Role of Individual Demographics on Selection of Investment Instruments in Kathmandu Valley

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Abstract

This study examines the investor's preference and choices of choosing the investment instruments to make investment in Kathmandu valley. Investment instrument is selected as the dependent variable. Similarly, age, gender, education, income level, risk tolerance ability and social circle are selected as the independent variables. This study is based on primary data with 122 observations. To achieve the purpose of the study, structured questionnaire is prepared. The correlation coefficients and regression models are estimated to test the significance and importance of different factors playing role on selection of investment instruments in Kathmandu valley.

The study showed that age has a positive impact on selection of investment instruments. It means that increase in age leads to increase in experience which leads to high risk-taking ability. Similarly, gender has a positive impact on selection of investment instruments. It indicates that the gender play a vital role on selecting the investment instruments. Moreover, education level has a positive impact on selection of investment instruments. It means that increase in education level leads to increase in investment in financial market. Likewise, income level has a positive impact on selection of investment instruments. It shows that increase in income level leads to increase in investment. Similarly, risk tolerance ability has a positive impact on selection of investment instruments. It shows that higher the risk tolerance ability, higher would be the investment in financial market. Further, social circle has a positive impact on selection of investment instruments. It shows that higher the influence of social circle, higher would be the changes on selection of investment instruments.

Keywords: Age, gender, education, income level, risk tolerance ability, social circle, investment instruments.

1. Introduction

An investment instruments is any type of financial agreement that provides the holder or retcipient with the promise of earning some sort of return from that investment Shefrin (2000) proposed that investors' decisions about choosing investment instruments is largely depend on behavioral

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factors internal and external to them and their individual demographics. Similarly, Grable and Lytton (1999) proposed that investment decision is the decision related to selection of investment instruments which is significantly influenced by the demographical factors like income level, education and level of risk tolerance ability of individual investors. The study concluded that the education and other demographics have significant relation with investment decision.

Stendardi (2006) proposed that investment decision making process is the process of selecting the investment instruments to invest in financial market. The study found that the personality is a trait which is very dynamic and has a tendency to waiver and change with time which takes considerable period of time and is fairly stable in varying situations and circumstances. The study found that personality makes a considerable impact in shaping the decisions of an individual. Similarly, *Lutfi (2010)* proposed that investment instrument and its preference are based on the demographical aspects of investors which are highly influenced by financial status of investors. The study found that demographic factor may influence investors risk tolerance and investment preferences.

Lease *et al.* (1974) found that there is a significant and positive correlation between age and the percentage of portfolio invested in income securities. Moreover, Lewellen *et al.* (1977) found that age, gender, income and education affect investors' preferences and attitudes towards investment decisions based on their investment objectives. The study showed that age has a strong influence on the investment goals of the investors. The study found that older investors have interest in long-term capital gains, while young investors preferred short-term capital gains. Likewise, Bishnoi (2014) found that those occupational groups, gender of respondents, marital status, age, income, area of residence and level of education have significant association with various investment objectives. The study found that the demographic factors of investors have positive relation with selection of investment instruments and their investment decision making process.

According to Lutfi (2010), financial literature supports an increasing role for behavioral aspects of investment decision making. The study found that demographic factor may influence investors risk tolerance and investment preferences. Furthermore, Powell and Ansic (2002) found that there is no relation between the demographic and personality variables when driving the effect on investment choice. The study showed that differences

in investment choice are significant for various combinations of independent variables like occupation, gender and education, age and education, education and occupation, education and personality. Likewise, Muhammad and Hafiz (2014) found a slight negative correlation between age and risk-tolerance. The study reported that increase in age at one point caused a negative effect on risk taking behavior of investors. Further, Begum and Rahaman (2016) found that the demographical factors- gender, income and savings have significant influence on the investor's attitude towards mutual funds investment. Moreover, Ikeobi and Arinze (2016) studied the impact of demographics on investment objectives reported by investors. The study found that there is no association between factors like age, gender, marital status and capital market experience.

Iman (2011) studied and sought to understand the patterns of differences in the risk-taking habits of men and women. The study found that women significantly differ in their investment behaviors than men. This study believed that the individual demographic such as gender, age, education and risk tolerance habit of individual have significant impact. Moreover, Wang *et al.* (2011) revealed through the study that women's risk perception is more than that of men after working and comparing various investment avenues like valuable securities, bonds, stocks. Likewise, Jamshidi and Asl (2018) suggested that investors with an external locus of control, type-A behavior and high maximizing tendency are busy working on trading more frequently. The study found that investors with an external locus of control, high sensation seeking and high self-monitoring have a less diverse portfolio. Further, Chen *et al.* (2004) found that mixed evidence that experience mitigates overconfidence. The study concluded that investor sophistication does not necessarily mitigate behavioral biases, nor improve trading performance. Similarly, Gosh (2022) examined on demographic aspects and investor's decision making process. The study found that several demographic factors have on meaningful relation with investment choice of investors. The study found that income level and occupation of employees are the determinant factor of investment decision making.

Lan *et al.* (2018) investigated on individual investment decision behaviors based on demographic characteristics: Case from China. The study found that demographic factors of the investors have significant impact on their investment decision process and it makes difficult to choose the investment instruments for them. Likewise, Oztop and Kuyu (2020) examined influence of socio-demographic characteristics, financial literacy and mood

on financial risk tolerance. This study found that both financial knowledge and positive mood are strong determinants of financial risk tolerance which influence in investment decision making. Further, Wang *et al.* (2011) revealed through the study that women's risk perception is more than that of men after working and comparing various investment avenues like valuable securities, bonds, stocks. Similarly, Wahyuni and Astuti (2020) found that demographic factors as a reflection of investor characteristics that are often of concern in influencing investment decisions are age, gender, education, income, occupation, marital status and investment experience. The study also found that individual demographics can have significant impact on the selection of investment instruments.

Kothari and Mindargi (2013) conducted study on a study of investor's attitude towards mutual fund with special reference to investors in Solapur city. The study found that the majority of investors have still not formed any attitude towards mutual fund investments. Likewise, Patidar (2010) proved that the age and gender of investors pre-dominantly determine the investors' risk-bearing capacity which have significant role on selection of investment instruments. Further, Alquraan *et al.* (2016) examined the influence of demographic issues on the investment decisions in the Saudi Stock Market and showed that apart from education, other variable such as income level didn't create any influence on the investment choices. Similarly, Firer (1988) analyzed individual investors who trade on Johannesburg Stock Exchange in South Africa. The study found that several demographical have significant relation with investment instrument selection process of the respondents. Similarly, Bhavani and Shetty (2017) perceived the impact of demographics and perception of investors on investment avenues. The study found that the investment choice and decision of investors is positively affected by their demographic factors and their perception towards the investment instruments. Moreover, Lodhi (2014) verified that investors' preference for risky investments decreases, as age and experience increase.

In the context of Nepal, investment instruments are the financial market instruments which are relied in Nepalese market which have a positive relation with individual's demographical factors like age, gender, education, etc. (Adhikari, 2020). Moreover, Rana (2019) examined factors affecting individual investors stock investment decision in Nepal. The study found that investor's demographical factors have significant relationship with investment instruments and decisions. Further, Shrestha (2020) determined the factors influencing investment decisions of Nepalese Investors. The study

found that most of the investor use own saving for making investment in stock which showed that the demographic factors like income level, risk tolerance ability, education and occupation of investors have positive correlation with investment decision of investors. Similarly, Shrestha (2019) examined overconfidence and investment decisions in Nepalese Stock Market. The study found that investors have overconfident biases due to positive coefficient in the model tested. This study found that women investors, investors having college education, and investors having net worth between Rs 2 to 5 million are confident in their own ability. Likewise, Kunwar (2021) found that behavioral biases like heuristics, prospects, market factor and herding effect the decision of individual investors in Nepal. Moreover, Chhetri (2022) found that the demographic factors and economic factors influence the individual investors' decision-making behavior of Nepalese stock investors.

The above discussion shows that the empirical evidences vary greatly across the studies on role of individual demographics on selection of investment instruments. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The main purpose of the study is to analyze the investor's preference and selection pattern of investment instruments in Kathmandu valley. Specifically, it examines the role of age, gender, education, income level, risk tolerance ability and social circle on selection of investment instruments in Kathmandu valley.

The remainder of this study is organized as follows. Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draws the conclusion.

2. Methodological aspects

The study is based on the primary data. The data were gathered from 122 respondents through questionnaire. The respondents' views were collected on age, gender, education, income level, risk tolerance ability, social circle and investment instruments. The study used descriptive and casual comparative research design.

The model

The model estimated in this study assumes that the investment

instruments selection depends upon demographical factors of individuals. The dependent variables selected for the study is investment instruments. Similarly, the selected independent variables are age, gender, education, income level, risk tolerance ability and social circle. Therefore, the model takes the following form:

$$II = \beta_0 + \beta_1 A + \beta_2 G + \beta_3 E + \beta_4 IL + \beta_5 RTA + \beta_6 SC$$

Where,

II= Investment instruments

A= Age

G= Gender

E= Education

IL= Income level

RTA= Risk tolerance ability

SC = Social circle

Investment instruments was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly agree and 5 for strongly disagree. There are 5 items and sample items include "I am willing to take on higher risk investments if it means potentially higher returns", "I am more likely to invest in an instrument that I am familiar with, even if it means potentially lower returns" and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.728$).

Age was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly agree and 5 for strongly disagree. There are 5 items and sample items include "I feel confident in making investment decision regardless my age", "I am more cautious about investment risk as I grow older" and so on. The reliability of the items was measured by computing the Cronbach's alpha ($\alpha = 0.716$).

Gender was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly agree and 5 for strongly disagree. There are 5 items and sample items include "Females are more risk averse than their male counterparts", "I rely on my spouse while making investment decision" and so on. The reliability of the items was

measured by computing the Cronbach's alpha (α =0.897).

Income level was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly agree and 5 for strongly disagree. There are 5 items and sample items include "My investment decisions are reliant on my regular income source", "I only invest in stock market when I make windfall gain", and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.728).

Education was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly agree and 5 for strongly disagree. There are 5 items and sample items include "I am willing to do research before making investment decisions", "Investment decisions should be made with consideration of one's level of education", and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.786).

Risk tolerance Ability was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly agree and 5 for strongly disagree. There are 5 items and sample items include "I am highly risk- averse when it comes to investment decisions", "I prefer low risk investments even if they offer lower potential returns", and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.711).

Social circle was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly agree and 5 for strongly disagree. There are 5 items and sample items include "I am willing to take investment decisions based on advice from my social circle", "I feel pressured to invest in certain instruments because of my social circle", and so on. The reliability of the items was measured by computing the Cronbach's alpha (α = 0.725).

The following section describes the independent variables used in this study along with hypothesis formulation.

Age

Age is the main demographical factor which effect on selection of investment instruments. Korniotis and Kumar (2011) found that older investors exhibit less investment skill. Further, Demographic variable named age have significant association with the behavioral issues in investment choices made

by investors (Chitra and Jayashree, 2014). Moreover, Chavali and Mohanraj (2016) found that age has a profound influence on the pattern of investment. Similarly, Belleau *et al.* (2006) argued that age affects the consumers' buying intention which impact on selection of investment instruments. Moreover, Lodhi (2014) found that investors' preference for risky investments decreases, as age and experience increase. Based on it, this study develops the following hypothesis:

H_1: There is a positive relationship between age and selection of investment instruments.

Gender

Gender refers to men and women basically and it also another emerging factor which plays vital role on selection of investment instruments. Barber and Odean (2001) discovered that gender plays a significant role in making an investment decision and they also found that women were less confident than men. Likewise, Chitra and Jayashree (2014) found that demographic variable named gender have a significant association with the behavioral issues in investment choices. However, Khanam (2017) found that there is a positive relationship between demographic variable named education with selection of investment instruments and investment decision. Similarly, Asnake *et al.* (2015) found that gender significantly influenced the teachers' savings as well as investment decisions. Furthermore, Kabra *et al.* (2016) found that the main factor affecting investment behavior and investors' decisions is gender. Based on it, this study develops the following hypothesis:

H_2: There is a positive relationship between gender and selection of investment instruments.

Education

Lewellen *et al.* (1977) concluded that investors' education has a significant influence on their investing attitudes and preferences. Likewise, Geetha and Ramesh (2012) revealed that demographic influences have an important effect on numerous investment choice elements. Likewise, Das and Jain (2014) discovered that the demographical factors named education had an association with the purposes of investment ad plays an important role on selection of investment instruments. Similarly, Kaleem *et al.* (2009) found that education have noteworthy role in determining the investor's investment style in Pakistan. Similarly, financial literacy is positively related with planning of retired income behavior and on investment decisions (Lusardi,

2007). Likewise, financial illiteracy is very high among specific age, gender, income and qualification for selection of investment instruments (Lusardi and Mitchell, 2007). Based on it, this study develops the following hypothesis:

H_3: There is a positive relationship between education and selection of investment instruments.

Income level

Subramariam and Athiyaman (2016) found that demographic factor such as income level is interrelated with the selection of investment instruments. Similarly, Alquraan *et al.* (2016) showed that apart from education, other variable such as income level didn't create any influence on the investment choices. Likewise, Merikas *et al.* (2003) indicated that individuals base their stock purchase decisions on economic criteria combined with other diverse variables. Furthermore, Anwar and Rahman (2017) found that people with higher income levels tends to invest in stocks and mutual funds, while those with lower income levels prefer to invest in fixed deposits and saving accounts. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between income level and selection of investment instruments.

Risk tolerance ability

Risk tolerance can be defined as the willingness of individual investors to take investment decisions where there is a desired goal, but the achievement of that goal is uncertain and there is a possibility of loss. Gilliam and Grable (2010) identified that the marital status of investor also the factor influencing the risk tolerance ability which has positive relation with selection of investment instruments. Likewise, Patidar (2010) found that the age and gender of investors pre-dominantly determine the investors' risk-bearing capacity which have significant role on selection of investment instruments. Similarly, Perera (2016) found that gender differences influenced significantly emotional factors, cognitive factors, and herding issues and there was a high relationship among the demographic variable of investors like risk-taking ability with investment instruments in Colombo, Sri Lanka. Similarly, Grable (2000) clarified that married individuals have greater risk-taking tendencies because shared more income and double human capital of married individuals may possibly encourage them to invest in riskier assets. Furthermore, Frijns *et al*. (2008) found that individuals who valued themselves low in terms of financial expertise tended to allocate their funds into less risky assets. Based

on it, this study develops the following hypothesis:

H_4: There is a positive relationship between risk tolerance ability and selection of investment instruments.

Social circle

Social circle has significant impact on the investment behavior of individual investors. Albaity *et al.* (2019) found that individuals who are surrounded by peers who invest in socially responsible investment instruments are more likely to invest in those instruments themselves. Likewise, Yang *et al.* (2016) found that individuals who are surrounded by peers who have a higher Risk tolerance are more likely to invest in equity-based instruments. The study found that social circle has a significant influence on investment behavior of individuals. Similarly, Yadav *et al.* (2018) found that individual with a larger and more diverse social networks are more likely to invest in risky assets such as stocks and mutual funds. Likewise, Social interaction can affect investment behavior by influencing an individual's risk preference (Gennaioli *et al.,* 2016). Moreover, Charness and Gneezy (2010) found that social comparisons can play a significant role in investment decisions. The study found that participants were more likely to invest in riskier option if they believed that others in society had also invested in that option. Based on it, this study develops the following hypothesis:

H_6: There is a positive relationship between social circle and selection of investment instruments.

3. Results and discussion

Correlation analysis

On analysis of data, correlation analysis has been undertaken first and for this purpose, Kendall's Tau correlation coefficients along with means and standard deviations have been computed, and the results are presented in Table 1.

Table 1

Kendall's Tau correlation coefficients matrix

This table presents Kendall's Tau coefficients between dependent and independent variables. The correlation coefficients are based on 122 observations. The dependent variable is II (investment instruments). The independent variables are A (age), G (gender), IL (income level), E (education), RTA (risk tolerance ability), and SC (social circle).

Variables	Mean	S.D.	A	G	IL	E	RTS	SC	II
A	2.285	0.728	1						
G	2.421	0.706	0.356**	1					
IL	2.539	0.727	0.371**	0.360**	1				
E	2.336	0.742	0.325**	0.303**	0.325**	1			
RTA	2.415	0.763	0.245**	0.369**	0.360**	0.387**	1		
SC	2.466	0.708	0.356**	0.361**	0.416**	0.396**	0.611**	1	
II	2.334	0.681	0.321**	0.376**	0.336**	0.458**	0.410**	0.572**	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 1 shows the Kendall's Tau correlation coefficients of dependent and independent variables for investment instruments. The study indicates that age is positively correlated to the selection of investment instruments indicating that age affects investment instruments. Likewise, gender is positively correlated to the investment instruments. This implies that gender play a significant role on investment instruments. Similarly, income level is positively correlated to investment instruments. It indicates that the income level of respondents would affect the selection of investment instruments. However, education is also positively related to investment instruments indicating that good education leads to best choice of investment instruments. Likewise, risk tolerance ability is positively correlated to investment an instrument which indicates that risk tolerance ability would affect the selection of investment instruments. Further, social circle is also positively correlated to the investment instruments. It shows that the proper suggestions from social circle have significant impact on selection of investment instruments.

Regression analysis

Having indicated the Kendall's Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it presents the regression results of age, gender, education, income level, risk tolerance ability and social circle on selection of investment instruments in Kathmandu valley.

Table 2

Estimated regression result of age, gender, education, income level, risk tolerance ability and social circle on selection of investment instruments in Kathmandu valley

The results are based on 122 observations using linear regression model. The model is $II = \beta_0 + \beta_1 A + \beta_2 G + \beta_3 IL + \beta_4 E + \beta_5 RTA + \beta_6 SC +$ where the dependent variable is II (investment

instruments). The independent variables are A (age), G (gender), E (education), IL (income level), RTA (risk tolerance ability) and SC (social circle).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		A	G	E	IL	RTA	SC			
1	1.129 (6.666) **	0.528 (7.469) **						0.312	0.56541	55.779
2	1.025 (5.564) **		0.541 (7.402) **					0.308	0.56702	54.788
3	1.101 (5.700) **			0.486 (6.637) **				0.262	0.58527	44.053
4	0.994 (6.194) **				0.574 (8.726) **			0.385	0.53439	76.780
5	1.118 (6.557) **					0.504 (7.482) **		0.312	0.56509	55.979
6	0.771 (5.414) **						0.634 (11.504) **	0.512	0.47190	132.351
7	0.723 (3.882) *	0.341 (4.258) **	0.344 (4.166) **					0.394	0.53042	40.370
8	0.740 (3.718)**		0.376 (4.298)**	0.269 (3.168) **				0.356	0.54681	34.473
9	0.697 (3.785)**			0.233 (3.006) **	0.447 (5.880) **			0.424	0.51735	45.478
10	0.680 (3.980)**				0.415 (5.620)**	0.284 (3.958) **		0.452	0.50445	50.915
11	0.633 (4.115)**					0.157 (2.186) *	0.537 (7.648) *	0.736	0.402	59.948

Notes:

i. Figures in parenthesis are t-values.
ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
iii. Investment instrument is dependent variable.

The regression results show that the beta coefficients for age are positive with the investment instruments. It indicates that age has positive impact on the selection of investment instruments. This finding is consistent with the findings of (Chitra and Jayashree, 2014). Likewise, the beta coefficients for gender are positive with the investment instruments. It indicates that gender have positive impact on the selection of investment instruments. This finding is consistent with the findings of Perera (2016). In addition, the beta coefficients for income level are positive with the investment instruments. It indicates that income level has a positive impact on the selection of investment instruments. This result is consistent with the findings of Parashar (2010). Further, the beta coefficients for education are positively related with the investment instruments. It indicates that education has a positive impact on the selection of investment instruments. This finding is consistent with the findings of Lewellen *et al.* (1977). Moreover, the beta coefficient for risk tolerance ability is positive with the investment instruments which indicate that risk tolerance ability has positive impact on the selection of investment instruments. This result is consistent with the findings of Patidar (2010). Moreover, the beta

coefficient for social circle is positive with the investment instruments which indicate that social circle has positive impact on the selection of investment instruments. This result is consistent with the findings of Charness and Gneezy (2010).

4. Summary and conclusion

An investment instruments is any type of financial agreement that provides the holder or recipient with the promise of earning some sort of return from that investment. Individual's demographical factor's analysis helps to determine the most important factor playing the crucial role on selecting investment instruments in Kathmandu valley.

This study attempts to examine the role of individual demographics on selection of investment instruments in Kathmandu valley. The study is based on primary data with 122 observations.

The study also showed that age, gender, education, income level, risk tolerance ability and social circle has positive relationship with investment instruments. The study concluded that proper education, age, gender, income level, risk tolerance ability and social circle have a significant role in increasing investment instruments. The study also concluded that the most influencing factor is income level followed by profession and risk tolerance ability that explains the risk-taking ability of investors towards investment instruments.

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