

# A Study on Influence of Financial Knowledge and Financial Behavior on Risk Tolerance of Millennials of Surat City

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## Abstract

The financial market in India is growing everyday with addition of new market players and new financial tools. It is of utmost importance that management of finance must be done in most efficient manner. Management of finance is totally dependent on individual's financial literacy. From the studies undertaken in past, it is observed that a financially literate person is more capable of taking sound financial decisions. This study also tries to identify the relation between two key determinants of Financial Literacy that is Financial Knowledge and Financial Behavior and its impact on Risk Tolerance of Surat City. The study is based on 210 responses collected from Surat City which indicated positive but weak association between the Financial Knowledge, Financial Behavior and Financial Risk Tolerance level.

**Keywords:** Financial Knowledge (FK), Financial Behavior (FB), Risk Tolerance (*RT*).

## 1. Introduction

Investors in financial market are increasing day by day, but to succeed in ever dynamic financial market one requires not only proper knowledge but also have a positive financial behavior and understanding of financial risk. Financial Knowledge can be defined as understanding of financial concepts and risks that would provide the skills and motivation to make effective financial decisions (OECD, 2016) which is one of the key determinants of Financial Literacy. With sound financial knowledge one is able to make correct financial decision but it can be affected by his financial behavior and risk tolerance level. Financial behavior refers to a way in which an individual manages financial decisions, money deals with financial issues which is highly influenced by one's personality, education, income and past experiences. Whereas risk tolerance is referred to as the willingness of an individual to engage in a behavior where there is desired goal but attainment of the goal is uncertain and accompanied by possibility of loss (Kogan and Wallach, 1964). The studies made in past have focused only on financial knowledge aspects, where having good financial knowledge is considered a sign of high financial literacy but studies nowadays has shown that even students having studied financial management with good financial knowledge score also tend to be impacted by their financial behavior and financial attitude (Yahaya, Zainol, Abidin and Ismail, 2019). Financial knowledge and financial behavior have shown positive relationship. High financial knowledge with positive financial behaviors can lead to more involvement in financial market and sound financial practices (OECD, Working Papers, 2009). It is observed that

people with low financial knowledge are more impacted by risk tolerance levels (Jacobs-Lawson, Hershey, 2005) this study was conducted in America. While another study conducted in India indicated that higher financial knowledge has higher impact on positive risk tolerance levels. Indicating that people with positive financial literacy are more willing to take informed higher risk decisions (Reddy and Mahapatra, 2017). Thus it can be interpreted that from the studies made in the past financial knowledge is impacted by both financial behavior and risk tolerance levels of an individual.

The research tries to study relationship between all three variables on the millennials of Surat city. Millennials are the people currently belonging in the age group of 27 years to 41 years, (born between 1981 to 1997). They are currently major part of the work force and tend to invest more from various perspectives including their retirement plan. Thus to study the financial knowledge levels and its impact on financial behavior and risk tolerance of this peer group is more than necessary.

## 2. Literature Review

Financial literacy helps not only in managing long term financial goals but it also helps in day-to-day activities such as making budget or buying decisions. To successfully manage one's present and future needs it is very much necessary to take into consideration of impact of all the different factors such as financial knowledge, financial behavior, financial attitude, risk tolerance level of individual, investment decisions. (OECD, 2012) reflects that there is positive relationship between financial knowledge and financial behavior in developed countries like USA and Australia. (Kummar & Annes, 2013) projected that financial literacy level of Indians majorly depend upon their education and income level, other factors which had major impact on literacy levels are age, family background, nature of employment etc. (Baruah, 2017) studied financial literacy and risk tolerance of working women of Gujarat and pointed out that financial risk tolerance increases with education and women holding highest levels of educational degrees had a high-risk tolerance level compared to other counterparts which is in line with study made by (Reddy and Mahapatra, 2017). Her study is also in line with Volpe and Chen (2002) which states that respondent having higher education would not necessarily mean that they possess higher financial literacy level. (Reddy and Mahapatra, 2017) studied financial knowledge and risk tolerance level of Indian respondents and pointed out that age, education and personal financial knowledge having significant positive relationship. (Mubaraq, Anshori and Trihatmoko, 2021) studied the impact of financial knowledge and risk tolerance on investment decision making, highlighting positive relationship of both the determinants towards investment decision making. (Ramudzuli and Muzindutsi, 2015) summarized that demographic factors such as education, gender, age and income have significant impact on financial risk tolerance of students of South African University which is in agreement with previous studies made by Boomier and Rochet, 2006 and Charyton, 2013. Thus many studies have been made in past which studies the impact of financial knowledge on financial behavior or impact of financial knowledge on risk tolerance. The aim of this study is to identify the inter relationship of all the three determinants discussed so far. Also not much study has been made to identify the impact of these determinants towards millennials.

## 3 Research Methodology

### 3.1 Objective Of Study

- To determine the Financial Knowledge levels of the respondents.
- To determine the factors of Financial Behavior and Financial Risk Tolerance.

- To determine the relationship between Financial Knowledge, Financial Behavior and Risk Tolerance.

### 3.2 Research Design

Descriptive Research design has been used for present study.

### 3.3 Sampling

A structured questionnaire was developed taking the OECD tool kit 2019 and 2022 as base for questions and statement related to financial knowledge and financial behavior, whereas the risk tolerance statements are considered from the literary work of John E. Grabel. Non-Probability Convenience Sampling method has been used to collect data from responses who were millennial of Surat city who are active part of the job force. Initially pilot testing of 30 respondents has been done and on the basis of that some necessary modifications have been done in questionnaire and 210 responses are taken into consideration for undertaking the final study.

### 3.4 Demographic Profile of Respondents

<b>Demographic details of the respondents</b>			
<b>(Table 1)</b>			
		<b>Frequency</b>	<b>Percentage</b>
<b>Age</b>	Age 33 to 37 years	49	23.3
	Age 28 to 32 years	122	58.1
	Age 38 to 43 years	39	18.1
<b>Gender</b>	Female	63	30.0
	Male	147	70.0
<b>Marital Status</b>	Married	72	34.3
	Unmarried	138	65.7
<b>Qualification</b>	Doctorate	14	6.7
	Graduate	57	27.1
	Post Graduate	130	61.9
	SSC/HSC	6	2.9
	Under Graduate	3	1.4
<b>Occupation</b>	Business	9	4.3
	Employee (Salaried)	79	37.6
	Homemaker	29	13.8
	Profession	33	15.7
	Self-employed	60	28.6
<b>Income</b>	Rs. 30,001 - 50,000	68	32.4
	Rs. 50,001 - 80,000	30	14.3
	Rs. 10,000 - 30,000	83	39.5
	Rs. 80,001 - 1,00,000	20	9.5
	Rs.1,00,000 and above	9	4.3
<b>No. of family members</b>	More than three	161	76.7
	Single	9	4.3
	Three	28	13.3
	Two	12	5.7

<b>Dependent</b>	More than three	15	7.1
	One	50	23.8
	Three	15	7.1
	Two	70	33.3
	Zero	60	28.6

Source: Primary Data

### 3.5 Methodology

The responses were collected through a structured questionnaire which was divided into three parts. Financial Knowledge, Financial Behavior and Risk Tolerance. Financial Knowledge of respondents were tested based on various questions related to simple division, calculation of compound interest, calculation of simple interest, understanding of time value of money, inflation and more. Financial Behavior and Risk tolerance were analyzed on the basis of simple statements related to them on 5 point Likert scale in which 5 points was awarded to highly satisfied and 1 was awarded to highly dissatisfied. The reliability of this determinants were tested with Cronbach Alpha test which is test of reliability of quality and consistency of the survey.

**Cronbach’s Alpha score of determinants of the study.  
(Table 2)**

	<b>Cronbach’s Alpha Score</b>	<b>N of items.</b>
Financial Knowledge	.808	10
Financial Behavior	.901	11
Risk Tolerance	.834	08

As the Cronbach Alpha score of each determinant is higher than 0.7 the questions and statements have been accepted for all three determinants of the study. (Table 2)

### 3.6 Financial Knowledge:

In total 10 basic questions were asked with multiple options for which simple division and risk and return are two aspect having maximum number of correct responses (98.57%) also respondents had better understanding in calculating interest amount (92.85%). While the respondents had low level of understanding of compound interest calculations and risk diversification.

**Table showing total percentage of correct responses to the questions of Financial Knowledge  
Table 3**

	<b>Questions of Financial Knowledge</b>	<b>Correct Answer (%)</b>
FK1	Sum related to Division.	98.57%
FK2	Time value of money.	57.6%
FK3	Calculation of Compound Interest.	32.38%
FK4	Calculation of Interest plus Principle.	92.85%
FK5	Risk and Return.	98.57%
FK6	Understanding of Inflation.	50%
FK7	Diversification.	36.19%

FK8	Understanding of various accounts.	88.57%
FK9	Understanding of basic Financial Instruments.	81.42%
FK10	Understanding of Risk Appetite.	50%

Based on the number of correct responses received from each respondents they are distributed into three category which are High (more than 80%), Moderate (60% to 79%) and Low level (below 60%) of Financial Knowledge which is similar to the studies undertaken by (Danes & Hira, 1987; Volpe, Chen & Paylicko, 1996)

Table showing distribution of Correct responses to questions of Financial Knowledge. (Table 4)		
	No. of respondents	Percentage
More than or equal 80%	66	31.42%
Between 60 to 79%	117	55.71%
Less than 60%	27	12.85%

Out of the total 210 responses 66 respondents (31.42%) had given 8 or more than 8 correct answers hence they can be said having high financial knowledge level. 117 respondents indicating 55.71% of total constituents fall in the category of 6 to 7 correct responses due to which they are considered having moderate knowledge level. Lastly 27 respondents (12.85%) have responded less than 6 correct answers hence they are having low level of financial knowledge. From this it can be stated that maximum number of respondents belong to Moderate level of Financial Knowledge.

### 3.7 Financial Behavior

Financial Behavior of the respondent is studied on a 5 point Likert Scale with 11 statements divided into different categories such as planning behavior, saving behavior, responsible investment behavior and bills and loan payment behavior. The mean of the statement lies between 3.64 to 4.476 while the standard deviation of all the statements is higher than 0.5 which states that no statement is unrelated (Table 5). In total 38.09% of respondents had shown high desirable behavior while 40.25% of population had moderately positive behavior. 5.5% of the population had selected negative statements in their responses indicating low to negative financial behaviour.

Table showing mean and Standard deviation of Financial Behavior Statements (Table 5)				
	Statements of Financial Behavior		Mean	Sd.
FB1	I carefully consider all the financial aspects before making investment decisions.	Planning Behaviour	4.476	.8078
FB3	I set long term financial goals and strive towards its achievement.		4.086	.8541
FB5	I always make purchases after taking reviews from others.		3.952	1.0202

FB8	I always assess my financial position at the end of year.		4.105	.9116
FB6	I have been actively saving money to invest in various securities.	<b>Saving Behavior</b>	4.010	.8471
FB4	I always prepare budget to plan out my expenses	<b>Responsible Investment Behavior</b>	4.205	.8809
FB7	I always keep a close eye on my financial affairs.		3.643	1.1743
FB9	I always invest in different investment avenues to increase returns and minimize risk.		3.838	.9547
FB10	I like to increase my financial knowledge by regularly updating myself with changes in the world.		4.024	.8882
FB11	I like to consider applicability of different taxes on my investments before investing.		4.100	.8609
FB2	I always pay my bills on time.	<b>Bills and Loan Payment Behavior</b>	4.476	.7652

### 3.8 Financial Risk Tolerance

Financial risk tolerance of an individual respondents depends upon respondents’ financial knowledge, their financial behavior and also towards their own personality it can also be affected based on their families, peer group. To measure the financial risk tolerance of individual 8 statements were given on 5 point Likert scale. The statements are broadly categorised into three parts Emotional responses and feelings, skills and standards and financial satisfaction. The mean values fall between 3.443 to 3.767 and Standard deviation is higher than .5 indicating that no statements are unrelated (Table 6). Moreover 17.38% of respondents had high positive risk tolerance levels while 36.66% respondents were moderately positive indicating that respondents do take into consideration their risk taking capacities before making financial decisions.

**Table showing mean and Standard deviation of Financial Risk Tolerance Statements (Table 6)**

	<b>Statements of Financial Behavior</b>		<b>Mean</b>	<b>Sd.</b>
RB1	I prefer investing in stock market than putting in a bank account.	<b>Emotional responses and feelings</b>	3.767	.8900
RB2	For me returns are more important than safety.		3.376	1.1181
RB3	I am willing to take sustainable risk in pursue of higher return.		3.552	.8470
RB6	I am comfortable holding on to an investment even though it drops sharply in value.		3.443	1.0348
RB4	I am willing to take job where payment is made exclusively on commission basis.	<b>Skills and Standards</b>	3.457	1.1199

RB5	I can tolerate sharp ups and downs in the short-term value of my investments in return for potential long-term gains.	<b>Financial Satisfaction</b>	3.467	1.1497
RB8	I believe that making risky decisions will add more to my value of returns		3.457	1.0447
RB7	I am willing to take risk associated with stocks in order to receive return greater than the rate of inflation.		3.548	1.1409

### 3.9 Factor Analysis between Financial Behavior and Financial Risk Tolerance.

Expleatory factor analysis was performed to identify the factors that co-relate significantly out of all the factors of financial behavior and risk tolerance. The Kaiser, Meyer and Olkin (KMO) values greater than 0.7 indicates that sample size is sufficient here in this study the KMO value was 0.744 ( $0.744 > 0.7$ ) hence the sampling was considered adequate indicating that factor analysis can be performed. Bartlett’s Test of Sphericity reached statistical significance (significance –  $.000 < .05$ ) indicating that population matrix was not an identity matrix. The communalities of the all the factors were higher than 0.4 hence all the factors were accepted. Varimax rotation was used for analyzing rotated component matrix. The Eigen values are considered as criteria to identify the number of factors, and those factors whose Eigen value is above 1 are extracted. Based on which 5 components are identified out of the set of 19 variables to which meaningful nomenclature has been assigned to understand the pattern of factor loading. (Table 7)

**Table showing factor analysis variables.**  
(Table 7)

Factor	Component Name	Factor Name
1.	I always prepare budget to plan out my expenses	<b>Responsible Financial Planning</b>
	I always make purchases after taking reviews from others.	
	I have been actively saving money to invest in various securities.	
	I always pay my bills on time.	
	I like to consider applicability of different taxes on my investments before investing.	
	I set long term financial goals and strive towards its achievement.	
	I carefully consider all the financial aspects before making investment decisions.	
2.	I am comfortable holding on to an investment even though it drops sharply in value.	<b>Financial Satisfaction</b>
	I am willing to take risk associated with stocks in order to receive return greater than the rate of inflation.	
	I believe that making risky decisions will add more to my value of returns.	
3.	I always assess my financial position at the end of year.	<b>Money Management</b>
	I always invest in different investment avenues to increase returns and	

	minimize risk.	
	I like to increase my financial knowledge by regularly updating myself with changes in the world.	
4	I am willing to take job where payment is made exclusively on commission basis.	<b>Financial Risk Taking Attitude</b>
	For me returns are more important than safety.	
5	I can tolerate sharp ups and downs in the short-term value of my investments in return for potential long-term gains.	<b>Investment Behavior</b>
	I always keep a close eye on my financial affairs.	
	I prefer investing in stock market than putting in a bank account.	
	I am willing to take sustainable risk in pursue of higher return.	

Factor analysis attempts to bring inter-correlated variables together under more general variables. Here the variables having inter correlation are divided into 5 main factors which are responsible financial planning, financial satisfaction, money management, risk attitude and investment behavior.

**3.10 Correlation between Financial Knowledge, Financial Behavior and Financial Risk Tolerance.**

In order to assess the correlation between financial knowledge, financial behavior and risk tolerance Spearman’s Rank Correlation is calculated among the three components of the study (Table 8). Spearman’s Rank Correlation measures the strength and direction of association between variables. It can take value between +1 to -1 where +1 indicates perfect association of rank while -1 means perfect negative association. To analyse financial knowledge questions total number of correct responses have been taken. While behavior and risk tolerance statements are taken to their median values. The correlation analysis between financial knowledge and financial behavior is (0.034) positive but the association is very poor which indicates that financial knowledge does not have any significant impact upon the financial behavior of respondents which is in line with the study made by (Bhushan & Medury). Similarly, the association between financial knowledge and financial risk tolerance is (0.86) which is again positive but very weak indicating that financial knowledge does not impact risk tolerance as well. Financial behavior and financial risk tolerance have a significant correlation, it is (.246) which indicates a moderate positive relation between them. It supports the notion that all the three determinants are inter related but the degree of association is very less.

		<b>Financial Knowledge</b>	<b>Financial Behavior</b>	<b>Financial Risk Tolerance</b>
<b>Financial Knowledge</b>	Correlation Coefficient	1.000	.034	.086
	Sig. (2-tailed)	.	.623	.217
	N	210	210	210
<b>Financial Behavior</b>	Correlation Coefficient	.034	1.000	.246**
	Sig. (2-tailed)	.623	.	.000

	N	210	210	210
<b>Financial Risk Tolerance</b>	Correlation Coefficient	.086	.246**	1.000
	Sig. (2-tailed)	.217	.000	.
	N	210	210	210

\*\*Correlation is significant at the 0.01 level (2-tailed).

#### 4. Conclusion

1. The study of financial knowledge shows that majority of the population is having moderate level of knowledge which is in line with previous studies (Bhushan Medury,2014), (Baruah, 2017). Although financial literacy is discussed more and more today, still no significant increase is visible in the levels of financial knowledge, majority of population is still having moderate level of financial knowledge.
2. The factor analysis of financial behavior and risk tolerance indicates that planning behavior, investment behavior, saving behavior money management and attitude are the some of the factors identified, these factors indicate that both financial behavior and risk tolerance are correlated.
3. To determine the level of correlation among these determinants Spearman’s Correlation was conducted which indicated positive relation but the degree of association was very low. Thus indicating that individual financial behavior is not affected by financial knowledge irrespective of their knowledge levels. Though financial behavior and risk tolerance are having significant correlation it is still not very high indicating that financial behavior affects risk tolerance but with low degree of association. This reflects that only taking measures to increase financial knowledge alone is not enough rather measures should be taken to increase the positive financial behavior and risk tolerance level as well.

Also, the study made it clear that financial behavior and risk tolerance levels are not purely knowledge driven hence further studies can be made to identify factors that have strong association towards them. Financial knowledge does not simply translate to financial literacy but it is impacted by various other determinants and the study has tried to identify the relation between two such factors, weak positive relation among these factors is an indication that having knowledge is not sufficient but a positive attitude towards financial planning and increased knowledge of investment avenues can help increasing risk tolerance levels by developing positive attitude which can be done when respondents are well aware of the risk associated with various investment avenues. Further studies can also be made to study investment behavior of individuals and its impact on financial literacy.

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