Factors Affecting Financial Risk Tolerance of Rural Households in Ludhiana District of Punjab

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Article

Factors Affecting Financial Risk Tolerance of Rural Households in Ludhiana District of Punjab

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Abstract: The present study aims to find out the financial risk tolerance scores of the rural residents of Ludhiana district. Also, how drivers such as socio-demographic factors, namely, gender, age, education, annual income, existence of loan, occupation, employment status and psychological factors, namely, deliberative thinking, optimism and personality type A/ B impact financial risk tolerance of rural residents. The study is important for financial policy makers as they will become aware about scenario of rural residents and frame policies accordingly. Stepwise regression analysis was carried on. The result was found out that optimism positively and deliberative thinking negatively impacted financial risk tolerance but personality type A/B did not have a significant impact on financial risk tolerance. Socio-demographic factors such as existence of loan, full-time salaried individuals, marital status significantly impacted financial risk tolerance. Other factors failed to have impact on financial risk tolerance of rural residents in the current study.

Keywords: financial risk tolerance; financial risk; psychological factors; socio-demographic factors

1. Introduction

Rising life expectancy and falling birth rates are putting pressure on resources of every economy. Today, economies of this world are facing extremities in form of COVID-19 pandemic, food shortage, trade deficit, inflation, recession and so on. As a unit of this world human beings need to slog day and night to be self-sufficient. In this light, right investment is significantly important to increase savings which will further help humans to have a better standard of living, be ready for emergencies and to attain peace of mind (Bayar *et al* 2020). The circumstances keep the human on his/her toes to make both ends meet. It is obvious for people to use experience and acquired skills to deal with risky situations as mentioned by Grable and Rabbani (2014). Attitude towards money is another important factor that shapes life. Tang (1995) opined that people who value money as achievement may become slaves rather than masters and lead a stressful life. Money should be used as a medium to enhance their skill set. Kim (2003) states that saving moves individual towards safety. Market is unpredictable and volatile; therefore, risk is an inherent part of an investment (Bayar *et al* 2020). Roszkowski and Davey (2010), Prasanna C (2001) defined risk as when probability of a negative outcome of a decision is known, on the other hand, the uncertainty refers to a situation where possible outcomes are not known. It is difficult to identify odds of every desired outcome as there are factors outside individual's control. An effective financial management requires a person to identify goals, time horizon, financial stability and financial risk tolerance and accordingly prepare for it (Grable and Lytton 1999). One who understands these inputs makes better use of his/her money and is called financially literate (Lusardi and Mitchell 2011). A person's level of willingness to take the risk when outcome could be negative is known as financial risk tolerance (Grable 2000, 2008; International Organization for Standardization 2006, Nobre and Grable 2015). Campbell (2006) explained risk tolerance as choosing how much debt a person can bear, finding financing option best suitable, allocating income to fixed and variable expenditures, savings. Financial risk tolerance is reverse of risk aversion (Roszkowski and Davey 2010, Ryack and Sheikh 2016). In simple language, Roszkowski and Grable (2010) mention risk tolerance as a desire to take a chance. Individuals with low level of risk tolerance do not accept loss and uncertainties (MacCrimmon and Wehrung 1990). Literature cites risk tolerance as a multi-dimensional trait (Weber *et al* 2002, Soane and Chmiel 2005). Investment risk,

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risk comfort and experience, speculative risk are various dimensions of financial risk tolerance as mentioned by Grable and Lytton (1999). Financial risk tolerance is a key ingredient of effective financial management and is an important study with huge scope.

Understanding financial risk tolerance within the context of rural and urban areas is vital for policy making. Financial markets and financial products need to be carefully developed (Moreschi, 2004). According to Reserve Bank of India, rural area still accounts for 70% of India's population. Few research has focused on rural investors, a factor that motivates this study. The study basically intends to plug this gap by focusing on rural residents in terms of their financial risk tolerance and its drivers. This study is an attempt to throw light on rural residents of Ludhiana region in Punjab. Ludhiana is the pioneer smart city of Punjab (Anonymous 2024a). It has a wide array of flourishing small-scale industries ranging from hosiery, garment, apparels to industrial goods, machine parts, tractor parts, household appliances. It is the prime center of bicycle manufacturing and textile industry in India.

The study aims to determine whether socio-demographic variables and psychological factors (Grable 2016) could be used to differentiate among levels of risk tolerance and classify individuals into risk tolerance categories (Grable 1997, Hanna *et al* 2008, Owusu *et al* 2023). Grable and Joo (2004) classified factors influencing financial risk tolerance into two broad categories- biopsychosocial and environmental factors. Biopsychosocial factors are immutable personal characteristics that is, those characteristics that cannot change such as age, gender, ethical background, birth order (Payne *et al* 2019). These features are deeply rooted to personality. Talking about birth order, an interesting notion mentioned by Foster (2024) is that parents become very protective about their first-born child. They take better care of needs of their first-born child than second one. Protective environment makes first born child dependable and fearful to take risk. Environmental factors are namely, income, education, Marital status. Psychological factors also called as behavioral factors (Grable 2016) are personality traits, life satisfaction level, anxiousness, extraversion, emotions, pride, regret, loss aversion bias, deliberative thinking etc. People who were cautious and risk avoiders had less percentage of their income allocated to equities. Fernandes (2013) stated a risk averse person is uncomfortable in making unpredictable financial decision. They fear to lose their money (Booij *et al* 2010). Researchers also mentioned that for human being pain of losing money is greater than earning money (Rabin and Thaler 2001). This trait is known as sensitivity towards loss. The degree of loss sensitivity will affect degree of taking risk (Dimmock and Kouwenberg 2010). Loss sensitive people were seen to have low income. Morin and Suarez (1983), Markowitz (1991) also added that risk averse person will maintain a diversified portfolio. Grable *et al* (2009), Duasa and Yusof (2013) further pointed that risk averse people are more interested in investing in safe assets such as saving account, cash and government bond. People who were willing to take risk or are gamblers in nature are more ready to buy equities, futures and options.

The current study aims to put light on how socio-demographic factors such as gender, employment status, occupation, existence of loan, marital status, education, age and psychological factors such as personality type A/B, optimism, deliberative thinking impact financial risk tolerance among rural residents. A few research studies talk about financial risk tolerance when it comes to rural residents. Most of research has focused urban population such as Nobre and Grable (2015) and Heo *et al* (2021). The same holds true for the impact of socio-demographic and psychological influences on financial risk tolerance and financial behavior of individuals (for example, Sulaiman 2012 and Riaz and Hunjra 2015).

The paper has five sections. Second section provides literature background of the study, while section three presents methodology, reliability and sample characteristics. Section four covers results and discussions of the study, conclusion drawn, limitation of the study and scope of future research forms part of section five.

2. Literature Review

2.1. Income

Income and financial risk tolerance has a positive connection as mentioned in studies such as Grable and Roszkowski (2008), Ardehali *et al* (2005), Grable and Joo (2004) and Sung and Hanna (1996). As income increases financial risk tolerance level also increase (MacCrimmon and Wehrung 1990, Duasa and Yusof 2013). The money makes individual powerful. Access to resources becomes

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fast and easy. In other words, financial risk tolerance is negatively associated with income. Household income act as a cushion to save from financial loss.

2.2. Age

Yao *et al* (2004) and Yao *et al* (2005), Deaves *et al* (2007) pointed out that age and financial risk tolerance are negatively related to each other. Milligan (2004) mentioned that age and risk tolerance follow hump shaped pattern. Nairn (2005) characterized older individuals to be risk averse. When an individual grows young his/her risk tolerance increases and when an individual grows old risk tolerance decrease (Duasa and Yusof 2013, Hallahan *et al* 2004, Halek and Eisenhauer 2001, Nguyen *et al* 2021, Zhao and Zhang 2020). The reason cited behind this is that older the individuals have less time to recover from financial losses. Guillemette *et al* (2012) mentioned that due to decrease in the cognitive ability risk tolerance decreases after the age of 60. As age increases cognitive ability decreases and so does financial risk tolerance (Dohmen *et al* 2010).

2.3. Gender

In accordance with Hoe *et al* (2020), Hallahan *et al* (2004) a greater number of women are risk averse due to less financial knowledge whereas men have more financial knowledge and are keen to take more risk. Some researchers such as Miller and Stark (2002), Sapienza *et al* (2009), Ardehali *et al* (2005) and Grable and Roszkowski (2007) pointed that men and women are different psychologically due to biological difference. Other notion is that due to less socialization level women prefer safer options (Olsen and Cox, 2001; Yao and Hanna 2005; Collet and Lizardo, 2009; Bajtelsmit and Bernasek, 1996). Men have more equity investments than women have. Also, men get better opportunity to earn (Karakowsky and Elangovan 2001, Eckel and Grossman 2002, Roszkowski and Grable 2005). Yusof (2015) pointed out that only those women who have higher income are inclined to have more risk tolerance.

2.4. Education

Through exploratory study Cupples *et al* (2013) put to light that education can decrease the role of gender variability on financial risk tolerance. Chang and Chiremba (2004); Grable and Joo (2004); Yao and Hanna (2005) found out that education is positively associated with financial risk tolerance. Through formal education people learn cost and benefits of risky decisions. Kingston *et al* (2003), Bernheim *et al* (2001), Duasa and Yusof (2013) put to light importance of education. Higher education makes people more active, wealthier and opt for riskier financial choices. Education act as a medium of socialization. Economically, Grable (2008), Halek and Eisenhauer (2001), education increases human capital and hence, person's future prospect of earning and thus, increase financial risk tolerance. Yusof (2015) suggested that education should be tailor made according to the needs of gender. As environment and behavior for men and women today is not same.

2.5. Marital Status

Individuals are postponing marriage to later age (Lundberg and Pollak 2013). The median age of marriage for men has shifted to 32 years and for women, the marriage age is as long as 30 years (Lee 2023). It may be perceived that single individuals have more risk tolerance than married once (Grable 2008, Yao and Hanna 2005). The notion supporting this statement is that the single individuals have less to lose in case of unfavorable risky decisions. moreover, they focus on personalized goals. Married individuals have responsibilities to support dependents such as children, parents (Yao and Hanna 2005) and losses can shake financial condition of a family (Ardehali *et al* 2005). Also, Siek *et al* (2007) mentioned right estimation of financial risk tolerance is important for married individuals as it will lead to better financial environment for the family.

2.6. Occupation

Occupation can be used as a classifying factor according to their risk tolerance (Sultana and Pardhasardhi 2011). Meyer and Reniers (2016) conducted an experiment and found that entrepreneurs are more risk takers than non-entrepreneurs. Duasa and Yusof (2013) highlighted the people working in private sector such as business, finance, hospitality, trade are more risk tolerant

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than other occupations. Barnewall (1988) and Masters (1989) have found out that non-professionals who have less economic risk such as clerical workers, skilled and unskilled laborers were more conservative than those who were educated professionals such as doctors, lawyers, educators, managers, owners and retired persons. Farmers engaged in agricultural activities are less willing to take risk as mentioned by Duarte *et al* 2023.

2.7. Employment Status

MacCrimmon and Wehrung (1990), Thanki and Baser (2021), Ansari and Phatak (2016) pointed out that self-employed individuals are more risk tolerant than salaried individuals. Because self-employed individuals have in-built characteristic of taking more risk. The current study focuses on investigating if self-employed and retired individuals had higher risk tolerance than those full-time salaried. Salaried individuals get fixed monthly salary. They avoid taking loans and get comfortable in what they have (Dohmen and Falk 2006). Retired individuals have lived their life. They are almost living the last innings of their life (Arano *et al* 2010). At this stage they want to use their savings which they have made throughout their life as mostly, children are independent and earn good. The relationship between retirement status and financial risk tolerance is quite complex (Kasten *et al* 2011, Harahap *et al* 2022). It depends upon multiple factors such as income stability, psychological factors, literacy (Lusardi and Mitchell 2007) and health status.

2.8. Existence of Loan

There is a common opinion that high-cost borrowers have high risk tolerance as they are able to pay high EMIs on time and maintain good credit score (Dew and Xiao 2011). Maintaining good credit score is important to get loan in future. Fernatt *et al* (2012) through their research found that it is wrong notion. When individuals face a financial emergency, they tend to borrow first rather than liquidating their assets. Because of the perception that in future they will not be able to buy the asset. In this situation they tend to find a source which is convenient and speedy to get cash.

2.9. Personality Type A/B

Carducci and Wong (1998) find a correlation between Type A personality and the willingness to take financial risks in everyday financial situations. Kannadhasan *et al* (2016), Thanki and Baser (2019) and Thanki *et al* (2020) in their studies found out that people with type A personality is hard driving, competitive, aggressive and time savers. These individuals had significant impact on financial risk tolerance. Type B personality individuals who are often characterized as easy going and relaxed have less risk tolerance. The current study aims to find out impact of personality type A or B on financial risk tolerance.

2.10. Optimism

Optimism is a hope that everything happens for good. Optimism leads to positivity in mind. Optimism is key to good financial behavior (Strömbäck *et al* 2017, Owusu *et al* 2023). Prospect theory opines that optimism influences financial risk tolerance. Optimism attracts hard work, savings. It's an important psychological factor. The current study also focuses on psychological factors which is more or less ignored in the previous studies but forms part of behavioral finance. Optimistic and overconfident people are more risk tolerant (Nosic and Weber 2010). Men tend to be very optimistic and hence overconfident about their financial risk tolerance (Camerar and Lovallo 1999, Grable and Rozkowski 2007).

2.11. Deliberative Thinking

Financial decision making depends upon intuition and on deliberative thinking (Strömbäck *et al* 2017, Owusu *et al* 2023). While intuition is fast forward and based on observation and past experiences, deliberative thinking is more based on learning and calculations. Studies have revealed that expertise is learnt out of deliberative or repeated actions. Better financial choices can be made through deliberative thinking and not through intuition.

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3. Methodology

In the study quantitative approach was employed, specifically, the survey method with cross-sectional data was used. Stratified random sampling was used. The data was collected from the household's 'breadwinner'. Breadwinner is defined as a male, or if no male was present, then the spouse, partner, or female head of the household. Only one person per family was asked to respond.

For rural residents, 5 blocks were randomly selected out of 13 blocks falling in Ludhiana district. The Block Development Officers of the selected blocks were then contacted for the villages falling under the selected blocks. Out of the villages falling under the 5 selected blocks, 2 villages from each block were chosen randomly. The Sarpanch of the selected villages were then contacted for the list of the residents. 20 residents were then selected randomly form each of 10 villages, leading to a sample of 200 rural residents. The following Table 1 shows list of selected rural blocks and villages.

Table 1. list of selected Rural blocks and villages.

Sr. No.	Block	Villages
1.	Jagraon	Manuke, Hathur
2.	Doraha	Jandali, Dhamot
3.	Khanna	Kalal Majra, Isru
4.	Ludhiana West	Ayali Kalan, Birmi
5.	Ludhiana East	Bhamian Kalan, Dehlon

3.1. Variables and Measures

Primary data was collected using a questionnaire. Keeping in mind the target population the questionnaire was converted into regional Punjabi language. The questionnaire was divided into three parts. Part 1 had questions related to socio-demographic variables such as gender, marital status, age, education level, existence of loan, employment status, occupation, annual income. These were independent variables in the study. Part two included question related to measuring financial risk tolerance-13-item scale developed by Grable and Lytton 1999. The construct is dependent variable. According to Grable and Lytton (1999, 2003), Kuzniak *et al* (2015) scores of the scale can range from 13 (low risk tolerance) to 47 (high risk tolerance). In the study scores of the financial risk tolerance ranged from 13 to 39. Part three covered constructs related to psychological influences which were considered as independent variables. Deliberative thinking was adapted from Pachur and Spaar (2015). Optimism scale designed by Scheier *et al* (1994). Eaker and Castelli (1988) personality type A/B scale was used.

In the study, IBM SPSS (Statistical Package for Social Sciences) version 26 was used. Socio-demographic variables such as annual income, age, occupation, employment was dummy coded by converting each category into binary variable 0 and 1. Single = 1, married = 0; female = 0, male = 1; loan takers = 1, loan non-takers = 0. Stepwise multiple regression analysis was carried to examine the relationship between dependent variable, namely, financial risk tolerance and independent variables such as socio-demographic variables and psychological factors (e.g., personality type, optimism and deliberative thinking). Reference categories were age: 18-25, annual income:- less than ₹5,00,000, occupation:- government job, employment status:- retired individuals.

3.2. Reliability

Reliability is the measure of internal consistency of the constructs in the study. Construct reliability was assessed using Cronbach's Alpha. The reliability results are summarized in the following table.

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Table 2. Cronbach's alpha results of different constructs used in the study.

Constructs	No. of items	Alpha (α)
Financial risk tolerance scale	13	0.738
Personality scale	6	0.71
Optimism scale	5	0.692
Deliberative thinking scale	2	0.628

The index was found to be reliable for all constructs. The results revealed that the financial risk tolerance scale with the thirteen items had α = 0.738. Personality scale had α = 0.71, deliberative thinking had α = 0.628.

From Table 3, it has been inferred that males dominate the sample. As 85% were males and female consisted of 15%. Respondents falling in the age group of 18-25 years is 11.5%. Population falling in the working age group of 26-55 years is 81%. Age group of 56-65 years consist of 5% of population and only 2.5% lie in upper age of 66 years and above. Matriculate residents are 13.5% and maximum residents (37%) have completed post-graduation. 35% of population have done graduation and 14.5% is 12th pass. 50% of residents earned annual income less than 7.5 lakh and 38.55 of residents earned annual income of 7.5 lakh to 12.5 lakh. Nearly 11.5% of residents earned above 12.5 lakh. 63% of residents were married and 37% were single. Only 3.5% of residents were retired, 55.5% were full-time salaried and 41% were self-employed. 20.5% of residents were doing government job where as 26% of residents had private job, 11.5% had self-owned business, 38% of residents are engaged in agriculture. Maximum number of residents (61%) of residents have availed bank loan where as 39% have not taken.

Table 3. Demographic characteristics of the respondents.

Area →		Rural (N=200)	
		Frequency	(%)
Gender	Female	30	15
	Male	170	85
Age	18-25	23	11.5
	26-35	59	29.5
	36-45	44	22
	46-55	59	29.5
	56-65	10	5
	66 and above	5	2.5
Education	Upto matriculation	27	13.5
	Up to 12th	29	14.5
	Graduation	70	35
	Post-Graduation	74	37
Annual Income	Less than ₹5,00,000	42	21
	₹5,00,000 to ₹7,50,000	58	29
	₹7,50,000 to ₹10,00,000	37	18.5
	₹10,00,000 to ₹12,50,000	40	20

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	₹12,50,000 to ₹15,00,000	10	5
	Above ₹15,00,000	13	6.5
Marital status	Single	74	37
	Married	126	63
Employment Status	Retired	7	3.5
	Full time Salaried	111	55.5
	Self Employed	82	41
Occupation	Government Job	41	20.5
	Private Job	52	26
	Business	23	11.5
	Professional	8	4
	Agricultural	76	38
Bank loan availed	No	79	39.5
	Yes	121	60.5

4. Results

5. Discussion

The mean financial risk tolerance score of the rural residents is 27.3, 41.5% of residents are conservative whereas 58.5% of residents are aggressive. The dependent variable (financial risk tolerance) was stepwise regressed on predicting variables, namely, deliberative thinking, optimism, personality and socio-demographic variables. In rural area the independent variable significantly predicted financial risk tolerance. Tables 4 and 5 shows that $F(7,192) = 11.52$, $p < 0.05$, which indicates that the factors under the study have a significant impact on financial risk tolerance. Moreover, the adjusted $R^2 = 0.27$ depicts that the variables explain 27% of the variance in financial risk tolerance due to independent variable. From Tables 6 and 7 the fitted equation developed for rural area is as follows:

Financial risk tolerance = 23.08 + 0.43 (optimism) + 3.64 (Loan existence) – 1.61 (Full-time salaried) -3.63 (ANNUAL_INC=Rs 7,50,000 to Rs 10,00,000) + 1.93 (age group = 46-55 years) + 3.213 (Marital status status) – 0.43 (Deliberative Thinking).

Table 4. financial risk tolerance score.

Rural Area	Conservative (less than average risk tolerance score)	Aggressive (greater than average risk tolerance score)
(Mean = 27.27)	83(41.5%)	117 (58.5%)

Table 5. Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.283a	0.08	0.075	5.65571
2	.368b	0.135	0.126	5.49716
3	.447c	0.2	0.188	5.29993
4	.496d	0.246	0.231	5.1574
5	.516e	0.266	0.247	5.10227
6	.530f	0.281	0.259	5.06437
7	.544g	0.296	0.27	5.02446

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Notes: a. Predictors: (Constant), optimism**;** b. Predictors: (Constant), optimism, loan; c. predictors: (constant), optimism, loan, marital status; d. predictors: (constant), optimism, loan, marital status, ₹7,50,000 to ₹10,00,000; e. predictors: (constant), optimism, loan, marital status, ₹7,50,000 to ₹10,00,000, deliberative thinking; f. predictors: (constant), optimism, loan, marital status, ₹7,50,000 to ₹10,00,000, deliberative thinking, 36-45; g. predictors: (constant), optimism, loan, marital status, ₹7,50,000 TO ₹10,00,000, Deliberative Thinking, 36-45, Full time salaried.

Table 6. Analysis of Variance Results (ANOVA)[a.]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	549.972	1	549.972	17.194	.000b
	Residual	6333.448	198	31.987		
	Total	6883.42	199			
2	Regression	930.329	2	465.165	15.393	.000c
	Residual	5953.091	197	30.219		
	Total	6883.42	199			
3	Regression	1377.916	3	459.305	16.352	.000d
	Residual	5505.504	196	28.089		
	Total	6883.42	199			
4	Regression	1696.651	4	424.163	15.947	.000e
	Residual	5186.769	195	26.599		
	Total	6883.42	199			
5	Regression	1832.993	5	366.599	14.082	.000f
	Residual	5050.427	194	26.033		
	Total	6883.42	199			
6	Regression	1933.388	6	322.231	12.564	.000g
	Residual	4950.032	193	25.648		
	Total	6883.42	199			
7	Regression	2036.344	7	290.906	11.523	.000h
	Residual	4847.076	192	25.245		
	Total	6883.42	199			

Notes: a Dependent Variable: SUM_FRT; b Predictors: (Constant), optimism; c Predictors: (Constant), optimism, loan; D predictors: (constant), optimism, loan, marital status; E predictors: (constant), optimism, loan, marital status, annual income: ₹7,50,000 to ₹10,00,000; F predictors: (constant), optimism, loan, marital status, annual income: ₹7,50,000 to ₹10,00,000, deliberative thinking; G predictors: (constant), optimism, loan, marital status, annual income: ₹7,50,000 to ₹10,00,000, deliberative thinking, age: 36-45; H predictors: (constant), optimism, loan, marital status, annual income: ₹7,50,000 to ₹10,00,000, deliberative thinking, age: 36-45, Full time salaried.

Table 7. Coefficients Table.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.173	1.524		13.896	0
	optimism	0.434	0.105	0.283	4.147	0
2	(Constant)	19.867	1.526		13.018	0

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	optimism	0.405	0.102	0.264	3.97	0
	LOAN	2.83	0.798	0.236	3.548	0
3	(Constant)	18.334	1.521		12.057	0
	optimism	0.384	0.099	0.25	3.899	0
	LOAN	3.853	0.811	0.321	4.753	0
	MARITAL STATUS	3.267	0.818	0.269	3.992	0
4	(Constant)	18.407	1.48		12.438	0
	optimism	0.424	0.097	0.276	4.391	0
	LOAN	4.039	0.791	0.337	5.109	0
	MARITAL STATUS	2.912	0.803	0.24	3.627	0
	₹7,50,000 TO ₹10,00,000	-3.323	0.96	-0.22	-3.462	0.001
5	(Constant)	21.615	2.027		10.663	0
	optimism	0.441	0.096	0.287	4.6	0
	LOAN	3.718	0.795	0.31	4.678	0
	MARITAL STATUS	3.021	0.796	0.249	3.796	0
	₹7,50,000 TO ₹10,00,000	-3.352	0.95	-0.222	-3.529	0.001
	DELIBERATIVE THINKING	-0.424	0.185	-0.144	-2.289	0.023
6	(Constant)	21.494	2.013		10.678	0
	optimism	0.448	0.095	0.291	4.699	0
	LOAN	4.062	0.808	0.338	5.028	0
	MARITAL STATUS	2.788	0.799	0.229	3.491	0.001
	₹7,50,000 TO ₹10,00,000	-3.635	0.954	-0.241	-3.812	0
	DELIBERATIVE THINKING	-0.378	0.185	-0.129	-2.036	0.043
	36-45	-1.806	0.913	-0.128	-1.978	0.049
7	(Constant)	23.076	2.145		10.756	0
	optimism	0.433	0.095	0.282	4.571	0
	LOAN	3.644	0.828	0.304	4.402	0
	MARITAL STATUS	3.213	0.82	0.264	3.92	0
	₹7,50,000 TO ₹10,00,000	-3.631	0.946	-0.24	-3.837	0
	DELIBERATIVE THINKING	-0.425	0.185	-0.145	-2.291	0.023
	36-45	-1.929	0.908	-0.136	-2.124	0.035
	FULL TIME SALARIED	-1.607	0.796	-0.136	-2.019	0.045

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Table 8. Excluded Variables.

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	LOAN	.236	3.548	0.00	0.245	0.994
	FULL TIME SALARIED	-.103	-1.516	0.131	-0.107	0.992
	SELF EMPLOYED	.055	0.803	0.423	0.057	0.989
	PRIVATE JOB	.020	0.287	0.775	0.02	0.983
	BUSINESS	-.001	-0.009	0.993	-0.001	0.974
	PROFESSIONAL	.112	1.655	0.099	0.117	1
	AGRICULTURAL	.051	0.746	0.456	0.053	0.999
	26-35	.048	0.695	0.488	0.049	0.997
	36-45	-.076	-1.114	0.267	-0.079	0.999
	46-55	-.007	-0.1	0.921	-0.007	0.994
	56-65	-.026	-0.375	0.708	-0.027	1
	66 AND ABOVE	.006	0.088	0.93	0.006	0.923
	₹5,00,000 TO ₹7,50,000	-.037	-0.535	0.593	-0.038	0.999
	₹7,50,000 TO ₹10,00,000	-.219	-3.272	0.001	-0.227	0.985
	₹10,00,000 TO ₹12,50,000	.197	2.942	0.004	0.205	0.996
	₹12,50,000 TO ₹15,00,000	.155	2.295	0.023	0.161	1
	ABOVE ₹15,00,000	.114	1.666	0.097	0.118	0.982
	PERSONALITY	-.080	-1.151	0.251	-0.082	0.971
	DELIBERATIVE THINKING	-.168	-2.494	0.013	-0.175	0.996
	MARITAL STATUS	.168	2.491	0.014	0.175	0.999
	UP TO 12TH	.057	0.833	0.406	0.059	0.995
	GRADUATION	.057	0.837	0.404	0.06	0.993
	POST-GRADUATION	.187	2.785	0.006	0.195	0.993
	GENDER	.032	0.464	0.643	0.033	0.979
2	FULL TIME SALARIED	-.029	-0.415	0.679	-0.03	0.885
	SELF EMPLOYED	-.010	-0.145	0.885	-0.01	0.915
	PRIVATE JOB	.074	1.075	0.284	0.077	0.938
	BUSINESS	-.022	-0.321	0.749	-0.023	0.967
	PROFESSIONAL	.123	1.861	0.064	0.132	0.998
	AGRICULTURAL	-.014	-0.208	0.836	-0.015	0.925
	26-35	.084	1.251	0.212	0.089	0.976
	36-45	-.137	-2.029	0.044	-0.143	0.946
	46-55	-.045	-0.673	0.502	-0.048	0.969
	56-65	-.048	-0.715	0.476	-0.051	0.992
	66 AND ABOVE	.001	0.015	0.988	0.001	0.922
	₹5,00,000 TO ₹7,50,000	-.005	-0.073	0.942	-0.005	0.981
	₹7,50,000 TO ₹10,00,000	-.249	-3.839	0.00	-0.264	0.973

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	₹10,00,000 TO ₹12,50,000	.146	2.15	0.033	0.152	0.931
	₹12,50,000 TO ₹15,00,000	.135	2.038	0.043	0.144	0.992
	ABOVE ₹15,00,000	.106	1.583	0.115	0.112	0.98
	PERSONALITY	-.043	-0.636	0.526	-0.045	0.947
	DELIBERATIVE THINKING	-.125	-1.851	0.066	-0.131	0.954
	MARITAL STATUS	.269	3.992	0.00	0.274	0.9
	UP TO 12TH	.039	0.584	0.56	0.042	0.989
	GRADUATION	.025	0.379	0.705	0.027	0.974
	POST-GRADUATION	.204	3.126	0.002	0.218	0.988
	GENDER	-.015	-0.221	0.825	-0.016	0.942
3	FULL TIME SALARIED	-.107	-1.522	0.13	-0.108	0.826
	SELF EMPLOYED	.051	0.738	0.461	0.053	0.872
	PRIVATE JOB	.020	0.291	0.771	0.021	0.898
	BUSINESS	-.014	-0.222	0.824	-0.016	0.966
	PROFESSIONAL	.085	1.315	0.19	0.094	0.974
	AGRICULTURAL	.051	0.749	0.455	0.054	0.873
	26-35	-.021	-0.295	0.769	-0.021	0.825
	36-45	-.107	-1.629	0.105	-0.116	0.932
	46-55	.063	0.894	0.372	0.064	0.827
	56-65	-.008	-0.124	0.902	-0.009	0.968
	66 AND ABOVE	.033	0.496	0.62	0.036	0.909
	₹5,00,000 TO ₹7,50,000	-.022	-0.339	0.735	-0.024	0.976
	₹7,50,000 TO ₹10,00,000	-.220	-3.462	0.001	-0.241	0.957
	₹10,00,000 TO ₹12,50,000	.143	2.188	0.03	0.155	0.931
	₹12,50,000 TO ₹15,00,000	.099	1.536	0.126	0.109	0.971
	ABOVE ₹15,00,000	.101	1.574	0.117	0.112	0.98
	PERSONALITY	-.048	-0.732	0.465	-0.052	0.947
	DELIBERATIVE THINKING	-.141	-2.179	0.031	-0.154	0.95
	UP TO 12TH	.054	0.837	0.404	0.06	0.986
	GRADUATION	.076	1.157	0.249	0.083	0.941
	POST-GRADUATION	.134	1.976	0.05	0.14	0.88
	GENDER	.054	0.79	0.431	0.056	0.883
4	FULL TIME SALARIED	-.103	-1.515	0.131	-0.108	0.826
	SELF EMPLOYED	.045	0.676	0.5	0.048	0.871
	PRIVATE JOB	-.005	-0.074	0.941	-0.005	0.887
	BUSINESS	.013	0.199	0.842	0.014	0.951
	PROFESSIONAL	.099	1.574	0.117	0.112	0.97
	AGRICULTURAL	.042	0.627	0.532	0.045	0.871
	26-35	-.009	-0.124	0.901	-0.009	0.823
	36-45	-.144	-2.237	0.026	-0.159	0.911

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	46-55	.098	1.426	0.155	0.102	0.811
	56-65	.014	0.224	0.823	0.016	0.958
	66 AND ABOVE	.019	0.29	0.772	0.021	0.905
	₹5,00,000 TO ₹7,50,000	-.092	-1.403	0.162	-0.1	0.896
	₹10,00,000 TO ₹12,50,000	.089	1.332	0.184	0.095	0.861
	₹12,50,000 TO ₹15,00,000	.077	1.214	0.226	0.087	0.96
	ABOVE ₹15,00,000	.070	1.109	0.269	0.079	0.958
	PERSONALITY	-.095	-1.469	0.143	-0.105	0.91
	DELIBERATIVE THINKING	-.144	-2.289	0.023	-0.162	0.95
	UP TO 12TH	.025	0.399	0.691	0.029	0.968
	GRADUATION	.119	1.844	0.067	0.131	0.911
	POST-GRADUATION	.107	1.607	0.11	0.115	0.867
	GENDER	.069	1.035	0.302	0.074	0.88
5	FULL TIME SALARIED	-.127	-1.865	0.064	-0.133	0.81
	SELF EMPLOYED	.084	1.244	0.215	0.089	0.825
	PRIVATE JOB	-.019	-0.294	0.769	-0.021	0.879
	BUSINESS	-.028	-0.431	0.667	-0.031	0.882
	PROFESSIONAL	.100	1.615	0.108	0.115	0.97
	AGRICULTURAL	.083	1.224	0.223	0.088	0.821
	26-35	-.055	-0.779	0.437	-0.056	0.762
	36-45	-.128	-1.978	0.049	-0.141	0.897
	46-55	.120	1.756	0.081	0.125	0.798
	56-65	.030	0.481	0.631	0.035	0.946
	66 AND ABOVE	-.010	-0.145	0.885	-0.01	0.872
	₹5,00,000 TO ₹7,50,000	-.079	-1.219	0.225	-0.087	0.889
	₹10,00,000 TO ₹12,50,000	.107	1.606	0.11	0.115	0.851
	₹12,50,000 TO ₹15,00,000	.063	0.99	0.323	0.071	0.949
	ABOVE ₹15,00,000	.081	1.296	0.197	0.093	0.953
	PERSONALITY	-.083	-1.284	0.201	-0.092	0.903
	UP TO 12TH	.045	0.705	0.481	0.051	0.952
	GRADUATION	.111	1.732	0.085	0.124	0.908
	POST-GRADUATION	.096	1.445	0.15	0.103	0.861
	GENDER	.057	0.872	0.384	0.063	0.875
6	FULL TIME SALARIED	-.136	-2.019	0.045	-0.144	0.807
	SELF EMPLOYED	.101	1.498	0.136	0.107	0.814
	PRIVATE JOB	-.011	-0.162	0.871	-0.012	0.875
	BUSINESS	-.026	-0.393	0.695	-0.028	0.881
	PROFESSIONAL	.091	1.476	0.142	0.106	0.964
	AGRICULTURAL	.101	1.496	0.136	0.107	0.808
	26-35	-.100	-1.383	0.168	-0.099	0.705

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	46-55	.070	0.891	0.374	0.064	0.599
	56-65	.009	0.145	0.885	0.01	0.918
	66 AND ABOVE	-.021	-0.326	0.745	-0.024	0.865
	₹5,00,000 TO ₹7,50,000	-.097	-1.49	0.138	-0.107	0.875
	₹10,00,000 TO ₹12,50,000	.120	1.814	0.071	0.13	0.843
	₹12,50,000 TO ₹15,00,000	.060	0.958	0.339	0.069	0.949
	ABOVE ₹15,00,000	.090	1.446	0.15	0.104	0.949
	PERSONALITY	-.085	-1.321	0.188	-0.095	0.902
	UP TO 12TH	.044	0.708	0.48	0.051	0.952
	GRADUATION	.126	1.964	0.051	0.14	0.898
	POST-GRADUATION	.093	1.423	0.156	0.102	0.861
	GENDER	.047g	0.716	0.475	0.052	0.868
7	SELF EMPLOYED	-.166	-0.945	0.346	-0.068	0.119
	PRIVATE JOB	.042	0.605	0.546	0.044	0.761
	BUSINESS	-.059	-0.892	0.374	-0.064	0.834
	PROFESSIONAL	.111	1.799	0.074	0.129	0.945
	AGRICULTURAL	.048	0.623	0.534	0.045	0.628
	26-35	-.094	-1.305	0.194	-0.094	0.703
	46-55	.067	0.862	0.39	0.062	0.599
	56-65	-.005	-0.076	0.939	-0.006	0.907
	66 AND ABOVE	-.055	-0.826	0.41	-0.06	0.817
	₹5,00,000 TO ₹7,50,000	-.072	-1.082	0.28	-0.078	0.834
	₹10,00,000 TO ₹12,50,000	.111	1.684	0.094	0.121	0.839
	₹12,50,000 TO ₹15,00,000	.048	0.764	0.446	0.055	0.939
	ABOVE ₹15,00,000	.058	0.895	0.372	0.065	0.865
	PERSONALITY	-.099	-1.557	0.121	-0.112	0.892
	UP TO 12TH	.075	1.182	0.239	0.085	0.907
	GRADUATION	.115	1.812	0.072	0.13	0.892
	POST-GRADUATION	.093	1.436	0.153	0.103	0.861
	GENDER	.038	0.583	0.56	0.042	0.864

There is positive relationship between presence of loan and financial risk tolerance. Loan takers had more financial risk tolerance than those who do not have loan on themselves. The result is in line with Wang (2023) but contrary to Fernatt *et al* (2012). If an individual deliberately manages his/her debt creditworthiness and investment opportunities increase and hence, financial risk tolerance also increase manifold. Carvalho *et al* (2019) mentions to be careful when borrowing. Cost of borrowing must be kept in mind while availing loan. Borrowing at high cost can prove to be fatal.

Negative relationship was found between full-time salaried individuals and financial risk tolerance. This implies the reference category: retired individuals had more financial risk tolerance than full-time salaried residents. According to Arano *et al* 2010, retired individuals want to use their savings which they have made throughout their life as mostly, children of retired individuals are independent and start earning for themselves. The results are opposite to Kasten *et al* 2011, Harahap *et al* 2022. According to them retired individuals may or may not have good financial risk tolerance.

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Occupation did not significantly impact financial risk tolerance. The result was in contrast with Sultana and Pardhasardhi (2011) but in line with Duasa and Yusof (2013) Individuals running their own business had more financial risk tolerance than government job holders. Individuals having agriculture as their occupation defer from taking bonds or stocks. They believe in buying agricultural land to be best investment and have low risk tolerance.

Education did not significantly impact financial risk tolerance of rural residents. The results were in contrast to Cupples *et al* (2013), Chang and Chiremba (2004), Grable and Joo (2004), Yao and Hanna (2005), Kingston *et al* (2003), Bannier and Schwarz (2017) and Heo *et al* (2021).

Relationship between income and financial risk tolerance scores was found not to be significant. The results were in contrary to Grable *et al* (2008), Ardehali *et al* (2005), Grable and Joo (2004); Huston *et al* (1997) and Sung and Hanna (1996). Only one group of individuals earning Rs 7,50,000 to Rs 10,00,000 had significant but negative financial risk tolerance. This indicates lower income earners (Less than ₹5,00,000) had better risk tolerance. The reason may be that lower income groups want to park their funds in better avenues and earn returns as more risk means more returns (Ricciardi V 2008). Higher income earners may not want to park their hard-earned money in risky assets and live in comfort zone (Bernstein 1996, Thanki and Baser 2021). During the survey it was observed that low age group residents who earned a meagre income wanted to opt for shortcuts and earn easy money through bitcoins or futures and options, of which they had little knowledge. They want to opt for shortcuts which may not benefit them for long term.

Age was also found not to be significantly associated with financial risk tolerance. Only the age group 46 to 55 years was found to have significant impact. At this age individual have experience and knowledge about market and children are mostly, of marriageable age. Taking financial risk can better off the financial conditions. The results were inconclusive and in line with Yang (2004), Chaulk *et al* (2003) and Ardehali *et al* (2005) but in contrast to Forenseca *et al* (2012), Yusof (2015) who found a positive association between age and financial risk tolerance.

Marital status had positive relationship with financial risk tolerance. Single individuals had higher financial risk tolerance than married individuals. Single individuals have less to lose in case of unfavorable risky decisions. The result is in line with Nosita *et al* (2020), Grable (2008), Yao and Hanna (2005). Family structure plays an important role in deciding financial risk tolerance according to Chaulk *et al* (2003) Moreover, single individuals focus on personalized goals. Married individuals have responsibilities. Financial expenditures are more for married ones compared to single ones.

Talking about psychological factors, in the present study, personality did not have significant impact on financial risk tolerance of rural residents. The results were in contrast to Kannadhasan *et al* (2016), Thanki and Baser (2019) and Thanki *et al* (2020).

Deliberative thinking had significant but negative impact on financial risk tolerance. This implies that as deliberative thinking improves financial risk tolerance decreases. The results show that when people are more calculative and planned, financial risk tolerance decreases.

Optimism had positive relation with risk tolerance. The results were consistent with Nosic and Weber (2010), Camerar and Lovallo (1999), Grable and Rozkowski (2007). Owusu *et al* (2023) did not find a significant relationship of optimism with financial risk tolerance whereas prospect theory opines that optimism influences financial risk tolerance. Optimism attracts hard work, savings and thus, increases risk tolerance.

6. Conclusions

In conclusion, financial risk tolerance in rural areas is influenced by a variety of factors, including socioeconomic status, access to financial education, and cultural attitudes toward risk and debt. Rural residents often face unique challenges such as limited access to financial services and markets, which can impact their risk tolerance. However, studies have found out that those with higher risk tolerance in rural areas are more likely to engage in entrepreneurial activities and take loans to invest in agriculture or small business ventures. According to the present study, loan takers had higher risk tolerance scores than non-loan takers. Rural residents use mobile phones and internet to not to be left behind and stay updated. Income and education impacts living style. In the present study annual income, age, education and occupation did not significantly impact risk tolerance scores. But according to literature these factors impact financial risk tolerance. Retired individuals have tendency to spend more on themselves and save for children as well. They had higher risk tolerance scores

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than full-time salaried and self-employed residents. Psychological factor such as personality did not impact financial risk tolerance. Deliberative thinking negatively impacted risk tolerance scores which means planning hard can decrease risk tolerance scores but being optimistic can certainly improve the scores.

6.1. Limitations

The data collected may be subject to biasness due to respondents self-reported data. The answers provided may be more socially acceptable rather than representing respondent's true feelings. Cultural differences may limit the scope of the study. The questions used to measure variables may be differently interpreted by residents. Actual response may not be captured due to this limitation. This study suffers from all the limitations associated with studies based on survey data.

6.2. Future Research

Future research could benefit from longitudinal data to examine changes in risk tolerance over time. Impact of economic cycles, technological advancements such as mobile banking, digital wallets etc. can be further studied. Additionally, exploring other psychological variables such as risk perception, trust, loss sensitivity, mental health etc. in more depth could provide a more comprehensive understanding. Urban and rural residents financial risk tolerance can be studied further according to different parameters.

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