A Study on Factors Influencing Investment Decisions of Retail Investors in VUCA World

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Abstract

In this paper, we seek to identify the factors influencing the investment decision of individual investors. Further, in the existing pandemic situation, which will cover the scope of the VUCA environment, it is important to understand the factors influencing investor's investment decision. For this purpose, we used exploratory factor analysis to group the factors affecting an investor's investment decision. Based on the findings, we identified four factors influencing investment preferences and the reliability of these factors are supported by strong statistical measures.

Keywords: VUCA environment, Individual Investors, Investment Decision.

1. Introduction

A shareholder who purchases securities for his or her own personal account rather than for a company is a retail investor. Usually, individual investors deal in quantities much smaller than institutional investors, such as mutual funds, pensions, or university

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endowments.Retail investing typically takes place across four channels: individual investors, retail brokers (who operate in the direction of these people), managed accounts (with the account manager making the individual's buying and selling decisions), and investment clubs (groups of individuals pooling their money to make investments)in the shadow of institutional investment activity, retail investing activity pales. Retail investors not only make smaller transactions, but they also appear to trade less regularly than institutional investors, who account for the majority of the trading volume of the industry. In recent years, however, the expanding use of online trading and enhanced access to financial information hasincreased the number of retail investors. Usually, individual investors exert less control than larger institutional shareholders on corporate decisions. Although there is some debate about whether a high level of institutional ownership enhances the management of a corporation, the fact that an institutional shareholder with 10,000 votes typically exercises greater control than an average retail shareholder with only 100 votes is not contested. Small investors seldom have access to corporate boardrooms or discussions, as opposed to institutional shareholders, and seldom have the chance to speak with the executives of anorganisation directly. For this reason, many retail investors prefer to see institutional security ownership as a sign of approval, and institutional trading behaviour is easily influenced.(Tracy, 2020)

1.1 Expected Utility Theory and Investor Decision making

In an effort to describe rational behaviour when people experience uncertainty, the expected utility theory was developed by John von Neumann and Oskar Morgenstern. This theory argues that when confronted with decision-making under uncertainty, individuals should act in a specific way. The principle is "nor-mative" in this context, which means that it explains how people can act rationally. This is in relation to a "positive" theory that characterises how individuals actually behave.

Assumptions

1. (Ordering of prospects): A decision-maker may always say, given any two prospects, that one is preferred to the other or

that he/she is indifferent between them. In addition, completeness and continuity must remain. Completeness implies that all potential prospects can be categorised in such a way, and consistency (transitivity) implies that A must be preferred to C if A is preferred to B, and B is preferred to C.

2. In view of the two normal possibilities, $P1_0$ and $P2_0$ with u_1 and u_2 linked, we have:

   $P1_0 \sim P2_0$ means u1 > u2

   $P1_0 * P2_0$ means that u1 = u2

3. Equivalent norm prospects): There is one and only one value u * in view of every certain income level w * between wL and wH, so that:

   (u *, wH, wL) w * ~ P_0

4. (Rational equivalence): Given a standard compound prospect (PSC), and given its standard rational counterpart, which is a standard prospect itself (P0), then:

   PSC~P_0

5. Independence of context): A prospect P can always be expressed as a regular compound prospect (PSC), where the former's wealth levels are replaced by their standard prospects equal to them.

Utility Characteristics
- Higher wealth contributes to greater practical utility

- The equivalent of certainty is less than the estimated asset value of the prospect.

- Nevertheless, until a positive linear transformation, all utility functions for a given individual are unique.

1.2 Prospects Theory and Investor Decision Making

Prospect theory is a theory of psychology that explains how people make decisions when alternatives involving risk, probability, and uncertainty are presented. It indicates that individuals make choices

based on perceived losses or benefits. Most individuals will opt to maintain the wealth they currently have, given the option of equal odds, rather than gamble the ability to increase their present wealth. People are generally averse to the prospect of losing, so instead of taking a chance to make an equal gain, they would rather prevent a loss.

In two stages, the theory explains the decision-making process, including:

a. Editing Phase

The editing stage applies to how the choices for choice or the framing effects are characterised by individuals involved in decision-making. The effects illustrate how the wording, order, or process in which the choices are presented affects the choice of an individual.

b. Evaluation Phase

Individuals prefer to act as though they can make a choice based on the possible results in the assessment process and select the alternative with a higher utility. To calculate and compare the results of each prospect the phase uses statistical analysis. The assessment process contains two indices, i.e. the function of value and the function of weighting, which are used to compare prospects.

c. Relative Positioning

Relative positioning means that individuals appear to reflect less on their final income or asset and more on the relative benefits or losses they will earn. They would not feel better off if their relative status does not change with rises in wages. This suggests that individuals prefer to equate themselves to members of their neighbours, colleagues, and relatives and are less interested in whether they are better off than they were years ago.

d. Loss aversion

People tend to give more weight to losses rather than gains made by taking a certain option.(Ackert & Deaves, 2010)

Manyresearchers predict that volatility, uncertainty, complexity, and ambiguity are getting to become more and more prevalent

within the business world. To manage within the VUCA age businesses must remember the changes that this type of environment can cause. A VUCA environment can dismantle human resources and make them anxious, drill their motivation, pose challenges to their career moves, make constant retraining and reshaping a necessity, consume a great deal of your time and energy to fight. Further, it can increase the probabilities of individuals making unfavourable decisions. Thus, businesses needto substantially prepare themselves for the uncertainties ahead. (Content Team, 2020)

Most investors clearly find investment management hard in the VUCA world. The VUCA description for the environment provides a richness concerning the investment problem where investors are faced with higher volatility or that there's an opportunity for black swans. Volatility tells about price mechanism but doesn't specialise in deciding with issues in investment management. It's highly important and relevant as a measure of risk, but it is quite important to know the explanations and factors contributing to the VUCA scenario.(Gills, 2020)While this is one dimension, it is equally important for businesses to understand how investors perceive this VUCA environment and make sure they do not lose their confidence. This study tries to identify key variables influencing investors in investment decision within the context of the VUCA business environment.

2.Review of Literature

2.1 Volatility and Investment Decision
(Caporale et al., 2020) explored the effect of buying and selling trades by investors on Korean trade Stock market uncertainty over two crisis cases, the 1997 Asian crisis and the global financial crash of 2008. They made a comparativeanalysis of domestic vs international and institutional vs individual investors' trading behaviour. Their findings indicate that buying and selling transactions have an asymmetric impact on volatility that depends on the form of trading of investors and the stage of the business cycle.Buy orders tend to be more insightful than sell orders because in the pre-crisis periods, they mainly lower volatility, whereas selling and post-crisis buy

trades have a positive effect on volatility irrespective of who trades (institutional or individual investors) and what details (member, non-member). Most notably, decomposing total buying and selling trades into groups of traders shows that some institutional investors are more experienced traders who balance the market compared to people who often increase volatility. In the Asian crisis as a whole, but only in the pre-crisis period before the recent global financial turmoil, international investors are reducing uncertainty with their purchases and overall trading activity.

(Ederington & Golubeva, 2012) studied the effect on investor actions of stock market volatility expectations. They found that, as calculated by the VIX, aggregate net equity fund flows are closely associated with shifts in expected future stock market volatility. This means that investor purchasing decisions are mainly influenced by risk expectations of returns and sales decisions.

(Katariya, 2019) seeks to discover the effect of certain behavioural biases that have been identified: overconfidence, representativeness, herding, anchoring, cognitive dissonance, aversion to regret, the fallacy of gamblers, mental accounting, hindsight bias, loss aversion, risk perception, unreasonable reasoning about the Indian stock market decision-making process of individual investors.For the purpose of the analysis, 300 investors from the Jalgaon district are considered to belong to different strata. The questionnaire focused on various prejudices influencing investment decisions; steps taken by investors are prepared at the time of market boom and crash. Investment by panic investors transforms into major loss due to the existence of behavioural anomalies. They use to hedge position at the time of the market crash, and sell winners display cognitive dissonance at the time of boom and regret investor aversion bias.

(Wang et al., 2011)The relationship between investor behaviour and future market volatility is explored in this report. The empirical findings suggest that the two-period OLG model for the future market is in line with China's market situation. More precisely, investors with adequate information, such as institutional investors, generally follow the opposite trading strategy, while investors with

insufficient information, such as individual investors, typically embrace the trading momentum strategy.

(Watanabe, 2008)studies an overlapping model of generations with different securities and agents that are heterogeneously informed. Multiple balances are generated by the model, including highly volatile balances that even, when asset availability and potential dividends are uncorrelated across assets, strong or poor correlations may be demonstrated between asset returns. Less informed agents act rationally as followers of patterns, while better-informed agents adopt opposing strategies. Trading volume has a hump-shaped re-link with the accuracy of the information and is associated positively with absolute price shifts. Finally, comprehensive details in the highly volatile, strongly correlated equilibrium increase the volatility and correlation of stock returns.

2.2 Individual Biases and Investment Decision

(Parveen et al., 2020)in their paper discussed that the representative heuristic and overconfidence are cognitive biases that influence the decisions of the investors in the stock market. They have found there is a significant effect of overconfidence and representative heuristic on the decision making of investors and the performance of the stock market.

(Skagerlund et al., 2018)investigated the role of the cognitive and emotional factors in financial knowledge. They found that the driving force behind being financially literate lies in their ability to understand numbers and have an emotional attitude towards numbers that does not interfere with a person's everyday participation in mathematics and financial decision-making activities.

(Bossaerts et al., 2019)in their study suggests that investors view capital markets as deliberate agents with their own interests and expectations. As a consequence, the behaviour is explained by the ability to infer others' thoughts, Mind Theory. We appeal, as evidence, to the results of recent studies on: (i) forecasting in the presence of insiders, (ii) trading in bubble markets and (iii) financial contagion. Mind Theory's intensity and skill explains heterogeneity, not only in choices but also in neural activation.

(Pandey & Sehgal, 2019)experimented with the development of confidence indices for alternative investors. They also assessed the role of the sentiment-based factor in asset pricing to discuss prominent equity market anomalies such as India's size, value, and price momentum. Based on the results, they have verified that the Composite Sentiment index leads to other sentiment indices in investment literature currently in vogue.Asset pricing models, like the newer Fama French 5 factor model, are not completely capable of explaining the small firm impact captured by their sentiment-based factor that appears to be a proxy for over-reactions in price.

(Audrino et al., 2020)studied the effect on stock market volatility of sentiment and attention variables by the use of a novel and comprehensive dataset incorporating social media, news stories, information consumption and search engine data.Researchers considered the most important variables to be the interest of investors, as calculated by the amount of Google searches on financial keywords (e.g. "financial market" and "stock market"), and the average volume of firm-specific short messages posted on StockTwits. Furthermore, their analysis showed that variables of attention and sentiment couldsignificantly boost volatility forecasts, although the size of the improvements is relatively smallfrom an economic point of view.

(Schwaiger et al., 2020)studied the price demand determinants and financial professional and student satisfaction rates. They find that "professionals display the most positive price preferences and are most happy if assets first fall in price and then recover." On top of that, the quality demands of practitioners are strongest after good returns. Qualitative related trends exist among students, but the price standards of professionals are less vulnerable to framing effects.

While many research studies focused on analysing investor behaviour with few variables, the recent studies did not focus on the factors affecting the investment decisions during the VUCA situations like the pandemic that the world is facing today. Hence this research is carried out.

3. Objectives of the Study

The objectives of the study are as follows:

1. To analyse the demographic profile of the respondents.

2. To identify the factors affecting the investor's investment decision in the VUCA situations.

3. To offer suggestions for gaining investor confidence.

4. Research Methodology

4.1 Sources of Data

Primary Data: The Data required for the study is collected through primary sources. The data for the study is collected using a survey method with the help of a structured questionnaire.

Secondary Data: The study also uses relevant secondary sources of information like books, magazines, journals and websites to provide necessary support and justification for the author's arguments.

4.2 Sampling Design

Sample size: The sample size for the study is 81 respondents. The adequacy of the sample is assessed by KMO and Bartlett's test of sampling adequacy under exploratory factor analysis.

Sampling Technique: The sample required for the study is collected using convenience sampling. This is a non-probability sampling technique.

4.3 Data Collection

Fieldwork: The Data required for the study is collected during the month of June and July 2020. The respondents are not selected on a hit and mass basis. Sufficient efforts have been taken to validate that they are retail investors and their awareness about various investment avenues.

Data Processing and Analysis: The Data required for the study, as mentioned earlier, is collected with the help of a structured questionnaire. The questionnaire is divided into two parts, namely demographic profile and statements related to investment decisions.

Demographic questions are based on multiple choices, while statements related to investment decisions are based on a five-point Likert scale technique. To make the data collected suitable for further analysis, the collected data is coded numerically, and analysis is carried out through IBM SPSS 25 version. The Study uses a descriptive statistical analysis tool like percentage analysis and multivariate analysis cum data reduction technique exploratory factor analysis based on principal component analysis with varimax rotation to identify the factors affecting the investment decision of investors.

4.4 Significance of the Study

This study will benefit investment companies and behavioural finance researchers. This will enable them to understand how individual behavioural biases influence the investment decision of the retails in a volatile or risk environment. Further, this understanding will enable investment companies to give equal importance to retail investors trading behaviour and formulate strategies to maximise their profit potential. Behavioural finance researchers will get some idea on fundamental factors influencing investors decision during this uncertain situation.

4.5 Results and Discussions

Table1: shows Age profile of the respondents

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	31-40	34	42.0	42.0	42.0
	21-30	27	33.3	33.3	75.3
	41-50	14	17.3	17.3	92.6
	Above 50	6	7.4	7.4	100.0
	Total	81	100.0	100.0	

Source: Primary Data Analysis

Interpretation

Table 1 shows the Age profile of the respondents. From the above table, it is clear that 42% of the investors are in the age group of 31-

40 while 33.3% of the investors are in the group of 21-30 and 17.3 %are in the age group of 41-50, and 7.4% of investors are in the age group of above 50.

Table2: shows the Gender of the respondents

				Valid	Cumulative
Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	41	50.6	50.6	50.6
	Male	40	49.4	49.4	100.0
	Total	81	100.0	100.0	

Source: Primary Data Analysis

Interpretation

Table 2 shows the Gender of the respondents. From the above table, it is clear that 50.6% of the investors are female, while 49.4% of the respondents are male.

Table 3: shows the Education profile

			Valid	Cumulative
Education				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Professionally Qualified	34	42.0	42.0	42.0
Post Graduate	30	37.0	37.0	79.0
Graduate	11	13.6	13.6	92.6
Others	6	7.4	7.4	100.0
Total	81	100.0	100.0	

Source: Primary Data Analysis

Interpretation

Table 3 shows the Education profile of the respondents. From the above table, it is clear that 42% of the investors are professionally qualified while 37% of the respondents are postgraduates, 13.6% of the respondents are graduates and 7.4% of investors possess other qualification.

Table 4: shows occupation

Occupation				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Private sector employee	46	56.8	56.8	56.8
Others	17	21.0	21.0	77.8
Public sector employee	12	14.8	14.8	92.6
Self-employed	6	7.4	7.4	100.0
Total	81	100.0	100.0	

Source: Primary Data Analysis

Interpretation

Table 4 shows the occupation profile of the respondents. From the above table, it is clear that 56.8% of the investors are private-sector employee while 21% of the respondents are postgraduates, 13.6% of the respondents are graduates and 7.4% of investors possess other qualification

Table 5: showing KMO and Bartlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.837
Bartlett's Test of Sphericity	Approx. Chi-Square	1845.200
	df	325
	Sig.	.000

Source: Primary Data Analysis

Table 5.1 shows the results of KMO and Bartlett's test, which tells whether the collected data is suitable for exploratory factor analysis. Dumitrescu et al.(2013) stated thatthe dependence of the variables under consideration is measured by the Kaiser-Meyer - Olkin sampling adequacy measure based on the distribution of chi square. The calculated test value 1845.200 suggests a minimum likelihood of 0.0001 being incorrect by denying the null hypothesis that the matrix of association is not statistically distinct from the matrix of identity. Kaiser (1974) agrees that a check value of 0.5 will be sufficient to begin the study. The calculated KMO value of 0.837 for the given

data set is due to the large partial coefficients of correlation between the variables.

Table 5.1: showing communalities

Communalities		
	Initial	Extraction
Proper understanding regarding creation and maintenance of budgets.	1.000	.720
The working mechanism of interest rates	1.000	.754
Importance of savings	1.000	.843
Family Wealth	1.000	.809
Inflation rates	1.000	.804
Family members	1.000	.808
Interactions with non family members	1.000	.618
Unpredictability of returns	1.000	.784
Knowledge about the financial assets	1.000	.819
Chance for incurring loss	1.000	.726
Diversification of portfolios	1.000	.828
Dependence on professional investment advice	1.000	.879
Economic growth	1.000	.677
Interest rates	1.000	.862
Stability	1.000	.802
Confidence and expectations	1.000	.745
Market Psychology	1.000	.882
Natural and Man-Made Disasters	1.000	.744
Performance of other related markets	1.000	.757
Other factors	1.000	.579
Availability of Information about performances	1.000	.699
Availability of Finance	1.000	.688
Financial Knowledge	1.000	.733
Risk Diversification Opportunities	1.000	.822
Rising Volatility	1.000	.715
Sustainable Investing Opportunities	1.000	.712
Extraction Method: Principal Component Analysis.		

Source: Primary Data Analysis

Table 5.1 shows commonalties. The commonalties show how much variance in the variables have been accounted for the extracted factors. A communality value of more than 0.5 is preferable for the exploratory factor analysis. In the study, all variables satisfythe required criteria.

Table 5.2: shows Total Variance Explained

	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Compon ent	Tota l	% of Varia nce	Cumulat ive %	Tot al	% of Varia nce	Cumulat ive %	Tot al	% of Varia nce	Cumulat ive %
1	10.2 27	39.334	39.334	10.2 27	39.334	39.334	5.3 95	20.748	20.748
2	4.27 3	16.436	55.770	4.27 3	16.436	55.770	5.1 15	19.673	40.422
3	2.37 0	9.114	64.885	2.37 0	9.114	64.885	4.3 84	16.862	57.284
4	1.85 2	7.123	72.008	1.85 2	7.123	72.008	3.8 08	14.645	71.929

Source: Primary Data Analysis

Table 5.2 shows the total variance explained. Dumitrescu et al.(2013)noticed from the total variance table that four factors contain 72.008% of the total variance of the extracted factors. Field (2005) recommends retaining those factors with an Eigenvalue higher than 1(the initial variables being standardised, having, therefore, a variation of 1, thus a factor's deigen greater than 1 explains more than a single factor variable.).

Table 5.3: shows Rotated Component Matrix

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
Stability	.825			
Interest rates	.821			
Confidence and expectations	.812			
Natural and Man-Made Disasters	.784			
Market Psychology	.780			
Performance of other related markets	.774			
Economic growth	.674			
Other factors	.644			
Importance of savings		.873		

Proper understanding regarding creation and maintenance of budgets.	.833		
Inflation rates	.827		
Family members	.822		
Working mechanism of interest rates	.816		
Family Wealth	.789		
Interactions with non family members	.629		
Risk Diversification Opportunities		.856	
Financial Knowledge		.799	
Rising Volatility		.781	
Sustainable Investing Opportunities		.763	
Availability of Information about performances		.748	
Availability of Finance		.742	
Dependence on professional investment advice			.873
Knowledge about the financial assets			.865
Diversification of portfolios			.836
Unpredictability of returns			.704
Chance for incurring loss			.692
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 6 iterations.			

Source: Primary Data Analysis

Table 5.3 shows the rotated component matrix. The rotated components matrix shows the grouping of variables for the study. The data used for the study is extracted into four factors. The rotation is based on varimax.

The factor I: Market Performance
The first extracted factor is labelled as Market Performance. The extracted sub-factors are stability, interest rates, confidence and expectations, natural and man-made disasters, market psychology, the performance of other related markets, economic growth and

other factors. These sub-factors have factor loadings greater than 0.5. Thus the factor becomes reliable for results. With respect to the pandemic situation, market stability seems to be the highest consideration for investors as market stability has the highest factor correlation to 82.5% to the core factor.

Factor II: Financial Literacy

The second factor loadings are labelled as financial literacy as most of the sub-factors represent financial knowledge which an investor should be aware of to maximise their returns. The extracted sub-factors are creation and maintenance of budgets, inflation rates, family members, working mechanism of interest rates, family wealth, interactions with non-family members. With respect to the pandemic situation, savings seems to be the highest consideration for investors in financial literacy as it is the highest item correlation of 87.3% to the core factors.

Factor III: Investor Considerations.

The third extracted factor is labelled as investor considerations. These include risk diversification opportunities, financial knowledge, rising volatility, sustainable investing opportunities, availability of information about performances and availability of finance. The risk diversification opportunitieshavethe highest factor loadings of 85.6% to the core factor.

Factor IV: Risk Perception

The last extracted factor is labelled as risk perception as the sub-factors extracted are mostly associated with the risk element of financial markets and instruments. These sub-factors include dependence on professional investment, advice knowledge about the financial assets, diversification of portfolios, the unpredictability of returns, and a chance for incurring a loss. Professional Investment Advice has the highest factor loadings of 87.3% to the core factor.

5. Conclusion and Suggestion

The Global Business Environment is becoming volatile day by day. New challenges and uncertainties are creating a need to develop a

flexible business model to sustain in this VUCA world. This research study throws valuable insights into investor's consideration of financial markets and instruments. The study explores four major factors influencing investor's investment decision. In this pandemic situation, most of the investors are risk-averse. It is important for businesses and financial institution to develop a model that will ensure their sustainable business performance. This will increase investor's confidence and encourage investments from their side as well.

6. Scope for Further Research

The following for the further scope of research that can be conducted in this area

1. The study focuses only on one dimension of retail investors, i.e. individual investors. The study can be replicated with investor brokers, investment clubs and managed account holders.

2. The same study can also be replicated by making a comparative analysis of individual and institutional investors.

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