

# **ORIGINAL PAPER**

# Evaluating the linkage between Behavioural Finance and Investment Decisions Amongst Indian Gen Z investors Using Structural Equation Modeling

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#### Abstract:

The aim of this research study is to investigate the relationship between behavioural finance and investment decisions amongst Gen Z (Generation Z) investors. A structural equation modeling is employed to analyse the behavioural biases such as financial literacy, risk attitude, herding, and information search to study the linkage. Analysing the behavioural factors with the decision making power of the Gen Z investors helps in taking strategic decisions and framing trading policies. The impact of the behavioural biases on Gen Z investors is studied through a sampling survey of 144 valid respondents consisting of Gen Z investors in Maharashtra (India). The survey conducted in between January 2021 to May 2021. By applying structural equation modeling (SEM) confirmatory factory analysis is conducted to check the validity measures and path analysis is performed on how behavioural finance and investment decisions are connected. The results indicate that the biases such as financial literacy, risk attitude and information search has a positive and significant impact on the decision making of investors while the trait herding has a very weak and negative relationship with investment decisions.

**Keywords:** Behavioural Finance; Investment Decisions; Financial Literacy; Risk Attitude; Gen Z investors; Structural Equation Modeling. **JEL Classifications:** G14, E00

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## 1. Introduction

Young individuals are prepping up their game to join to low-cost investment and trading businesses and showing themselves how to contribute. From simple venture products and all-cash exchanges to complex technology driven trading and online dealings, India has seen an ocean change in the investment sector, which calls for educated financial choices as opposed to simply leaving the cash in banks. The fast change in the procedure of financial dealings after demonetisation not just put the Generation X (born between 1965 and 1980) and millennial (born between 1981 and 1996) day dreaming, even the technically driven more youthful age – Generation Z (born between 1996 and 2012) thinks that it is complex while at the same time strolls on independent way of managing their finances. When it comes to investing, Gen Z just need to access materials they require by means of the internet on their devices. They are not just confronting expanding intricacy in investment products, management and services, but also they are bound to bear financial risk later on.





The Gen Z accounts to a population of 2.5 billion people all around the world and as per the consultancy Euromonitor set to fourfold throughout the following decade to around \$33 trillion. Critically, the vast majority of individuals from Gen Z live in Asia and other developing business countries (Schroders Wealth Management, 2021).

Gen Z accounts now for the largest population group in the world ranging around 2.5 billion people. And as per the consultancy Euromonitor they make quick and easy money in comparison to other groups and it is set to reach around \$33 trillion dollars by the end of the next decade.



Source: UN, Euromonitor

#### 2. Literature review

Behavior of investors got popularised in academics on account of support of individual investors in the securities exchange has unexpectedly expanded lately. There are a few foundations for this increment. To begin with, the remarkable profit from the resources of the securities exchange, chances of bringing in cash work and accomplishing returns on invested cash. Then the high liquidity of monetary instruments which implies a financial investor could quickly change over to monetary market instrument into cash. Third, an assortment of monetary assets that implies a progression of monetary assets open to people, they can choose assets as per the targets of their venture (Akhtar and Das, 2019).

Ejaz et al. (2020) discussed about the strategy applied by global investors in the context of investment opportunities provided by international financial markets based on diversified portfolio while minimizing potential risks. Meher et al. (2020) analyzed the concept of sustainable investment considering the influence of ESG factors, such as: environment, society and corporate governance. Moreover, Spulbar et al. (2019) have conducted an advanced empirical study on volatility spillovers in certain developed stock markets, such as: USA, Canada, France and UK, concluded that financial market

volatility reacts and is permanently influenced by the buying and selling behaviour of traders and investors.

A financial investors behavioural and psychological factors impact their trading pattern (Pak and Mahmood, 2015; Sivaramakrishnan, et al., 2017; Tauni et al., 2017). The demeanour of people toward risk, impression of social impact and confidence decide the expectations of financial investors (Akhtar et al., 2018; Bali, et al., 2009) and goal shape the behavior of people. Studies back then has uncovered that risk taking behavior, social cooperation, feelings, religious faith and monetary information are the critical determinants of venture conduct and speculation choices (Korniotis and Kumar, 2011; Kumar and Goyal, 2016; Tahir and Brimble, 2011).

Shabgou and Mousavi (2016) analyzed the bahavioural factors influencing choices of likely investors in Iran, for an example of 385 respondents. The discoveries uncovered that heuristic variables, prospect factors and market factors, crowding impact factors sway on investors dynamic. Cuccinelli et al. (2016) additionally inspected Italian clients and guides financial behaviour utilizing The Theory of Planned Behaviour. It was discovered that demeanor, SN and seen social control impacted monetary behavior, while past venture and monetary education didn't have any impact on investment behavior.

Trang and Tho (2017) researched the apparent risk and performance of investment on investment behaviour in Vietnam. The examination utilized a blended philosophy, including 50 meetings and 465 disseminated surveys. The research revealed that risk emphatically affected both performance of investment and goals. In any case, financial risk has a direct constructive outcome on speculation aim. Xiao (2008) contends monetary behavior research has advanced around portraying financial behavior, understanding financial behavior, anticipating financial behavior, changing financial behavior, and growing new financial behavior. Previous literaturehave likewise shown that mentalities towards risk can be related with investment behavior(Wood and Zaichkowsky, 2004; Funfgeld and Wang, 2009). Segment factors like age, instruction, pay and abundance have likewise been affirmed to affect financial investorsmentality (Schooley and Worden, 1999; Barber and Odean, 1999; Riley and Chow, 1992;). Schooley and Worden (1999) found that investors with advanced education levels have higher level of price protections in their portfolios.

Mak and Lp (2017) studied about the performance of investment of individual investors in Hong Kong and Mainland China and attempted to differentiate the distinctions in investment performance and inclination between them. Factual strategies like Regression Analysis, Descriptive Statistics have been utilized for information investigation. The examination discovered the impact of sociological, mental furthermore, segment factors on investor's behaviour and encouraged the financial specialist organizations to make reasonable vital arrangements to direct the investors dependent on the comprehension of impacting factors.

## 2.1 Financial Literacy

Financial literacy can be described as the skill and knowledge that are essential to gather financial information and make financial decision regarding investment. As indicated by Klapper, Lusardi, and Van Oudheusden (2015), financial information is indispensable in the advanced period when there are assortments of complex financial products in monetary business sectors. Interestingly, financially educated individuals have better financial decision making abilities (Lusardi and Mitchell, 2014). These people diversify risk through circulation their investment in various monetary assets. Al-

Tamimi and Kalli, (2009) studied the financial literacy and investment decisions of UAE investors. Notably the findings revealed that a major difference was present when it comes to the financial literacy according to gender of respondents. Women have lower financial literacy level in comparison to the men. Sharma and Joshi (2015) has a similar opinion on the matter of financial literacy of women. It was found from the research that women are looking for some opportunities which helps them in empowering knowledge of finance and leads to a better decision making.

As per the survey conducted by National Centre for Financial Education in 2019 it was only 27% of Indians who are financially literate. BSE (Bombay Stock Exchange) achieved a seven crore registered users based on Unique Client Code (UCC). But the investor population was pretty less. In each of the, 62% of the investors are under 40 years old, of that 24% fall somewhere in the range of 20 and 30 years. As per BSE, the development has been driven by technically knowledgeable youthful clients, with an age profile of 20-40, who contributed 82 lakh of the one crore client augmentations from six crore to seven crore. It would be useful for the entire framework if the new participants come in with fundamental information on the structure squares of investment and the risks implied in investing (Business Line, 2021).So this study consolidated financial literacy in research system alongside the essential component of SEM to contemplate the investment behaviour and intention of individual Gen Z investors. Financial literacy and behaviour of the investors directly connects with each other.

## 2.2 Risk Attitude

Past Literature has revealed a critical positive connection between risk resistance and investors intention towards investment. Behavioural intention is a factor that inspires people to include specifically investment behaviour (Ajzen, 1991; Fishbein and Ajzen, 1977). Grable and Lytton (2003) found that there is a positive and significant relationship between the risk averse attitude and bond holdings of an investor. Alternately, it is noted that those individual investors, who need long term development of their capital and bigger profit from capital, put resources into stocks. The danger taking behavior of people persuade them to put resources into shares (Clark-Murphy and Soutar, 2004).

Shefrin and Statman (1985) propose that investor's aversion to bear the pain of disappointment related with a misfortune. Consequently, they will in general concede understanding their loss while booking their benefits consistently and term this the Disposition Effect. This hypothesis contends that investors are inclined to holding failures excessively long and selling winners too soon. The discoveries of MacCrimmon and Wehrung (1986) define the risk propensity as the willingness of people to take risk because most of the investors have a fear of loss in investment and are very likely sensitive to risk. Singh (1986) uncovered the essential guidelines for the investmentin the organization. The basic measure in investment is understanding and estimating return and risk. Many of the investors are risk averse but in order to get a better yield the investor needs to confront more risks.

Gen Z investors are ready to more risk than they have previously, as indicated by new information from E\*Trade, a Yahoo! Money article. The organization's quarterly financial investors overview tracked down that majority these majority of young investors showed that their risk resilience has expanded since Covid, far higher. E\*Trade's review, which surveyed 873 investors, tracked down that 51% of Gen Z have expanded danger resistance out of all the population (ETF TRENDS, 2020).

## 2.3 Herding

Herding according to academics alludes to the lemming-like behaviour of investors glancing around, seeing what each other is doing, and traveling toward that path. It addresses the inclination of people to mirror the activities of a bigger gathering. Chiang et al. (2012) explored the herding behaviour of investors in Pacific Basin business sectors and found that herding is emphatically connected with stock returns and adversely connected to showcase unpredictability. MoatemriOuarda et al., (2012) investigated the impacts of herding when it comes to returns, unpredictability and volume of exchange and uncovered presence of herding in both bullish and negative stages, expanded herding propensities related with higher exchanging volume and more prominent instability for the most part because of expanded action of transient investors. Likewise it was discovered that return misfortunes on stock costs highlighted destabilizing effect of groups temporarily.

Some other researchers such as: Graham (1999), Devenow and Welch (1996) highlighted the herding behaviour by defining it as people mimicking something which is not their own. As per Liem and Sukamulja (2017) herding is a subsequent conduct that a single investor follows another investor for different reasons and conditions. This behaviour is the most well-known misstep wherein investors will in general follow the greater part in settling on choosing their investment. The impact of individuals around them is the principle reason an investor has herding behaviour. An individual with herding behaviour is effectively affected by others' choices and affects changes in their investment patterns (Gozalie and Anastasia, 2015).

Kumar and Bharti (2021) explored the herding behaviour of market-wide grouping in the Indian value market during the spread of COVID-19 pandemic. The outcomes got uncover huge herding in the Indian equity market that is affected by market unpredictability. Gupta and Kohli (2021) has a similar result on their study on herding behaviour during post and pre financial crisis in Indian stock market. The evidence revealed that there is a presence of herding during post financial crisis, but not during the pre-financial crisis. This behavioural aspect of an investor becomes valuable when looked from the perspective of a financial institution.

#### 2.4 Information Search

Information search has been demonstrated to be identified with shifting degrees of contribution. As a general rule, as the individual relevance of a decision undertaking builds, increment in involvement. Profoundly purchasers have been found to seekproduct data not exclusively to increase item information during a choice, yet in addition to encounter the happiness of managing a most loved item (Petty et al., 1983). However an invetsors enduring involvement is viewed as low for most items, one might encounter high contribution with afew items on a continuous premise. The investor who has the tendency to invest on a continuous basis, has a high enduring involvement with the financial exchange.

Wynes et al, (2020) through his study found that there is a significant differences in the amount of time an investor spends for learning additional information regarding investment and the capability of the investor to recite the details about those information. Loibl et al. (2009) in their study regarding the investment behaviour of US investors were able to discover higher-instructed male investors with higher income bound to follow a high-information search methodology, affirming past investigations.

Lin and Lee (2004) recognized the variables that influenced the investor's information search behaviour towards making investment choices. Utilizing the 2000 to

2001 Macro Monitor informational index, Scholars found down that abstract information, measure of investment, risk resilience, age, and pay affected both the degree of information search and the utilization of explicit data sources, including writing, media, the Internet, companions/ family, and expert administrations. Schwarzkopf (2007) investigated the source validity to investors by giving understanding into investors insight furthermore, utilization of normal information sources. The authors found no critical contrasts in the rankings among more and less experienced investors. Respondents were found to credit responsibility or on the other hand freedom to specific sources without warrant. Shockingly, lower amount of investors was accounted for utilizing the examiner's report and fiscal summary notes in blend with fiscal summary information.

The importance of relevant information search is a must when it comes to making viable investment decisions. Even though the importance of information search is the core of an investor behaviour, there has not been that many studies which has incorporated to analyse the behaviour of investors. So this study makes use of information search as s variable to study the investor behaviour of Gen z as they has grown surrounded by technology and innovation where information of all kind is accessible. Magnify Money found that just about 6 of every 10 Gen Z investors are individuals from speculation networks or discussions, like Reddit, and almost half have gone to online media in the previous month for contributing research. YouTube channel is the top hotspot for information search among youthful investors, with 41% going to the webpage in the previous month. Other online media stages that investors visit for related information incorporate TikTok (24%), Instagram (21%), Twitter (17%), Facebook groups (16%) and Reddit (13%). Taking all things together, 46% of Gen Zers and recent college grads have utilized web-based media for putting information in the previous month (Cision PR Newswire, 2021).

# 2.5 Investment Behaviour

Investment behaviours are defined as how the investors judge, predict, analyze and review the procedures for decision making, which includes investment psychology, information gathering, defining and understanding, research and analysis. The whole process is "Investment Behavior" (Slovic, 1972; Alfredo and Vicente, 2010).

Kansaland Singh (2013) analysed investment behaviour on the basis of gender biasness. This outcome is anyway not in the line of past examinations which say that the investment behaviour of men and women have a critical distinction. Women also was found to be managing and taking high valued investment decisions just as men. The authors reasons that it might be the new monetary unrest because of which a critical change has happened in the investment practices of men and women.

Chaudhary (2013) looks at the significance of behavioural finance and its application in investment. He has additionally examined some trading approaches for investors in stocks and bonds to help them in showing and controlling their mental detours. Ngoc (2013) intend to explore behavioural factors affecting the choices investors at the Securities Companies in Ho Chi Minh City, Vietnam. He suggests that investors ought to consider cautiously before investment, however should notbe excessively concerned the earlier loss for later investment.

## 2.6 Investment Decision

Jagongo and Mutswenje (2014) contemplated the variables affecting investment decision in the Nairobi Stock Exchange, Kenya. The discoveries showed that the most significant variables that impact investment decision incorporate the firm's image,

company's status in the business, anticipated corporate income, benefit and state of the assertion, past performance of the organizations' stock, the cost per share, feeling about the economy and expected dividend by investors. Sondari and Sudarsono (2015) additionally investigated the Indonesian financial investors behaviour expectation utilizing TPB. The discoveries from information investigation utilizing PLS (Partial Least Square) showed that behaviour towards investment have altogether affected the expectation to invest, while self-viability neglected to show a critical impact on investment intention.

Alshamy (2019) investigated the factors affecting the investment decision making. The study utilised six variables consisting of heuristics, financial information, corporate governance, risk aversion, and experience were independent variables while investment decision making was dependent variable while age, gender and financial education were moderating variables. The results declared that Heuristics, Risk Aversion, Financial Information, Corporate Governance and Experience has the highest degree of influence over investor decision making process. Investors response tomarket factors, that is, stock price changes and past market patterns, is additionally essential for an investment decision and investment performance (Phan and Zhou, 2014; Waweru et al., 2008). The developed markets are well established and show whole market data, though the developing markets are questionable and displaying lopsided data. Consequently, investors in developing markets are more reliant on behavioural prejudices than the developed markets.

The main purpose of this research study is to dissect the significance of behavioural finance on investment decisions and intention of Gen z investors. The focal point of the discussion in this examination is to quantify the impact of financial literacy, attitude towards risk, herding, information search and investment decision on Gen Z.

## 3. Data collection and research methodology

India has the largest population in Gen Z than any other country in the world. It has more Gen Z population than the US and China combined and this leads to the aim to conduct a study on the linkage between Behavioural Finance and Investment Decisions amongst Indian Gen Z. The impact of the behavioural biases on Gen Z investors is studied through a sampling survey of 144 valid respondents consisting of Gen Z investors in Maharashtra (India). The survey conducted in between Jan 2021 to May 2021. The survey utilized a five-point Likert scale ranking from 1 denoting strongly disagree, to 5 meaning strongly agree. The study was divided into 6 independent variables while 4 of the independent variables consisted of 5 constructs, and the dependent variable had 3 constructs which is given below.

- 1. I have proper knowledge of how to invest my money.
- 2. I maintain a regular budget on my income and expenditure.
- 3. I have the knowledge and ability on how to make my monthly budget.
- 4. I implement technical analysis while making investment decisions.
- 5. I implement fundamental analysis while making investment decisions. Risk Attitude
  - 1. I am willing to take huge risk in return for a greater profit.
  - 2. I feel anxious and stressed when I invest my money in risky stocks.
  - 3. I keep the shares with lower value in my portfolio and sell those with higher value.

- 4. I feel sad when I keep the lower value stocks and sell the higher value stocks.
- 5. I take investment decisions separately for my each shares/stocks.

### Herding

- 1. I follow the directions of changes in the investor's decision in the stock market and implement the same.
- 2. The investment decisions I make is heavily influenced by more sophisticated respondents.
- 3. When I imitate the decisions of other sophisticated investors it makes me feel less worried.
- 4. When there is bullish trend in the market, I mostly follow other investors while making investment decisions.
- 5. When there is bearish trend in the market, I mostly follow other investors while making investment decisions.

Information Search

- 1. I discuss about my investment decisions with others.
- 2. I seek professional financial advisors help before making investment decisions.
- 3. I seek suggestions from my family and friends help before making investment decisions.
- 4. I search internet and social media networking sites before taking investment decisions.
- 5. I would like to search about the firm's expected earnings from magazines and other mediums before investing.

Investment Decisions

- 1. I invest in the market to earn profits quickly.
- 2. Past performance of firm's stock plays an important role in my investment decision.
- 3. Price per share influences my investment decision.

The questionnaire was distributed among the 150 Gen Z investors in Maharashtra whom falls under the age group of 17-22. 6 out of the questionnaires had incomplete answers, they were discarded. Rest of the 144 questionnaires were used for analysis. Structural Equation Modeling was applied to look analyse the hypothesis and it was conducted on the basis of two steps modeling approach to the estimation model and structural equation model.

# 3.1. The Structural Equation Model (SEM) - A brief approach

According to Spulbar et al. (2021), structural equation modeling or simply the acronym SEM represents a multivariate statistical analysis technique which is applied in the analysis of structural relationships, while it also represents a compound of factor analysis and multiple regression analysis. Bai Gokarna et al. (2021) conducted an empirical study using Partial Least Square-Structural Equation Modeling also known as the PLS-SEM algorithm in order to complete data analysis.

The analysis utilizes structural equation model (SEM) to assess and investigate how the behavioural biases and investment decisions of Gen Z investors are related. The theoretical model is proposed and investigated with the SPSS AMOS statistical package. Over 90 years prior, the evolutionary biologist Wright (1921, 1934) fostered the estimation of direct, indirect and overall effects stem and also, path diagram from the procedure of path analysis. As per Beauty et al. (2010), the main benefit that recognizes SEM from most other approaches is its unmistakable quality on assessing causal effects through the examination of path relationships. SEM, frequently called LISREL models:

Linear Structural Relations, is essential for the second generation multivariate information examination strategy, which can evaluate latent variables and direct causal models (Kline, 1998; Nachtigall et al., 2003; Kaplan, 2008). One of the best benefits of Structural Equation Modeling (SEM) is the capacity to incorporate latent variables in causal models (Edwards and Bagozzi, 2000). Others benefits of SEM over regression methods is: ability to survey indispensable causal relationship networks at the same time (Lowry and Gaskin, 2014); and ability to incorporate other multivariate regression models.

## 4. Empirical findings

This research study attempted to measure the linkage between investment behaviour and investment decisions of Gen Z in India. The majority of the recent research studies on behaviour finance have proposed multiple factors which affect the behaviour of investors. However, there is comparatively less number of studies focusing on the Gen Z investors response were used by applying Likert scale where 5 denotes for strongly agree, 4 for agree. 3 for neutral, 2 for disagree and 1 for strongly disagree. The findings for the study is given below. Thusly, appropriate screening of the gathered essential information is done and factual methods are applied for information investigation reason. Exploratory Factor Analysis has been applied on previously mentioned 38 variables. Prior to applying Exploratory Factor Analysis on these factors, the reliability has been checked with the assistance of IBM SPSS Statistics Software, Version 26.

Model Fit Indicators	Measured Values
CMIN	2.28
Comparative Fit Index (CFI)	.968
Goodness of Fit Index (GFI)	.972
Adjusted GFI (AGFI)	.776
Normed Fit Index (NFI)	.935
Root Mean Square Error of Approximation (RMSEA)	.051
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Table 1: Validity measurement for the model and Output of CFA

Source: Authors' calculation

Table 1 indicates the validity measurement of the model and the measures are near to the optimum range (Hoe, 2008). Moreover, table 2 shows the unstandardized measures of hypothesis testing results.

Tuble 21 Coefficient estimates of model parameters						
			Estimate	S.E.	C.R.	Р
FL	<	InvBeh	1.325	.364	1.725	.025
RA	<	InvBeh	1.468	.527	2.787	.005
Н	<	InvBeh	300	.180	-1.668	.095
IS	<	InvBeh	2.361	.680	3.470	***
Inv Dec	<	InvBeh	1.614	.287	3.572	***
FL5	<	FL	1.539	.243	4.468	***
FL4	<	FL	1.301	.334	3.890	***

 Table 2: Coefficient estimates of model parameters

Evaluating the linkage be	etween Behavioural Financ	e and Investment Decisions.
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			Estimate	S.E.	C.R.	Р
FL3	<	FL	1.724	.400	4.308	***
FL2	<	FL	1.410	.343	4.105	***
FL1	<	FL	1.336	.339	3.942	***
RA5	<	RA	1.489	.287	2.874	***
RA4	<	RA	.733	.344	2.127	.033
RA3	<	RA	1.247	.432	2.884	.004
RA2	<	RA	1.153	.432	2.669	.008
RA1	<	RA	1.505	.493	3.050	.002
HD5	<	Н	1.249	.648	2.975	.019
HD4	<	Н	1.633	.701	2.330	.020
HD3	<	Н	3.268	1.368	2.388	.017
HD2	<	Н	2.163	.886	2.442	.015
HD1	<	Н	1.096	.555	1.976	.048
IS5	<	IS	.547	.124	2.507	***
IS4	<	IS	.983	.196	5.004	***
IS3	<	IS	.627	.172	3.648	***
IS2	<	IS	.827	.190	4.351	***
IS1	<	IS	.722	.169	4.281	***
ID1	<	InvDec	1.000	.485	1.986	***
ID3	<	InvDec	2.594	.705	3.678	***
ID2	<	InvDec	2.216	.623	3.556	***

Source: Authors' calculation

Two phases are conducted in the Structural Equation modeling, specifically the measurement model assessment (MMA) and the structural model assessment (SMA). The MMA under AMOS is embraced to guarantee that the data fit the model and that the model is liberated from issues brought by reliability and validity. The constructs are determined with the assistance of Exploratory Factor Analysis (EFA) have been affirmed with the assistance of Confirmatory Factor Analysis (CFA) which is a multivariate statistical methodology that is utilized to test how well the variables address the number of constructs.

From the table 1 it is visible after 42 iterations were conducted, the structural model accomplished a good fit. Results showed that CMIN/DF was 2.280 (lower than 3), RMSEA was 0.051 (lower than 0.050), and SRMR was 0.049 (not exactly 0.08). It was likewise tracked down that the Chi-Square was 512.29 with a degree of freedom of 225. The meaning of the Chi-Square measurement was lower than 0.05 (p-esteem = 0.00) because of the enormous example size.



**Figure 3: Path Analysis** Source: Authors' calculation

The respondents are asked whether they are actively involved in making investments or do they have any intention to make investments in the future. In this context investor's perception has been analysed through various behavioural factors that are being undertaken by the investors to take viable investment decisions. The investors are asked whether they are aware and literate enough to know about the investment products and prices in market; whether they calculate and manage the risk towards investment, whether they are influenced by peer groups before making a decision, how much of a professional financial help is need and finally the constraints that helps them in taking investment decisions.

The results from Figure 3 of the study indicates a significant and positive relationship between Investment Behaviour and Investment Decision. The model explained 31 per cent of the variance in Financial Literacy (FL), 83 per cent of the variance in Risk Attitude (RA), 67 per cent of variance in Information Search (IS) but a negative and weak relationship of 9 per cent variance in Herding (H).

The Gen Z investors are asked about their ability on creating budget and managing their money, fundamental and technical analysis implemented by them while

making investment decisions. Results revealed that they do have proper knowledge of how to invest (loadings= 56 per cent) their moneyand maintain a regular budget (loadings = 59 per cent) on their income and expenditure. They have the knowledge and ability on how to make their monthly budget (loadings = 65 per cent). The generation of today has learned on how to do budgeting starting from their school days. The importance of maintaining a budget is included in most of the school curriculum nowadays. Since most of the respondents belonged to students from business school they displayed sufficient technical and fundamental analysis (loadings = 49 per cent) capable for taking investment decisions.

When the respondents were asked about their attitude towards risk in the stock market, many of them am willing to take huge risk (loadings = 32 per cent) for a huge return. At the same time the investors tend to be worried (loadings = 34 per cent) if they are making risky decisions. They are tend to make decisions such as to keep shares with lower value (46 per cent) while sell the shares with a higher value and during those times they feel sorrow (loadings = 32 per cent). They find taking investment decisions separately for each shares (loadings = 35 per cent) more suitable than a unanimous decision for all the shares in the portfolio. At these times the investors tend to look more risk averse than they are willing to take risk.

When asked about the influence their peer groups have on their investment decisions, not many has much a tendency to follow others (loadings= 27 per cent). Rather they tend to follow the more experienced investors (loadings = 40 per cent) in the market and it makes them less worried (85 per cent). During the period of bullish (loadings = 41 per cent) and bearish (per cent) following the decisions of other investors is best chosen by the respondents. This could be because it is easier to follow the group and buy the most popular stock.

Gen Z who is most advanced when it comes to gathering information through various medium had also positive attitude towards seeking help from others while making investment decisions (loadings = 48 per cent). Moreover they prefer help from financial advisors (loadings = 50 per cent) than that of family and friends (loadings = 40 per cent). A higher number of Gen z investors make avail the use of internet (loadings = 60 per cent) for information searching and they also study the firms image and earnings (loadings = 58 per cent) before making a decision.

The findings indicate that financial literacy (loadings = 63 per cent) because since Gen Z is well advanced in the field of literacy they search for mediums to increase their knowledge. The risk attitude of investors (loadings = 91 per cent) could be because the overconfident investors tend to overestimate the data available and engage in a more aggressive trade and regardless of whether their stocks have performed well or not their risk attitude has consistency and Information search (loadings = 82 per cent) of Gen z investors always increases because they are finding mediums to increase the profit. All these factors has a significant and positive impact while herding (loadings = -29 per cent) has a negative impact on Investor behaviour.

This may be because the investors may be looking for alternatives to increase their wealth with a long term view by avoiding the crowd. The investor behaviour positively affects the investment decision (loadings = 90 per cent) taken by the investors. Along with it, factors such as motivation to earn profit quickly (loadings = 28 per cent), image of the firm (loadings = 56 per cent) and price of the shares (loadings = 67 per cent) also has a significant impact of the investment decision of the investor. Thus this

findings indicate that the decision making power of Gen Z investors are influenced by behavioural factors.

## 5. Conclusions

The research study tried to fill the research gap of linkage between investment behaviour and investment decision of Gen Z investors in India. In the light of above findings, it may be stated that the behavioural biases play a huge role in the decision making of the investors. There is higher degree of financial literacy, risk attitude and information search among the Gen Z investors while a weak negative relationship in the case of herding. The knowledge that the investors could have various assessments to safeguard their self-appreciation character concerning investment might appear to be odd in a financial setting, but would not be bewildering to a few social analysts. Behavioural finance has explored numerous parts of investors conduct, and we make use of this to understand the perception of investors around us. Thus it may be useful for the financial advisors, brokers, government, organisations who can plan their own strategies to incorporate the preferences of Gen Z investors in their investment products. The research may be useful for financial education planning and organisations.

There are also some limitations of the study. Moreover, the limitation of the study can also be taken as a recommendation for future research. The study covered only a limited number of Gen Z population in Maharashtra (India). This can be extended further to rest part of the India. It is also possible the respondents have stated their preferences which differs from that of actual behaviour.

# APPENDICES

## **QUESTIONNAIRE**

India has the largest population in Gen Z than any other country in the world. It has more Gen Z population than the US and China combined and this leads to the aim to conduct a study on the linkage between Behavioural Finance and Investment Decisions amongst Indian Gen Z. The survey utilized a five-point Likert scale ranging from 1 denoting strongly disagree to 5 meaning strongly agree. The study was divided into 6 independent variables while 4 of the independent variables consisted of 5 constructs, and the dependent variable had 3 constructs.

Name:

Age:

Gender:

# A. Financial Literacy

- a. I have proper knowledge of how to invest my money.
- b. I maintain a regular budget on my income and expenditure.
- c. I have the knowledge and ability on how to make my monthly budget.
- d. I implement technical analysis while making investment decisions.
- e. I implement fundamental analysis while making investment decisions.

## **B.** Risk Attitude

- a. I am willing to take huge risk in return for a greater profit.
- b. I feel anxious and stressed when I invest my money in risky stocks.

- c. I keep the shares with lower value in my portfolio and sell those with higher value.
- d. I feel sad when I keep the lower value stocks and sell the higher value stocks.
- e. I take investment decisions separately for my each shares/stocks.

# C. Herding

- a. I follow the directions of changes in the investor's decision in the stock market and implement the same.
- b. The investment decisions I make is heavily influenced by more sophisticated respondents.
- c. When I imitate the decisions of other sophisticated investors it makes me feel less worried.
- d. When there is bullish trend in the market, I mostly follow other investors while making investment decisions.
- e. When there is bearish trend in the market, I mostly follow other investors while making investment decisions.

## **D. Information Search**

- a. I discuss about my investment decisions with others.
- b. I seek professional financial advisors help before making investment decisions.
- c. I seek suggestions from my family and friends help before making investment decisions.
- d. I search internet and social media networking sites before taking investment decisions.
- e. I would like to search about the firm's expected earnings from magazines and other mediums before investing.

## **E. Investment Decisions**

- a. I invest in the market to earn profits quickly.
- b. Past performance of firm's stock plays an important role in my investment decision.
- c. Price per share influences my investment decision.

## **References:**

- Ajzen, I., & Fishbein, M. (1977). "Attitude-behavior relations: A theoretical analysis and review of empirical research". *Psychological Bulletin*, 84(5), 888–918. https://doi.org/10.1037/0033-2909.84.5.888.
- Akhtar, F., & Das, N. (2019). "Predictors of investment intention in Indian stock markets". *International Journal of Bank Marketing*, 37, 97-119.
- Akhtar, F., Thyagaraj, K., & Das, N. (2018). "The impact of social influence on the relationship between personality traits and perceived investment performance of individual investors: Evidence from Indian stock market". *International Journal of Managerial Finance*, 14(1), 130-148.
- Alfredo, M.O., Salas-Fumas, V. (2010). "I.T. Investment and Intangibles: Evidence from Banks", SSRN Working Paper Series.
- Bai Gokarna, V., Suhan, M., Hawaldar, I.T., Spulbar, C., Birau, R., Nayak, S. & Manohar, M. (2021) Exploring the antecedents of institutional effectiveness: a case study of higher education universities in India, Economic Research-Ekonomska Istraživanja, DOI: 10.1080/1331677X.2021.1959367.
- Bali, T. G., Demirtas, K. O., Levy, H., & Wolf, A. (2009). "Bonds versus stocks: Investors' age and risk taking". *Journal of Monetary Economics*, 56(6), 817-830.

- Barber, B., & Odean, T. (1999). The Courage of Misguided Convictions", Financial Analysis Journal, 55: 41-55.
- Cäzilia, L., Hira, T.K. (2009). "Investor information search", *Journal of Economic Psychology*, 30, (1), 24-41.
- Chaudhary, A. K. (2013). "Impact of behavioral finance in investment decisions and strategies a fresh approach". *International Journal of Management Research andBusiness Strategy*.
- Chiang, T.C., Zheng, D. (2010) "An empirical analysis of herd behavior in global stock markets", *Journal of Banking & Finance*, 34(8), 1911-1921.
- Clark-Murphy, M., & Soutar, G. N. (2004). "What individual investors value: Some Australian evidence". *Journal of Economic Psychology*, 25(4), 539–555. https://doi.org/10.1016/S0167-4870(03)00056-4.
- Cucinelli, D., Gandolfi, G., & Soana, M.-G. 2016. "Customer and advisor financial decisions: the theory of planned behavior perspective". *International Journal of Business and Social Science*, 7(12), 80–92.
- Devenow, A., & Welch, I. (1996) "Rational Herding in Financial Economics," *European Economic Review*, 40, 603–15.
- Edwards, J.R., & Bagozzi, R.P., (2000). "On the nature and direction of relationships between constructs and measures". *Psychol. Methods* 5 (2), 155–174.
- Ejaz, A., Birau, R., Spulbar, C., Buda, R., & Tenea, A.C. (2020) "The impact of domestic portfolio diversification strategies in Toronto stock exchange on Canadian textile manufacturing industry", *Industria Textila*, 71, 3, 215–222, http://doi.org/10.35530 /IT.071.03.1696.
- Fünfgeld, B., & Wang, M. (2009). "Attitudes and behaviour in everyday finance: evidence from Switzerland". *International Journal of Bank Marketing*, 27, 108-128.
- Gozalie, Stephanie and Njo Anastasia. (2015). "The Influence of Heuristics and Herding Behavior on Residential Property Investment Decision Making". *FINESTA*. Vol 3. No 2. Pg 28-32
  Grable, J. E., & Lytton, R.H. (2003). "The development of a risk assessment

instrument: A follow-up study". Financial Sendees Review, 12, 257-274.

- Grace, J.B., Anderson, T.M., Olff, H., Scheiner, S.M. (2010). "On the specification of structural equation models for ecological systems". *Ecol. Monogr.* 80 (1), 67–87.
- Graham, J.R. (1999) "Herding among Investment Newsletters: Theory and Evidence," *Journal of Finance*, 54, 237–268.
- Gupta, P and Kohli, B (2021). Herding Behavior in the Indian Stock Market: An Empirical Study. Indian Journal of Finance.
- Hassan Al-Tamimi, H.A., Anood Bin Kalli, A. (2009). "Financial literacy and investment decisions of UAE investors", *Journal of Risk Finance*, Vol. 10 No. 5, pp. 500-516.
- Hernandez. B. (2020). "Millennials, Gen Z Prefer to Turn on the Risk When It Comes to Investing". *ETF TRENDS* .https://www.etftrends.com/thematic-investing-channel/millennials-prefer-to-turn-on-the-risk-when-it-comes-to-investing/.
- Hoe, S. L. (2008). "Issues and Procedures in Adopting Structural Equation Modeling Technique". *Journal of Applied Quantitative Methods*, 3, 76-83.
- Icek, A. (1991) "The theory of planned behaviour", Organizational Behavior and Human Decision Processes, 50(2), 179-211, ISSN 0749-5978.
- Jagongo, A., & Mutswenje, V.S. (2014). "A Survey of the Factors Influencing Investment Decisions: The Case of Individual Investors at the NSE". International Journal of Humanities and Social Science, 4, 92-102.
- Kaplan, D., 2008. "Structural Equation Modeling: Foundations and Extensions." 10 Sage Publications.

- Kansal, P., & Singh, D. (2013). "Investment Behaviour of Indian Investors: Gender Biasness". Sustainability & Economics eJournal.
- Klapper, L., Lusardi, A., & Van Oudheusden, P. (2015). "Financial Literacy around the World". Washington DC: Standard & Poor's Ratings Services Global Financial Literacy Survey.
- Kline, R.B., (1998). "Principles and Practice of Structural Equation Modeling". *The Guilford Press, New York.*
- Korniotis, G. M., & Kumar, A. (2011). "Do older investors make better investment decisions?" *The Review of Economics and Statistics*, 93(1), 244-265.
- Kumar, A. (2021). "Exploring Herding Behaviour in Indian Equity Market during COVID-19 Pandemic: Impact of Volatility and Government Response". *Millennial Asia*. https://doi.org/10.1177/09763996211020687.
- Kumar, S., & Goyal, N. (2016). "Evidence on rationality and behavioural biases in investment decision making". *Qualitative Research in Financial Markets*, 8(4), 270-287.
- Liem, W. K. A., &Sukamulja, J. S. (2017). Perilaku Herding pada IndeksSektoral dan Saham-Saham Terpilih. Mycological Research, 113(2), 207–221.
- Lin, H.F. and Lee, G.G. (2004), "Perceptions of senior managers toward knowledge-sharing behaviour", *Management Decision*, 42(1), 108-25.
- Lowry, P.B., Gaskin, J., 2014. "Partial least squares (PLS) structural equation modelling (SEM) for building and testing behavioral causal theory: when to choose it and how to use it" *IEEE Trans. Prof. Commun.* 57 (2), 123–146.
- Lusardi, A., Mitchell, O.S. (2014). "The Economic Importance of Financial Literacy: Theory and Evidence." *Journal of Economic Literature*, 52 (1): 5-44.
- Mak, M. K., & Ip, W. (2017). "An exploratory study of investment behaviour of investors". International Journal of Engineering Business Management. https://doi.org/10.1177/1847979017711520.
- MacCrimmon, K.R., & Wehrung, D.A. (1986). "Assessing risk propensity. In L. Daboni, A. Montesano, & M. Lines (Eds.), Recent developments in the foundations of utility and risk theory" (pp. 291-309). *Dordrecht: Reidel Press.* http://dx.doi.org/10.1007/978-94-009-4616-3 19.
- Meher, B.K., Hawaldar, I.T., Mohapatra, L., Spulbar, C., & Birau, R. (2020) "The Effects of Environment, Society and Governance Scores on Investment Returns and Stock Market Volatility", *International Journal of Energy Economics and Policy*, 10(4), 1-6, DOI: https://doi.org/10.32479/ijeep.9311.
- Narayanan B. (2021)."Financial literacy: Catch them young". *The Hindu Business Line*. https://www.thehindubusinessline.com/markets/stock-markets/financial-literacycatch-them-young/article34792263.ece.
- Nachtigall, C., Kroehne, U., Funke, F., Steyer, R. (2003). "Pros and cons of structural equation modelling". *Methods Psychol. Res.* Online 8 (2), 1–22.
- N.A. (2021). "66% of Investors Regret Impulsive or Emotional Investing Decisions, While 32% Admit Trading While Drunk". *Cision PR Newswire*. https://www. prnewswire.com/news-releases/66-of-investors-regret-impulsive-or-emotionalinvesting-decisions-while-32-admit-trading-while-drunk-301351321.html.
- N.A. (2021). "What investors need to know about Gen Z". Schroders Wealth Management. https://www.schroders.com/de/ch/wealth-management/insights/markte/ whatinvestors-need-to-know-about-gen-z/.
- Ngoc, L.T. (2013). "Behavior Pattern of Individual Investors in Stock Market". *International Journal of Biometrics*, 9, 1.

- Ouarda, M., Bouri, A., Bernard, O. (2012) "Herding Behaviour Under Markets Condition: Empirical Evidence on the European Financial Markets", *International Journal of Economics and Financial Issues*, 3(1), 214-228.
- Pak, O., & Mahmood, M. (2015). "Impact of personality on risk tolerance and investment decisions: A study on potential investors of Kazakhstan". *International Journal of Commerce*)and Management, 25(4), 370-384.
- Phan, C. K., & Zhou, J. (2014). "Factors influencing individual investors' behavior: An empirical study of the Vietnamese stock market". *American Journal of Business and Management*, 3(2), 77–94. https://doi.org/10.11634/216796061706527.
- Petty, R.E., Cacioppo, J.T., Schumann, D. (1983) "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement", *Journal of Consumer Research*, 10(2), 135–146, https://doi.org/10.1086/208954.
- Riley, W., Chow, K.V. (1992). "Asset Allocation and Individual Risk Aversion", Financial Analysts Journal, 48(6), 32–37.
- Ryan, W. & Zaichkowsky, J.L. (2004). "Attitudes and Trading Behavior of Stock Market Investors: A Segmentation Approach", *Journal of Behavioral Finance*, 5(3), 170-179, DOI: 10.1207/s15427579jpfm0503 5.
- Salam, A.A. (2019). "Factors Affecting Investment Decision Making: Moderating Role of Investors Characteristics," The Journal of Social Sciences Research, Academic Research Publishing Group, 5(4), 965-974.
- Schooley, D., D. Worden, (1999). "Investors' Asset Allocations versus LifeCycle Funds", *Financial Analysts Journal*, 55, 37–43.
- Schwarzkopf, L., David (2007), "Investors' attitudes toward source credibility", *Managerial Auditing Journal*, 22(1), 18-33.
- Shabgou, M., Mousavi, A. (2016) "Behavioral Finance: Behavioral Factors Influencing Investors' Decisions Making". Advanced Social Humanities and Management, 3, 1-6.
- Shefrin, H., & Statman, M. (1985). "The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence". *The Journal of Finance*, 40, 777-790. doi:10.2307/2327802.
- Sharma A., & Joshi, B. (2015). "Financial literacy of women and its effect on their investment choice decision". *Global Journal for Research Analysis*, 4(7), 190–192.
- Singh (1986) investment Management, Himalaya Publishing House, Bombay Nagpur and Delhi.
- Sivaramakrishnan, S., Srivastava, M., & Rastogi, A. (2017). "Attitudinal factors, financial literacy, and stock market participation". *International journal of bank marketing*, 35(5), 818-841.
- Slovic, P. (1972). "Psychological Study of Human Judgment: Implications for Investment Decision Making", *Journal of Finance*, 27(4), 779-799. Websites: http://newmops.tse.com.tw/http://www.cepd.gov.tw/.
- Sondari, M. C., & Sudarsono, R. (2015). "Using theory of planned behavior in predicting intention to invest: Case of Indonesia". *International Academic Research Journal of Business and Technology*, 1(2), 137–141.
- Spulbar, C., Ehsanifar, M., Birau, R., Babaie, A., & Doagă, D. I. (2021). "Advanced empirical research based on structural equation modeling (SEM) regarding the impact of tax revenue on GDP dynamics at EU-28 level", *Scientific Annals of Economics and Business*, 68(3), 285–307, https://doi.org/10.47743/saeb-2021-0017.
- Spulbar, C., Trivedi, J., Birau, R., Tenea, C.A., & Ejaz, A. (2019). "Estimating volatility spillovers, dynamic causal linkages and international contagion patterns between

developed stock markets: An empirical case study for USA, Canada, France and UK", *Annals of the "Constantin Brâncuşi" University of Târgu Jiu, Economy Series, "Academica Brâncuşi" Publisher*, 3/2019, 44-62.

- Tahir, I., & Brimble, M. (2011). "Islamic investment behaviour". *International Journal of Islamic and Middle Eastern Finance and Management*, 4(2), 116-130.
- Tauni, M. Z., Fang, H., Mirza, S. S., Memon, Z. A., &Jebran, K. (2017). "Do investor's Big Five personality traits influence the association between information acquisition and stock trading behavior?" *China Finance Review International*, 87, 248-255.
- Trang, P., Minh, T., & Nguyen, H.T. (2017). "Perceived Risk, Investment Performance and Intentions in Emerging Stock Markets". *International Journal of Economics and Financial Issues*, 7: 269–78.
- Waweru, N. M., Munyoki, E., & Uliana, E. (2008). "The effects of behavioural factors in investment decision making: A survey of institutional investors operating at the Nairobi Stock Exchange". *International Journal of Business and Emerging Markets*, 1(1), 24–41. https:// doi.org/10.1504/IJBEM.2008.019243.
- Wright, S. (1921). "Correlation and causation". J. Agric. Res. 20, 557-585.
- Wright, S. (1934). "The method of path coefficients". Ann. Math. Stat. 5, 161–215.
- Wynes, S., Zhao, J. & Donner, S.D. (2020). "How well do people understand the climate impact of individual actions?". *Climatic Change* 162, 1521–1534, https://doi.org/10.1007/s10584-020-02811-5.
- Xiao J.J. (2008). "Applying Behavior Theories to Financial Behavior. In: Xiao J.J. (eds)"*Handbook of Consumer Finance Research. Springer, New York, NY.* https://doi.org/10.1007/978-0-387-75734-6\_5.

#### **Article Info**

*Received:* October 18 2021 *Accepted:* October 22 2021