Investment Behavior: The Effects of Overconfidence Bias and Herding Behavior

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Abstract

This study analyzes the factors that influence individual investment behavior in Budhanilkantha Municipality, focusing on the psychological aspects that affect decision-making. The research specifically looks at how overconfidence bias and herding behavior impact investment choices, using gender as a moderating variable. The research utilized a cross-sectional design. A structured questionnaire was employed to gather data from 107 participants with diverse occupational backgrounds. The findings indicate a significant positive relationship between overconfidence bias, herding behavior, and investment decisions. Investors who exhibit higher confidence in their knowledge tend to make more frequent investment decisions, and many are also influenced by the opinions and behaviors of their peers. Overconfidence bias was identified as the most influential factor in investment behavior. The study concludes that understanding these psychological influences is vital for individual investors and financial professionals when making informed decisions. This knowledge contributes to market stability and efficiency. The insights gained from this study offer valuable implications for developing investment strategies and enhancing financial literacy initiatives.

Keywords: *Investment Behavior; Overconfidence Bias; Herding Behavior; Investment Decisions; Behavioral Finance; Psychological Factors.*

JEL Classification: *C31; G10; E22; F65; G40*

Introduction

Personal investing is not just about financial research and data crunching; human psychology also plays a significant role (Lakshmi et al., 2024). The personality of each investor varies due to differing ethos but typically, they base their investment decisions on objectives, profitability, and associated risks (Gakhar, 2019). Investors consider economic factors such as expected earnings, the condition of financial statements of firms/companies, recent price movements, risk, returns, etc., before investing; however, their emotional bias also influences their evaluations, and they may not be entirely objective (Riaz et al., 2012). Chira et al., (2008) address that consideration of psychological and emotional factors will help investors make better decisions, avoiding future errors by consciously choosing the best investment option. Psychological factors strongly influence decision-making by shaping our

preferences (Sarwar & Afaf, 2016). Behavioral finance (BF) is an emerging discipline that encompasses various approaches to redefining the traditional view of economic rationality in finance. Specifically, BF utilizes research from psychology and cognitive science to explore the reasons behind individuals frequently making decisions that deviate from rational choices in consistent patterns (Chira et al., 2008).

Behavioral finance combines behavioral biases with an intellectual psychological component, as well as economics and finance, to create a solid supporting rationale for people's irrational behavior while making financial decisions (Javeed et al., 2017). It believes that the investors are influenced by their own biases rather than being rational (Olsen, 1998). In Nepal, NEPSE provides a platform for trading shares and stocks, with digitalization allowing online order placements, trading, and transaction settlements, enhancing transparency and convenience. The COVID-19 pandemic has led to increased stock market investments, making it a popular source of passive income post-pandemic. Financial literacy has improved, supported by educational institutions and social media. Access to news from platforms like *Share Sansar* and *Nepali Paisa* has boosted investor confidence (Rijal, 2022). Aregbeyen and Mbadiugha (2011) concluded a positive relationship between such factors with investment decisions in Nigeria, a developing nation. The result is consistent with the study of Riyazahmed and Saravanaraj (2015) in India, a developing nation. Likewise, the positive impact of such factors on investor decisions is visible from the study (Singh & Yadav, 2016). The study implies that females are more affected by such factors in comparison with males. Since every consistent research conclusion was drawn from the study area of developing nations, this study explores the impact of psychological factors in the Nepalese context. Thus, the study attempts to study the impact of psychological factors on investment decisions among individuals above 18 years old residing in Budhanilkantha Municipality. Likewise, the study focuses on determining the significant difference in the perception of the independent and dependent variables across genders.

Theoretical Review

Theory of Behavioral Finance (TBF)

The concept of behavioral finance can be traced back to 1912 when George Seldon published "Psychology of the Stock Market." However, the theory gained popularity and momentum in 1979 when Daniel Kahneman and Amos Tversky suggested that most investors tend to make decisions based on subjective reference points rather than objectively choosing the best option. Behavioral finance is an economic theory that suggests that investors often make financial decisions based on emotions rather than rationality and uses financial psychology to interpret investors' actions. According to the theory, investors are not always rational; instead, they have cognitive biases and limited self-control that led to errors in judgment. Some of the cognitive biases that affect our financial decisions include overconfidence bias, herd mentality, loss aversion, and confirmation bias. Similarly, key components of the theory include heuristics, mental accounting, and anchoring. The theory helps in identifying and overcoming financial biases and understanding how individual choices affect the market. Overall, behavioral finance helps in understanding how human emotions, biases, and cognitive limitations influence financial decisions regarding investments, payments, risk, and debt.

Theory of Planned Behavior (TPB)

The theory of planned behavior, developed by Icek Ajzen in 1985 and 1991, aims to predict and explain a wide range of behaviors. It is an extended version of the theory of reasoned action (TRA) and examines the relationships between beliefs, attitudes, behavioral intentions, and actual behavior in human domains. The theory suggests that individuals have intentional control over their behavior. The more effort individuals put into performing a behavior, the more likely they are to succeed. This theory helps in understanding and predicting various financial decisions and behaviors, such as investment choices, debt management, mortgage use, cash saving, and credit management. According to the theory, achieving behavioral goals depends on both motivation (intention) and ability (behavioral control). It assumes that the more positive the attitude and subjective norm, and the greater the perceived control, the stronger a person will intend to perform a particular behavior.

Modern Portfolio Theory

Markowitz (1952), an American economist developed a theory of "portfolio selection," which allows investors to analyze risk relative to their expected profit. For his pioneering work, Markowitz, a professor at Baruch College at the City University of New York, shared the 1990 Nobel Memorial Prize in Economic Sciences with William Sharpe and Merton Miller. Markowitz's theory, now recognized as Modern Portfolio Theory (MPT), is an investment framework aimed at maximizing expected returns for a specified level of risk or, inversely, minimizing risk for a target return by strategically selecting asset proportions. Unlike traditional security analysis, portfolio theory focuses on the statistical relationships between the securities within the entire portfolio rather than just the traits of individual investments (Edwin & Martin, 1997). Modern portfolio theory posits that the risk and return of a specific investment should not be assessed in isolation. Instead, they should be considered in terms of their impact on the portfolio's overall risk and return. In other words, investors can build a collection of various assets that achieve higher returns without increasing the level of risk.

Empirical Review

Aregbeyen and Mbadiugha (2011) concluded that investors' decisions are significantly influenced by social, economic, cultural, and psychological factors, with social influences having the strongest impact. Economic factors, such as financial security and company performance, play a critical role, while psychological and cultural factors exert moderate to low influence. The findings support the behavioral finance theory, emphasizing that investment decisions are not purely rational but are influenced by cognitive biases and social pressures. Wamae (2013) found that the behavioral factors influencing investment decisions in Kenya's stock market, focusing on risk aversion, prospecting, anchoring, and herdin have positive association with investment decisions, with herding having the greatest impact, followed by anchoring and prospecting, while risk aversion had the least contribution. Lodhi (2014) found that higher financial literacy boosts risk-taking in investment decisions, as literate investors can better identify strong companies. Interestingly, older investors often prefer lower-risk options, and improved accounting information reduces information asymmetry, leading to safer investments. Ultimately, age affects investment preferences, reducing risk appetite and favoring dividends over capital gains.

Riyazahmed and Saravanaraj (2015) divided the behavioral factors into four categories: heuristics, prospect, market, and herding. The study found that all heuristic variables moderately impact investment decisions, with the prospect dimension having a high impact. Fear of loss leads to lower stock market investments, while market information, price changes, and trends significantly influence decisions. Updated knowledge and share price fluctuations heavily affect investors, who often seek advice from peers before entering the market. Singh and Yadav (2016) concluded that economic factors, financial factors, social factors, cultural factors, and psychological factors have positive effect of all factors on investment decisions concerning gender. Sarwar and Afaf (2016) concluded a positive and significant relationship between psychological factors and economic factors on investment decisions; however, psychological factors have a greater impact on investment decisions compared to economic factors. Mweu and Omwenga (2017) reveal that firms' financial statements positively impact investor decisions. Key factors include net worth and liquidity, which attract investors, as well as the correlation between disposable income and investment choices, emphasizing a need for a stronger economy. Additionally, access to market information like dividends and ROI via ICT is crucial. Investors with strong financial management knowledge are more active, highlighting the importance of awareness for market growth. Gill et al., (2018) found a positive relationship between economic expectations and investment decisions, indicating that economic growth encourages higher investments. However, when information search was considered as a mediating variable, this relationship became insignificant and negative. Additionally, a significant positive relationship was identified between overconfidence bias and investment decisions, suggesting that overconfident investors are drawn to investments for potential maximum profits. Information search partially mediates this relationship, as it influences investors' attention to market realism.

Riaz et al., (2020) found that herding dimensions significantly influence investor decisions, with the prospect dimension leading to increased risk aversion during COVID-19. It noted that past stock performance was a key

factor, and all heuristic dimensions had a strong impact. Investors often rely on their skills and intuition about the economy, believing these would yield profitable outcomes. Safdar et al., (2020) focused on the examination of psychological and sociological factors affecting the investment decisions of individuals which concluded all the independent variables have a positive and significant relationship with investment decisions. Hartini et al., (2022) concluded that while risk profile negatively impacts investment decisions, diversification behavior positively affects decision-making through risk spreading. Financial literacy does not moderate the effects of risk profile and diversification but strengthens the impact of retirement preparedness, regulation, and technology on investment choices. Jamil et al., (2023) concluded that there is a partial positive effect of financial literacy and a significant positive effect of financial efficacy on investment decisions. It disclosed that the investors' knowledge of financial resources management and capabilities to manage it have a heavy influence on their investment decisions. Shahzad et al., (2024) concluded that behavioral biases, specifically ORAAH: overconfidence, representativeness, availability, anchoring, and herding biases significantly influence individual investment decisions in the stock market. The results highlight the importance of effectively managing ORAAH practices for different stakeholders, as this can result in notable returns on their investments. Investors should consider these common behavioral biases to reach their long-term strategic investment objectives.
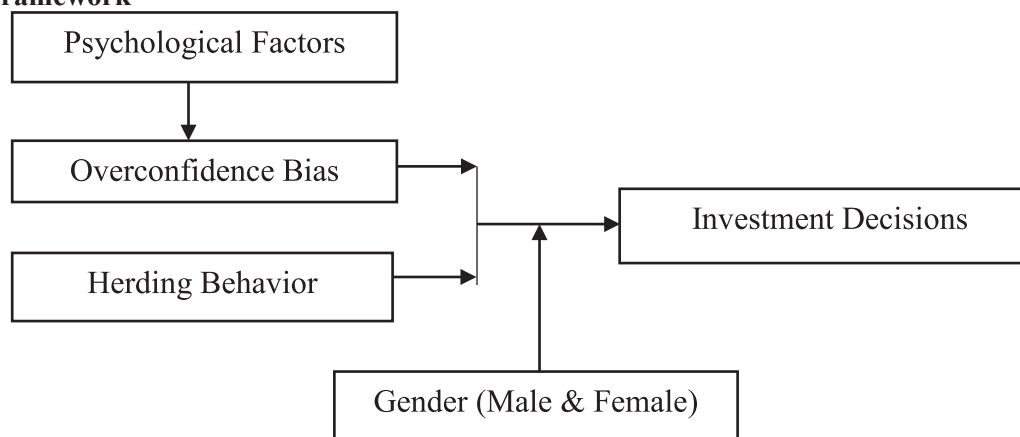
Research Framework

Figure 1: Conceptual Framework of the Study

The psychological factors included herding behavior and overconfidence bias as its dimension. Herding behavior is simply the tendency to follow the footwork of others. Overconfidence bias is the tendency to overestimate own skills and knowledge that presents a negative impact on decision-making. The moderating variable in the study is gender (male and female).

Operational Definitions:
Overconfidence Bias
Overconfidence means when someone has more confidence in his/her abilities in some situation (Sarwar & Afaf, 2016). Overconfidence bias makes an investor think that the investment decisions of other persons are caused by their emotions, perceptions, feelings, and moods while their own decisions are a result of purposeful and sensible ideas that make them think all their decisions are logical while opinions of others as illogical and insensible (Gill et al., 2018). This study highlights the overconfidence bias, which refers to investors' tendency to believe that they possess complete knowledge about investment decisions that lead them to invest in stocks based on their own experience, belief that the Stock Exchange is an attractive investment channel, and rely on market statistics without spending enough time analyzing them.

Herding Behavior

Herding behavior refers to the tendency of an individual to follow the actions or directions of others; with the advent of online trading, investors can react more quickly to new information. Investors impressed by the effects of herding trend move in similar flows with other investors when stock prices change (Caparrelli et al., 2004). Some investors have the impact of others on their decision-making instead of following their strategies (Bikhchandani & Sharma, 2000). This study has emphasized the concept of herding behavior, which refers to the tendency of individuals to rely on the recommendations of their friends and colleagues when making investment decisions. They may be motivated to invest when they see others doing the same and tend to follow the reaction of others in the stock market, which can easily influence their decision-making process.

Investment Decisions

Investment decisions are made to seek better returns in the future by sacrificing immediate advantages (Kishori & Kumar, 2016). Investment decisions of individuals are more heavily influenced by psychological factors than by economic factors (Sarwar & Afaf, 2016). Laopodis (2020) defines investment as today's sacrifice of resources (time, money, & energy) to get better or more resources in the future. Musfidah et al., (2022) states making an investment decision means choosing the best way to achieve the goal of obtaining future returns with limited financial resources. This study highlights the importance of considering various factors before investment decisions, having confidence in one's ability to outperform the market, and selecting safe investment instruments for a high degree of investor satisfaction level.

Table 1

Sources of Construct

Variables	Sources
Overconfidence bias	Riyazahmed and Saravanaraj (2015); Sarwar and Afaf (2016); Gill et al., (2018); Shahzad et al., (2024)
Herding behavior	Riyazahmed and Saravanaraj (2015); Riaz et al., (2020); Wamae (2013); Sarwar and Afaf (2016); Singh and Yadav (2016); Shahzad et al., (2024)
Investment decisions	Riyazahmed and Saravanaraj (2015); Riaz et al., (2020); Aregbeyen and Mbadiugha (2011); Lodhi (2014); Safdar et al., (2020); Singh and Yadav (2016); Wamae (2013); Mweu and Omwenga (2017); Hartini et al., (2022); Jamil et al., (2023); Gill et al., (2018); Sarwar and Afaf (2016); Shahzad et al., (2024)

Hypotheses

H_{01}: *There is no significant relationship between herding behavior and investment decisions.*

H_{02}: *There is no significant relationship between overconfidence bias and investment decisions.*

H_{03}: *There is no significant impact of herding behavior on investment decisions.*

H_{04}: *There is no significant impact of overconfidence bias on investment decisions.*

H_{05}: *There is no significant difference in perception of overconfidence bias across males and females.*

H_{06}: *There is no significant difference in perception of herding behavior across males and females.*

H_{07}: *There is no significant difference in perception of investment decisions across males and females.*

Research Methods

The study employed a quantitative research approach to quantify and analyze the collected data through mean, median, standard deviation, correlational, and regression analysis. Likewise, the study has used a deductive approach from the reasoning perspective using the theory of behavioral finance, and the theory of planned behavior (Aregbeyen & Mbadiugha, 2011) and (Wamae, 2013). In addition, a cross-sectional research design is adopted since the data was collected only once from potential investors. The population of the study were individuals aged above 18 years old irrespective of their occupational status from the Budhanilkantha Municipality. The selection of the study area was based on the convenience factor for the researcher to collect data. The study included only

individuals above 18 years old who were eligible to operate their demat account and make rational decisions. Since the population size was larger and unknown, the sample was drawn based on the convenient sampling technique to determine a sample size of 97 which means 97 or more surveys are needed at a confidence level of 95% within ±10% margin error (Yamane, 1967). A total of 115 questionnaires were distributed to those who were willing to participate and were distributed via online and offline methods from May 12, 2024. The questionnaires were distributed through social media channels like Facebook and Instagram. A total of 50 questionnaires were distributed in printed form to the respondents. The responses were analyzed to examine the validity of the questionnaire which resulted in 8 responses being invalid. Consequently, the study was based on 107 valid questionnaires. The study is based on primary data collected via a structured questionnaire designed to determine the impact of psychological factors on the decision-making of potential investors. The participants were given instructions for each question, including yes/no questions, ranking questions, multiple choice questions, and a Likert scale ranging from strongly disagree to strongly agree. The Likert scale questions were formulated based on a review of literature and past literature from the potential investors. The data was first entered into MS Excel and then evaluated and analyzed using SPSS software.

Model Specification

$Y = a + b_1X_1 + e$

$Y = a + b_2X_2 + e$

Where, Y = *Investment decision*

a = *Intercept*

X_1 = *Overconfidence bias*

X_2 = *Herding behavior*

b_1 = *Coefficient of overconfidence bias*

b_2 = *Coefficient of herding behavior*

e = *error term*

Results

Demographic Analysis

Table 2

Demographic Results

Gender	Frequency	Percent	Cumulative Percent
Male	43	40.2	40.2
Female	64	59.8	100
Total	107	100	
Age			
18-24	80	74.8	74.8
24-30	13	12.1	86.9
above 30	14	13.1	100
Total	107	100	
Educational Level			
Plus 2	11	10.3	10.3
Bachelors	81	75.7	86
Masters	15	14	100
Total	107	100	
Occupation			
Student	70	65.4	65.4

Business	7	6.5	72
Nurse/ Health Professionals	5	4.7	76.6
Others	25	23.4	100
Total	107	100	
Investment Experience			
Yes	73	68.2	68.2
No	34	31.8	100
Total	107	100	

Table 2 shows that out of 107 respondents, 43 are male and 64 females, indicating a higher female proportion. The age distribution shows that 80 respondents (74.8%) are in the 18-24 age group, followed by 13 (12.1%) in the 24-30 age group and 14 (13.1%) above 30. Most (75.7%) hold a Bachelor's degree, while 14% have a Master's and 10.3% are at the Plus 2 level. Additionally, 65.4% (70 individuals) are students, 6.5% (7 individuals) are in business, and 4.7% (5 individuals) work in nursing and health. Also, 73 participants are involved in investment decisions, with 68.2% having investment experience. It indicated the participation of investors having investment experience.

Opinion Survey Analysis

Table 3

Results on Opinion Survey

Responses	Opinion on following footwork of other		Cumulative
	Frequency	Percent	Percent
Yes	89	83.2	83.2
No	18	16.8	100
Total	107	100	
Opinions on spending time analyzing the market			
Yes	93	86.9	86.9
No	14	13.1	100
Total	107	100	
Opinions on the recommendation to others to invest			
Yes	92	86	86
No	15	14	100
Total	107	100	
Influencing factors of investment decisions			

Statement	Responses		Percent of Cases
	N	Percent	
Financial knowledge about the share market	75	31.90%	70.10%
Recommendations from friends and colleagues	44	18.70%	41.10%
High return and future financial security	74	31.50%	69.20%
Experience with investment instruments	42	17.90%	39.30%
Total	235	100.00%	219.60%

Prioritizing the motivating factors in investment decisions among respondents

Statements	Rank 1		Rank 2		Rank 3		Rank 4		Median	Rank
	N	%	N	%	N	%	N	%		
Financial security	59	56.20%	25	23.80%	16	15.20%	5	4.80%	1	1
Friends' recommendation	4	3.80%	18	17.10%	16	15.20%	67	63.80%	4	4
Experience in the share market	17	16.20%	29	27.60%	47	44.80%	12	11.40%	3	3
Financial literacy	25	23.80%	33	31.40%	26	24.80%	21	20.00%	2	2

Table 3 shown that 83.2% of participants follow the investment choices of friends, colleagues, brokers, and relatives, while 16.8% do not. Out of 107 respondents, 89 follow others' decisions, and 14 (86.9%) do not spend enough time analyzing the stock market, with 93 investing sufficient time. Additionally, 92 respondents (86%) recommend investing in the stock market, whereas 15 do not. Based on Table 2, 86% of participants suggest that their friends and relatives participate in the stock market. The primary factor influencing investment decisions is financial knowledge about the stock market, supported by 31.90% of respondents (75 responses). Additionally, 74 respondents indicated that future financial security and high returns affect their choices. Approximately 31.50% believe that future earnings and financial security significantly impact their decisions. Recommendations from friends and relatives influenced 18.70% (44 responses), while experience with investment instruments had the least influence at 17.90% (42 responses). Overall, financial knowledge was the most significant factor, while experience ranked the lowest. The majority of respondents, 56.20%, ranked financial security as the top motivator for investors, followed by financial literacy at 31.40%. Experience in the stock market was the third most important factor, supported by 44.80%. Friends' recommendations were deemed the least significant, with 63.80% of participants considering them unimportant.

Survey on Overconfidence Bias

Table 4

Survey on Overconfidence Bias

Statements	Ratings					Total responses	Weighted value	Weighted mean
	SDA	DA	N	A	SA			
I have complete knowledge of the stock exchange.	11	37	44	12	3	107	280	2.62
I invest in the stocks which I think to be the best according to my own experience.	10	11	34	43	9	107	351	3.28
I believe that the Stock Exchange is an attractive investment channel.	0	12	24	49	22	107	402	3.76
I take the least time possible to analyze and rely on available market statistics.	12	28	34	27	6	107	308	2.88
Grand weighted mean								3.13

Table 4 shows that investors view the stock market as the most attractive investment channel, with a weighted mean of 3.76. Experience with stocks and financial instruments influenced their decisions, averaging 3.28. Most respondents were neutral about the time spent analyzing market statistics, with a mean of 2.88. The respondents also showed neutral agreement on having complete knowledge of the stock exchange, averaging 2.62. Overall, the weighted mean for overconfidence bias was 3.13, indicating it is the most influential factor in investment decisions.

Survey on Herding Behavior

Table 5

Survey on Herding Behavior

Statements	Ratings					Total responses	Weighted value	Weighted mean
	SDA	DA	N	A	SA			
I consider information from friends/ colleagues to be more reliable.	7	26	36	31	7	107	326	3.05

Statements	Ratings					Total responses	Weighted value	Weighted mean
	SDA	DA	N	A	SA			
My investment is motivated when others are making a new investment.	7	19	30	44	7	107	346	3.23
I usually react quickly to the changes in other investors' decisions and follow their reactions to the stock market.	6	28	42	27	4	107	316	2.95
Grand weighted mean								3.08

Table 5 shows that most respondents reported being motivated by others' investment decisions, with a weighted mean of 3.23. The respondents found information from fellow investors, friends, and relatives reliable, yielding a mean of 3.05. However, participants were neutral about quickly reacting to others' stock market decisions, with a mean of 2.95. The overall weighted mean for this variable is 3.08.

Survey on Investment Decisions

Table 6

Survey on Investment Decisions

Statements	Ratings					Weighted value	Weighted mean
	SDA	DA	N	A	SA		
In general, I am satisfied with how I make investment decisions.	6	19	37	41	4	339	3.17
I consider all possible factors while making investment decisions.	4	17	27	37	22	377	3.52
I believe that my skills and knowledge of the market help me to outperform the market.	4	20	42	33	8	342	3.20
I make sure that my investment in stocks has a high degree of safety investment decision-making.	6	14	27	51	9	364	3.40
Grand weighted mean							3.37

Table 6 highlights that most investors thoroughly evaluate various factors before making investment decisions, evidenced by a weighted mean of 3.52. Additionally, with a weighted mean of 3.40, investors prioritize maintaining high security in their investment instruments. They also tend to agree that their market skills contribute to outperforming, reflected in a weighted mean of 3.20. Overall, investors express satisfaction with their decisions and practices, considering risk and other influences, resulting in a satisfaction mean of 3.17.

Gender and Time Spent to Analyze the Share Market

Table 7

Cross-Tabulation between Gender and Time Spent to Analyze the Share Market before Making Investment Decisions

Gender		Time spent to analyze the share market before making investment decisions		Total
		Yes	No	
Male	Count	39	4	43
	% within Gender	90.70%	9.30%	100.00%
Female	Count	54	10	64
	% within Gender	84.40%	15.60%	100.00%
Total	Count	93	14	107
	% within Gender	86.90%	13.10%	100.00%

Table 7 illustrates the relationship between gender and the tendency to analyze the stock market for informed investment decisions. The data reveals that 90.7% of male participants (39 individuals) and 84.4% of female participants (54 individuals) are inclined to invest significant time in market analysis. Conversely, 9.3% of males and 15.6% of females feel they haven't dedicated enough time to this practice. Overall, 86.9% of participants demonstrate a strong interest in stock market analysis, with males showing a slightly higher inclination.

Descriptive Analysis

Table 8

Descriptive Analysis Results

Variables	Mean	Median	Std. Deviation	Variance	Skewness	Kurtosis
Overconfidence bias	3.133	3.250	0.599	0.359	-0.471	0.608
Herding Behavior	3.078	3.333	0.772	0.597	-0.387	-0.650
Investment Decision	3.322	3.500	0.728	0.531	-0.696	0.695

In Table 8, overconfidence bias has the highest mean value at 3.133, followed closely by herding behavior at 3.078. The mean for investment decisions stands at 3.322. The highest median is for herding behavior at 3.333, followed by overconfidence bias at 3.250, while investment decisions have a median of 3.5. Regarding variability, herding behavior shows the highest standard deviation (0.772) and variance (0.597), with investment decisions next at 0.728 and 0.531, respectively. Overconfidence bias has the lowest standard deviation (0.599) and variance (0.359). In terms of skewness, both overconfidence bias (-0.471) and herding behavior (-0.387) exhibit slight negative skewness, while investment decisions show a more pronounced negative skewness (-0.696). The kurtosis indicates that overconfidence bias (0.608) and investment decisions (0.695) have moderate kurtosis, reflecting heavier tails and concentration around the mean. In contrast, herding behavior exhibits a platykurtic distribution, indicating a flatter shape with lighter tails and more evenly spread data points.

Independent Sample t-test

Table 9

Independent Sample t-test for the Equality of Mean Across Gender

Variables	Equal Variance	Levene's Test for Equality of Variances		t-test for Equality of Means				Hypothesis Result
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	
Overconfidence bias	Equal variances assumed	0.165	0.685	0.912	105.00	0.364	0.108	Ho is accepted
	Equal variances not assumed			0.911	89.90	0.365	0.108	
Herding Behavior	Equal variances assumed	0.609	0.437	-0.173	105.00	0.863	-0.027	Ho is accepted
	Equal variances not assumed			-0.173	89.58	0.863	-0.027	
Investment Decision	Equal variances assumed	0.258	0.612	0.984	105.00	0.327	0.141	Ho is accepted
	Equal variances not assumed			0.981	89.47	0.329	0.141	

Table 9 presents results assuming equal variance for overconfidence bias, herding behavior, and investment decisions. For overconfidence bias, the mean difference between male and female respondents is 0.108 with a P-value of 0.685, indicating an insignificant difference. Similarly, herding behavior shows a mean difference of -0.027 with a P-value of 0.437, also deemed insignificant. In terms of investment decisions, the mean difference is 0.141, with a P-value of 0.612, again leading to an acceptance of the null hypothesis. Overall, all tests result in accepting the null hypothesis, suggesting no significant differences across genders in these areas.

Association Analysis

Table 10

Integrated Correlation Matrix

Variables	OB	HB	ID
OB	1		
HB	.298** 0.002	1	
ID	.533** 0.001	.403** 0.001	1

Table 10 presents a significant positive correlation between overconfidence bias and investment decisions, evidenced by a correlation coefficient of 0.533 at a 99% confidence level (p < 0.01). This indicates that higher overconfidence enhances investment decision-making. Additionally, herding behavior also shows a positive relationship with investment decisions, with a correlation coefficient of 0.403 at the same significance level. Thus, increased herding behavior corresponds with more active investment decisions.

Impact of Overconfidence Bias on Investment Decisions

Table 11

Integrated Impact Analysis of Overconfidence Bias on Investment Decisions

Coefficients a	Unstandardized Coefficients		t	Sig.	F	Sig.	Model result	Adjusted R Square
	B	Std. Error						
(Constant)	1.292	0.32	4.033	0.001	41.666	.001b	Model is fit	0.277
OB	0.648	0.1	6.455	0.001				

Hypotheses result: Null hypothesis rejected at 0.01 level
Dependent Variable: Investment Decision

In Table 11, overconfidence bias significantly impacts investment decisions, with a regression coefficient of 0.648, leading to the rejection of the null hypothesis at the 0.01 significance level. This suggests a 1% increase in overconfidence bias corresponds to a 0.648% increase in investments. Additionally, the model's accuracy at the same significance level, showing overconfidence bias accounts for 27.7% of the variation in investment decisions, making it the most influential factor compared to herding behavior.

Impact of Herding Behavior on Investment Decisions

Table 12

Integrated Impact Analysis of Herding Behavior on Investment Decisions

Coefficients a	Unstandardized Coefficients		T	Sig.	F	Sig.	Model result	Adjusted R Square
	B	Std. Error						
(Constant)	2.151	0.267	8.052	0.001	20.414	.001b	Model is fit	0.155
HB	0.381	0.084	4.518	0.001				

Hypotheses Result: Null hypothesis is rejected at 0.01 level
Dependent Variable: Investment Decision

Table 12 demonstrates that herding behavior positively influences individual investment decisions, with a regression coefficient of 0.381. This indicates that the null hypothesis is rejected at the 0.01 significance level, suggesting a 1% increase in herding leads to a 0.381% rise in investment decisions. The model also fits well at the same significance level, confirming the accuracy of the predictions. Additionally, the herding behavior accounts for 15.5% of the variance in investment decisions.

Discussions

The analysis revealed a significant link between overconfidence bias and investment decisions among individuals aged 18 and above. Increased overconfidence often leads to a greater interest in investing, potentially resulting in less scrutiny of market data. The findings align with the research conducted by Sarwar and Afaf (2016), which identified a strong correlation between overconfidence and investment choices. Similarly, Gill et al., (2018) observed that overconfident investors tend to be more proactive in seeking returns, driven by their perceived abilities. Furthermore, the results are consistent with those of Shahzad et al., (2024), who highlighted a significant positive impact of overconfidence bias on investment decisions. However, this differs from Riyazahmed and Saravanaraj (2015), who suggested that the impact of overconfidence is moderate compared to herding behavior. Overall, these results highlight the complexity of overconfidence bias in investment behavior and the need for further research in this area. A comprehensive analysis revealed a significant correlation between herding behavior and the investment choices of individuals aged 18 and older. Investors often rely on the opinions of friends and colleagues, mirroring their reactions to market changes. This aligns with Wamae (2013), which shows that investors are influenced by their environment and group dynamics when making share purchases. Similarly, Sarwar and Afaf (2016) and Shahzad et al., (2024), found a significant positive relationship and impact

between herding behavior and investment decisions respectively, highlighting investors' tendency to seek advice from others before investing. Riaz et al., (2020) reinforced these findings, noting that investors' lack of market understanding amplifies herding due to fear of losses. Singh and Yadav (2016) also indicated that investors prefer guidance from friends and relatives. While herding behavior has a lesser influence compared to overconfidence bias, Riyazahmed and Saravanaraj (2015) assert it has the highest impact on investment decisions. The research indicates no significant differences in investment decision perceptions among individuals over 18 based on gender. This is consistent with Sarwar and Afaf (2016), which also found no strong correlation between gender and investment choices. However, male investors are generally more active in the investment process, while female investors often seek advice from friends and family and are influenced by the success stories of others. In contrast, male investors tend to rely less on external advice and are motivated by different factors.

Conclusion

The research is focused on examining the impact of psychological factors on the investment decisions of individuals above 18 years old living in Budhanilkantha municipality. The study aimed to investigate the most influential factors in investment decisions concerning two dimensions of psychological factors: overconfidence bias and herding behavior. Additionally, the study seeks to analyze the gender-based differences in the perception of overconfidence bias, herding behavior, and investment decisions. The research was conducted using a structured questionnaire administered to 107 individuals. Data analysis was carried out using a variety of statistical tools including frequency, mean, median, standard deviation, independent t-test, correlation, and regression analysis. The study has concluded that overconfidence bias significantly impacts investment decision-making. The research indicates that individuals who exhibit a high degree of confidence in their grasp of market analytics and have a strong belief in their own experience are more inclined to engage in investment activities. Essentially, the study proposes that the greater the self-assurance and faith that investors have in their abilities, the higher the probability of them participating in various investment instruments. Moreover, the research emphasizes that investors' decision-making is considerably influenced by their levels of confidence and their positive outlook toward the market. Likewise, the study suggests that investors perceive the opinions of their friends, relatives, and brokers as more reliable, and they are easily influenced by the decisions and actions of others in the market. This herding behavior significantly impacts the financial markets. As such, it is advisable for an investor to carefully consider the actions of reliable and successful investors who are likely to bring profitability. This research study highlights the crucial influence of psychological factors on investment decisions and the subsequent impact on investment instruments. It emphasizes that a comprehensive understanding of psychological factors can contribute to the creation of a high-index market. This underscores the importance of integrating psychological insights into investment analysis and decision-making processes to achieve more stable and predictable investment outcomes.

Implications

The research findings carry significant implications for individuals seeking to engage in investment decisions. The study recognizes that delving into the psychological aspects of investment behavior is key to gaining a deeper comprehension of market dynamics, ultimately resulting in more well-informed and effective investment choices. Furthermore, the insights drawn from the study not just benefit individuals but also extend to the companies issuing shares, enabling them to better understand their investors and optimize the trading of their financial instruments in the market. By acknowledging the profound impact of psychological factors on investment behavior, financial professionals are empowered to make informed decisions that contribute to a more efficient and strong market performance. This underscores the importance of acquiring a comprehensive understanding of these psychological factors, which in turn can significantly contribute to the development of a successful market index. Overall, the study reinforces the value of considering psychological aspects in investment decision-making and market dynamics, providing a solid foundation for more successful and effective investment strategies.

References

Aregbeyen, O., & Mbadiugha, S. O. (2011). Factors influencing investors decisions in shares of quoted companies in Nigeria. *Medwell Journals, 6*(3), 205-212.

Bikhchandani, S., & Sharma, B. (2000). Herd behavior in financial markets. *IMF Staff Papers, 47,* 279-310.

Caparrelli, F. D., Arcangelis, A. M., & Cassuto, A. (2004). Herding in the Italian stock market: A case of behavioral finance. *Journal of Behavioral Finance, 5*(4), 222–230.

Chira, I., Adams, M., & Thomton, B. (2008). Behavioral bias within the decisions making process. *Journal of Business and Economics Research, 6*(8), 11-20.

Edwin, J. E., & Martin , J. G. (1997). Modern portfolio theory. *The Journal of Banking and Finance, 21,* 1743-1759.

Gakhar, D. (2019). Role of optimism bias and risk attitude on investment behaviour. *Theoretical Economics Letters, 9*(4), 852-871. https://doi.org/10.4236/tel.2019.94056

Gill, S., Khurshid, M. K., Mahmood, S., & Ali, A. (2018). Factors effecting investment decision making behavior: The mediating role of information searches. *European Online Journal of Natural and Social Sciences, 7*(4), 758-767.

Hartini, L. P., Suarmanayasa, I. N., & Sinarwati, N. K. (2022). The influence of internal and external factors on investment decisions with financial literature as moderate variables. *International Journal of Social Science and Business, 6*(1), 91-102. https://doi.org/10.23887/ijssb.v6i1

Jamil, P. C., Monica, V., Shaddiq, S., & Alhempi, R. R. (2023). The effect of financial literature and financial efficiency on investment decisions (Case study on students in Pekanbaru city). *International Journal of Latest Technology in Engineering, Management & Applied Science (IJLTEMAS), 12*(1), 1-17. https://doi.org/10.51583/IJLTEMAS

Javeed, H., Bagh, T., & Razzaq, S. (2017). Herding effects, overconfidence, availability bias and representativeness as behavioral determinants of perceived investment performance: An empirical evidence from Pakistan Stock Exchange (PSX). *Journal of Global Economics, 6*(1), 1-13.

Kishori, B., & Kumar, D. (2016). A study on factors influencing the investors' decision making in stock market with special reference to Indian stock market. *International Journal of Management and Commerce Innovations, 4*(1), 39-43.

Lakshmi, D., Charumati, D., Nayeem, M. A., Vidya, S., Sagar, R., & Kadyan, J. S. (2024). Financial behavior in personal investment: Influence of psychological factors on investment decision. *Journal of Informatics Education and Research, 4*(1), 1356-1360.

Laopodis, N. T. (2020). *Understanding Investments: Theory and Strategies* (2/E). Routledge. https://doi.org/10.4324/9781003027478

Lodhi, S. (2014). Factors influencing individual investor behavior: An empirical study of city Karachi. *IOSR Journal of Business and Management, 16*(2), 68-76.

Musfidah, H., Aji, T. S., & Hartono, U. (2022). Defining investment decision making in the stock market: A literature review. *Journal of World Economy: Transformations & Transitions (JOWETT), 2*(5), 1-13. https://doi.org/10.52459/jowett25231222

Mweu, K. J., & Omwenga, J. (2017). Factors influencing investment decisions in Nairobi Securities Exchange: A case of Dyer & Blair Investment Bank Limited. *International Academic Journal of Economics and Finance, 2*(3), 1-15.

Olsen, R. (1998). Behavioral finance and its implications for stock-price volatility. *Financial Analysts Journal, 54,* 10-18. https://doi.org/10.2469/faj.v54.n2.2161

Riaz, L., Hunjra, A. I., & Azam, R.-i. (2012). Impact of psychological factors on investment decision making mediating variable by risk perception: A conceptual study. *Middle-East Journal of Scientific Research, 12*(6), 789-795. https://doi.org/10.5829/idosi.mejsr.2012.12.6.1777

Riaz, S., Ahmed, R., Parkash, R., & Ahmad, M. J. (2020). Determinants of stock market investors' behavior in COVID-19: A study on the Pakistan stock exchange. *International Journal of Disaster Recovery and*

Business Continuity, 11(3), 977 - 990.

Rijal, A. (2022, March 1). *The Nepal Stock Exchange- Background and trends.* https://nepaleconomicforum.org/

Riyazahmed, K., & Saravanaraj, M. (2015). A study on factors influencing buying behavior of securities in Indian stock. *SNS Journal of Marketing, 7*(1), 1-9.

Safdar, M. Z., Mateen, M. M., Khan, M. M., Muddassar, K., & Shafique, D. Z. (2020). Factors influencing investment decisions of individual investors working in Hazara division industrial zone. *International Journal of Management (IJM), 11*(9), 360-367. https://doi.org/10.34218/IJM.11.9.2020.034

Sarwar, A., & Afaf, G. (2016). A comparison between psychological and economic factors affecting individual investor's decision-making behavior. *Cogent Business & Management, 3*(1), 1-18. https://doi.org/10.1080/23311975.2016.1232907

Shahzad, M. A., Jianguo, D., Jan, N., & Rasool, Y. (2024). Perceived behavioral factors and individual investor stock market investment decision: Multigroup analysis and major stock markets perspective. *Sage Journals, 14*(2), 1-14.

Singh, J., & Yadav, P. (2016). A study on the factors influencing investors decision in investing in equity shares in Jaipur and Moradabad with special reference to gender. *Amity Journal of Finance, 1*(1), 117-130.

Wamae, J. N. (2013). Behavioural factors influencing investment decision in stock market: A survey of investment banks in Kenya. *International Journal of Economics and Finance, 1*(5), 1-15.

Yamane, T. (1967). *Statistics: An Introductory Analysis* (2/E). Harper & Row.