Does Investors' Demographics and Selected Profile Factors Influence Financial Risk Tolerance?

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Abstract - **In this study, researcher attempted to study the association of the demographic and selected profile factors of investors with one of the important psychological variable namely financial risk tolerance using the chi square test. Further by using the correspondence analysis/crosstabs, researcher attempted to gain more insight in to the association. Finally, the extent of influence of the demographic and investor profile variables on the financial risk tolerance cluster was studied using the canonical correlation. The research design followed in this study is the descriptive research design. Using the Multi stage random sampling technique, the primary data for the study was collected from 470 respondents (investors) in the State of Tamilnadu, India. The results of this study confirmed that there exists significant association between all the Demographic and Investor profile variables with the financial risk tolerance. Also, the results further revealed that variables such as gender, age, marital status, type of family, dependents, religion, occupation, number of earning members and amount spent for recreation/entertainment exert significantly strong influence on the financial risk tolerance cluster.**

Keywords– Financial risk tolerance, Demographics, Investor profile, Investor Perception.

1. Introduction

Financial risk tolerance is the level of risk or the maximum level of volatility than an investor willing to accept (or) absorb while taking a financial decision. It is a complex attitude having four facets namely financial, physical, social and ethical. Risk tolerance is considered as an important aspect to study in order to understand the savings and investment choices of investors for any household goals. Also, it plays a vital role in each individual investors/household's portfolio decisions.

An investor's capability to manage risks varies with their demographic and other investor profile factors such as Gender, Age, Qualification, Marital Status, Type of family, Dependents, Religion, Community, Occupation, Current Grade, Experience, Monthly Income, Number of Earning members, Amount spent every month for Recreation/Entertainment and Investment Experience. These factors of investors could be used to differentiate between various levels of risk tolerance and further an association of these factors could be formed to predict an investor's risk tolerance.

Empirical research studies on financial risk tolerance of investors in relation to their demographic, socioeconomic, and attitudinal factors are very limited. Some of the related studies on factors determining or influencing the financial risk tolerance of investors are listed below.

MacCrimmon and Wehrung (1986) in his study provided the literature and research review relating to risk tolerance, wherein examined the research associated with the relationships among various factors like demographic, socioeconomic, attitudinal factors, and financial risk tolerance.

Wallach and Kogan (1961) studied relationship between risk tolerance and age of investors. They found that aged investors/individuals are less risk tolerant than younger investors/individuals.

It's a common belief that financial risk tolerance decreases with age and large number of studies reporting that younger individuals/investors have significantly higher financial risk tolerance (Chaulk, Johnson & Bulcroft, 2003; Donkers & Van Soest, 1999; Faff, Hallahan, & McKenzie, 2009; Fan & Xiao, 2006; Hallahan, Faff, & McKenzie, 2004; Sung & Hanna, 1996a; Xiao, Alhabeeb, Hong, & Haynes, 2000; Yao, Hanna, & Lindamood, 2004)

Slovic (1966) stated after an exhaustive literature that a "prevalent belief in our culture is that men should and do take greater risks than women". There exists consensus among researchers that men exhibit high risk tolerance then women.

(Lazzarone, 1996) stated that marital status is one of the demographic factor that significantly influences risk and return preferences; and an individual's satisfaction with finance.

For single individuals financial risk tolerance appears to be on higher side as they are assumed to have less responsibilities and less to lose by accepting greater financial risks (Fan & Xiao, 2006; Grable & Joo, 2004; Hallahan et al., 2004; Hawley & Fujii, 1993; Yao et al., 2004). With their family development theory, Chaulk et al. (2003) stated that financial risk tolerance of the individuals decreases once they get married, due to a greater requirement for protection of wealth for future consumption such as children or housing etc. Further, in line with this theory, several research studies reported a negative relationship between financial risk tolerance and number of dependants (Chaulk et al., 2003; Faff et al., 2009; Grable & Joo, 1999; Hallahan et al., 2004).

As per Roszkowski, M.J; Snelbecker, G.E; and Leimberg, S.R (1993), keeping other variables constant, occupations of investors can be used to differentiate between their levels of financial risk tolerance.

According to (Cohn, RA; Lewellen, WG; Lease, R.C; and Schlarbaum, G.G, 1975; Cicchetti and Dubin, 1994; and Shaw, 1996) over the period of time there exists a positive association between income of individual investors and their financial risk tolerance.

Many studies report that high income and wealth category individuals are high in financial risk tolerance (Chaulk et al., 2003; Chang, DeVaney, & Chiremba, 2004; Fan & Xiao, 2006; Grable, 2000; Hallahan et al., 2004; Grable & Joo, 1999, 2004; Grable, Lytton & O'Neill, 2004; Sung & Hanna, 1996a; Sung & Hanna, 1996b; Yao et al., 2004; Yook & Everett, 2003). However, there exists some evidence to suggest that the relationship between financial risk tolerance and wealth and income may be non-linear (Hallahan et al., 2004).

According to Bakeer and Haslem, 1974; and Grable and Lytton, 1998, an individual's level of formal education has an influence on risk tolerance.

Many studies report a general positive relationship between education and financial risk tolerance (Chang et al., 2004; Fan& Xiao, 2006; Grable & Joo, 1999, 2004; Grable, 2000; Hallahan et al., 2004; Hawley & Fujii, 1993; Sung & Hanna, 1996a, 1996b; Yao et al., 2004).

As per the Researchers such as Grable and Joo (1997); Grable and Lytton (1997); and Sung and Hanna (1996), individuals knowledge of personal finance and economic expectations plays a vital role in determining risk preferences.

(Sulaiman, 2012) stated that anticipated relation between the financial risk tolerance and the demographic or socio economic variables factors from the literature were found to be relevant. The outcome of the study confirms that investors who are single, have higher qualification levels and high-income exhibit high risk tolerance. However, this study disproves that financial risk tolerance decreases with age.

(Kannadhasan, 2015) in his study, stated that four out of six demographic factors such as gender, age, marital status, education, occupation and income found to be useful in differentiating between levels of investors' financial risk tolerance (FRT) and financial risk behaviour (FRB) as well as classifying individuals into different FRT and FRB categories.

As a whole many studies in the developed world undertaken to study the association of the demographic factors such as gender, age, marital status, qualification, occupation and income. But there exists a dearth of such studies in the developing country like India which is very diversified in terms culture, language and religion etc. This has led the researcher to undertake this study in the State of Tamilnadu, India. Also, the studies in this area were

undertaken only with the above stated six demographic factors. However, in this research included other demographic/investor profile variables such as current grade in employment, community, religion, type of family, experience, number of earning members in family, investment experience and amount spent for recreation/entertainment to study its association/influence on financial risk tolerance.

1.   Objective

1. To ascertain the homogenous clusters/groups within the financial risk tolerance construct.
2. To determine the association of Demographic and Investor profile factors with the financial risk tolerance cluster.
3. To study the extent of influence of Demographic and Investor profile factors on the financial risk tolerance cluster.

2.   Methodology

This research design followed in this study was the descriptive research design. The equity investors in the State of Tamilnadu, India, were considered as the population for this study. Using the Multi stage random sampling method, a sample of 500 respondents was randomly selected. In the first stage of sampling procedure, three cities namely Chennai, Coimbatore and Trichy were randomly selected. From the selected cities, list of share broking firms were collated and 5 firms operating in all the selected three cities were randomly selected. The data was collected using a pretested and validated structured questionnaire. Around 500 questionnaires were distributed to the randomly selected customers (investors) of the selected broking firms. Of the 500 distributed questionnaires, 482 were received back from the respondents. Out of the 482 questionnaires received, 12 questionnaires were found incomplete. Finally, 470 questionnaires were considered for the analysis. The minimum sample size required for this study is only 430, which was calculated using the below formula based on the pilot study data collected from the randomly selected 30 respondents.

$$n = (\frac{\Phi * 1.96}{\mu * 0.05})^2$$

where n – sample size, Φ - standard deviation, μ - mean

Also reliability and validity of the questionnaire were checked using the pilot study data before proceeding with the main study. For the purpose of data analysis the following statistical tools such as Cluster analysis, Chi Square tests, Correspondence analysis/Crosstabs and Canonical Correlation were used. Entire data analysis for this study was done with the support of IBM SPSS 20 package.

3.   Analysis

To understand the perception of the investors towards financial risk tolerance, mean value of all the five items under the financial risk tolerance construct was calculated. The results of the analysis are displayed in the Table 1.

Table 1. Perception of Investors on Financial risk tolerance - Mean analysis and rank scores

Statements	Total no of Response	Mean	Std. Dev.	Rank
I am willing to risk financial losses	470	3.06	0.808	III
I prefer investments that have higher returns even though they are riskier	470	3.03	0.747	IV
The overall growth potential of a retirement investment is more important than the level of risk of the investment	470	3.17	0.69	I
I am willing to make risky investments to ensure financial stability in retirement	470	3.1	0.786	II
As a rule, I would never choose the safest investment when planning for retirement	470	2.16	0.736	V

Table 1 provides information about the Mean, Standard deviation values and rank scores of the five items under the variable financial risk tolerance. The response for the items was obtained from 470 investors, which was the sample size of this study. Of the 5 items, "The overall growth potential of a

retirement investment is more important than the level of risk of the investment" has the highest mean value of 3.17 with Rank 1 and the item, "As a rule, I would never choose the safest investment when planning for retirement" has the lowest mean value of 2.16 with rank 5. Except for one item, for the remaining four items, the mean value was >3, which implies that all the respondents are positively inclined towards each item and further can be inferred that the respondents exhibit positive financial risk tolerance tendency. Also in case of standard deviation, the item "I am willing to risk financial losses" has the highest value of 0.844 and the item, "The overall growth potential of a retirement investment is more important than the level of risk of the investment" has lowest value of 0.690.

In order to identify homogenous clusters or groups within the financial risk tolerance construct, K-Means cluster analysis was performed. The outcome of the analysis is shown in the Table 2.

Table 2. Final clusters and ANOVA

Statements	Cluster				
	1	2	3	F	Sig
I am willing to risk financial losses	4	3	2	859.1	0
I prefer investments that have higher returns even though they are riskier	4	3	2	256.29	0
The overall growth potential of a retirement investment is more important than the level of risk of the investment	4	3	3	155.35	0
I am willing to make risky investments to ensure financial stability in retirement	4	3	2	464.5	0
As a rule, I would never choose the safest investment when planning for retirement	2	2	2	26.617	0
No. of cases in each cluster	219	143	108		

The Table 2 shows the grouping of respondents (cases) based on their financial risk tolerance tendency in to three distinct groups/clusters using the K-Means cluster analysis. The cluster no 1 with 219 cases grouped under it, with item mean value for four items as 4 was termed as high financial risk tolerance cluster, whereas the cluster no 2 with 143 cases grouped under it, with item mean value for four items

as 3 was termed as medium financial risk tolerance cluster and finally the cluster no 3 with 108 cases having item mean value as 2 for four items was named as low financial risk tolerance cluster. As the significant value of all the items are 0.000, which indicates that all the items have significantly contributed for grouping the investors in to three clusters based on their financial risk tolerance. Out of the 5 items, the item "I am willing to risk financial losses" has high F statistics value, which indicate that the respective item has contributed more for grouping of respondents in to three clusters, whereas the item "As a rule, I would never choose the safest investment when planning for retirement" with low F statistics value as 26.617 contributes less for grouping.

To ascertain the association of the demographic & investor profile variables with the financial risk tolerance, chi square tests was performed. The test results are displayed in Table 3.

Table 3. Association between the Demographic & Investor profile variables with the Financial risk tolerance cluster.

S.No	Demographic /Investment Variables	Chi Square value	df	Sig.
1	Gender	117.522[a]	2	0
2	Age	107.484[a]	8	0
3	Qualification	32.418[a]	6	0
4	Marital Status	47.116[a]	2	0
5	Type of Family	37.424[a]	2	0
6	Dependents	128.431[a]	12	0
7	Religion	23.416[a]	4	0
8	Community	22.407[a]	4	0
9	Occupation	49.262[a]	6	0
10	Current Grade	37.892[a]	6	0
11	Experience	193.474[a]	8	0
12	Monthly Income	117.172[a]	8	0
13	Number of Earning members	12.907[a]	4	0.01
14	Amount spent every month for Recreation/Entertainment	37.250[a]	6	0
15	Investment Experience	131.248[a]	8	0

Table 3 depicts the results of the chi square test performed to study the association of the demographic & investor profile variables with the

financial risk tolerance cluster. As the significant value (p value) for all the listed variables are < 0.05, we can conclude that there exists significant association between all the demographic & investor profile variables and the financial risk tolerance cluster. Also, the higher chi square value for the variables like gender, age, dependents, experience, monthly income and investment experience shows its stronger association with the financial risk tolerance cluster.

In order to gain further insight in to the association of demographic/investor profile factors with the financial risk tolerance cluster, cross tabs/ correspondence analysis was performed and the results of the same are discussed in the following sections. The results of the cross tabs/correspondence analysis are displayed in the table 4 to table 7 and in the figure 1 to figure 3.

Table 4. Cross tabulation of Gender, Marital Status, Type of Family, Religion& Community with the financial risk tolerance cluster.

	Financial risk tolerance cluster			Total
	High	**Medium**	**Low**	
Gender				
Male	213(97.3%)	77(53.8%)	97(89.8%)	387(82.3%)
Female	6(2.7%)	66(46.2%)	11(10.2%)	83(17.7%)
Total	219	143	108	470
Marital Status				
Single	70(32%)	52(36.4%)	1(0.9%)	123(26.2%)
Married	149(68%)	91(63.6%)	107(99.1%)	347(73.8%)
Total	219	143	108	470
Type of Family				
Nuclear	106(48.4%)	90(62.9%)	90(83.3%)	286(60.9%)
Joint	113(51.6%)	53(37.1%)	18(16.7%)	184(39.1%)
Total	219	143	108	470
Religion				
Hindu	191(87.2%)	104(72.7%)	71(65.7%)	366(77.9%)
Christian	20(9.1%)	23(16.1%)	23(21.3%)	66(14%)
Islam	8(3.7%)	16(11.2%)	14(13%)	38(8.1%)
Total	219	143	108	470
Community				
OC	101(46.1%)	53(37.1%)	37(34.3%)	191(40.6%)
OBC	102(46.6%)	66(46.2%)	68(63.0%)	236(50.2%)
SC/ST	16(7.3%)	24(16.8%)	3(2.8%)	43(9.1%)
Total	219	143	108	470

Table 4 shows the cross tabulation(association) between various categories under the gender, marital status, type of family, religion & community with the financial risk tolerance cluster. It is evident that the male investors have high financial risk tolerance, whereas the female investors exhibit medium financial risk tolerance. It shows that female investors take calculated, measured steps when it comes to investments whereas male investors look for risky investments expecting high returns. In case of marital status, married investors have low financial risk tolerance, whereas single investors have medium financial risk tolerance. It depicts that risk appetite of an investor before marriage is more when compared to the risk appetite after marriage. With respect to the family setup, investors belonging to nuclear family have low financial risk tolerance whereas those investors in joint family high financial risk tolerance. From this result, it may be inferred that investors in nuclear family appears to be risk aversive compared to those in joint family setup. This may be due to the fact in case of nuclear family setup, getting any financial support at times of exigencies is remote and hence they may exhibit low financial risk tolerance

In case of religion, the hindus who form the major portion of the sample investors (77.9%), exhibit high financial risk tolerance, whereas christians and islams exhibit low financial risk tolerance. It can be further inferred that the hindus have high financial risk appetite when compared to the other two religions. In terms of the community, OC category investors have high financial risk tolerance whereas the OBC and SC/ST Category investors have low financial risk tolerance and medium financial risk tolerance respectively.
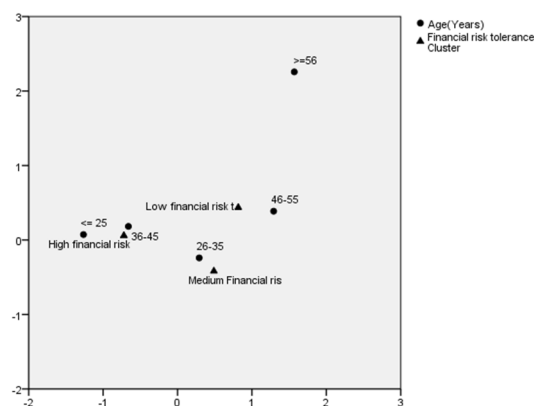
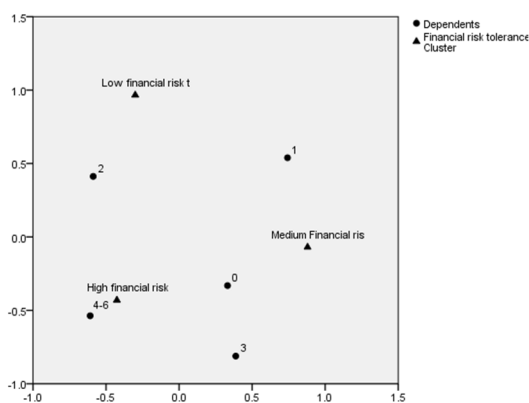**Figure 1.** Correspondence of Age with Financial risk tolerance cluster.

Figure 1 illustrates the correspondence between the age and the financial risk tolerance cluster. It is

clearly evident from the diagram that the investors in the age bracket of 46-55 &>=56 possess low financial risk tolerance, investors in the age group of <=25 & 36-45 exhibit high financial risk tolerance and those in the age group of 26-35 have medium financial risk tolerance. It can be inferred that the investors in the higher age bracket possess less risk appetite when compared to those investors in the lower age bracket.
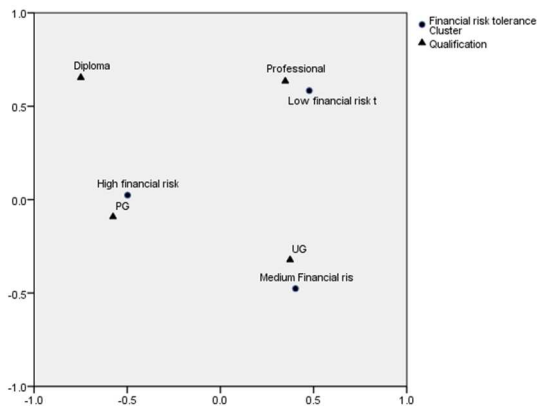
Figure 2. Correspondence of Qualification with Financial risk tolerance cluster.

Figure 2 illustrates the correspondence between the qualification of investors and their financial risk tolerance. From the diagram, it can be inferred that the investors with professional qualification have low financial risk tolerance, whereas the PG qualified investors have high financial risk tolerance. However, UG or qualified investors have medium financial risk tolerance.

Figure 3. Correspondence of Number of dependents with financial risk tolerance cluster.

Figure 3 illustrates the correspondence between the number of dependents of investors and their financial risk tolerance. From the figure, it is evident that the investors with 3 to 6 dependents have high financial risk tolerance, investors with 0 or 1 dependents have medium financial risk tolerance and investors with 2 dependents have low financial risk

tolerance. So, it can be inferred that when the number of dependents are more, then the risk tolerance of the investors is on the higher side.

Table 5. Cross tabulation of Occupation, Current Grade, Experience, Monthly income & Number of Earning members with the financial risk tolerance cluster.

	Financial risk tolerance cluster			Total
	High	**Medium**	**Low**	
Occupation				
Employed In Government	18(8.2%)	34(23.8%)	30(27.8%)	82(17.4%)
Employed in Private Organization	166(75.8%)	89(62.2%)	62(57.4%)	317(67.4%)
Professional	14(6.4%)	1(0.7%)	14(13.0%)	29(6.2%)
Business	21(9.6%)	19(13.3%)	2(1.9%)	42(8.9%)
Total	219	143	108	470
Current Grade				
Entry level / Trainee	12(5.5%)	0	0	12(2.6%)
Junior Management Level	62(28.3%)	54(37.8%)	14(13.0%)	130(27.7%)
Middle Management Level	123(56.2%)	81(56.6%)	87(80.6%)	291(61.9%)
Senior Management Level	22(10.0%)	8(5.6%)	7(6.5%)	37(7.9%)
Total	219	143	108	470
Experience				
up to 5	59(26.9%)	56(39.2%)	2(1.9%)	117(24.9%)
06-10 years	42(19.2%)	27(18.9%)	61(56.5%)	130(27.7%)
11-15 years	63(28.8%)	17(11.9%)	7(6.5%)	87(18.5%)
16-20 years	55(25.1%)	3(2.1%)	11(10.2%)	69(14.7%)
21 and above	0	40(28.0%)	27(25.0%)	67(14.3%)
Total	219	143	108	470
Monthly income				
up to 25,000	12(5.5%)	21(14.7%)	2(1.9%)	35(7.4%)
25,001-50,000	74(33.8%)	30(21.0%)	13(12.0%)	117(24.9%)
50001-75000	15(6.8%)	50(35.0%)	18(16.7%)	83(17.7%)
75001-100000	23(10.5%)	20(14.0%)	38(35.2%)	81(17.2%)
>100000	95(43.4%)	22(15.4%)	37(34.3%)	154(32.8%)
Total	219	143	108	470
No. of Earning members				
1	74(33.8%)	47(32.9%)	47(43.5%)	168(35.7%)
2	108(49.3%)	78(54.5%)	57(52.8%)	243(51.7%)
3	37(16.9%)	18(12.6%)	4(3.7%)	59(12.6%)
Total	219	143	108	470

Table 5 depicts the association between the various categories under the variables viz., occupation, current grade, experience, monthly income and number of earning members with the financial risk tolerance cluster. In case of the occupation, professionals and those employed in government services exhibit low financial risk tolerance, the investors working with private organisations have high financial risk tolerance and those running their own business or self-employed exhibit medium financial risk tolerance. With respect to the current Grade, investors currently in entry level, junior management grade, middle management grade and senior management grade exhibit high, medium, low and high financial risk tolerance respectively. From this it can be inferred that the risk tolerance of investors has inverse association with their current grade with only exception is the senior management grade.

In case of job experience, investors with 06-10 years of experience exhibit low financial risk tolerance, investors with 11-15 & 16-20 years of experience have high financial risk tolerance and investors in the experience bracket of up to 5 years and above 21 years exhibit medium financial risk tolerance. With respect to the monthly income, investors who are in the income bracket of 25,001 to 50,000 and >100,000 exhibit high financial risk tolerance, whereas those investors in the income bracket of up to 25,000 & 50,001-75,000 have medium financial risk tolerance. Only the investors with the monthly income in the range of 75,001 to 100,000 have low financial risk tolerance.

Regarding the number of earning members in the family, investors with only one earning member exhibit low financial risk tolerance, investors with two earning members exhibit medium financial risk tolerance and those with three earning members in the family exhibit high financial risk tolerance. It can be further inferred that the level of financial risk tolerance increases with the increase in earning members in the family.

Table 6. Cross tabulation of Amount spent every month for Recreation / Entertainment with the financial risk tolerance cluster

| Amount spent every month for Recreation /Entertainment (Rs) | Financial risk tolerance cluster | | | Total |
	High	Medium	Low	
up to 2000	112(51.1%)	81(56.6%)	40(37.0%)	233(49.6%)
2001-5000	70(32.0%)	44(30.8%)	30(27.8%)	144(30.6%)
5001-8000	29(13.2%)	18(12.6%)	38(35.2%)	85(18.1%)
>11000	8(3.7%)	0	0	8(1.7%)
Total	219	143	108	470

Table 6 illustrates the correspondence of the amount spent every month for recreation / entertainment with the financial risk tolerance cluster. The investors who spend every month Rs.2001-5000 &>Rs. 11000 for recreation / entertainment have high financial risk tolerance and investor who spend in the range of 5001-8000 have low financial risk tolerance. However, those investors who spend up to 2000 exhibit medium financial risk tolerance.

Table 7. Cross tabulation of Investment Experience with the financial risk tolerance cluster

| Investment Experience | Financial risk tolerance cluster | | | Total |
	High	Medium	Low	
up to 5	100(45.7%)	84(58.7%)	51(47.2%)	235(50.0%)
06-10	48(21.9%)	16(11.2%)	19(17.6%)	83(17.7%)
11-15	71(32.4%)	0	11(10.2%)	82(17.4%)
16-20	0	28(19.6%)	22(20.4%)	50(10.6%)
>=21	0	15(10.5%)	5(4.6%)	20(4.3%)
Total	219	143	108	470

Table 7 depicts the association of investment experience with the financial risk tolerance cluster. From the table, it is clearly evident that those investors having investment experience from 06 years to 15 years have high financial risk tolerance, whereas investors having experience in the range of 16-20 years have low financial risk tolerance. However, investor having investment experience up to 5 years and >=21 exhibit medium financial risk tolerance.

In order to identify the most significantly influencing factors among the demographic/investor profile factors considered in this study, canonical correlation tests were performed. The outcome of this test is presented in the table 8.

Table 8. Canonical Correlation- Influence of Demographic & Investor profile of investors on the financial risk tolerance cluster.

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Linear combinations for canonical correlations      Number of obs =      470

                 Coef.    Std. Err.     t     P>|t|    [95% Conf. Interval]

u1
     gender    1.086983   .1801424    6.03    0.000    .7329966    1.440969
 agecatcomp~s  -.6848072   .1898237   -3.61    0.000   -1.057817   -.3117971
 qualificat~n   .0398023   .0758588    0.52    0.600    -.109263    .1888676
 maritalsta~s   1.447825   .2104473    6.88    0.000    1.034288    1.861361
 typeoffamily  -.3658417   .1518652   -2.41    0.016    -.664262   -.0674213
   dependents  -.6339875   .0764473   -8.29    0.000   -.7842091   -.483766
     religion   .9301958   .1082502    8.59    0.000    .7174804    1.142911
    community   -.024474   .1062673   -0.23    0.818    -.233293     .184345
   occupation  -.4081554   .1009299   -4.04    0.000   -.6064863   -.2098246
 currentgrade   .0303112    .188688    0.16    0.872   -.3404673    .4010898
  experience~s   .3059253   .1589353    1.92    0.055   -.0063882    .6182388
  monthlyinc~s   .1090719   .0966388    1.13    0.260   -.0808268   -.2989705
 numberofea~y  -.3109231   .1232834   -2.52    0.012   -.5531793   -.0686669
 amountspen~i   .3117439   .0966833    3.22    0.001    .1217579      .50173
 investment~s   .0478195   .1515957    0.32    0.753   -.2500713    .3457102

v1
      FRT_CAT    1.2487    .0716678   17.42    0.000    1.107871    1.38953

                              (Standard errors estimated conditionally)
Canonical correlations:
    0.6273

Tests of significance of all canonical correlations
                  Statistic    df1    df2       F      Prob>F
   Wilks' lambda    .60655      15     454    19.6330    0.0000  e
   Pillai's trace   .39345      15     454    19.6330    0.0000  e
Lawley-Hotelling trace .648668  15     454    19.6330    0.0000  e
 Roy's largest root .648668     15     454    19.6330    0.0000  e

             e = exact, a = approximate, u = upper bound on F
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Table 8 shows the canonical correlation between the demographic/investor profile variables and the financial risk tolerance cluster. The chi square test and correspondence analysis revealed the prevalence of significant association between the demographic/ investor profile variables and the financial risk tolerance cluster, whereas the canonical correlation depicts which of these demographic/investor profile variables exert the most significant influence on the financial risk tolerance cluster. From the results it can be inferred that canonical correlation value (Degree of determination) is 62.7% and only the variables gender, age, marital status, type of family, dependents, religion, occupation, number of earning members and amount spent for recreation/entertainment significantly influence on the financial risk tolerance cluster as the significant value (p value) < 0.05. Also the tests of significance, such as Wilks' Lambda, Pillai's Lambda are statistically significant indicating that the variables gender, age, marital status, type of family, dependents, religion, occupation, number of earning members and amount spent for recreation/entertainment are strongly correlated with the financial risk tolerance cluster. Also, the tables lists the regression coefficient value of each demographic/ investor profile variables under the column named "coef", which may be positive or negative indicting the nature of relationship the respective variable have with the financial risk tolerance cluster.

4.   Findings

The results of this study revealed that the financial risk tolerance construct can be divided in to three homogeneous groups or clusters, namely high, medium and low financial risk tolerance clusters. Further the Chi square test results confirmed that all the demographic /investor profile variables such as gender, age, qualification, marital status, type of family, dependents, religion, community, occupation, current Grade, experience, monthly income, number of earning members, amount spent every month for recreation/entertainment and investment experience considered in this study have significant association with the financial risk tolerance clusters/groups. Further the correspondence analysis / crosstabs exhibited further insight in to the association of demographic /investor profile variables with the financial risk tolerance clusters/groups which was discussed in detail in the analysis section. Finally, the results of the canonical correlation revealed that out of all demographic/investor profile variables considered in this study, only the variables gender, age, marital status, type of family, dependents, religion, occupation, number of earning members and amount spent for recreation/entertainment exert significantly strong influence on the financial risk tolerance clusters with reasonably high degree of determination at 67%.

5.   Conclusion and directions for future research

The outcome of this study has brought to light some of the interesting facts. Though all the demographic and investor profile variables considered in this study has significant association with the financial risk tolerance cluster, only 9 out of the 15 variables namely gender, age, marital status, type of family, dependents, religion, occupation, number of earning members and amount spent for recreation/entertainment ended up as the major determinant of the variable financial risk tolerance. Further some of the study results such as male investors have high financial risk tolerance compared to female investor, married investors are less financial risk tolerating than single investor, investors in joint family possess high financial risk tolerance than an investor in nuclear family, investors

belonging to Hindu religion exhibit high financial risk tolerance compared to Christians & Muslims , investors having more dependents tend to exhibit high financial risk tolerance etc. was very interesting to note and expected to kindle the attention of the research and academic community for undertaking further research in these aspects . This study has its own limitation as it was restricted only to equity investors whose domicile was within the State of Tamilnadu, India. There exists further scope for extending this study to other geographical areas (or) to a different population say bank employees, IT employees , Teachers, NRI's etc. Further research can be done to identify whether psychological and behavioural factors of investors influence the financial risk tolerance of investors. Also this study can be further extended to study the influence of financial risk tolerance on investment behaviour and investment choice decision of investors, giving more importance to the retirement planning and retirement investment choice decision of the investors. This study will be useful to the financial institutions for introducing new financial products and to reposition existing products in line with the investors risk tolerance and also for the portfolio managers to offer tailor made investment solutions to their customers (investors) considering their financial risk tolerance. Also, governments may find this study useful to reorient their policy initiatives in line with the changing risk tolerance of investors with respect to their demographics.

References

[1] MacCrimmon, K.R; D.A. Wehrung, D.A; 1986. Taking Risks. The Free Press, New York.

[2] Wallach, M.A; Kogan, N; 1961. Aspects of Judgment and Decision Making: Interrelationships and Changes with Age, Behavioral Science, 6, pp.23-26.

[3] Chaulk, B., Johnson, P. J., &Bulcroft, R. (2003). Effects of marriage and children on financial risk tolerance. A synthesis of family development and prospect theory. Journal of Family and Economic Issues, 24, 257–279.

[4] Donkers, B., & Van Soest, A. (1999). Subjective measures of household preferences and financial decisions. Journal of Economic Psychology, 20, 613–642.

[5] Faff, R., Hallahan, T., & McKenzie, M. (2009). Nonlinear linkages between financial risk tolerance and demographic characteristics. Applied Economics Letters,16, 1329–1332

[6] Fan, J. X., & Xiao, J. J. (2006). Cross-cultural differences in risk tolerance. A comparison between Chinese and Americans. Journal of Personal Finance, 5, 54–75.

[7] Hallahan, T. A., Faff, R. W., & McKenzie, M. D. (2004). An Empirical investigation of personal financial risk tolerance. Financial Services Review, 13, 57–78.

[8] Sung, J., & Hanna, S. D. (1996a). Factors related to household risk tolerance. An ordered probit analysis. Consumer Interest Annual, 42, 227–229.

[9] Xiao, J. J., Alhabeeb, M. J., Hong, G., & Haynes, G. W. (2000). Risk tolerance of family business owners. Consumer Interests Annual, 140–146.

[10] Yao, R., Hanna, S. D., &Lindamood, S. (2004). Changes in financial risk tolerance, 1983–2001. Financial Services Review, 13, 249–266.

[11] Slovic, P; 1966. Risk-taking in Children: Age and Sex Differences, Child Development, 37, pp 169-176.

[12] Lazzarone, B.G; 1996. "The economic well-being of rural Nevada elders", Proceedings of the 1996 Conference of the Western Region Home Management Family Economics Educators, pp. 67-74.

[13] Grable, J. E., &Joo, S. (2004). Environmental and biopsychosocial factors associated with risk tolerance. Financial Counseling and Planning, 15, 73–82.

[14] Hawley, C. B., &Fujii, E. T. (1993). An Empirical analysis of preferences for financial risk: Further evidence on the Friedman–Savage model. Journal of Post Keynesian Economics, 16, 197–204.

[15] Roszkowski, M.J; Snelbecker, G.E; Leimberg, S.R; 1993. Risk-tolerance and Risk Aversion", In S.R. Leimberg.

[16] Cohn, R.A; Lewellen, W.G; Lease, R.C; Schlarbaum, G.G; 1975. Individual Financial Risk Aversion and Investment Portfolio Composition, Journal of Finance, 30, pp. 605-620.

[17] Cicchett, C.J; Dubin, J.A; 1994. A Microecocnomietric Analysis of Risk Aversion and the Decision to Self-insure, Journal of Political Economy, 102, pp. 169-186.

[18] Chang, C., DeVaney, S. A., & Chiremba, S. T. (2004). Determinants of subjective and objective risk tolerance. Journal of Personal Finance, 3, 53–67.

[19] Grable, J. E. (2000). Financial risk tolerance and additional factors that affect risk taking in everyday money matters. Journal of Business and Psychology, 14, 625–630.

[20] Sung, J., & Hanna, S. D. (1996b). Factors related to risk tolerance. Financial Counselling and Planning, 7, 11–20.

[21] Yook, K. C., & Everett, R. (2003). Assessing risk tolerance. Questioning the questionnaire method. Journal of Financial Planning, 16, 48–55.

[22] Shaw, K.L; 1996. An Empirical Analysis of Risk Aversion and Income Growth, Journal of Labor Economics,14, pp. 626-653.

[23] Bakeer, H.K; Haslem, J.A; 1974. The Impact of Investor Socio-economic Characteristics on Risk and Return Preferences", Journal of Business Research, 2, pp. 469-476

[24] Grable, J.E; Lytton, R.H; 1998. Investor Risk Tolerance: Testing the Efficacy of Demographics as Differentiating and Classifying Factors", Financial Counsellings and Planning, 9 .1, pp. 61-74

[25] Grable,J.E; Joo, S.H; 1997. Determinants of Risk Preference: Implications for Family and Consumer Science Professionals, Family Economics and Resource Management Biennial, 2, pp. 19-24.

[26] Grable J.E; Lytton, R.H; 1997. Determinants of Retirement Savings Plan Participation: A Discriminant Analysis, Personal Finances and Resource Management Biennial, 2, pp. 19-24.

[27] Sung, J; Hanna, S; 1996. Factors Related to Risk Tolerance, Financial Counseling and Planning, 7, pp. 11-20.

[28] Sulaiman, E. K. (2012). An Empirical Analysis of Financial Risk Tolerance and demographic Features of Individual Investors. Procedia Economics and Finance, 2(Af), 109–115. http://doi.org/10.1016/S2212-5671(12)00070-6

[29] Kannadhasan, M. (2015). Retail investors ' financial risk tolerance and their risk-taking behaviour : The role of demographics as differentiating and classifying factors. IIMB Management Review, 175–184.