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Effect of Age on Investor Decisions

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Abstract:
This research paper seeks to identify the effect of age on investor decisions at the Nairobi Securities Exchange, Kenya. A total of 57 investors responded. Data collected for this study was analyzed using descriptive statistics and Pearson Chi-square test. The results indicated that investors of all ages considered (18-30 years, 31-40 years, 41-50 years, above 50) were affected by the behavioral biases (overconfidence bias, Representativeness bias, Confirmation bias and Disposition effect). A significant relationship between age and overconfidence bias was exhibited. However, the relationship between age and Representativeness bias, Confirmation bias and Disposition effect was found to be insignificant at 5% significance level.
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Keywords: *Behavioral Finance, Representativeness bias, Confirmation bias, Disposition effect and Overconfidence bias*

1. Introduction

Traditional finance models assume investor rationality in decision making. As such, the investors use the available information to make finance decisions which maximize utility. However, the models are based on assumptions which may not hold in practice. The assumption that all investors act rationally has been proved wrong because they exhibit irrational behaviors; they trade excessively, purchase stock without considering the fundamental value, base their decisions on past performance, buy stocks which their friends are buying, and retain loss making stocks while selling bullish stocks. Also, the supposition that all investors have the exact idea of potential returns has been disproved as the expectations of investors are normally biased. Over optimistic investors tend to expect excessive returns as compared to less optimistic returns.

Behavioral finance has explained irrationalities in the market place which Traditional Finance had failed to do. Behavioral biases which emanate from the field of Behavioral Finance have been found to affect investors differently based on their demographic characteristics. Rekik and Boujelbene (2013) found that demographic factors; gender, age, and experience had an impact on investment decisions among Tunisian investors. Also Obamuyi (2013) found that the socio-economic characteristics of investors (age, gender, marital status and educational qualifications) statistically and significantly influenced the investment decisions of investors in Nigeria.

Barber and Odean (2001) tested overconfidence bias between men and women and how it affects their performance. They found that men were affected more by the overconfidence bias and their returns were lower than those of women. Similar results were obtained by Lin (2011) who conducted a study on the relationship between psychological traits, demographics and financial behavioral biases for individual investors in Taiwan. The findings depicted that males were more overconfident than females and also older people were more overconfident than young people. Contrary results were obtained by Hon-Snir et al. (2012) where females were found to be more affected by the biases than males and the longer the investment experience, the lower the bias. However, Bashir et al. (2013), Lee et al. (2013) and Chira et al. (2008) in their investigation of the relationship between gender and overconfidence bias, found that gender was not related to overconfidence. In terms of herding effect, Rekik and Boujelbene (2013) found that Tunisian investors exhibited more of the herding effect and less of the mental accounting bias as compared to women.

In terms of age, contrary results have been obtained. Rekik and Boujelbene (2013) conducted a study on the Tunisian Stock market and found that older investors were less affected by behavioral biases due to more experience. However, Lin (2011) investigation of Taiwan investors found that older people depicted higher disposition effect and overconfidence than young people. A study by Bashir, Azam, Butt, Javed and Ayesha (2013c) results showed that age was negatively related with disposition effect and positively related with overconfidence, herding and risk-taking. The lack of consensus has necessitated this study to be carried out so as to provide a position on the relationship between age and overconfidence bias, Representativeness bias, Confirmation bias and disposition effect, and how this affects investor decisions.

2. Research Methodology

This section covers the research design, population of the study, data collection technique and data analysis.

2.1. Research Design

The study adopted a causal design so as to establish the effect of age on investor decisions.

2.2. Population and Data Collection

The population of the study was all individual investors of firms listed at the NSE. The target population was individual investors located at Mombasa County, Kenya. Random sampling technique was used in the study. Data was collected using questionnaires and 57 investors responded. The period of study was between January and March 2014.

2.3. Data Analysis Technique

Data collected for this study was analyzed by using descriptive statistics and Pearson Chi-square test was used to analyze the relationship between gender and the behavioral biases. To ascertain the difference between the answers given by the respondents on the basis of gender, age, education level, income level, the study will use the Chi Square test of independence. Cramer's V was used to measure the strength of the relationship. The value ranges from 0 to 1 and the nearer to 1 the stronger the relationship.

3. Main Results

A total of 57 respondents were considered for the study. They were categorized into four age brackets; 18-30, 31-40, 41-50 and above 50 years. 31% 0f the respondents were in the 18-30 age group, 54% were in the 31-40 age group, 10% were in the 41-50 age group and 5% in the last age group of above 50 years.

3.1. Age Profile

3.1.1. 18 – 30 years

61% of the respondents in this age bracket had prior information of the company they had invested while 39% did not have any information. 41% had invested in one company while 59% had bought stocks in more than one company. Majority of the respondents had invested in the Telecommunication and Technology sector (61%), while Commercial and Services and the Banking sector had 33%. The other sectors had proportions of less than 30%.

3.1.2. 31-40 years

When they asked whether they had any information about the company which they invested in, 32% responded that they did not have any information while 68% had prior information of the company they invested in. The sources of information included media, brokers and dealers and family and friends. In terms of diversification, 26% had stock in one company while 74% had invested in more than one company. However, the investors did not consider all the companies listed at the Nairobi Securities Exchange. Majority of the respondents (65%) had invested in the Telecommunication segment, 45% in the Banking segment, 29% in the Energy sector, 19% in the Commercial sector while the other sectors had 6% and below.

3.1.3. 41-50 years

83% of the respondents in this age bracket had prior information of the company they invested in, while 17% did not have any information. Also, 83% had bought stocks in more than one company and 17% had invested in only one company. All the respondents had invested in the banking sector, 83% in the Telecommunication and Technology sector, and 33% had invested in the Commercial and Services, Energy and Manufacturing and Allied. Lastly, 17% of the respondents invested in the Insurance Company.

3.1.4. >50 years

33% of the respondents in this age bracket had information of the company they had invested in while 67% did not have prior information. 67% of the respondents had invested in more than one company and the other portion (33%) had invested in one company. All the respondents had invested in the Commercial and Services sector, 67% of the respondents had invested in the Agricultural and Banking segment. However, the response from this age bracket was insignificant to be considered for analysis.

3.2. Age and Overconfidence Bias

56%, 11%, and 33% of the respondents in the age brackets 18-30 years, 31-40 years and 41-50 years respectively were affected by the overconfidence bias. The findings depict that age differences do significantly affect the level of overconfidence bias among the respondents. The responses were significantly different at 5% significance level as the P-value was 0.018 *(Table 1).* A significant relationship also exists between the respondents' age and overconfidence bias as depicted by the Cramer's V of 0.436.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.000[a]	2	.018
Likelihood Ratio	8.540	2	.014
Linear-by-Linear Association	3.417	1	.065
N of Valid Cases	42		

Table 1: Age and Confidence bias

3.3. Age and Representativeness Bias

The investors were asked whether they considered past information of the companies before they invested in them. 77%, 93%, and 83% of the age brackets 18-30, 31-40, 41-50 years respectively considered past performance information of the companies they invested. The χ^2 *value* = 2.118, and P- *value* = 0.347 (*Table 2*) depicted an insignificant relationship between age and representativeness bias. This was also supported by the Cramer's V which showed a weak relationship at a value of 0.212.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.118[a]	2	.347
Likelihood Ratio	2.038	2	.361
Linear-by-Linear Association	.599	1	.439
N of Valid Cases	47		

Table 2: Age and Representativeness bias

3.4. Age and Confirmation Bias

To test for confirmation bias, investors were asked whether they identify a company they want to invest in before searching for information or they seek for information first before selecting a company. Those who responded positively comprised of 64%, 72% and 33% of the age brackets 18-30, 31-40 and 41-50 years respectively. The results depicted an insignificant relationship between age differences and confirmation bias with $\chi 2$= 3.360, and P-*value* = 0.186 *(Table 3).* The relationship is weak has shown by the Cramer's V value of 0.262.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.360[a]	2	.186
Likelihood Ratio	3.213	2	.201
Linear-by-Linear Association	.729	1	.393
N of Valid Cases	49		

Table 3: Age and Confirmation bias

3.8. Age and Disposition Effect

To test for disposition effect, investors were asked what action they would take when the price of a stock they held increased.61%, 71%, and 67% of the ages 18-30 years, 31-40 years, 41-50 years and above 50 years respectively chose to sell the stocks. However the age differences and disposition effect were found to be insignificantly related at 5% with a P-*value* =0.639 *(Table 4).* The Cramer's V of 0.133 depicted a very weak relationship between Disposition effect and age.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.897[a]	2	.639
Likelihood Ratio	.900	2	.638
Linear-by-Linear Association	.878	1	.349
N of Valid Cases	51		

Table 4: Age and disposition Effect

5. Conclusion

The objective of the study was to determine whether behavioral biases affect individuals differently based on their age. A total of 57 respondents were considered for the study. The results depicted a significant relationship between age and overconfidence bias. Investors in the 18-30 years age bracket were the most affected while those in the 31-40 years were the least affected. This is in contrast With Rekik and Boujelbene (2013) who found that older investors were less affected as compared as compared to young investors and also Zaidi and Tauni (2012) who found an insignificant relationship between age and overconfidence bias.

Representativeness Bias was depicted in all the investors at 77%, 93% and 83% at age brackets 18-30 years, 31-40 years and 41-50 years respectively. However, the responses did not differ significantly among the different age brackets. The P- *value* was 0.347 which had indicated an insignificant relationship between age and representativeness bias.

Investors of all the age brackets were affected by confirmation bias. The most affected investors were between 31-40 years at 72%, followed by 18-30 years at 64% and lastly 41-50 years at 33%. The results showed an insignificant relationship between age and confirmation bias.

Disposition effect affected all the investors at 61%, 71% and 67% for age brackets 18-30 years, 31-40 years and 41-50 years respectively. However, there was an insignificant relationship between age and disposition effect at 5%. This contradicts a similar study by Bashir, Azam, Butt, Javed and Ayesha (2013) who found that age was negatively related with disposition effect.

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