

# The Effect of Demographic Factors on the Behavior of Investors during the Choice of Investment: Evidence from Twin Cities of Pakistan

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## Abstract

Investor's behaviour is influenced by many factors during investment decision making. Demographic profile of investors is also one of the decision influencing factor among others. The aim of this paper is to examine the effect of demographic factors on investors level of risk tolerance regarding the choice of investment. 100 investors from twin cities of Pakistan (Rawalpindi and Islamabad) were selected as sample, chi square test and correlation was conducted to explore the effect of demographic factors on investor's level of risk tolerance regarding the choice of investment. Result of the paper showed that demographic factors of investors such as academic education, income level, investment knowledge, and investment experience effect the investors level of risk tolerance, while investors gender, marital status, occupation, and family size showed no effect on investors level of risk tolerance. These results are important for managers to advise their clients about better area of investment and risk level according to their demographic profile.

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**Index terms**— demographic factors, investors level of risk tolerance, correlation, pakistan.

## 1 Introduction

behaviour of investors in derivative markets is influence by many personal and situational factors during the choice of investment. Different researches are conducted to determine the behaviour influencing factors and attempt to understand and explain the degree to which these factors influence the decision-making process.

Investment involves the utilization of funds at present with the hope of better return in future. Traditional financial theories presume that investors are rational. People rationally choose between alternatives, they act rationally while making their investment decisions (Von Neumann, and Morgenstern, 1944). Later on it is explored by many researchers that Individual investor sometime make irrational decisions about their investments (Barberis, and Thaler, 2003). Different factors affect the investors behaviour during personal financial management process. Among others factors investor behaviour is also affected by demographic characteristics. Different research papers are conducted to identify the effect of demographic factors on investment decision and shown contradictory results from country to country and area to area.

The aim of this paper is to investigate the extent to which demographic factors affect an investor's risk tolerance attitude during decision making with the context of Pakistan. This study is primary data based collected from various respondents through a questionnaire. The respondents who were interested in investment were interacted from twin cities of Pakistan i.e. Islamabad and Rawalpindi.

## 2 II.

### 3 Literature Review

Many studies are conducted to examine the effect of demographic factors on investor's level of risk tolerance during investment decision making. People having different gender, ages, income level, knowledge, marital status and occupation shows different attitudes towards decision making, some are risk seeker and some adverse risk. Brief literature about the effect of demographic factors on investor's behaviour with international evidence is given below. Male's investors are more confident in their investment decisions, they have more financial knowledge and wealth and ability to take risks (Bruce, 1995) ??Barber and Odean 2001: 261).When males are investing in their assets due to large income they take greater risks ??Parker, and Terry 2002).Some studies shown that there is no significant effect of gender on risk tolerance during financial decisions ??Schubert et al. 1999: 384-385

#### 4 d) Marital Status

Marital status is also an effective factor influencing the decision making of investor. Single individuals are more risk taker than married because married individuals have responsibilities for themselves and dependents (Roszkowski et al. 1993) (Lazzarone, 1996) ??arber and Odean (2001: 285).Some studies failed to find significance association between marital status and financial risk tolerance ??McInish, 1982).

#### 5 e) Income Level

Income level of investor is also affects its behaviour toward investment. A person with greater wealth takes greater risk ??Terry, and Parker, 2002). Persons with upper level of income and millionaires tend to take higher risk as than individual with lower level of income (MacCrimmon, and Wehrung, 1986). Researcher explored that level of risk tolerance increase with the increasing level of income (Blume et al.1994)Investors invest their funds in more volatile portfolio composed of more volatile stocks when they have higher level of income (Barber, and Odean , 2001).

Higher level of income creates the ability of bearing the losses, so wealthier people preferred higher level of risk ??bernheim et al, 2001).

In contrast some researchers shown income level has no relationship with financial risk tolerance ??Strydom et al (2009: 18) f) Occupation Occupation means the activity in which people engaged for pay. Those people who generate their income directly from their own business, trade, or profession leads to higher levels of risk taking as compare to the people of straight salary work for others ??MacCrimmon & Wehrung, 1985).Occupational status is also affecting the level of risk taking ability; people with higher ranking occupational status are more risk seeker as compare to low ranking occupational status (Roszkowski et al., 1993).People having low risk taking ability choose low ranked professions (Barnewall, 1988).

#### 6 g) Family Size

Investor's family size is also effects their financial risk taking behaviour. Investors having small family size are more risk taker, where increase in family size caused risk aversion (Lease, Lewellen, and Schlarbaum, 1977).

## 7 III.

### 8 Objectives of the Study

Following objectives were framed from the present study:

? Find the effect of demographic factors on investor's decisions. ? Find the nature of association between demographic factors (Education, Age, Gender, Investment knowledge, investment experience, Occupation, marital status, Income level, and family size of investors) and investor's level of risk tolerance.

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## 10 Research Methodology

This study is primary data based involves to explored the effect of demographic factors on investors level of risk tolerance during investment decision making process. Data is collected from various respondents through a structured questionnaire. The Questionnaire contains open and close ended questions. Only those people were interacted who were interested in investment located in twin cities of Pakistan i.e. Islamabad and Rawalpindi. The total sample consisted of 100 respondents.

Males and females from different occupations and income levels are splits from different age groups and education levels. In this study Risk is consider as a dependent variable, while demographic factors individually checked as independent factors in relation with risk taking attitude of investors. In order to statistically check the results Chi-Square and correlation tests are used. These tests are also used by Jain, D.

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## 11 (DATA FROM QUESTIONNAIRE) a) Association between investors gender and financial risk tolerance H0:

There is no significant effect of gender on risk tolerance during financial decisions. H1: There is significant effect of gender on risk tolerance during financial decisions. From Table 3: It is evaluated that the computed value of chi -square is 1.544 .Where tabulated value using 5% level of significance is 7.815.Computed value is less than tabulated value so we accept our H0 (null hypothesis) and concluded that there is no significant effect of gender on risk tolerance during financial decisions. Both male and female have same response toward financial risk tolerance.

Table 4 is revealing that there is a negative correlation between gender and financial risk tolerance.

Increase in investor's gender caused negative effect on investor's ability of financial risk tolerance.

## 12 b) Association between investors age and Financial risk tolerance H0:

There is no significant effect of Age on risk tolerance during financial decisions. H1: There is significant effect of Age on risk tolerance during financial decisions.

## 13 C

From Table 6: It is evaluated that the computed value of chi -square is 21.767 .Where tabulated value using 5% level of significance is 21.026.Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded that there is significant effect of Age on risk tolerance during financial decisions.

Table 7 is revealing that negative correlation is exist between Age of investors and financial risk tolerance. An Increase in age caused negative effect on investor's ability of financial risk tolerance.

## 14 c) Association between investors academic qualification and financial risk tolerance H0:

There is no significant effect of Academic qualification on risk tolerance during financial decisions. H1: There is significant effect of Academic qualification on risk tolerance during financial decisions. From Table 9: It is evaluated that the computed value of chi -square is 30.066.Where tabulated value using 5% level of significance is 16.919.Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded that there is significant effect of Academic qualification on risk tolerance during financial decisions.

Table 10 is revealing that positive correlation is exist between academic qualification and financial risk tolerance. An increase in Academic qualification caused a Positive effect on investor's ability of financial risk tolerance.

## 15 d) Association between investors annual income and financial risk tolerance H0:

There is no significant effect of income level on risk tolerance during financial decisions H1: There is significant effect of income level on risk tolerance during financial decisions. From Table 12: It is evaluated that the computed value of chi -square is 36.475, where tabulated value using 5% level of significance is 21.026.Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded there is significant effect of income level on risk tolerance during financial decisions.

Table 13 is revealing that Positive correlation is exist between income level of investors and financial risk tolerance. An increase in Level of income caused a positive effect on investor's ability of financial risk tolerance.

## 16 e) Association between marital status of investors and financial risk tolerance H0:

There is no significant effect of marital status on risk tolerance during financial decisions. H1: There is significant effect of marital status on risk tolerance during financial decisions. .620 N 100 100

From Table 15: It is evaluated that the computed value of chi-square is 3.423 .Where tabulated value using 5% level of significance is 7.815.Computed value is less than tabulated value so we accept our H0 (null hypothesis) and concluded that there is no significant effect of marital status on risk tolerance during financial decisions.

Table 16 is revealing that Positive correlation is exist between marital status and financial risk tolerance.

An increase in marital status caused a Positive effect on investor's ability of financial risk tolerance.

## **f) Association between investors investment knowledge and financial risk tolerance H0:**

There is no significant effect of investment knowledge on risk tolerance during financial decisions. H1: There is significant effect of investment knowledge on risk tolerance during financial decisions.

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Volume XIV Issue III Version I Year 2014 ( ) \*\* Correlation is significant at the 0.01 level ??2-tailed).C

From Table 18: It is evaluated that the computed value of chi -square is 61.381, where tabulated value using 5% level of significance is 21.026.Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded that there is significant effect of investment knowledge on risk tolerance during financial decisions.

Table 19 is revealing that Positive correlation is exist between investment knowledge of investors and financial risk tolerance. An increase in knowledge caused a Positive effect on investor's ability of financial risk tolerance.

## **g) Association between investors occupation and financial risk tolerance H0:**

There is no significant effect of Occupation on risk tolerance during financial decisions. H1: There is significant effect of Occupation on risk tolerance during financial decisions. From Table 21: It is evaluated that the computed value of chi -square is 11.158, Where tabulated value using 5% level of significance is 21.026.Computed value is less than tabulated value so we accept our H0 (null hypothesis) and concluded that there is no significant effect of occupation on risk tolerance during financial decisions.

Table 22 is revealing that negative correlation is exist between occupation and financial risk tolerance.

An increase in occupation caused a negative effect on investor's ability of financial risk tolerance.

## **h) Association between investors investment experience and financial risk tolerance H0:**

There is no significant effect of investment experience on risk tolerance during financial decisions. H1: There is significant effect of investment experience on risk tolerance during financial decisions. From Table 24: It is evaluated that the computed value of chi -square is 33.569, where tabulated value using 5% level of significance is 21.026.Computed value is greater than tabulated value so we reject our H0 (null hypothesis) and concluded that there is significant effect of investment experience on risk tolerance during financial decisions.

Table 25 is revealing that Positive correlation is exist between investment experience and financial risk tolerance. An increase in investment experience caused a Positive effect on investor's ability of financial risk tolerance.

## **i) Association between investors family size and financial risk tolerance H0:**

There is no significant effect of Family size on risk tolerance during financial decisions. H1: There is no significant effect of Family size on risk tolerance during financial decisions. From Table 27: It is evaluated that the computed value of chi-square is 6.285 .Where tabulated value using 5% level of significance is 16.919.Computed value is less than tabulated value so we accept our H0 (null hypothesis) and concluded that there is no significant effect of family size on risk tolerance during financial decisions.

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Table 28 is revealing that negative correlation is exist between family size and level of risk tolerance. An increase in family size caused a negative effect on investor's ability of financial risk tolerance.

## **VI.**

## **Conclusion**

This study concludes that there is an association between demographic characteristics and investors level of risk tolerance. Result shows that demographic factors like investor's age, academic qualification, income level, investment knowledge, and investment experience have significant effect on the behaviour of investors. There is positive correlation between investor's academic qualification, income level, and investment knowledge and investment experience with their level of risk tolerance during the choice of investments. However investor's age shows slight negative correlation. Increase in age at one point caused a negative effect on risk taking behaviour of investors.



Figure 1:

188 Other demographic factors like investor's gender, marital status, occupation and family size have no significant  
189 effect on investor's level of financial risk tolerance.<sup>1</sup>

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## b) Age

Older people tolerate more risk as compare to the young investors (Grable and Lytton, 1999b: 7)

Young investor can not accurately assess about his work performance as compare to older one. Old people gain investment knowledge and experience, and make better investment Choices (Kumar, and Korniotis, 2011).

In contrast some researchers found that increasing age of investors caused decrease in risk tolerance (Jiankopolos and Bernasek 2006).Further some researchers explored that investors age and financial risk tolerance have no significant relationship (Al-Ajmi, 2008: 21) (Anbar and Eker 2010: 505) Gumede (2009).

c) Education Third demographic factor which caused a higher financial risk tolerance during decision making process is education i.e. formal attained academic training (sung, Hanna, 1996). Level of education obtained and risk tolerance have a positive relationship (Kimball et al 2007: 20) (Graham et al. 2009). Contra-dictory results are also shown by some researchers, which are exploring that no significant relationship is exist between education and risk tolerance whilst the Strydom et al (2009) Gumede (2009: 27).

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Figure 2:

1

Variables		Number of Investors	%Age
Gender	Male	73	
	Female	27	
	Total	100	100
Age	Below 30 years	42	
	30-40 years	26	
	40-50 years	18	
	50-60 years	12	
	60 or Above 60 years	02	
	Total	100	100
Marital Status	Single	38	
	Married	62	
	Widow	0	0
	Divorced	0	0
	Total	100	100
Academic Qualification level	Below Graduation	11	
	Graduation	43	
	Post Graduation	37	
	Others	9	9
	Total	100	100
Income ( Per annum )	Below Rs. 160,000	33	
	Rs.1,60,000-Rs.3,20,000	12	
	Rs.3,20,000-Rs.4,80,000	25	
	Rs.4,80,000-Rs.6,40,000	14	
	Rs. 6,40,000 and Above	16	
	Total	100	100
Occupation	Student	09	
	Professional	18	
	Business	14	
	Service	46	
	Others	13	
	Total	100	100
Investment Experience	Below 1 year	30	
	1-4 Years	40	
	4-7 years	17	
	7-10 years	08	
	10 Years or Above	05	
	Total	100	100

Figure 3: Table 1 :

**2**

		RISK				Total
		Below average	Average	Above average	Very high	
GENDER	Male	31	28	10	4	73
	Female	12	11	4	0	27
Total		43	39	14	4	100

Figure 4: Table 2 :

**3**

Value	Df	Sig.(2 sided)
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Figure 5: Table 3 :

**4**

Gender	Risk
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Figure 6: Table 4 :

**5**

		RISK				Total
		Below Av- erage	Average	Above erage	Av- Very High	
Age	Below 30 years	19	18	5	0	42
	30-40 Years	8	9	7	2	26
	40-50 Years	6	10	2	0	18
	50-60 Years	8	2	0	2	12
	60 Years and above	2	0	0	0	2
Total		43	39	14	4	100

Figure 7: Table 5 :

**6**

Value	Df	Sig. (2-sided)
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Figure 8: Table 6 :

**7**

Age	Risk
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Figure 9: Table 7 :



8

				Risk		Total
		Below average	Average	Above average	Very high	
Qualification Level	Below graduation	11	0	0	0	11
	Graduation	20	19	3	1	43
	Post Graduation	9	18	7	3	37
	Others	3	2	4	0	9
	Total	43	39	14	4	100

Figure 10: Table 8 :

9

	Value	Df	Sig. (2-sided)
Pearson Chi-Square	30.066	9	.000

Figure 11: Table 9 :

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Education	Risk
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[Note: \*\* . Correlation is significant at the 0.01 level(2-tailed).]

Figure 12: Table 10 :

11

				Risk	Total	
		Below average	Average	Above average	Very high	
Income	Below Rs. 160,000	23	8	2	0	33
	Rs.1,60,000-Rs.3,20,000	6	6	0	0	12
	Rs.3,20,000-Rs.4,80,000	7	11	6	1	25
	Rs.4,80,000-Rs.6,40,000	3	10	1	0	14
	Rs. 6,40,000 and Above	4	4	5	3	16
Total		43	39	14	4	100

Figure 13: Table 11 :

12

	Value	Df	Sig. (2-sided)
Pearson Chi-Square	36.475	12	.000

Figure 14: Table 12 :

13

Income

Risk

Figure 15: Table 13 :

14

		Risk				Total
		Below average	Average	Above average	Very high	
Marital Status	Single	17	14	7	0	38
	Married	26	25	7	4	62
Total		43	39	14	4	100

Figure 16: Table 14 :

15

	Value	Df	Sig. (2-sided)
Pearson Chi-Square	3.423	3	.331

Figure 17: Table 15 :

16

Marital Status

Risk

Figure 18: Table 16 :

17

Risk

Figure 19: Table 17 :

18

	Value	Df	Sig. (2-sided)
Pearson Chi-Square	61.381	12	.000

Figure 20: Table 18 :

19

Knowledge			Knowledge	Risk
	Pearson Correlation		1	.592**
	Sig.(2tailed)			.000
	N		100	100
	Pearson Correlation		.592**	1
	Sig.(2tailed)		.000	
Risk	N		100	100

Figure 21: Table 19 :

20

		Risk				Total
		Below average	av- Average	Above average	Very high	
Occupation	Student	5	3	1	0	9
	Professional	5	10	3	0	18
	Business	4	5	3	2	14
	Service	21	17	6	2	46
	Others	8	4	1	0	13
Total		43	39	14	4	100

Figure 22: Table 20 :

21

	Value	Df	Sig. (2-sided)
Pearson Chi-Square	11.158	12	.515

Figure 23: Table 21 :

22

Occupation	Risk
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Figure 24: Table 22 :

23

	Below av- erage	Average	Risk Above av- erage	Very high	Total
Less than 1 Years	17	9	4	0	30
Experience 1-4 Years	14	19	7	0	40
4-7 Years	6	8	2	1	17
7-10 Years	2	2	1	3	8
10 years or Above	4	1	0	0	5
Total	43	39	14	4	100

Figure 25: Table 23 :

24

	Value	Df	Sig. (2-sided)
Pearson Chi-Square	33.569	12	.001

Figure 26: Table 24 :

25

Experience	Risk
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Figure 27: Table 25 :

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Figure 28: Table 26 :

27

	Value	Df	Sig. (2-sided)
Pearson Chi-Square	6.285	9	.711

Figure 29: Table 27 :

28

Family Size	Risk
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Figure 30: Table 28 :

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