender have become the focal point in behavioral researches, of late **(Katper et al., 2019)**[10]. Focus on the decisions of independent women and how they differed from that of independent men has also been asserted **(Embrey & Fox, 1997)**[6]. Certain studies have found women to more averse to risk than men **(Sung, 1997)**[19] while others found male and

female equally averse but when considering the proportion of the risk factor male were more risk tolerant than women**(Lutfi, 2011)**[13]. As an individual investor's age grows so does his investing decisions become mature and rational**(Jains & Dashora, 2012)**[9]. Among all demographic factors the capacity of taking risks is decided predominantly by gender and age**(Dash, 2010)**[4].

III. OBJECTIVE OF THE STUDY
i. To study the relationship between Gender and investor perception during macroeconomic announcements.
ii. To study the relationship between Age and investor perception during macroeconomic announcements.

IV. HYPOTHESES OF THE STUDY
i. H_0^a: There is no significant relationship between Gender andinvestor perception during macroeconomic announcements.
ii. H_0^b: There is no significant relationship between Age and investor perception during macroeconomic announcements.

V. RESEARCH DESIGN & METHODOLOGY
i. *Sample, Sampling Method and Sample Size*

Individual investors are the targeted group for the particular study. So, individual investors in India who invest in SENSEX and NIFTY have been reached out for the data collection via non-random and purposive sampling method for a sample size of 200 respondents.

ii. *Data Collection Technique*

A well-structured questionnaire divided into two parts was distributed to individual investors through online mode.First part consisting questions about individual investor's gender and age; second consisting questions designed to capture investor behavioral traits in response to different macroeconomic announcements based on 5 point Likert scale with a Cronbach Alpha score of 0.923 as shown in Exhibit 1 indicative of high reliability. Only 104 responses were found to be valid for the study out of 200.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.923	.923	12

Exhibit 1 Cronbach's Alpha Score

iii.   Statistical Tools and Techniques

Cronbach's Alphaappliedfor questionnaire scale reliability analysis. ANOVA test used to analyse and conclude any significant relationships among selected demography variables and investor perception during macroeconomic announcements. Further, application of Post-Hoc test is done to report the significant differences among sub-groups of selected demographic variables of the research.

VI.   ANALYSIS & INTERPRETATION
i. H_0^a: A significant relationship between Gender and investor perception during macroeconomic announcements is non-existent.
H_1^a: A significant relationship between Gender and investor perception during macroeconomic announcements is existent.

Gender Distribution of Investor Respondents: From the questionnaire responses, the observation was that most of respondents were male 84.6% in the study while female comprise only 15.4% as shown in Exhibit 2.

Gender	No. of Respondents	% of Respondents
Female	16	15.4
Male	88	84.6
Total	104	100

Exhibit 2 Gender of Investor Respondents

To compare the association of gender and investor perception during macroeconomic announcement one-way ANOVA test was undertaken. The test scores of ANOVA Exhibit 3 suggest that the mean difference of two groups of gender i.e., male and female were not statistically important [f (1, 102) = (1.387), p = 0.242]. Given the results, null hypothesis $H_0^a$is accepted as evidence were not statistically enough to substantiate the association between gender and investor perception during macroeconomic announcements, sincep>0.05.

		Sum of Squares	df	Mean Square	F	Sig.
inv_perc * GENDER	Between Groups (Combined)	154.731	1	154.731	1.387	.242
	Within Groups	11380.028	102	111.569		
	Total	11534.760	103			

Exhibit 3 ANOVA Table

ii. H_0^b: There is no significant relationship between Age and investor perception during macroeconomic announcements.
H_1^b: There is significant relationship between Age and investor perception during macroeconomic announcements.

Age Groups of Investor Respondents: From a glance at the questionnaire responses, it was visible in Exhibit 4 that maximum number of respondents isunder 45 years of age and 82.7% of respondents were between 25 to 35 years. This means sample comprises of mainly young investors.

Age Group	No. of Respondents	% of Respondents
Under 25 years	03	02.9
25 – 34 years	86	82.7
35 – 44 years	11	10.6
45 – 54 years	02	01.9
55 – 64 years	02	01.9
Total	104	100

Exhibit 4 Age Group of Investor Respondents

To compare the association of age and investor perception during macroeconomic announcement one-way ANOVA test was undertaken. The test scores of ANOVA in Exhibit 5 suggest that the mean of at least one of the age groups is statistically significant [$f(4, 99) = (3.172)$, $p = 0.017$]. Given the results, alternate hypothesis $H_1^b$is accepted to substantiate the association between age and investor perception during macroeconomic announcements, since $p < 0.05$.

			Sum of Squares	df	Mean Square	F	Sig.
inv_perc * AGE	Between Groups	(Combined)	1310.542	4	327.635	3.172	.017
	Within Groups		10224.218	99	103.275		
	Total		11534.760	103			

Exhibit 5 ANOVA Table

Since, the ANOVA scores for age groups is significant Post-Hoc tests is applied to identify the groups with significant mean differences. Based on the significance scores of homogeneity of variances in Exhibit 6 being $p = 0.207 > 0.05$, assumption is made that variances are equal and thus, Least Significance Difference in Post-Hoc Tests is chosen.

Levene Statistic	df1	df2	Sig.
1.505	4	99	.207

Exhibit 6 Test of Homogeneity of Variances

With a scan of results of LSD post-hoc test in Exhibit 7, multiple comparisons depict various age groups to have considerable mean differences. Age group 25 – 34 years has significant mean difference from age groups 35 – 44 years and 45 – 54 years of7.89 and 17.57 respectively. Age group 45 – 54 years has significant mean difference from 55 - 64 years of -25.00.

Dependent Variable: Investor Perception during Macroeconomic Announcement
Least Significant Difference [LSD]

(I) AGE	(J) AGE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Under 25 yrs.	25 - 34 yrs.	-3.06977	5.96874	.608	-14.9130	8.7735
	35 - 44 yrs.	4.81818	6.61918	.468	-8.3157	17.9521
	45 - 54 yrs.	14.50000	9.27698	.121	-3.9075	32.9075
	55 - 64 yrs.	-10.50000	9.27698	.260	-28.9075	7.9075
25 - 34 yrs.	Under 25 yrs.	3.06977	5.96874	.608	-8.7735	14.9130
	35 - 44 yrs.	**7.88795***	**3.25415**	**.017***	**1.4310**	**14.3449**
	45 - 54 yrs.	**17.56977***	**7.26900**	**.017***	**3.1465**	**31.9930**
	55 - 64 yrs.	-7.43023	7.26900	.309	-21.8535	6.9930
35 - 44 yrs.	Under 25 yrs.	-4.81818	6.61918	.468	-17.9521	8.3157
	25 - 34 yrs.	**-7.88795***	**3.25415**	**.017***	**-14.3449**	**-1.4310**
	45 - 54 yrs.	9.68182	7.81192	.218	-5.8187	25.1824
	55 - 64 yrs.	-15.31818	7.81192	.053	-30.8187	.1824
45 - 54 yrs.	Under 25 yrs.	-14.50000	9.27698	.121	-32.9075	3.9075
	25 - 34 yrs.	**-17.56977***	**7.26900**	**.017***	**-31.9930**	**-3.1465**
	35 - 44 yrs.	-9.68182	7.81192	.218	-25.1824	5.8187
	55 - 64 yrs.	**-25.00000***	**10.16243**	**.016***	**-45.1645**	**-4.8355**
55 - 64 yrs.	Under 25 yrs.	10.50000	9.27698	.260	-7.9075	28.9075
	25 - 34 yrs.	7.43023	7.26900	.309	-6.9930	21.8535
	35 - 44 yrs.	15.31818	7.81192	.053	-.1824	30.8187
	45 - 54 yrs.	**25.00000***	**10.16243**	**.016***	**4.8355**	**45.1645**

*. The mean difference is significant at the 0.05 level.

Exhibit 7 Post-Hoc Test

VII. FINDINGS

i. Through the ANOVA analysis Exhibit 3, it is observed that there is no considerable association between gender and investor perception during macroeconomic announcement. This points that the reaction of both male and female gender groups is almost similar in regards to their investment in the events of macroeconomic announcement.

ii. Through the ANOVA analysis Exhibit 5, it is observed that there is statistically considerable association between at least one of the age groups

and investor perception during macroeconomic announcement. This points that in events of macroeconomic announcement, behavior of different age groups is altered in regards to their stock investments.

iii. By conducting Post-Hoc test Exhibit 7, significant mean differences among various age groups was highlighted. Individual investors in age bracket 25 – 34 years reported, on average, being of perception that macroeconomic announcements have high influence on the investmentsby 7.89 points and 17.57 points than reported by individual investors in age brackets 35 – 44 years and 45 – 54 years respectively.While individual investors in the age bracket 45 – 54 years reported, on average, perceiving that macroeconomic announcements have low influence on the investments by 25.00 than reported by individual investors in the age bracket 55 – 64 years.

VIII.   CONCLUSION

The research helps throw light into understanding the variations in investor perception during macroeconomic announcements among different groups of gender and age of individual investors. Individual investors demonstrate statistically significant results of altercations across different age brackets towards their investment behavior in events of macroeconomic announcements. While gender groups of individual investors showed almost similar investment behaviors in events of macroeconomic announcements. With increasing age and experience, a decline in irrational investor perception is evident **(Nicolosi et al., 2009)**[15].

The research is constructed on small sample of individual investors of India which prohibited from accomplishing certain possible and interesting outlooks inthe research subject. Increasing the data collection number will help amplify the study findings in future with better results and exploring more investor characteristics. Certain restraints in the study might also be an outcome of biased or thoughtless answers from the respondents. The area of research is gigantic and further research should be encouraged to eradicate the past deficiencies in literature.

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