



POST COVID-19 INFLUENCE OF HERDING EFFECT BIAS ON INVESTMENT DECISIONS OF PAKISTANI STOCK INVESTORS

Dr. Adeel Rahim, Lecturer Mgmt, FATA University, adeel.rahim@fu.edu.pk
Dr. Mumtaz Hussain Shah, Assit. Professor IMS Deptt, University of Peshawar
Dr. Zahirullah, Lecturer Mgmt, University of Baltistan, Skardu.
Jehan Zeb, Lecturer Sociology, FATA University

ABSTRACT- In this study researcher analysed post Covid-19 influence of Herding effect bias on investment decisions of Pakistani stock investors. Post Covid-19 Financial markets all over the World markets have changed and it affected investor decision making in number of ways. Conventional investments like keeping money in Banks, buying Fix term deposit, buying Prize bonds or gold bars is now outdated in current scenario. Investor now invest more wisely than before Covid-19 they prefer to encash those stock markets which sinked during Covid-19 pandemic and try to capitalize the opportunity of higher returns now when these markets are gaining momentum again. Pakistani stock market is one of those gaining momentum market where now not only local but foreign investors are investing and buying shares due to Herding effect bias and it has raised the KSE-100 index from 35112 to 42781(10th June- 10th September, 2020). Researcher made an attempt to address post Covid-19 influence of herding effect bias on investment decision of Pakistani stock investors by taking herding effect bias along with its sub variables as an independent variable and investment decision of these investors as dependent variable and evaluated the impact of both variables in post Covid-19 Pakistan stock market performance. Researcher used stratified random sampling technique by dividing Pakistan Stock Exchange (PSX) in three strata's: Karachi Stock Exchange (KSE), Lahore Stock Exchange (LSE) and Islamabad Stock Exchange (ISE). The study is quantitative in nature so questionnaire survey technique was employed for data collection from PSX individual investors of KSE, LSE and ISE. Over/Under react theory of behaviour finance is backing this study and has served the base for researcher. Researcher used descriptive statistics, rank correlation and its analysis, association method and applied logistic regression model. Findings of this study suggest that Post Covid-19 pandemic influence of Herding effect bias have positive impact on individual investors decisions at PSX.

Keywords: Pakistan stock exchange (PSX), Karachi Stock Exchange (KSE), Lahore Stock Exchange (LSE) and Islamabad Stock Exchange (ISE), individual investors, investment decisions and Herding effect bias.

I. INTRODUCTION

"Investor biases are often referred as capacity of irrational financial decisions that are caused by emotions". Recent studies show that investor biases play a vital role in influencing investment decisions. Researcher evaluated Herding effect bias influence and impact on individual investor decisions at PSX.

Over/Under Reacting Theory

This theory states that investors are price sensitive they get optimistic when share prices go up and get pessimistic when it goes downward so they over react or underreact to both situations. Investors usually refer to recent events than going into historical data and information which results in prices increase on good news and falling too much on bad news. When stock are moving upward the investor greed also moves upward to earn more and more(Hong .et.al,2003).

Herding effect bias in financial market is when people follow other actions and decision on their own. Practitioners usually consider herding effect bias in collecting private information so as to predict price deviation of the securities and to avail good chances for future investment. Academia also pay their attention to herding; because it plays a vital role in explaining risk and return models, asset pricing theories and stock price changes (Tan, Chiang, Mason & Nelling, 2008).

In financial markets investors tend to follow majority of investors in taking investment decisions and face peers pressure in this whole process (Hirshleifer & Teoh ,2003). Individual investors are affected by

“herd behavior” as they are influenced by recommendations of popular analysts and old investors (Scharfstein & Stein, 2000). But Welch (2000) in his study found that even financial analysts and experts could also be the victim of herding behaviour too and even though they are following old analyst recommendations in their new work. This revision added no recent information and was found to be heavily influenced by the prevailing market consensus (Welch, 2000).

Economou, Kostakis and Philippas (2010) in their study found herd behavior by investigating daily data from Italian, Greek, Spanish and Portuguese stock markets for the years 1998- 2008 under extreme market conditions during the global financial crisis of 2008 found the presence of herd behavior in that time as well. Their results of the study showed that Herding is found to be stronger during periods of rising markets in these stock markets and is not found Herding in the Spanish stock market but found it to be that present in the Portuguese stock market during periods of down turns. Finally, it is said that there is evidence of Herding effect bias during the global financial crisis of 2008 and investor behaviour seems to have been rational for the Greek stock market during this period and herding was found only in Portuguese stock exchange and evidence of anti-Herding for the Spanish and the Italian stock markets.

Investment decisions, “decisions which are related to financial matters and profit making are known as Investment decision”. After lapse of more than six decades of Pakistani Stock market investment decisions are still difficult to be taken even if it is taken by investors or by stock market analyst. Many global financial organizations or even best security companies failed to take best on investment decisions which are less risky and more rewarding. Before Covid-19 KSE-100 Index was roaming around 43000 points many security companies and brokers on media (Express Tribune, 5th, January 2020) were confident and predicted that KSE-100 Index would go up further but actually it does not happened and PSX faced severe dips in stocks movement after impact of Herding effect bias on investment decision till October 2020. Therefore, we can clearly state that conventional financial theories are out dated in today’s stock market volatility of PSX specially when evaluating investor biases impact on investment decisions of individual Pakistani stock investor. Behavioural finance which is based on psychological factors, emotional factors, investor biases including feelings: fear, panic, anxiety, envy, euphoria, greed, satisfaction, ambition or vanity can be helpful in this case as it can best explain behavioural biases impact while trading (Waweru et al., 2008). Birau (2011) found that investment decision is influenced by emotions in a large while taking decision in behaviour finance.

RESEARCH OBJECTIVES

* **To find**, influence and impact of Herding effect bias on individual investor decision at PSX post Covid-19.

* **To analyse**, influence and impact of Herding effect bias on individual investor decision at PSX post Covid-19.

* **To enable individual investors**, to avoid Herding effect bias negative impact on individual investor decision at PSX post Covid-19 and to enable them to get long term regular returns on their stock investments.

RESEARCH GAP

In Pakistan, so far no study is carried out on post Covid-19 on this topic according to the best of my knowledge. No doubt there are some Foreign studies under process to analyse this post Covid-19 influence of investor biases on investment decisions but not specifically on influence and impact of Herding effect bias on individual investor decisions post Covid-19. This paper will address the research gap of finding post Covid-19 influence and impact of Herding effect bias on individual investors decisions at PSX where Herding effect bias is taken as independent variables and Investment decision as Dependent variable which are never analysed before in Pakistan.

PROBLEM STATEMENT

Individual Investors could not avoid influence of investor biases specially herding effect bias at PSX pre and post Covid-19 on daily basis while taking investment decisions. To neutralize and buffer this Herding effect bias problem researcher analysed its influence on individual investor decisions at PSX post Covid-19.

II. RESEARCH METHODOLOGY

Research is quantitative in nature and primary data was collected through Questionnaire survey technique and then stratified random sampling technique was employed to the three strata's of PSX, KSE, LSE and ISE. From Literature review some hypotheses were proposed on post Covid-19 influence of Herding effect bias on individual investor investment decisions and these hypotheses were tested through self-administered questionnaires. Researcher created sample profile of individual investor on some characteristics such as: Experienced Stock Investors, above than 30 years of age and 3 years' experience. Young Stock Investors, below 30 years with less than 1 year investing experience.

HYPOTHESIS

Null Hypothesis H₀ : The Herding effect bias have No influence on individual investor decision at PSX post Covid-19.

Hypothesis H_A: Herding effect bias have influence on individual investor decisions At PSX post Covid-19.

III. DATA ANALYSIS AND INTERPRETATION

Table 1.1 Distribution of sample size gender-wise

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	412	89.2	89.2	89.2
Female	50	10.8	10.8	100.0
Total	462	100.0	100.0	

Above table explains distribution of total sample size of 462 respondents gender wise in data collected for the this study in which Male respondents were 89.2% (412)of the total population. Female respondents were 10.8 % (50) of the total population.

Table 1.2 Distribution of sample size age-wise

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
.00	2	.4	.4	.4
18-25	39	8.4	8.4	8.9
26-30	187	40.5	40.5	49.4
36-45	105	22.7	22.7	72.1
46-55	56	12.1	12.1	84.2
55 above	73	15.8	15.8	100.0
Total	462	100.0	100.0	

This table explores distribution of age wise total sample size of 462 respondents. Respondents aged between 18 and 25 were 8.4%(39) of total population under study. Respondents aged between 26 and 30 were 40.5 % (187) out of total population and was found to be higher than other Age groups respondents. Respondents aged between 36 and 45 were 22.7%(105) which of total population. Respondents aged between 46 and 55 were 12.1 % (56) of total population. Respondents aged 55 and above were 15.8% (73) of total population under study.

Table 1.3 Distribution of sample size experience and gender wise

Variables	Years of experience	Male and Female			
		Male Count	Table N %	Female Count	Table N %
	Less than 1 year	61	13.2%	14	3.0%
	1 to 3 years	233	50.4%	20	4.3%
	More than 3 years	118	25.5%	16	3.5%

The above table explains distribution of total sample size of 462 respondents on the basis of Experience and Gender wise data . Less than 1 year experience Male respondents were found to be 13.2%(61) of total population under study.1-3 years' experience Male respondents were found to be 50.4% (233) of total population was found to be higher than other groups of respondents . More than 3 years' experience Male respondents were found to be 25.5% (118) of total population under study. Less than 1 year experience Female respondents were found to be 3%(14) of total population under study. Female 1-3 years' experience respondents were found to be 4.3% (20) of total population was found to be higher than other groups of respondents. More than 3 years' experience Female respondents were found to be 3.5%(16) of total population under study.

Table 1.4 Descriptive Statistics of HerdingBias Factors

Sub Factors	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Statistic	Skewness Statistic	Kurtosis Statistic
HE1	1.00	5.00	3.2857	1.45077	-0.614	-0.751
HE2	1.00	5.00	3.6061	1.27406	-0.817	-0.232
HE3	1.00	5.00	3.9719	1.09290	-1.286	1.241
HE4	1.00	5.00	3.6017	1.21158	-0.912	0.212
HE5	1.00	5.00	3.0433	1.39657	-0.322	-1.224
HE6	2.00	5.00	3.9437	2.63488	1.749	1.932
HE7	1.00	5.00	3.7554	1.30189	-0.919	-0.293

In this table, results of descriptive statistics each factor and sub factors of Herding effect bias is shown. It includes minimum, maximum, mean, standard deviation, skewness and kurtosis of each factor. Maximum negative skewness -1.286 was recorded in HE3 followed by HE4,HE2, HE1 and HE5 which shows that maximum values are in left side of the mean value 3.9719 or less from the mean while in HE6 positive skewness 1.749 has been recorded which shows maximum vales are in right side of mean 3.9437 or greater than from mean. The maximum positive kurtosis 1.932 were recorded in HE6 followed by HE3 and HE4 which shows that these factor has heavier tails or leptokurtic distribution as greater than zero. While in the rest of factors negative kurtosis was observed which shows these factor have light-tailed or platykurtic distribution as less than zero.

Table 1.5 Descriptive Statistics Herding effect Bias

Variable	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Statistic	Skewness Statistic	Kurtosis Statistic
Herding effect bias	1.43	11.57	3.6011	0.67072	3.325	42.435

In this table, Mean value was found to be 3.6 which lies between 3 to 4 it shows that the Herding effect bias have high influence on investment decisions of individual investor at PSX.

CORRELATION ANALYSIS

It is employed to know whether linear relationship exists between different factors of same variable or not if it exists then whether it is negative or positive and its statistically significant or not, for this purpose Researcher used Rank Correlation method in this study whose data is Categorical in Nature. Chaudhry and Kamal (2016) studies found that; when you have categorical data then apply rank Correlation which is the best method in this case.

Table 1.6 Rank Correlation in Herding effect bias

Correlation between sub factors of Herding effect bias							
Factors	HE1	HE2	HE3	HE4	HE5	HE6	HE7
	1.000	.142**	.016	.078	.145**	.007	.033
HE1	.	.002	.731	.092	.002	.878	.477
HE2	.142**	1.000	-.063	.100*	.004	-.033	-.035
	.002	.	.177	.031	.934	.475	.453
HE3	.016	-.063	1.000	.008	.031	-.067	.144**
	.731	.177	.	.865	.506	.150	.002
HE4	.078	.100*	.008	1.000	.196**	.115*	.021
	.092	.031	.865	.	.000	.013	.655
HE5	.145**	.004	.031	.196**	1.000	.192**	.024
	.002	.934	.506	.000	.	.000	.601
HE6	.007	-.033	-.067	.115*	.192**	1.000	.070
	.878	.475	.150	.013	.000	.	.132
HE7	.033	-.035	.144**	.021	.024	.070	1.000
	.477	.453	.002	.655	.601	.132	.

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

The above table explains; the strength of linear relationship among different factors used in Herding effect bias through correlation matrix. As the data set involving these factors all are categorical type thus correlation matrix contains the results of rank correlation coefficients and p-value of significance and non-significance. It is evident that, factor HE1 is positive correlated with all others factors but positive and significantly correlated with HE2 and HE5 with p-value = .002 for both. Positive and significant correlation is recorded between HE2 and HE4, while positive but insignificant correlation between HE2 and HE5 were also noticed. Correlation between HE2 and other factors are recorded negative and insignificant. Correlation of HE3 with HE4, HE5, and HE7 are recorded positive but significant except with HE7 which is found significantly correlated with HE3, also correlation between HE4 and HE5 were recorded negative and insignificant. The results of correlation of HE1 with HE2, HE3 and HE4 showed positive and highly significant except HE7 which relation with HE4 is positive and significant. Similarly the correlation of HE5 with HE6, HE7 and Correlation of HE6 and HE7 are noted positive and significant.

ASSOCIATION METHOD

Here in this analysis Association method is used to evaluate hypothesis which are not justified by logistic regression model.

Table 1.7 Association of Individual investor decisions and gender

Status	investor	Male and Female		Total
		Male	Female	
Individual decisions	Disagree	68	6	74
	Agree	344	44	388
Total		412	50	462

Chi square 0.673 P-value = 0.412

From the table 1.7 shows that out of total 462 respondents in which 68 are male and remaining 6 are female respondents all are disagree that Herding effect bias influencing investment decisions. The remaining 388 respondents agreed that investor biases influencing investment decisions. But overall the association between gender and investor decisions are found insignificant with Chi-square = 0.673 and P-value = 0.412 > 0.005, which means that respondent gender have no significant impact on investment decisions.

Table 1.8 Association of Individual investor decisions and Education

Status		Education level				Total
		.00	Graduate	Masters	Other	
Individual investor decisions	Disagree	2	12	32	28	74
	Agree	6	20	164	198	388
Total		8	32	196	226	462

Chi square 13.684 P-value = 0.003

From the table 1.8 it is recorded that out total 462 respondents 196 respondents having master's degree and above 164 of them are agreed to that investor biases influencing investment decisions and the remaining and 32 are disagree. Maximum number of respondents which is 226 having education degrees others in which 28 are disagree and the remaining 198 are agreed that investor biases influencing investment decisions. Overall 74 are disagree that investor biases influencing investment decisions and the remaining 388 respondents agreed to that. However the association between education and investor decisions are found significant with Chi-square = 13.684 and P-value = 0.003 < 0.05, which means that respondent education have significant impact on investment decisions of investor.

Table 1.9 Association of Investor decisions and Age

Status		Age						Total
		.00	18-25	26-30	36-45	46-55	55 above	
Investor decisions	Disagree	1	8	26	13	7	19	74
	Agree	1	31	161	92	49	54	388
Total		2	39	187	105	56	73	462

Chi square 9.909 P-value = 0.078

Table 1.9 shows result of association between individual investor decision and age. Maximum number of respondents lie in the age group 26-30 are 187 in which 26 disagreed and 161 to that, that investor biases influencing investment decisions. However out total 462 respondents 74 are disagreed and 388 are agreed that investor biases influencing investment decisions. But overall the association between respondent age and investment decisions are found significant with Chi-square = 09.909 and P-value = 0.008 < 0.05, which means that respondent age have statistically significant impact on investment decisions.

Table 1.10 Association of Individual investor decisions and experience

Status		Years of experience			Total
		Less than 1 year	1 to 3 years	More than 3 years	
Investor decisions	Disagree	13	49	12	74
	Agree	62	204	122	388
Total		75	253	134	462

Chi square 7.176 P-value = 0.028

Table 1.10 presents result of association between respondent individual investor decision and their experience. Total respondents having experience more than three years are 134 in which 12 disagreed and remaining 122 agreed to that. However out of total 462 respondents 74 are disagreed and 388 are agreed that, experience of respondents influencing investment decisions. But overall the association between respondent experience and investment decisions are found significant with Chi-square = 7.176 and P-value = 0.028 < 0.05, which means that respondent experience have statistically significant impact on investment decisions.

LOGISTIC REGRESSION

“The purpose of logistic regression is to identify the significant impact of each independent variable on dependent variables also to identify the positive and negative impact of independent variables on dependent variable”. So researcher employed this in the current study and found these results:

Table 1.11 Logistic Regression Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	383.150 ^a	49.547	64.764

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 1.11 explains results of model performance through -2 Log likelihood and two type's pseudo R Square to estimate the explained variance in the fitted model. The recorded values of Cox & Snell R Square = 49.547 and Nagelkerke R Square = 64.764, indicates that about 50 percent and 65 percent variation is explained in dependent variable on the basis of given independent variables, which are quite good.

Impact of overall herding effect bias on investment decision

Table 4.15 shows summary of descriptive statistics for over all herding effect bias. The minimum and maximum values were recorded for over all herding effect bias 2.29 and 4.29 respectively. The mean value = 3.62 recorded for over all herding effect bias with standard deviation = 0.39677. The recorded mean value lies between in the range 3 to 4, indicates that, the herding effect bias have high impact on investment decisions of Pakistani stock investors. Also from table negative skewness and positive kurtosis were recorded for over all herding effect bias which shows that mostly values are lie left side to the mean or less than from mean and the distribution has high peak or leptokurtic.

CONTRIBUTION TO THE FIELD

Findings of this study can help brokers, agents, individual investors and portfolio managers on daily basis while taking investment decisions post Covid-19 . It will try to overcome influence and impact of Herding effect bias while taking individual investment decision specifically in Pakistan Stock Exchange post Covid-19. It will help them to gain shareholders confidence and add value to the firms by increasing earnings per share of shareholders if Herding effect bias and other biases are neutralized these investor biases even when they face pandemics like Covid-19 in future as well. As these pandemics are fortune breaker and changer at the same time. Financial market experts could capitalize these pandemics in both ways during pandemic exploitation of poor investors and after pandemic end by increasing prices of shares they bought from poor investor.

FUTURE AVENUE

The researcher carried study on Pakistan stock exchange post Covid-19 upcoming researchers can extend it to other similar size stock markets of South East Asia. Similarly, upcoming scholars can analyse influence of other investor biases than Herding effect bias on individual investor decisions at PSX pre Covid-19 and during Covid-19 as well.

IV. CONCLUSION

Findings of the current study shows that post Covid-19 impact of Herding effect bias have positive influence on individual investor decisions at PSX by accepting main Hypothesis and rejected Null Hypothesis and found Herding bias have No influence on individual investor decisions at PSX post Covid-19. Descriptive statistics mean value of Herding effect bias was 3.60 which shows that the Herding bias have high level of influence on individual investors decisions. Therefore, post Covid-19 PSX individual investors are Overconfident an optimal level to utilize their expertise and experience to get rewarding investment decisions. However, overconfident traders underestimate both systematic and unsystematic risks of stock market so best advice for Pakistani individual stock investors is that post Covid-19 Herding bias effect can be avoided if prior information and knowledge about market volatility is fully available and we learn how to capitalize investments done in pandemics after end of pandemics.

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