

## INDIVIDUAL INVESTOR'S BEHAVIORAL BIASES ON INVESTMENT DECISION MAKING IN UAE

**Dr. S. Edmund Christopher**

Assistant Professor, City University College of Ajman (CUCA)

Sheikh Ammar Road, Al Tallah 2 Ajman, UAE

### Abstract

Behavioral finance plays a significant role in the financial and investment decision making process. In reality, irrationality of the investors is also unavoidable and has been changing time to time. Individual investor's investment behavior is influenced by a range of biases that tinted in the behavioral finance. Hence, this research is an effort to find out the investor's behavioral biases on financial and investment decision making in United Arab Emirates. The researcher has studied many reviews of related studies based on the reviews of the literature, it is understood that individual investor's behavior is comprehensively influenced by different biases. The present study the researcher used both descriptive and inferential statistics. After gone through different behavioral biases, and conducted a pilot study from the field, five significant variables were identified by the researcher. They are over confidence, hindsight effects, disposition effects, anchoring and herding. The findings of the study show----- the positive impact on investment and financial decision making. This study will helpful to the individual investors, financial intermediaries and the stake holder who wish to investment in stock and other investments.

Key words: Over Confidence, Hindsight Effects, Disposition Effects, Anchoring and Herding, Individual Investment

---

### INTRODUCTION

In the recent past, Individual investor's involvement in the financial market has been increasing. Due to the World Wide Web and recent development in the information and communication the Individual investors are able to collect and monitor stock related information very quickly. Most of the investment decisions are happened based on their excess income and the availability or literacy of financial data. Individual investors are relaying their friends, relative, financial institutions and intermediaries to invest their surplus

money. A rule of rationality and an act of rationality are the two basic assumptions of the rationality theory. According to Ahamed Zamri Haslinder (2017), individual investor takes on the behavior which maximizes the assumed utility and the act of rationality the individual investor selects the yields maximum utility.

### **Review of Literature**

The researcher made an attempt to study the reviews of related studies in the area of behavioral biases of individual investors and their decision making. Following are the significant reviews of literature which were focused on the behavioral biases about the investment decision making. Individuals are either mostly reasonable or unreasonable in their choices. This hypothesis demonstrated that people have predispositions and psychological impediments, which prohibit them from accomplishing full discernment at the hour of dynamic (Ahmad Zamri, Ibrahim, Haslindar, Tuyon, 2017).

Study on experimental research inspected the effect of grouping conduct on expansion conduct. Results proposed that grouping conduct altogether impact nonoptimal portfolio decisions (Filiz, Nahmer, Spiwoks, and Bizer, 2018). In one of the examination impacts of crowding conduct was inspected on institutional speculator crediting this conduct to think about some distributed data and consequently shielding financial specialist's notoriety and vocation. A job of crowding conduct of common store directors inspected, and it broke down that grouping conduct affected by paper gain proportion and paper misfortune proportion. It additionally found that, however grouping conduct of shared reserve chief damages venture execution.

Additionally, in sell impact of crowding conduct vanished. It further found that even manner impact impacts crowding predisposition too. The nearness of the grouping impact more significant in Asian markets, their crowding asymmetry during rising markets has seen. In addition, during the worldwide emergency also crowding nearness was found in the US and Latin American markets. It was showed up in research that bank's crowding separates with various sorts of advances. It was appeared in paper that crowding was all the more often found in lodging advances and Mastercards than different kinds of advances. Additionally, it was likewise inspected in the paper that huge banks crowd more in contrast with littler and local banks (Tran, Nguyen, and Lin, 2017).

In one of the examinations crowding conduct nearness was researched between financial exchange and oil advertise during market trouble. Analysts found that crowding conduct

diminished because of the unpredictability of the securities exchange. It was additionally inspected and happened that crowding conduct moved conversely in both the business sectors and grouping conduct is additionally upgraded by inaccessibility of data in both the business sectors (Ben Mabrouk, 2018).

Social fund recommends that the speculation choice - making process is affected by different conduct predispositions that help speculators to veer off from judiciousness and take unreasonable venture choices (Niehaus and Shrider, 2014). The current examination is a broad audit of social predispositions in singular venture dynamic (Taffler, Spence, and Eshraghi, 2017). The pertinence to this examination field has expanded as of late, covering both hypothetical and experimental commitments. In the wake of contemplating different literary works, it found that there is a need to lead one examination who convey efficient audit on conduct predispositions (Kumar and Goyal, 2015).

Proof and clarification proposed in the hypothesis of limited discernment clarify that people are not generally ready to acquire all the important data, which is required to settle on potential choices (Kinoshita, Suzuki, and Shimokawa, 2013).

Limited soundness thoroughly worried about the way genuine dynamic procedure impacts the choices that showed up (Kinoshita et al., 2013); (Ahmad Zamri, Ibrahim, Haslindar, Tuyon, 2017).

With regards to singular venture dynamic, it is fundamental to think about that as a specific level of vulnerability and hazard is related with every speculation choice decision (Paul Slovic, 1972).

There is adequate proof, call attention to that because of the event of market inconsistencies, markets respond contrastingly contrasted with the conduct of a discerning man. Different psychological inclinations regularly keep people from sane idea. People invested with levelheadedness that permits them to think about all the accessible data. From this, they create fair figures about occurring of future occasions, which permit them to settle on the best money related choices (Fama, 1970); (Michael C. Jensen, 1978).

The establishment base of customary fund is effective market speculation. According to this theory, financial specialists approach showcase data and costs of advantages and furthermore speculators viewed as sound. Despite the fact that the order of current account has developed logically, it is as yet hard to clarify on the logical grounds that why individuals carry on non-

sanely while managing in cash. While customary fund accept individuals justify and improve their monetary choices, conduct money incorporates the pertinence of what speculators ought to do and mix the rudiments of conventional account with what individuals do regarding their venture choices (Mitroi, Adrian Stancu, 2014).

The areas of Psychology and human science are viewed as basic quickening agents inside the field of investigation of Behavioral Finance (Robert J. Shiller, 1997). In logical inconsistency to the productive market theory, numerous investigations have demonstrated social inclinations in financial specialists (Musciotto, Marotta, Piilo, and Mantegna, 2018). The social fund approach replaces the customary objectivity theory and affirming that conduct inclinations impact people. Social Finance has seen as an investigation of how brain research impact money related markets and monetary dynamic (H. Shefrin, 2001). Social fund is another wonder to monetary markets that have risen because of obstacles looked in conventional account. It comprehended as a budgetary occasion where specialists are not so much sound (Barberis, 2002).

The dad of Behavioral account is 'Daniel Kahneman' who has gotten Nobel Prize in the field of financial matters for his possibility hypothesis. The pioneer analysts in the field of social money who's contributed colossally are Daniel Kahneman, Amos Tversky, and Richard Thaler. They developed conduct predispositions that considered as building squares of social account. Social inclinations are basic issues for the inconsistencies between customary accounts and conduct fund spaces. There have been various examinations that challenge soundness and accordingly advanced Behavioral Finance (Tversky and Kahneman, 1971).

Conduct predispositions give motivations to the asymmetry between the manner in which people settle on choices including additions and choices including misfortunes (Tversky, An and Kahneman, 1973). A similar person who is a hazard unwilling for a choice including gains turns into a hazard searcher for a misfortune maintaining a strategic distance from choice,(Tversky, An and Kahneman, 1973). Presumptuousness, grouping, mooring, psychological cacophony, accessibility predisposition, self-attribution, mental bookkeeping, surrounding, agent inclination, are barely any inclinations that saw as building squares of conduct account that fundamentally impact the dynamic of individual financial specialist (H. M. Shefrin and Thaler, 1988); (Singh, 2016).

Subsequently, a social inclination is made because of an inappropriate understanding of data accessible in the market. People use heuristics approach while doing venture. It is significant

device and heuristics are techniques for dynamic and handling data, in light of restricted time and data accessible in the market (Ackert et al., 2010). Hassan et al. (2013) and Rehan and Umer (2017) additionally directed a review concentrate in Pakistan, in light of various social inclinations, for example, mien impact, crowding, pomposity and overcompensation exist in money related dynamic. This examination considers just five inclinations which are as often as possible saw in money related markets. The above referred to writing plainly bolsters the way that conduct predispositions have sway on venture dynamic.

Among these inclinations are discovered idealism predispositions, the representativeness algorithmic, conservatism or mental attach, those influence the monetary choice of speculators. Speculators become overestimate their private data which is essentially produced by their own considerations and capacities, in this sort of conduct financial specialists disregards mistakes or disappointments, which drove them to overestimate the chances and capacities. Besides individuals consistently utilize mental alternate routes as opposed to utilizing anticipated utility hypothesis. Financial experts, analysts and different scientists attempted to concentrate how individuals settle on decisions for the last numerous decades. Financial aspects is so unique in relation to sociologies because of the suspicions taken in financial matters that have very much characterized inclinations and settle on sane decisions and accordingly conduct can be clarified. The investigation of dynamic condition is significant for getting advantage and cost of data for dynamic (Ackert et al., 2010)

Basically, the individual investor's investment decision making differs because everyone influenced by dissimilar behavioural biases.

This research paper made an attempt to conquer the research gaps which were found in the review of literature and the analytical study impact of five individual investor's behavior biases on investor's decision making. After carefully gone through the reviews of literature and the other related studies the researcher finalized the conceptual frame work of the research work.

Fig. 1 shows the conceptual frame work of behavioral bias on investment decision making



### Disposition Effect

The disposition effect is the tendency to sell winning investments too early and hold losing investments too long (Odean, 1999). The disposition effect is the tendency to sell winning investments too early and hold losing investments too long (Odean, 1999). Specialists have perceived that the inclination of financial specialists to hold misfortunes in venture to draw out and sell shares in speculation too soon has set apart as disposition effect. The disposition effect has antagonistic results on a person's venture on the grounds that losing speculations ordinarily carry on failing to meet expectations, though winning speculations for the most part carry on to beat (Aspara and Hoffmann, 2015). Analysts have perceived that the attitude impact isn't influenced by trial controls of anticipated future increases or misfortunes (H.- J. Lee, Park, Lee, and Wyer, 2008).

### Overconfidence

Over confidence is one of the psychological attribute in behavioral finance. It has a major impact on the financial decision making process of the individual investors. Those choices can be securities exchange venture choices or other speculation choices (Joo, 2017). In conduct fund, carelessness reflected as a typical mental inclination, which makes monetary markets wasteful by making mispricing as monstrous unpredictability and return fluctuation (Ko and James Huang, 2007). Numerous sorts of writing have referenced the meaning of arrogance, yet

its definition better comprehended in following referenced way. Carelessness is a mental predisposition that guides a speculator to think a boundary which is more noteworthy than it is, and it additionally accepted that a person's decisions are compounded and wrong. With those decisions, an individual could never gain proficiency with the right circulation (Dubra, 2004). During pomposity, it saw that normal common reserve chief fails to meet expectations the market (Gruber, 1996).

Regardless of sufficient proof that carelessness is inescapable, it has not increased a lot of consideration in the field of financial aspects. Much consideration and expansive appropriateness of arrogance predisposition have found in the conduct of judicious operators (Dubra, 2004). Specialists contend that arrogance inclination regularly coordinated by the disregard of questions (Walters, Fernbach, Fox, and Sloman, 2016). It reported that expanded presumptuousness prompts extreme exchanging volume and more significant expense instability financial exchanges (Graham, Harvey, and Huang, 2009); (Nir Jaimovich and Sergio Rebelo, 2007). Overcompensations by financial specialists are because of presumptuousness about their capacities to handle or procedure data (Kent Daniela, David Hirshleifer, 2002); (Mushinada and Veluri, 2018). In spite of this examination, scientists contended that pomposity is additionally a positive indicator that figure the speculation execution of individual financial specialists that are trailed by advertise oddities (Abdin, Farooq, Sultana, and Farooq, 2017). In this manner, Overconfidence is a critical mistake where individuals overestimate their expertise, information, see data or grow the abstract likelihood of specific outcome occurring (Campbell, Goodie, and Foster, 2004); (Glaser, Markus and Weber, 2010).

#### Anchoring

Among the psychological biases Anchoring occupy a significant role in the world. (Shin & Park, 2018). Mooring characterized is an intellectual inclination that clarifies the customary person's propensity to rely hugely upon the main snippet of data while deciding (Shin and Park, 2018); (Maqsood Ahmad, Syed Zulfiqar Ali Shah, 2018); (Singh, 2016). Financial specialists are probably going to grapple their acquisition of stocks on the ongoing most significant expense of the stock. Such conduct responses show that mooring inclination related with problematic choices of financial specialists in their dynamic procedures (Krause, Shiller, Shleifer, Wilcox, and Shiller, 1970). Tying down inclination showed as a rule to break down stock returns or gainfulness by a conduct approach at questionable conditions in 52-week high

and energy techniques (Jahanmiri, 2018). Analysts records that mooring lays a negative effect on venture choices made by singular financial specialists or merchants (Maqsood Ahmad, Syed Zulfiqar Ali Shah, 2018). Analysts likewise contend that Anchoring as a critical inclination, last decisions when to understand toward the beginning stage of the adjudicator's thought. The securing and-change heuristic holds that mooring inclination brought about by deficient modification (Qu, Zhou, and Luo, 2008). The tying down heuristic holds to bountiful balance that is under reaction. Individuals grapple at some observable outcomes, during utilizing this heuristic and adjust dependent on prescient data (Amir and Ganzach, 1998). Along these lines, tying down is a heuristic predisposition that makes financial specialists depend on late value changes and value levels

#### Herding Behavior

This is one of the commonly accepted happening in the investment and financial Market. It is a typical inclination of human instinct to allude, watch, and impersonate other's conduct during the sporadic condition in money related markets (Yu, Dan, Ma, and Jin, 2018). At the nearness of grouping, financial specialists don't act soundly in their venture decisions. They want to follow other financial specialist's conviction and suppositions for taking their speculation choice. Thus when financial specialists group, they will in general control their choices and tail others. During seasons of market pain, for example, showcase peculiarities, value bubbles, gossipy tidbits, nearness of crowding impact is more significant (Mertzanis and Allam, 2018). Crowding has seen as aggregate impersonation prompting a juncture of developments (Philippas, Economou, Babalos, and Kostakis, 2013). It likewise appeared in many exploration papers that crowding conduct may bring about comparative examples of developments across people acknowledging significant government assistance misfortunes. In one of the examination papers, group conduct has characterized in an alternate way that is if specialists are conceded to move toward the techniques of their system neighbors, a criticism impact on the system structure and game yields watched. Such an impact named as crowding conduct (Mello, Souza, Cajueiro, and Andrade, 2010).

#### Hindsight bias

This is a psychological based biases and the hindsight bias influence the individual investors before the decision was happened. This can lead individuals to infer that they can precisely anticipate different occasions. Knowing the past predisposition is concentrated in social money

since it is a typical falling flat of individual financial specialists. Speculators feel strain to time their acquisition of stocks impeccably so as to expand their profits. At the point when they endure a misfortune, they lament not acting prior. With lament comes the idea that they saw it coming from the start. Truth be told, it was one of the numerous prospects that they may have foreseen. The researcher presented the characteristics of the variables which are used in the research. Based on the review of literature and the role of the variables in research the research hypothesis and the statistical hypothesis were framed by the researcher.

### Research Hypothesis

H<sub>0</sub> 1 There is no significant relationship between behavioral biases and the individual investor's investment decision making.

Statistical Hypothesis framed for validate the research findings.

H<sub>0</sub> 1 Anchoring of the individual investor is not influenced significantly by the investment decision making.

H<sub>0</sub> 2 Herding behavior of the individual investor is not influenced significantly by the investment decision making

H<sub>0</sub>3 Overconfidence of the individual investor is not influenced significantly by the investment decision making.

H<sub>0</sub> 4 Hindsight effect of the individual investor is not influenced significantly by the investment decision making.

H<sub>0</sub>5 Disposition effect of the individual investor is not influenced significantly by the investment decision making.

### Objectives of the study

To analyze the factors which are influenced the individual investors to finalize the investment decision making in United Arab Emirates.

### Methodology of the study

The study is based on analytical in nature. The researcher used pre tested structured questionnaire for collecting the data from the respondents. Behavioral factors of the respondents are taken as the independent variables. Investment choices are considered as the dependent variables. The study is consisted of the Investors from all seven Emirates of UAE. Calculated sample size as per the standard deviation and cronbach's Alpha was 385. Total 420

questionnaires were distributed. After verifying the filled questionnaire the researcher found 360 completed questionnaire. Therefore the researcher fixed the sample size of the study is 360. The researcher used stratified random sampling techniques to choose the sample respondents. Based on the population of each Emirates and the number of positive individual investors the researcher gave weightage to each and every Emirates. SPSS 20.0 version software is used to analysis the collected data. The researcher also visited brokerage houses, mutual fund office and stock management companies to collect information about the individual investors. After employing the research tools, the research makes interpretation and research findings.

### Data Analysis

The researcher used both descriptive and inferential statistics for analyzing the collected data from the sample respondents. Demographic profile of the respondents was analyzed by descriptive statistics. To find the relationship between behavioral biases and investment decision, inferential statistics was employed. In order to measure the reliability the cronbach's Alpha test has done. To study the behavioral biases and investment decision making correlation and regression analysis were employed.

### Validity and reliability test

Pilot study has done to confirm the validity of the questionnaire. In order to conduct the pilot study the researcher pre tested the questionnaire with 40 respondents. Cronbach's Alpha test was conducted to verify the validity of the questionnaire. The reliability analysis result showed the value of Cronbach's Alpha was 0.856. If the cronbach's Alpha value is more than 0.6 then the instrument is a valid one. Here the value is more than 0.6. Hence it is assumed that the survey instrument is a valid one. Number of items used in the test was six.

Table shows the Descriptive Statistics of the Respondents

Demographic Factors	Frequency	percentage
Age		
18-25	113	31.3
26-35	102	28.4
36-45	52	14.5
Above 45	93	25.8
Gender		

Male	248	68.9
Female	112	31.1
Education		
School	66	18.4
Diploma	51	14.2
Bachelor	78	21.6
Graduate	75	20.8
Professional	24	6.7
Others	66	18.3
Profession		
Government	44	12.3
Private	153	42.6
Business	163	45.1
Experience		
Less than 2 years	139	38.6
3 to 5 years	58	16.1
6 to 10 years	48	13.2
11 to 15 years	38	10.5
15-20 years	42	11.8
More than 20 years	35	9.8

The above table reveals the demographic profile of the sample respondents. Regarding the age 59 percent of the respondents belongs the age group of 35 and less than that. It shows that the young generation has showed significant interest regarding the investment decision. This age group of people is literate and closely monitors the performance in the stock market. Males are dominating the stock market and the investment decision. Hence the analysis showed that more than 68 percent of the respondents are male. Even though the females are working in home they are not much interested in the investment decision.

Regarding the educational qualification, 18 percent of the respondents have done school education. Out of this some of the respondents are not completed the school education. Fourteen

percent of the respondents possess their diploma and 21 percent are completed the bachelors. Most of the young respondents have completed bachelor degree.

Forty five percent of the respondents are doing business. Some of them are doing joint venture agency business, small shops and other IT based services. 42 percent of the respondents are working in the private sector undertaking. Only ten percent of the respondents are having more than 20 years of experience. Thirty eight percent of the respondents are having experience less than two years. It expressed that most of the respondents new to the job.

Table showing the regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.479 <sup>a</sup>	0.238	0.221	0.6587

The above regression output reveals the linear regression analysis with the investment decision of the individual in UAE. There are five dependent variables i.e. over confidence, hindsight effects, disposition effects, anchoring and herding. The summary results are evaluated to assess the fitness. It shows that the R square reveals 0.238 but the adjusted R square value is very close to R square.

Overall fitness of the model of the F-statistics value is 12.987 P-value significant less than 0.05

F-statistics	Significance
12.987	0.000 <sup>2</sup>

1. Dependent variable: Financial decision making
2. Predictors : over confidence, hindsight effects, disposition effects, anchoring and herding

Table showing the individual significance of the individual investor's decision making

Model	Un-standardized coefficients		Standardized coefficients Beta	T	Sig.
	B	Std. Error			
Constant	1.792	0.232	-	7.892	0.000
Disposition effects	-0.132	0.076	-0.129	-1.598	0.103
Hindsight	0.212	0.169	0.210	2.458	0.013

Overconfidence	0.283	0.069	0.281	3.746	0.000
Anchoring	0.039	0.072	0.042	0.538	0.572
Herding	0.181	0.079	0.191	1.965	0.048

The outcome of the individual significance test revealed that the overconfidence, herding and hindsight variables have significantly influenced the individual investor's financial decision making because the significance value is less than 0.05. The other two variables such as anchoring, disposition effects do not influence or impact on the investment decision making of individual investors.

### Correlation analysis

Table showing the correlation analysis of the financial decision making of the individual investors

		Financial Decision Making	Overconfidence	Herding	Anchoring	Disposition effects	Hindsight
Investment Decision Making	Pearson correlation	1	0.403**	0.298*	0.314**	0.234**	0.397**
	Sig.(2-tailed)		0.000	0.000	0.000	0.000	0.000
	N	360	352	360	360	346	352
Overconfidence	Pearson correlation	0.402**	1	0.472*	0.542**	0.554**	0.458**
	Sig.(2-tailed)	0.000		0.000	0.000	0.000	0.000
	N	348	360	352	360	348	360
	Pearson correlation	0.362**	0.501**	1	0.609**	0.589**	0.604**

Herding	n						
	Sig.(2-tailed)	0.000	0.000		0.000	0.000	0.000
	N	352	360	348	360	348	352
Anchoring	Pearson correlation	0.316**	0.543**	0.625*	1	0.598**	0.542**
	Sig.(2-tailed)	0.000	0.000	0.000		0.000	0.000
	N	360	352	342	348	352	360
Disposition Effects	Pearson correlation	0.239**	0.548**	0.579*	0.608**	1	0.469**
	Sig.(2-tailed)	0.000	0.000	0.000	0.000		0.000
	N	360	342	348	360	352	360
Hindsight	Pearson correlation	0.421**	0.458**	0.593*	0.529**	0.493**	1
	Sig.(2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	350	360	342	352	360	360

\*\* one percent level of significant (2-tailed)

From the above correlation analysis one can understand there is a very significant relationship between the over confident and the investment decision of the individual investors at one percent level of significance. It represent that if the investor has overconfident it increases the investment of the individual investors. Investment decision making and herding is 0.298 is at one percent level of significance. This showed the positive relationship between herding variable and investment decision making of the individual investors. The relationship between the variable hindsight and the decision making on individual investment is also positive. Hence the

behavioral biases and the investment decision making of the individual investors are correlated positively.

### **Discussion**

Behavioral biases of the individual investors causes variation on the security pricing. But it will not affect in the stock market significantly. Individual investors are more while comparing the institutional investors. But comparing the volume of transaction, individual investor's contribution is limited. In this research five variables are identified as behavioral biases, they are overconfidence, herding, anchoring, disposition effect and hindsight. Behavioral finance theory contradicts the traditional theory concepts. Psychological aspects of the individuals influence the investment and trade decision making. In the regression analysis three variables have significantly impact on the investment decision making of the individual investors such as hindsight, overconfidence and herding. Some of the investors investing in to the stock market with the motive of getting more return within a very short time. Behavioral biases influenced the behavior of such investors and their investment decision affected by these psychological factors.

### **Conclusion**

Behavioral finance involves different behavioral biases but it varies based on the individual's social, economical and emotional reactions and tolerance. This research is aim to find the influential factors of behavioral finance investment decision making of individual investors. Five significant behavior bias variables are identified. With the help of the analysis the study concluded that three variables overconfidence, hindsight and herding have influenced significantly the investment decision making of the individual investors. Behavioral finance merges the finance and the psychology economics. It will helpful for financial advisory services, finance managers, individual investors and other investment agents. This study is useful to the individual investors to overcome their behavioral biases on investment decision making.

### **References:**

- Ackert, L. F., Church, B. K., & Tkac, P. A. (2010). An experimental examination of heuristic-based decision making in a financial setting. *Journal of Behavioral Finance*, 11(3), 135-149.

- Ahmad, M., Shah, S. Z. A., & Mahmood, F. (2018). Qualitative Research in Financial Markets. *Asian Review of Accounting*, 18(1).
- Amir, E., & Ganzach, Y. (1998). Overreaction and underreaction in analysts' forecasts. *Journal of Economic Behavior & Organization*, 37(3), 333-347.
- Aspara, J., & Hoffmann, A. O. I. (2015). Selling losers and keeping winners: How (savings) goal dynamics predict a reversal of the disposition effect. *Marketing Letters*, 26(2), 201-211.
- Babajide, A. A., & Adetiloye, K. A. (2012). Investors' behavioral biases and the security market: an empirical study of the nigerian security market. *Accounting and Finance Research*, 1(1), 219- 229.
- Barberis, N. (2002, September). A Survey of Behavioral Finance. *Journal Bureau of Economic Research*.
- Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. in G. Constantinides, M. Harris, and R. Stulz (editors) *Handbook of the Economics of Finance*, North-Holland, Amsterdam.
- Bekiros, S., Jlassi, M., Lucey, B., Naoui, K., & Uddin, G. S. (2017). Herding behavior, market sentiment and volatility: Will the bubble resume?. *North American Journal of Economics and Finance*, 42, 107-131.
- BenMabrouk, H. (2018). Cross-herding behavior between the stock market and the crude oil market during financial distress: Evidence from the New York stock exchange. *Managerial Finance*, 44(4), 439-458.
- Budescu, D. V., & Weiss, W. (1987). Reflection of transitive and intransitive preferences: a test of prospect theory. *Organizational Behavior and Human Decision Processes*, 39, 184-202.
- Campbell, W. K., Goodie, A. S., & Foster, J. D. (2004). Narcissism , Confidence , and Risk Attitude. *Journal of Behavioral Decision Making*, 311, 297-311.
- Chang, C.-H. (2008). The Impact of Behavioral Pitfalls on Investors' Decisions: the Disposition Effect in the Taiwanese Warrant Market. *Social Behavior and Personality: An International Journal*, 36(5), 617-634.

- Chang, E. C., Cheng, J. W., & Khorana, A. (2000). An examination of herd behavior in equity markets: An international perspective. *Journal of Banking and Finance*, 24(10), 1651-1679.
- Chen, G. M., Kim, K. A., Nofsinger, J. R., & Rui, O. M. (2007). Trading Performance, Disposition Effect, Overconfidence, Representativeness Bias, and Experience of Emerging Market Investors. *Journal of Behavioral Decision Making*, 2(4), 425-451
- Chong, F. (2009). Disposition Effect and Flippers in the Bursa Malaysia. *Journal of Behavioral Finance*, 10(3), 152-157.
- Daniela, K., Hirshleifer, D., & Teoh, S. H. (2002). Investor psychology in capital markets: evidence and policy implications. *Journal of Monetary Economics*, 49, 139-209.
- Darrat, A. F., Zhong, M., & Cheng, L. T. W. (2007). Intraday volume and volatility relations with and without public news. *Journal of Banking and Finance*, 31(9), 2711-2729.
- De Avila, C., de Oliveira, L. A., de Melo Silva Avila, A. S., & Jessica Rayse Malaquias, R. F. (2016). Behavioral Biases in Investors' Decision: Studies Review From 2006-2015. *Revista De Gestao Financas E Contabilidade*.
- DeBondt, W., & Thaler, R. H. (1995). Financial decision-making in markets and firms: a behavioral perspective. *Handbooks in Operations Research and Management Science*, 9(13), 385-410.
- DeBondt, Werner, F. M., Mayoral, R. M., & Vallelado, E. (2013). Behavioral decision-making in finance: an overview and assessment of selected research.
- Dhar, R., & Zhu, N. (2006). Up Close and Personal: Investor Sophistication and the Disposition Effect. *Management Science*, 52(5), 726-740.
- Dowie, G., & Willows, G. (2016). An investigation of investors' estimates of returns earned and the effect of anchoring on these estimations. *South African Journal of Accounting Research*, 30(1), 29-40.
- Dubra, J. (2004). Optimism and overconfidence in search. *Review of Economic Dynamics*, 7(1), 198-218.
- European Financial Management*, 20(1), 107-125.
- Fama, E. F. (1970). American Finance Association Efficient Capital Markets : A Review of Theory and Empirical Work. *Journal of Finance*, 25(2), 28-30.
- Fama, E. F. (1991). Efficient capital markets: II. *Journal of Finance*, 46(5), 1575-1617.

- Fenton-O'Creevy, M., Soane, E., Nicholson, N., & Willman, P. (2011). Thinking, feeling and deciding: The influence of emotions on the decision making and performance of traders. *Journal of Organizational Behavior*, 32(8), 1044-1061.
- Filbeck, G., Hatfield, P., & Horvarth, P. (2005). Risk aversion and personality type. *Journal of Behavioral Finance*, 6(4), 170-180.
- Filiz, I., Nahmer, T., Spiwoks, M., & Bizer, K. (2018). Portfolio diversification: the influence of herding, status-quo bias, and the gambler's fallacy. *Financial Markets and Portfolio Management*, 32(2), 167-205.
- Glaser, M., & Weber, M. (2010). Overconfidence. *Behavioral Finance: Investors, Corporations, and Markets*, 241-258.
- Graham, J. R., Harvey, C. R., & Huang, H. (2009). Investor Competence, Trading Frequency, and Home Bias.
- Gruber, M. J. (1996). Another Puzzle: The Growth in Actively Managed Mutual Funds. *The Journal of Finance*, 51(3), 783-810.
- Gunay, S. G., & Demirel, E. (2011). Interaction between demographic and financial behavior factors in terms of investment decision making. *International Research Journal of Finance and Economics*, 66, 147-156.
- Hassan, E. U., Shahzeb, F., Shaheen, M., Abbas, Q., Hameed, Z., & Hunjra, A. I. (2013). Impact of affect heuristic, fear and anger on the decision making of individual investor: a conceptual study. *World Applied Sciences Journal*, 23(4), 510-514. view at Google scholar
- Heukelom, F. (2007). Kahneman and Tversky and the Origin of Behavioral Economics.
- Hirshleifer, D. (2001). Investor psychology and asset pricing. *Journal of Finance*, 56(1), 1533-1597 *Asian Journal of Empirical Research*, 8(3)2018: 99-109 109
- Hirshleifer, D., Daniel, K., & Subrahmanyam, A. (2001). Overconfidence, arbitrage and equilibrium asset pricing. *Journal of Finance* 56, 921-965.
- Huang, J. B., Tan, N., & Zhong, M. R. (2014). Incorporating overconfidence into real option decision-making model of metal mineral resources mining project. *Discrete Dynamics in Nature and Society*.  
*International Journal of Managerial Finance*, 14(5), 613-632.

- Jahanmiri, M. (2018). Anchoring Bias a Criterion for Explain Profitability of 52-Weeks High and Momentum Strategies. *Pacific Business Review International*, 10(7), 115-124.
- Jaimovich, N., & Rebelo, S. (2007, May). Behavioral Theories of the Business Cycle. *Journal Ofthe European Economic Association*, 5, 361-368. Retrieved from <http://www.management4all.org/2009/11/behavioral-theories-of-motivation.html>
- Joo, B. A. K. (2017). Influence of Overconfidence, Optimism and Pessimism on the Rationality of the Individual Investors: An Empirical Analysis. *Pacific Business Review International*.
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263-291.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: an analysis of decision under risk. *Econometrica*, 47(2), 263-291.
- Kamoto, S. (2014). Impacts of internal financing on investment decisions by optimistic and overconfident managers.
- Kaustia, M. (2004). Market-wide impact of the disposition effect: Evidence from IPO trading volume. *Journal of Financial Markets*, 7(2), 207-235.
- Kaustia, M., Alho, E., & Puttonen, V. (2008). How Much Does Expertise Reduce Behavioral Biases? The Case of Anchoring Return Effects Estimates in Stock. *Financial Management*, 37(3), 391-411.
- Kelmara, M. V., Paulo, S. C., Larissa de Lima, T., & Carlos, E. M. T. (2011). Misattribution bias: the role of emotion in risk tolerance. *The IUP Journal of Behavioral Finance*, 8(3), 25-35.
- Khan, M. T. I., Tan, S. H., Chong, L. L., & Ong, H. B. (2017). Investment characteristics, stock characteristics and portfolio diversification of finance professionals. *Borsa Istanbul Review*, 17(3), 164-177.
- Kinoshita, K., Suzuki, K., & Shimokawa, T. (2013). Evolutionary foundation of bounded rationality in a financial market. *IEEE Transactions on Evolutionary Computation*, 17(4), 528-544.
- Kishore. (2004, January 22-25). Theory of Behavioural Finance and its Application to Property Market: A Change in Paradigm. *TTwelfth Annual Pacific Rim Real Estate Society Conference*. Auckland, New Zealand.

- Ko, K. J., & James Huang, Z. (2007). Arrogance can be a virtue: Overconfidence, information acquisition, and market efficiency. *Journal of Financial Economics*, 84(2), 529-560.
- Krause, M., Shiller, V., Shleifer, A., Wilcox, D., & Shiller, R. J. (1970). Human Behavior and the Efficiency of the Financial System. *Handbook of Macroeconomics*, 1-34.
- Kumar, S., & Goyal, N. (2015). Behavioural biases in investment decision making - a systematic literature review.
- Lee, H.-J., Park, J., Lee, J.-Y., & Wyer, R. S. (2008). Disposition Effects and Underlying Mechanisms in E-Trading of Stocks. *Journal of Marketing Research*, 45(3), 362-378.
- Lee, J. S., Yen, P. H., & Chan, K. C. (2013). Market states and disposition effect: Evidence from Taiwan mutual fund investors. *Applied Economics*, 45(10), 1331-1342. <https://doi.org/10.1080/00036846.2011.617696>
- Lin, H. (2011). Elucidating rational investment decisions and behavioral biases: Evidence from the Taiwanese stock market. *African Journal of Business Management*, 5(5), 1630-1631. <https://doi.org/10.5897/AJBM10.474>
- Lin, X., & Zhang, L. (2012). The investment manifesto. AFA 2013 San Diego Meetings Paper. Portfolio selection
- Liu, J., Jin, X., Wang, T., & Yuan, Y. (2015). Robust multi-period portfolio model based on prospect theory and ALMV-PSO algorithm. *Expert Systems with Applications*, 42(20), 7252-7262.
- Lowies, G. A., Hall, J. H., & Cloete, C. E. (2016). Heuristic-driven bias in property investment decision-making in South Africa. *Journal of Property Investment & Finance*, 34, 51-67.
- Ma, Q. Z., Wang, H., & Zhang, W. (2017). Trading against anchoring. *Review of Behavioural Finance*, 9(3), 242-261.
- Mello, B. A., Souza, V. M. C. S., Cajueiro, D. O., & Andrade, R. F. S. (2010). Network evolution based on minority game with herding behavior. *European Physical Journal B*, 76(1), 147-156.
- Mertzanis, C., & Allam, N. (2018). Political Instability and Herding Behaviour: Evidence from Egypt's Stock Market. *Journal of Emerging Market Finance*, 17(1), 29-59.

- Michael C. Jensen. (1978). Some Anomalous Evidence Regarding Market Efficiency. *Journal of Financial Economics*, 6, 95-101.
- Mitroi, Adrian Stancu, I. (2014). Biases, Anomalies, Psychology of a Loss and Individual Investment Decision Making. *Economic Computation and Economic Cybernetics Studies and Research*.
- Mueller, A., & Brettel, M. (2012). Impact of biased Pecking order Preferences on firm success in real business cycles.
- Muhammad, N. M. N., & Abdullah, M. (2009). Investment decision-making style: Are Malaysian investors rational decision makers? *Interdisciplinary Journal of Contemporary Research in Business*, 1(3), 96-108.
- Musciotto, F., Marotta, L., Piilo, J., & Mantegna, R. N. (2018). Long-term ecology of investors in a financial market.
- Mushinada, V. N. C., & Veluri, V. S. S. (2018). Investors overconfidence behaviour at Bombay Stock Exchange. *Neuroscience Letters*, 445(3), 199-203.
- Niehaus, G., & Shrider, D. (2014). Framing and the disposition effect: Evidence from mutual fund investor redemption behaviour. *Quantitative Finance*, 14(4), 683-697. <https://doi.org/10.1080/14697688.2013.819114>
- Odean, T., Strahilevitz, M. A., & Barber, B. M. (2010). Once Burned, Twice Shy: How Navī e Learning, Counterfactuals, and Regret Affect the Repurchase of Stocks Previously Sold. SSRN.
- Odean, T. (1999). Do investor trade too much. *American Economic Review*.
- Odean, T. (1999). Do investors trade too much? *American Economic Review*, 89(1), 1279-1298.
- Ormos, M., & Timotity, D. (2016). Unravelling the asymmetric volatility puzzle: A novel explanation of volatility through anchoring. *Economic Systems*, 40(3), 345-354.
- Parker, A. M., & Fischhoff, B. (2005). Decision-making competence: External validation through an individual-differences approach. *Journal of Behavioral Decision Making*, 18(1), 1-27.
- Pelster, M., & Hofmann, A. (2018). About the fear of reputational loss: Social trading and the disposition effect.

- Phan, T. C., Rieger, M. O., & Wang, M. (2018). What leads to overtrading and under-diversification? Survey evidence from retail investors in an emerging market. *Journal of Behavioral and Experimental Finance*, 19, 39-55. <https://doi.org/10.1016/j.jbef.2018.04.001>
- Philippas, N., Economou, F., Babalos, V., & Kostakis, A. (2013). Herding behavior in REITs: Novel tests and the role of financial crisis. *International Review of Financial Analysis*, 29, 166-174. <https://doi.org/10.1016/j.irfa.2013.01.004>
- Pompian, M. (2006). *Behavioral finance and wealth management*. Hoboken: NJ: John Wiley & Sons.
- Prosad, J. M., Kapoor, S., Sengupta, J., & Roychoudhary, S. (2018). Overconfidence and Disposition Effect in Indian Equity Market: An Empirical Evidence. *Global Business Review*, 19(5), 1303-1321.
- Qu, C., Zhou, L., & Luo, Y. J.. (2008). Electrophysiological correlates of adjustment process in anchoring effects. *Qualitative Research in Financial Markets*, 7(1), 88-108.
- Revista Española de Financiación y Contabilidad (Spanish Journal of Finance and Accounting)*, 42(157), 99-118. view at Google scholar / view at publisher Etzioni, A. (2014). Humble decision-making theory. *Public Management Review*, 16(5), 611-619.
- Roger, P. (2009). Does the Consciousness of the Disposition Effect Increase the Equity Premium?. *Journal of Behavioral Finance*, 10(3), 138-151.
- Roger, P. (2011). Testing alternative theories of financial decision making: a survey study with lottery bonds. *Journal of Behavioral Finance*, 12(4), 219-232.
- Rompotis, G. G. (2018). Herding Behavior among Exchange-Traded Funds. *Journal of Behavioral Finance*, 19(4), 483-497.
- Schneider, S. (1992). Framing and conflict: aspiration level contingency, the status quo, and current theories of risky choice. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 18, 1040-1057.
- Shefrin, H. (2001). Some New Evidence on Eva Companies. *Journal of Applied Corporate Finance*, 22(1), 32-42.

- Shefrin, H. M., & Thaler, R. H. (1988). the Behavioral Life-Cycle Hypothesis. *Economic Inquiry*, 26(4), 609-643.
- Shiller, R. J. (1997). Human Behavior and the Efficiency of the Financial System.
- Shin, H., & Park, S. (2018, April). Do foreign investors mitigate anchoring bias in stock market? Evidence based on post-earnings announcement drift. *Pacific Basin Finance Journal*, 48, 224-240.
- Shleifer, A. (2000). Inefficient Markets. Investopedia.
- Singh, S. (2016). The Role of Behavioral Finance in Modern Age Investment. *Pacific Business Review International*, 1(1), 234-240.
- Slovic, P. (1972). American Finance Association. *The Journal of Finance*, 72(6),
- Smit, H. T. J., & Moraitis, T. (2010). Playing at Serial Acquisitions. *California Management Review*, 53(1).
- Taffler, R. J., Spence, C., & Eshraghi, A. (2017). Emotional economic man: Calculation and anxiety in fund management. *Accounting, Organizations and Society*, 61, 53-67.
- Tran, V. T., Nguyen, H., & Lin, C. T. (2017). Herding behaviour in the Australian loan market and its impact on bank loan quality. *Accounting and Finance*, 57(4), 1149-1176. <https://doi.org/10.1111/acfi.12183>
- Tversky, A., & Kahneman, D. (1971). Belief in the law of small numbers. *Psychological Bulletin*, 76(2), 105-110. <https://doi.org/10.1037/h0031322>
- Tversky, A., & Kahneman, D. (1973). Psychological Review. American Psychological Association, 80(4).
- Walters, D. J., Fernbach, P. M., Fox, C. R., & Sloman, S. A. (2016). Known Unknowns: A Critical Determinant of Confidence and Calibration. *Management Science*.
- Wright, W. F., & Anderson, U. (1989, December). Effects of situation familiarity and financial incentives on use of the anchoring and adjustment heuristic for probability assessment. *Organizational Behavior and Human Decision Processes*, 44(1), 68-82.
- Yu, H., Dan, M. H., Ma, Q., & Jin, J. (2018, May). They all do it, will you? Event-related potential evidence of herding behavior in online peer-to-peer lending. *Neuroscience Letters*, 681, 1-5.

Yin, L., & Feng, J. (2019). Can investors attention to oil markets predict stock returns? The North American Journal of Economics and Finance, 48(C), 786–800.

Zamri, A., Ibrahim, H., & Tuyon, J. (2017). Qualitative Research in Financial Markets. Asian Review of Accounting, 181.