Factors Determining Risk Tolerance of Individual Investors in Kathmandu Valley

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Abstract

The paper aims to evaluate the various factors influencing the risk tolerance of individual investors in Kathmandu Valley. Seven factors which are: time horizon, investment preference, financial knowledge, investment objective, personality traits, herd behaviour, and consultancy effect, and overconfidence are used. The study used a descriptive research design and collected primary data through structured questionnaires to conduct quantitative analysis. Using a convenience sampling method, responses from 200 individual investors residing in the Kathmandu Valley were collected. The research used descriptive statistics and regression to measure the variables having a significant impact on the risk tolerance level. It was found that amongst the variables, time horizon, herd behaviour and consultancy effect, and overconfidence have a positive significant impact on risk tolerance.

1. Introduction and Study Objectives

Risk tolerance is the amount of loss an investor is capable of handling comfortably. The individual investors in this study are the ones who have done investments in different areas like Stock, Real Estate, Fixed deposits, and Savings Account. The study mainly focuses on risk tolerance which is taken as a dependent variable whereas the independent variables are divided into financial and behavioural variables. The financial variables are time horizon, investment preference, financial knowledge, and investment objective. Similarly, the behavioural variables are personality traits, herd behaviour and consultancy effect, and overconfidence. Furthermore, demographic factors like age, gender, education qualification, occupation, monthly income, and marital status are also studied.

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The investment decisions and management of risks are governed not only by financial knowledge and past performance of the asset, but emotions and social biases also play a key role in the decision (Shah & Bhatt, 2013). Hence, it is necessary to study behavioural finance to know the impact of personal, social, and emotional bias in financial decision-making.

Generally, it is considered that the higher the risks associated with an investment, the higher is the reward so some people comfortably invest in risky assets to maximise their wealth while others even think twice while depositing money in a bank account. The personality traits, behaviour, upbringing, financial knowledge, investment objective, demographic factor, etc. are different between people so the level of risk that can be taken also varies (Satvaya, 2017).

Risk is the hazard, danger, or uncertainty associated with the investments which decrease the value of the assets. Most people opt for safer investment alternatives like saving money in the bank and hesitate to invest in risky assets like stock. Risk is very important when making investment decisions because analysis and management of risk will help to develop a suitable portfolio for investment (Rahmawati et al., 2015). Moreover, before making investments every investor thinks about the risks and rewards associated with them. Since every investor's primary goal is to maximise their wealth, it is necessary to assess their risk tolerance level and make smart investment decisions. Since the investments are not always profitable, if someone makes investments beyond their risk-taking level, they may not be able to recover from losses associated with it. In such cases, investors will lose confidence and feel demotivated to make further investments. This will lead to fewer investments and a decrease in productivity. Hence, investors should assess their risk-taking capacity and make wise investment decisions.

Problem Statement: Most investment managers do not assess the risk tolerance level of the client so the investment plan which they develop fails to meet their requirements. As a result, the clients hesitate to make further investments. However, making investments is vital for economic growth so it is necessary to encourage people to make investments. This can be achieved if investment managers divide the clients into different risk tolerance levels based on various financial, behavioural, and demographic factors, and help clients develop a suitable portfolio having optimal risk-return trade-off. Hence, after developing an optimal portfolio the clients can tolerate risks comfortably and make further investments in the future.

Study objectives: This study aimed at achieving the following objectives:

➢ To analyse the relationship of financial and behavioural factors on risk tolerance level,

➢ To examine the relationship of the demographic factors with risk tolerance level

The study is expected to help investment managers to choose the correct portfolio for their clients, based on the client's risk tolerance level. Likewise, it can make individual investors aware of the need to assess their risk tolerance level before making any investment. It can also help them reflect on the factors that are hindering them from making investments.

2. Literature Review

Ricciardi and Simon (2000) have stated that behavioural finance helps to understand the investment pattern of investors as it explains the psychological processes that influence the decision-making process of investors. The author states that behavioural finance explains the reasons for making investments so they should not be neglected by financial planners and investors.

Geetha and Selvakumar (2015) have said that the modern model for decision making in investment management needs four factors namely goals, financial stability, time horizon, and risk tolerance. However, risk tolerance is subjective and difficult to measure so many people neglect it in making investment decisions. As the risk tolerance level depends upon a variety of factors, the investment managers should classify their clients into different risk tolerance levels based on different identified factors and only then they will be able to develop the correct portfolio for their clients.

Fagereng, Gottlieb, and Guiso (2016) described that when the time horizon is more, the riskiness of an investor's portfolio increases, regardless of the individual's age. The author stated that if investors start investing in the market in their twenties, then their portfolio will have more stocks compared to other investment choices even though stocks are considered riskier.

Gustafsson and Omark (2015) concluded that most individuals have high financial risk tolerance due to their high financial literacy. However, their financial literacy is increased through the experience of the stock market or other markets in which they invest rather than through academic background in business and economics so financial literacy gained through prior investment experience has an increasing effect on financial risk tolerance.

Ansari and Pathak (2017) studied the relationship between the financial risk tolerance of investors and their preferred investment type. The study found that the majority of the respondents were moderate risk-takers, and their first preferred investment avenue was insurance as they wanted safe returns to secure their principal amount from their investment avenues. Moreover, their second investment choice was investing in real assets like gold which meant that most investors still believe in traditional investment alternatives rather than investing in modern investment alternatives like stocks, debentures, etc.

Hoffmann, Shefrin, and Pennings (2017) depicted that the basic investment objective of individuals is safety, income, and growth. Hence, the investors whose primary goal is to save for retirement will make investments with lower risk and vice versa.

Thanki (2015) stated that the risk preference of investors depends on people's personality traits as well. In the research, type-A personalities have an aggressive attitude, they prefer multi-tasking and are impatient while the people with type B personalities are calm, composed, relaxed, and easy-going. Thus, people of type A personality are more risk-tolerant than type B due to their aggressive and impatient traits.

Christoffersen and Staehr (2019) argued that most financial analysts show herd behaviour, so their forecasts are not accurate. They used an experimental setting in which the participants had to forecast future earnings from a rich information set, from which they found that less risk-tolerant individuals were following consensus forecasts rather than using their knowledge and logic and vice versa. Hence, they found that risk tolerance is an explanatory variable for herding behaviours. Finally, they have stated that most people tend to follow herd behaviour in case of uncertainty.

Lin, Tsai, and Lung (2013) stated that in uncertain situations investors usually tend to follow advice from professional investors or their peers. Additionally, they may also start collecting enough information that helps them to make optimal investment decisions. Likewise, the level of uncertainty that an investor can handle depends upon his risk tolerance level so the investors who are more overconfident and show less herding behaviour tend to take a higher level of risk. Also, the author believes that with the increase in investment experience, herd behaviour decreases because young fund managers are more prone to herding. Hence, experienced investors have more confidence and less herding behaviour than their counterparts, so they are willing to take more uncertainty in their investments which is equivalent to a higher risk tolerance level.

Malik, Hanif, and Azhar (2019) stated that overconfidence bias is created as individuals overestimate their skills and ability. Due to this reason, they make impulsive decisions as they feel they have more knowledge than others and neglect taking important advice. Moreover, those overconfident investors invest more in risky stocks and hold them as they believe that their information and judgment of the market is accurate.

 Hence, such investors overestimate their skills and their ability to control events which can lead them to suffer disastrous results in the future.

Samson and Ramani (2018), found that overconfidence has a strong psychological relationship with risk tolerance. In the case of overconfident individuals, the influence of gender, age group, wealth, and financial literacy on risk tolerance is weakened. That is, controlling for the effect of all other variables related to a person's risk-taking score and expressing it as a percentile, the risk tolerance level is about 10 points higher for a person with high overconfidence than one with moderate overconfidence. Since overconfidence severely affects the risk-taking capacity so they have recommended investment management companies readjust their client's risk tolerance taking account of their overconfidence.

Additionally, they have suggested finding out ways to deal with such overconfident clients who may resist advice.

Chalise, Sharma, and Dangol (2017) conducted a study to determine the relationship between risk tolerance and demographic factors like gender, education, income, and age group. They found out that, men do more investments compared to women as they have more investment experience, so men take more risks. Likewise, investors with a high level of education are more risk seekers than with a low level of education because the former group has higher confidence and a good level of investment knowledge. Similarly, wealthy investors are more risk-tolerant than their counterparts as they do not distress from losing wealth because normal losses will not have a significant effect on their living standards. Furthermore, investors in the age group 31-50 are more risk-takers than their counterparts because they are a high-income earning group due to their work experience, so they want to maximise their wealth by investments.

A similar study conducted by Adhikari and Virginia (2011) in Nepalese Bankers found that women bankers invested a lower percentage of their wealth in risky financial assets compared to men. This is because women bankers considered themselves as having less knowledge about financial markets, so their risk appetite was low.

Conceptual Framework

Time horizon or investment horizon is the total length of time a security is to be held by an investor. The time horizon can be short-term and long-term. At present, there are many investment options available like fixed deposits, stocks, real estate, a savings account of a bank, etc, and the preference of which varies from person to person. Financial knowledge is the awareness and understanding of financial concepts and using it to solve financial problems. The investment objective is the investment goals of the investor which can be safety, alternative sources of income, liquidity, growth, and hobby. Based on personality traits, individuals can be classified into Type A and Type B. The individuals with Type A personalities are impatient, hostile, workaholic, aggressive while people with Type B personalities are flexible, emotional, relaxed, expressive, have patience, and a laid-back attitude. Herd behaviour is a condition where people tend to follow group decisions even if their viewpoint is different as individuals think that a large group cannot be wrong. Similarly, the consultancy effect is the phenomenon where individuals rely on a consultant's advice and follow it blindly to make investment decisions. Overconfidence is a bias where people believe that their judgments and confidence are higher than the actual accuracy of those judgments.

Risk tolerance is the amount of loss that the individual can handle comfortably. It depends upon financial, behavioural, and demographic factors.
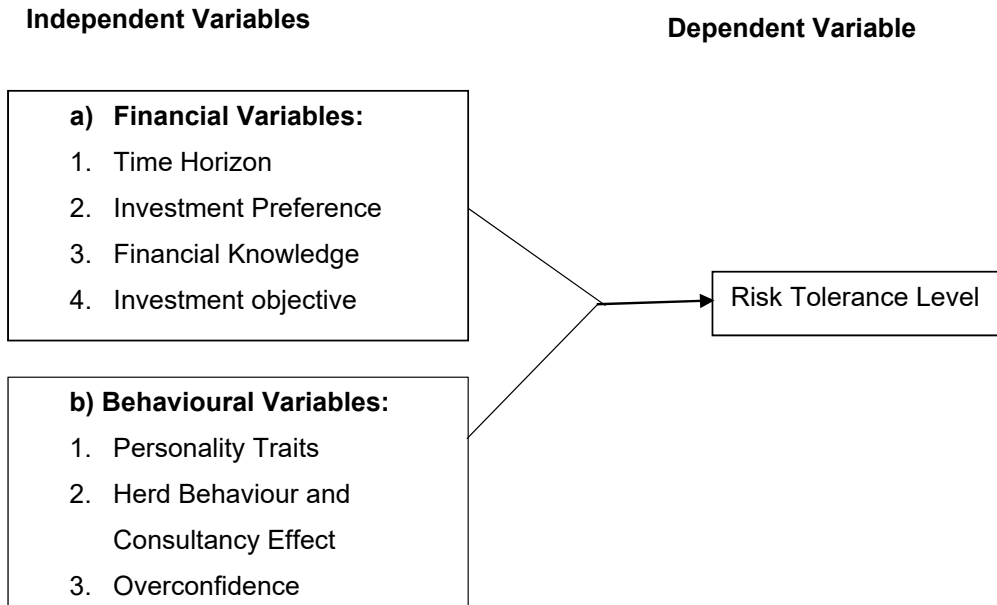
Independent Variables

Dependent Variable

| a) **Financial Variables:** |
| 1. Time Horizon |
| 2. Investment Preference |
| 3. Financial Knowledge |
| 4. Investment objective |

Risk Tolerance Level

| b) **Behavioural Variables:** |
| 1. Personality Traits |
| 2. Herd Behaviour and Consultancy Effect |
| 3. Overconfidence |

Figure 1. *Conceptual Framework*

3. Research Methods

The study has adopted a quantitative research approach with a descriptive research design because the study seeks to measure the relationship between the independent and dependent variables but does not try to influence the variables. A structured questionnaire was used to collect the data and the data is analysed statistically to interpret the findings and results.

The study is based on a survey method. The individual investors from the Kathmandu Valley who invest in different areas like stocks, savings account, fixed deposit, and real estate, are taken as the population of this study. The data has been collected by developing a structured questionnaire and distributing it to the investors. The structured questionnaire is prepared taking references from works of expert scholars and investors belonging to different demographics have filled it. The questionnaire is closed-ended containing both personal and specific questions. The first few questions of the questionnaire are used to collect the demographic information of the respondents which are in the form of single response questions. On the other hand, the specific questions are designed in 5 points Likert scale form the five-point Likert scale had values ranging from 1 to 5 where: 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly Agree. Similarly, a sample size of 200 was taken because the usable response was 200 while the other responses contained missed information, so they were discarded. A convenience sampling technique was used to collect the data as it saves time and collects data from easily available respondents. Easily available respondents are the ones who are near the researcher like the investors present

in the researcher's neighbourhood, workplace, and education institute. The questionnaire was administered using a researcher administered technique it helps to clarify the doubts which result in fewer errors.

4. Data Analysis and Discussions

The data analysis is done using different statistical measures like frequency, percentage, mean, regression, ANOVA, and T-test. The data is presented in the following paragraphs.

Table 1.

Demographic Profile of the Respondents

SN	Demographic Variables	Number of respondents(200)	Percentage of Respondents(100%)
1	Gender	141	70.5
	Male	59	29.5
	Female		
2	Age group		
	20-30	53	26.5
	31-40	46	23
	41-50	53	26.5
	50 and above	48	24
3	Occupation		
	Government job	25	12.5
	Private job/ Non-profit Company	45	22.5
	Self-employed	44	22
	Student	26	13
	Housewife/Unemployed	26	13
	Retired	34	17
4	Education Qualification		
	SLC/+2/Vocational Training	35	17.5
	Bachelor's degree	98	49
	Masters and Above	67	33.5
5	Monthly Income of an Individual		
	10001- 15000	70	35
	15001-30000	48	24
	30001-45000	28	14
	45001-60000	29	14.5
	Above 60000	25	12.5
6	Marital Status		
	Unmarried	58	29
	Married	142	71

Note. From the researcher's survey, 2020

Table 1 shows the demographic profile of the respondents. Based on the table, more than two-thirds (70.5%) of the respondents are male; it indicates that the female engagement in investment decision making is low. Similarly, in terms of age group, more than half of them (52%) of the investors belong to the age group 20-30 and 40-50 which gives the impression that the active investors are either young or the ones with several years of investment experience. Likewise, in terms of occupation nearly half (44.5%) of the respondents are from Private Jobs and Self-Employed, so it appears that the people who have unsecured employment options are more interested in investments.

Furthermore, around half (49%) of the respondents have a Bachelor's degree which depicts that investors have a good educational background. Similarly, more than one-third (35%), of the respondents have a monthly income between 10001-15000 which seems that people with low income want to increase their wealth, so they are actively involved in making investments. Likewise, more than two-thirds (71%) of the respondents are married so it looks like unmarried investors have lower engagement in making an investment decision.

Table 2.
Descriptive Statistics of Independent Variables

Variables	Number	Minimum	Maximum	Mean	Std. Deviation
Time Horizon	200	2	4.25	2.95	0.5863
Investment Preference	200	2	4.2	3.3	0.5742
Financial Knowledge	200	2	4.25	3.45	0.4991
Investment Objective	200	1.8	4.4	3.46	0.5063
Personality Traits	200	1.5	4.75	2.92	0.6144
Herd Behaviour and Consultancy Effect	200	1	4.5	2.95	0.6426
Overconfidence	200	1	4.5	2.86	0.6985
Risk Tolerance	200	1.2	4.6	2.94	0.6842

Note. Calculations based on the researcher's survey, 2020

Table 2, shows that the average score in Time Horizon is 2.95 which is less than 3 so investors seem to have a relatively short-term investment horizon. Furthermore, investment preference (3.3), financial knowledge (3.45), investment objective (3.46) have an average score all of which are more than 3 so investors are more likely to invest in the stock market compared to other avenues, they seem to have a relatively basic financial knowledge and are more likely to invest for secured future, respectively. Furthermore, personality traits (2.92), herd behaviour and consultancy effect (2.95), overconfidence (2.86), and risk tolerance (2.94) have a mean score less than 3 so, likely, investors are more have type B personalities, they do not follow the herd, they are not overconfident, and they have a relatively low-risk tolerance, respectively.

Table 3.

Risk Tolerance According to Gender and Marital Status

Variables	Number	Total Mean	Std. Deviation	T	Sig.
Gender	200	2.87	0.65605	3.291	0.001
Marital Status	200	2.97	0.68295	1.131	0.259

Note: Calculations based on the researcher's survey, 2020

From the above table, gender has a p-value of 0.001 which is less than α (0.05) so there is a significant impact of gender on the risk tolerance level. However, marital status has a p-value of 0.259 which is greater than α (0.05) so there is no significant impact of marital status on the risk tolerance level.

Table 4.

Risk Tolerance According to Age Group, Occupation, Education Qualification, and Monthly Income

Variable	Number	Total Mean	Std. Deviation	F	Sig.
Age Group	200	2.94	0.6842	2.332	0.075
Occupation	200	2.94	0.6842	2.332	0.075
Education Qualification	200	2.94	0.6842	0.013	0.987
Monthly Income (of an Individual)	200	2.94	0.6842	2.472	0.046

Note. Calculations based on the researcher's survey, 2020

In the Table, the age group has a p-value of 0.075, occupation has a p-value of 0.253, and education qualification has a p-value of 0.987 all of which are greater than α (0.05) so they do not have a significant impact on risk tolerance level. However, the p-value of monthly income is 0.046 which is less than α (0.05) so there is a significant impact of monthly income on the risk tolerance level.

From the Table, we can see that the value of R^2 is 0.297 so we can conclude that changes in independent variables jointly can explain nearly 30 percent of the change which has occurred in the dependent variable. Therefore, the regression model seems to have satisfactory explanatory power.

The p-value of Investment Preference (0.965), Financial Knowledge (0.303), Investment Objective (0.094), Personality Traits (0.226) is greater than α (0.05) so they do not have a significant impact on Risk Tolerance. However, the p-value of Time horizon (0.006), Herd behaviour and Consultancy Effect (0.025), and Overconfidence (0.000) is less than α (0.05) so they have a significant impact on Risk Tolerance. The impact is positive because the increase in the mean value of either of the significant variables will lead to an increase in the mean value of risk tolerance.

The finding that there is a significant impact of time horizon on risk tolerance supports the results of Fagerang, Gottlieb, and Guiso (2016). It is more likely that the investors with a long investment horizon are more likely to opt for riskier stocks to hold them for the long term and capitalise on the market volatility to achieve high profits. Additionally, in the long-time frame, the investors seem to gain more experience and become comfortable taking more risks.

Table 51

Effect of Independent Variables on Risk Tolerance

Variable	B	t	p-value
b0(Constant)	-0.319	-0.703	0.483
Time Horizon	0.2	2.758	0.006
Investment Preference	0.004	0.043	0.965
Financial Knowledge	0.089	1.032	0.303
Investment Objective	0.151	1.681	0.094
Personality Traits	0.087	1.215	0.226
Herd Behaviour and Consultancy Effect	0.158	2.261	0.025
Overconfidence	0.387	5.532	0
R^2	0.297		
F-value	11.57		
p-value	0		

Note.Calculations based on the researcher's survey, 2020

Moreover, the result that there is no significant impact of investment preference and financial knowledge on risk tolerance opposes the results of the study done by Ansari and Pathak (2017), and Gustafsson and Omark (2015), respectively. This might be because investors In Nepal are more likely to be unaware of other investment avenues like insurance policies, mutual funds, etc. so they seem to invest in popular avenues like stock regardless of its high riskiness. Also, it seems that investors got relatively high scores in financial literacy questions due to intuition, but in reality, they might have less financial knowledge.

Likewise, the result that there is no significant impact of the investment objective and personality traits on the risk tolerance contradicts the results shown by Hoffmann, Shefrin, and Pennings (2017) and Thanki (2015), respectively. It seems the investors have less investment knowledge, so they are more likely to make a safer investment choice to not suffer from heavy losses

Additionally, the finding that there is a significant impact of the herd behaviour and consultancy effect, and overconfidence on the risk tolerance supports the findings of the study done by Chriofferson and Staehr (2019), and Malik, Hanif, and Azhar (2019), respectively. That is investors who show herd behaviour are more likely to blindly follow the group and choose safer investment alternatives.

Similarly, overconfident investors seem to relatively overestimate their investment skills, so they end up taking more risks.

5. Conclusion and Implications

To sum up, time horizon, herd behaviour and consultancy effect, and overconfidence have a significant influence on risk tolerance whereas investment preference, financial knowledge, investment objective, and personality traits have no significant impact on risk tolerance. The investors who have a long investment time horizon, are more risk-tolerant so they usually opt for volatile stock as they hold it for a long time to get maximum return. Investors who follow the herd are less risk tolerant as they fear uncertainty, so they are likely to make safe investment choices. Moreover, in most cases, overconfident investors seem to overestimate their skills and ability to control future events, so they end up taking more risks.

Likewise, in terms of demographic factors, gender and income have a significant impact on risk tolerance while age group, occupation, education qualification, and monthly income have no significant impact on risk tolerance level. In Nepal, women are mostly engaged in household chores, so men tend to make important family decisions. Hence, due to restrictions imposed by our society on women, they might feel less confident and so they are more likely to make less risky investment choices compared to males. Likewise, when the monthly income increases, the accumulated wealth will increase so people get comfortable making risky investments.

Therefore, analysis of risk tolerance is important for investment managers to develop a suitable portfolio for their clients because if investors with low-risk tolerance have risky assets in their portfolio then they might not be able to handle losses associated with risky assets. Similarly, if the investors with high-risk tolerance have only low risky assets, then they will not be satisfied with low returns. Hence, investment managers must optimise the portfolio according to the client's risk-taking potential so that the investors are content with their investments and make more investments in the future which leads to a boost in the economy.

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Conflict of Interest

The author declares having no conflict of interest in this research because of her affiliation and other formal position.