

## **A Study on Determinants of Financial Risk Tolerance: A Review of the Evidence**

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### **ABSTRACT**

Financial risk tolerance is one of the key elements for financial service providers and investors. It is essential for both to understand the risk level. Therefore understanding, assessing and measuring financial risk and factors that affect financial risk tolerance of investors have been interest of research. This paper presents a review of empirical research on determinants of financial risk tolerance. The evidence suggests that there are different determinants affected at different country and at different demographics & other factors of investors. The researcher has studied five different countries review of literature namely Australia, India, Turkey, U.S.A., & U.K. The author has found that age, gender, marital status, income, number of dependents affect in same manner at different countries while others do different to the financial risk tolerance.

**Keywords:** Demographic factors, Financial risk tolerance, Reviews

### **I. INTRODUCTION**

A risk tolerance is a maximum amount of loss in the value of assets that a person is willing accepts. A person's attitude towards accepting and understanding risk is an important for financial service provider. Understanding of risk is the key to choose the investment programme. The risk tolerance is a personal characteristic that may difficult to measure and different for different investor. Basically risk tolerance is used for number of financial decision. The financial advisor used risk tolerance for choosing appropriate investment product, asset allocation plan and construction of portfolio. Traditionally the financial advisor used risk tolerance for a construction of portfolio of their clients based on age. Earlier risk tolerance was used for construction of portfolio to decide the composition of various assets using risk return trade off (Droms, 1987). The financial risk tolerance level also measured using Markowitz portfolio optimization process (Schirripa and Trcotzky, 2000).

Presently the financial advisor used factor as an input for modern investment plan of their clients. These inputs include an investor's goal, time horizon, financial stability and risk tolerance (Hallman & Rosenblom 1987, Allbright & Taylor, 1996, Garman & Forgue, 1997, Grable & Lytton, 1998). Financial risk tolerance is a subjective and objective phenomenon (Chia-Chi Chang, Sharon A. DeVaney, & Sophia T. Chiremba, 2004). The risk tolerance is based on

demographics, socioeconomic and attitudinal factors (Wallach and Kogan, 1961; MaInish, 1982; Morin and Suarez, 1983; Wang and Hanna, 1997; Grable and Joo, 1997; Grable and Lytton, 1998; John E. Grable & So-hyun Joo, 1999; Jasim Y. Al-Ajmi, 2008; Robert Fatt, Terrence Hallhan and Michael McKenzie, 2009; Hakan Ozerol, Selin Metin Camgoz, Dr. Mehmet Baha Karan, & Dr. Azize Ergeneli, 2011). There are numbers of factors considered for determining risk tolerance level of investors like age, annual income, education, occupation, gender, marital status, number of dependents, net assets, experience, investment pattern, investment decision, perception towards investment avenue, job status, retirement, opinion of others etc. The knowledge about impact of these factors contributes a lot while selecting financial product to the investors or for construction of portfolio to the financial service providers.

## **II. REVIEWS OF DIFFERENT LITERATURE**

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
W. V. Harlow, Keith C. Brown (1990)	Students of Arizona University	U.S.A.	economic, psychological, biological	<ul style="list-style-type: none"> <li>• Financial risk tolerance is significantly related to sensation-seeking and extroversion and Individuals who exhibit higher degree of various forms of sensation-seeking who less introverted are more willing to accept financial risk.</li> </ul>
Neil F. Riley, Manuel G. Russon (1995)	Chartered Financial Analyst	U.S.A.	asset allocation	<ul style="list-style-type: none"> <li>• Time horizon for a client is an essential element for proper asset allocation.</li> <li>• The variables such as age, marital status, gender, and number of children are observable, time horizon which appears to have greatest explanatory power of risk tolerance.</li> </ul>
Jaimie Sung, Sherman Hanna (1996)	Survey of consumer finance, 1992	U.S.A.	Income, self employed, age, education, race, household size, marital status, occupation, housing ownership	<ul style="list-style-type: none"> <li>• All the variables except age and years to retirement were significantly related to risk tolerance.</li> <li>• Most of the sets of independent variables had significant effects, except for household size, occupation, and house ownership status.</li> <li>• The differences in risk tolerance by gender, marital status, ethnic group and education could be due to differences in understanding of nature of risk.</li> </ul>
Vickie L.	Survey of	U.S.A.	Gender	<ul style="list-style-type: none"> <li>• Gender differences in investment were less</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
Bajtelsmit, Alexandra Bernasek (1996)	consumer finance			well defined.
Hui Wang, Sherman Hanna (1997)	Survey of consumer finance	U.S.A.	Age, ratio of risky assets to total wealth	<ul style="list-style-type: none"> <li>• The proportion of net wealth invested in risky assets increases as people age i.e. risk tolerance increases with increase in age when other variables hold constant.</li> </ul>
Melanie Powell, David Ansic (1997)	Undergraduate & Post graduate students	U.K.	Gender	<ul style="list-style-type: none"> <li>• Females are less risk seeking than males irrespective of familiarity and framing, costs and ambiguity.</li> <li>• The male and female adopt different strategy in financial decision making but these strategies have no significant impact on ability to perform.</li> </ul>
John E. Grable, Ruth H. Lytton (1998)	Survey of Consumer Finance, 1992	U.S.A.	Gender, age, marital status, occupation, income, race, education	<ul style="list-style-type: none"> <li>• Education level was most significant factor for discriminating and classifying factors.</li> <li>• Gender, self employment, income were also effective in discriminating among level of risk tolerance.</li> </ul>
John E. Grable, Ruth H. Lytton (1999)	Employees of Southeastern Research University	U.S.A.	Gender, age, marital status, occupation, income, education, financial knowledge,	<ul style="list-style-type: none"> <li>• The classes of risk tolerance differed widely on a respondent's education level and personal financial knowledge.</li> <li>• An above average risk tolerance was associated with increased levels of attained</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
			economic expectations	education, an increased knowledge of personal finance, higher levels of income, and being employed in professional occupation.
John E. Grable, So-hyun Joo (1999)	White collar clerical workers	U.S.A.	Gender, age, marital status, income, education, ethnic background, home ownership, number of dependents, financial knowledge, solvency ratio	<ul style="list-style-type: none"> <li>• Education, financial knowledge, and income have positive and home ownership &amp; number of dependents has negative relationship with person's risk tolerance.</li> </ul>
John E. Grable (2000)	Faculty & Staff of Southeastern university	U.S.A.	Demographic, socioeconomic, attitudinal	<ul style="list-style-type: none"> <li>• Gender, age, occupation, income, education, financial knowledge, and economic expectations were significant in differentiating between levels of risk tolerance.</li> <li>• The combination of demographic, socioeconomic, and attitudinal factors were differentiating between levels of financial risk tolerance such as education, financial knowledge, income and occupation.</li> </ul>
Ulla Y. Yip (2000)	Students of New	U.S.A.	Portfolio return,	<ul style="list-style-type: none"> <li>• Financial risk tolerance was found to remain</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
	South Wales University		gender, age, current financial situation, marital status, education	<p>stable across time and event.</p> <ul style="list-style-type: none"> <li>• Despite the different strategies used for gender, the overall performance of the two populations closely resembled one another.</li> </ul>
Govind hariharan, Kenneth S. Chapman, Dale L. Domian (2000)	Health and Retirement Survey, 1992	U.S.A.	portfolio composition	<ul style="list-style-type: none"> <li>• Risk tolerant individuals invest lesser amounts in treasury bills.</li> <li>• The division of individual portfolios between stocks and bonds was not systematically related to their measure of risk tolerance.</li> </ul>
Sherman D. Hanna, Michael S. Gutter, Jessie X. Fan (2001)	Students of Ohio State university	U.S.A.	Age, gender	<ul style="list-style-type: none"> <li>• There is a wide variation of risk tolerance in people, but no systematic patterns related to gender or age have been found.</li> </ul>
Robert W. Faff, Terrance Hallahan, and Michael D. McKenzie (2002)	ProQuest Personal Financial Profiling system	Australia	Age, marital status, education, wealth, income	<ul style="list-style-type: none"> <li>• Gender, income and wealth are significantly associated with financial risk tolerance.</li> <li>• The negative relationship between marital status, age and risk tolerance, and age is having a non linear relationship with risk tolerance.</li> </ul>
Elke U. Weber, Ann Renee Blais and Nancy E. Betz (2002)	American undergraduate students	U.S.A.	financial decisions, healthy/safety, recreational, ethical and social decisions	<ul style="list-style-type: none"> <li>• Degree of risk taking was highly domain specific .i.e. not consistently risk averse or consistently risk seeking across all domains.</li> <li>• Women appeared to be more risk averse in all domains except social risk.</li> <li>• The expected benefits and perceived risks</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
				<p>suggests that gender and content domain differences in apparent risk taking are associated with differences in the perception of the activities' benefits and risk, rather than with differences in attitude towards perceived risk</p>
Uri Benzion and Joseph Yagil (2002)	MBA students	U.S.A.	Risk return, wealth, portfolio composition, personal characteristics	<ul style="list-style-type: none"> <li>• Negative relationship between the risk level of the assets and proportion of wealth invested in risky assets.</li> <li>• The proportion was found to be as much as three times higher for common stocks than for options.</li> <li>• The risky proportion ratio between stocks and options was found to be about 2.5 for all five wealth levels examined.</li> <li>• Those who invest relatively low proportions of their wealth in risky assets possess the characteristics of not invest in options in real life, sometimes buy lottery tickets, were female and employed.</li> </ul>
Kenneth A. Froot, Paul G. J. O. O'Connell (2003)	Investors from state street corporation	29 Countries	Stock price	<ul style="list-style-type: none"> <li>• The changes in risk tolerance affect to acquire more assets in proportion to their current holding.</li> <li>• The result shows that the risk tolerance</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
				<p>component turns out to account for a substantial portion of variation in portfolio holdings and a smaller but meaningful amount of variation in equity returns.</p>
Susan Coleman (2003)	Survey of Consumer Finance, 1998	U.S.A.	Proportion to hold risky assets, gender	<ul style="list-style-type: none"> <li>• Almost 50% were not likely to take financial risk i.e. women expressed a higher level of risk aversion.</li> <li>• According to the investment behavior, women over age of 40 held significantly lower percentage of risky assets than men.</li> <li>• There were no difference between men and women over 40 years in terms of their willingness to hold stocks and stock mutual funds, apart from education and wealth.</li> </ul>
Huei-Wen, Lin and Chia-Chi, Chang (2003)	Investors	Taiwan	personality inventory, cognitive task	<ul style="list-style-type: none"> <li>• Risk tolerance and overconfidence having positive relationship and negative relationship with herding behavioural.</li> <li>• The investors type and risk tolerance aspect to finding investors are impulsion and anxious type exhibit relative.</li> </ul>
John E. Grable, So-hyun Joo (2004)	Faculty & Staff of college	U.S.A.	Environmental and biopsychosocial	<ul style="list-style-type: none"> <li>• Education, marital status, net worth, household income, financial knowledge, and self esteem were significantly related to financial risk tolerance.</li> </ul>



Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
				<ul style="list-style-type: none"> <li>• Environmental factors play more important role in determining an individual's tolerance for financial risk.</li> </ul>
Chi-Chi Chang, Sharon A. DeVaney and Sophia T. Chiremba (2004)	Survey of Consumer Finance 2001	U.S.A.	Age, Education, Race, Marital status, employment, net worth	<ul style="list-style-type: none"> <li>• Education, race and employment were determinants of both subjective and objective risk tolerance and subjective risk tolerance positively influenced objective risk tolerance.</li> </ul>
Terrence Hallahan, Robert Faff, and Michael McKenzie (2004)	ProQuest Personal Financial Profiling system	Australia	Gender, marital status, number of dependents, age, education income, combined income & net assets	<ul style="list-style-type: none"> <li>• Gender, marital status, number of dependents, and age indicate negative relationship with financial risk tolerance.</li> </ul>
Don Bellante and Carole A. Green (2004)	Households with at least one member aged 70 or over	U.S.A.	age, race, gender, education, health status, number of children	<ul style="list-style-type: none"> <li>• Relative risk aversion increases modestly as the elderly grow older.</li> <li>• The personal characteristics of race, education, health status, and number of children significantly affect portfolio allocation.</li> </ul>
Robert W. Moreschi (2005)	ProQuest Personal Financial Profiling system	U.S.A.	Gender, Marital status, family dependents, age, education, income,	<ul style="list-style-type: none"> <li>• Males make smaller forecast errors than females and more education leads smaller forecast errors and forecast errors appear to increase with age &amp; income.</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
			net worth	<ul style="list-style-type: none"> <li>• The most significant factors are gender and formal education.</li> </ul>
Michael J. Roszkowski and John Grable (2005)	Financial advisors and their clients	U.S.A.	Preferences for different investment vehicles, expected return, reaction to sample portfolio	<ul style="list-style-type: none"> <li>• Financial advisors are not particularly good judges of their clients' financial risk tolerance.</li> <li>• Financial advisors tend to be relatively worse at assessing even their own risk tolerance compared to their clients.</li> </ul>
Rui Yao and Sherman D. Hanna (2005)	Survey of Consumer Finance 1983 to 2001	U.S.A.	Demographic, Economic, and Attitude	<ul style="list-style-type: none"> <li>• Married males were less likely to be willing to take financial risk than unmarried males.</li> <li>• Unmarried males were the most risk tolerant, followed by married males, then by unmarried females.</li> </ul>
Binary Kumar Adhikari (2005)	Employees of banks & Financial institute	Nepal	Sex, age, marital status, income, knowledge of investment, number of children	<ul style="list-style-type: none"> <li>• The variables sex, age, knowledge, and wealth allocation shows women were more risk aversion than men because women considered themselves to less knowledgeable about investment markets and products.</li> </ul>
Ms. M. Kothai Nayaki and Mrs. P. Prema (2005)	Investors	India	Gender, age, financial literacy, investment avenues preference, preferred sources of information	<ul style="list-style-type: none"> <li>• Gender &amp; age having relationship with risk tolerance.</li> <li>• Investors were financial illiterate, preferred electronic and print media for sources of information preferred of investment avenues PPF, FD, and Bonds next to equities and</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
				<p>mutual funds.</p> <ul style="list-style-type: none"> <li>• Increase in age decrease in risk tolerance level.</li> </ul>
John Gilliam and Swarn Chatterjee (2006)	Faculty & Staff from Southwestern public university	Greece	Stock ownership, birth order	<ul style="list-style-type: none"> <li>• Later-born males more likely to allocate stocks in their portfolio compare to first born males.</li> <li>• Later-born males were also having greater proportion of stock in their portfolio as compared to later-born females.</li> </ul>
Kapil Sharma (2006)	Respondents	India	Demographic, socioeconomic and psychological factors	<ul style="list-style-type: none"> <li>• Risk tolerance was associated with being male, older, married, professional employed with higher incomes, more educated, more financially knowledgeable, and increased economic expectations.</li> </ul>
Chris Veld and Yulia V. Veld (2007)	Members of consumer panel	Netherland	Variance, market return, risk free rate of return	<ul style="list-style-type: none"> <li>• The most preferred by investors was variance; beside they often used several measure of shortfall risk.</li> <li>• Original investment to be the most important benchmark, followed by the risk free rate of return and market return.</li> </ul>
Cristian Paun, Radu Musetescu, Iulian Brasoveanu and Alina Draghici	Investors	Romanian Capital Market	Gender, age, education, social status, income, occupation	<ul style="list-style-type: none"> <li>• Women have a relatively higher risk aversion than men, age below 30 years and more than 55 years were high risk aversion, social status inversely related to risk</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
(2007)				<p>aversion, risk aversion decrease with increases education, and decrease with increases in income.</p> <ul style="list-style-type: none"> <li>• The individual investors risk aversion of Romanian capital market was low.</li> </ul>
Thomas Wai-kee Yuen and Chris Wang-wai Chen (2008)	Respondents	China	Gender, marital status, education level, age, household income	<ul style="list-style-type: none"> <li>• Age, gender, household income and personal income were significant determinants of investment risk tolerance in Hong Kong, where as education, marital status and number of household members do not show significant influence on risk tolerance.</li> <li>• Attitude of family members and friends towards investment risk significantly influence the investment risk tolerance of investors.</li> </ul>
Jasim Y. Al-Ajmi (2008)	Respondents	Bahrain	Sex, education, age, monthly income, type of work, nationality	<ul style="list-style-type: none"> <li>• Men were less risk averse than women, less educated investors were less likely to take risk, the effect of age on risk tolerance was complex in contrast to reports in earlier studies, wealthy investors were more risk tolerate than the less wealthy investors.</li> </ul>
Saptarshi Purkayastha (2008)	Clients of Multinational bank	India	Gender, age, occupation, designation, income	<ul style="list-style-type: none"> <li>• Younger investors and those with high income were willing to take more risk and self employed with few dependents were</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
			and dependents, risk appetite	<p>willing to take less risk.</p> <ul style="list-style-type: none"> <li>Irrespective of the risk appetite, investors tend to invest his money in the average risk mutual funds only.</li> </ul>
Kevin Bosner and Merouane Lakehal-Ayat (2008)	College students	New York	age, job security, living situation, number of years to retirement, emotional reaction to making an investment, level of anxiety about losing money, friends' and peers' opinions	<ul style="list-style-type: none"> <li>The majority of participants having higher scored of risk tolerance over their risk capacity.</li> <li>Male participants do appear to have a higher tolerance for risk; men indicate a higher capacity for risk.</li> </ul>
John E. Grable, Sonya L. Britt and Farrell J. Webb (2008)	Employees from universities and investors	U.S.A.	Environmental, biopsychosocial factors	<ul style="list-style-type: none"> <li>Person's environmental and biopsychosocial profile were highly correlated, the person's environmental profile has a positive effect on risk tolerance but a negative effect on money mismanagement behaviour.</li> <li>Gender was insignificant in terms of describing a person's biopsychosocial profile, financial risk tolerance used as a precipitating factor, shown positive effect on risk taking behaviour.</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
Sherman D. Hanna and Suzanne Lindamood (2009)	Survey of Consumer Finance from 1992 to 2007	U.S.A.	Percent of Households owning equity investment, age, Race, gender, education, expectation, own home	<ul style="list-style-type: none"> <li>• The proportion of households holding equity assets increased substantially from 1992 to 1998, increased slightly from 1998 to 2001, decreased slightly between 2001 and 2004, and remained about the same 2007.</li> <li>• The proportion of households willing to take some investment risk increased between 1992 and 1998, decreased slightly between 1998 and 2001, decreased between 2001 and 2004, and remained about the same between 2004 and 2007.</li> </ul>
Gerhard Van de Venter and David Michayluk (2009)	ProQuest Personal Financial Profiling system	Australia	Age, marital status, number of dependents, education, personal income, household net worth, use a financial planner, investment market expectations	<ul style="list-style-type: none"> <li>• Relatively small change in individuals' financial risk tolerance over time.</li> <li>• Slight decrease in financial risk tolerance associated with a decrease in household size and after terminating the services of financial planner.</li> </ul>
Serkan Sahin and Ozlem Yilmaz (2009)	Undergraduate, graduate students, respondents	Turkey	Three different questionnaire for measuring financial risk tolerance	<ul style="list-style-type: none"> <li>• Gambling questionnaire result in more risk seeking attitude.</li> <li>• There was significant differences between two most widely used assessment techniques</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
				in determining the risk tolerance level of individual investors.
Lujer Santacruz (2009)	ProQuest Personal Financial Profiling system	Australia	Gender, age, education, net assets, income, marital status, number of dependents	<ul style="list-style-type: none"> <li>• Risk tolerance of Australian investors does not appear to be affected by the general economic mood.</li> </ul>
Robert Fatt, Terrence Hallhan and Michael McKenzie (2009)	ProQuest Personal Financial Profiling system	Australia	Net assets, age, education, gender, income, marital status, number of dependents	<ul style="list-style-type: none"> <li>• Age, number of dependents and income shows non linear relationship with financial risk tolerance.</li> </ul>
Dr. Adem Anbar and Dr. Melek Eker (2010)	students of faculty of economics and administrative sciences	Turkey	age, gender, marital status, number of children, income and total net assets	<ul style="list-style-type: none"> <li>• Gender, department and working in a job were significant predictors of financial risk tolerance and it shows overall 62.4% correct classification of model.</li> <li>• Gender, department, working in a job, monthly personal income, monthly family's total income and total net assets were significant in determining individuals into risk tolerance levels, where as age, marital status and number of children had no significant effect on financial risk tolerance.</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
John Gilliam, Swarn Chatterjee, and John Grable (2010)	Survey of Consumer Finance, Faculty & Staff of Southwest public University	U.S.A.	Gender, age, use financial advisor, education, asset allocation,	<ul style="list-style-type: none"> <li>• Risk tolerance was positively associated with allocation of stocks in the portfolio.</li> <li>• The respondents who jointly held the majority of their assets with their spouse, as opposed to the reference group of respondent who did not do so, were more likely to allocate a higher proportion of their assets into stocks.</li> <li>• Male was also found positively associated with greater portfolio allocation into stocks.</li> </ul>
Chris Wang-Wai Chen and Thomas Wai-kee Yuen (2010)	Respondents	China	Attitude toward investment, investment decision, research for investment	<ul style="list-style-type: none"> <li>• The overall trust in financial consultants or brokers declined, investors become more cautious about the risk as they considered as negative aspect, attitude toward investment changed to have more speculative after financial tsunami.</li> <li>• Investors do not conduct enough research before investment decision.</li> </ul>
Michael J. Roszkowski and Geoff Davey (2010)	Survey of Consumer Finance & ProQuest Personal Financial	U.S.A. & Australia	risk tolerance and risk perception	<ul style="list-style-type: none"> <li>• Risk tolerance appears relatively stable and was not drastically affected by the economic circumstances of 2008.</li> </ul>



Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
	Profiling system			
Elif Akben Selcuk, Asli Elif Aydin altinoklar, and Gaye Karacay Aydin (2010)	Online survey	Turkey	Demographic, socioeconomic, and attitudinal	<ul style="list-style-type: none"> <li>• Male, younger respondents and people working with private sectors were more risk tolerant than female, older and public sectors, intolerance of uncertainty was negatively related to financial risk tolerance.</li> <li>• The education, income and locus of control do not have a significant effect on financial risk tolerance.</li> </ul>
P. Sashikala and P. Siva Prasad Ravi (2010)	Respondents	India	Gender, age, occupation, investment experience, choice of investment	<ul style="list-style-type: none"> <li>• Younger investors, men, and experienced investors were more habituated with aggressive stock and speculative instruments.</li> <li>• The risk taking ability can be judged by his age, gender and investment experience and no relation found of number of dependent and level of saving with risk tolerance categories.</li> </ul>
Patti J. Fisher (2010)	Survey of Consumer Finance, 2007	U.S.A.	Gender	<ul style="list-style-type: none"> <li>• The risk tolerance affects men and women in terms of they engaged in saving.</li> <li>• Women have reported low risk tolerance significantly less likely to save over the short term and regular saver.</li> <li>• The difference was not found significant between men and women, high risk</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
				tolerance significantly decreased the likelihood of short term saving for men.
James E. Corter (2010)	Students of University	New York	Investment behaviour and risk attitude	<ul style="list-style-type: none"> <li>• The risk tolerance does predict investing behaviour and uncertainty aversion and expertise were particularly strong predictions of investment behaviour.</li> <li>• The risk tolerance and negative emotional reactions to losses predicted self reported changes in investment strategy.</li> </ul>
John E. Gilliam, Swarn Chatterjee, Dandan Zhu (2010)	ProQuest Personal Financial Profiling system	U.S.A.	Gender, age, residence, education, income, net assets, marital status, and number of financial dependents	<ul style="list-style-type: none"> <li>• The group of gender, higher income and higher net worth affected their risk tolerance.</li> <li>• Age and being married was negatively associated with risk tolerance, completion of college and higher education positively associated with higher risk tolerance among leading boomers.</li> <li>• The lower income and less educated were more likely to underestimate their risk tolerance scores.</li> </ul>
Joseph I. Injodey and Dhanya Alex (2011)	Respondents	India	Risk tolerance questions	<ul style="list-style-type: none"> <li>• The first phase the author has identified 60 items based on experience and literature review.</li> <li>• After dropping number of items, the author</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
				<p>has set a 29 new items.</p> <ul style="list-style-type: none"> <li>• In a second phase, the questionnaire was further modified and finalized 33 questions were included in a new questionnaire.</li> </ul>
Iqbal Mahmood, Habib Ahmad, Abdul Zahid Khan, and Mansoor Anjum (2011)	Investors	Pakistan	reinvestment intention, return expectations, investment experience, regulatory policies, information asymmetry, marital status, gender, sensational attitude	<ul style="list-style-type: none"> <li>• Investors given more importance to policies relating to the risk sources instead of intrinsic value of share, investment experience and risk propensity were correlated.</li> <li>• The risk perception performs a key role in the investment decision process.</li> </ul>
Catalina Popescu and Ion Dobre (2011)	Management consultants, researcher in economic field & professionals in finance industry	Romania	value of options, probability of options, level of information and position of the respondent relative to the outcome of the risk	<ul style="list-style-type: none"> <li>• These factors do play their intuitive role in fundamental decisions in context of risk; they were ill correlated to one another and not coherent across different contexts.</li> <li>• There was no significant correlation between measures derived from behaviour in hypothetical situations, natural behaviour and self assessment.</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
Engin Demirel and Suleyman Gokhan Gunay (2011)	Students of university (Questionnaire developed by Dow Jones and Company)	Turkey	Gender, marital status, age, class levels, working duration, spending level, working status	<ul style="list-style-type: none"> <li>• Individuals take more risk based on demographic factor and only age and gender were common in risk taking behaviour in two different countries.</li> <li>• The demographic factors on risk taking behaviour not universal.</li> </ul>
Alan Wong (2011)	ProQuest Personal Financial Profiling system	Australia, U.S.A. & U.K.	Gender, income, education, marital status, age	<ul style="list-style-type: none"> <li>• Financial risk tolerance increases with education and income, and decreases with age, female and marriage.</li> <li>• Australia has the highest risk tolerance score, followed by the Unites States, and finally the United Kingdom in a comparison of three countries.</li> </ul>
Hakan Ozerol, Selin Metin Camgoz, Dr. Mehmat Baha Karan, and Dr. Azize Ergeneli (2011)	Istanbul stock exchange	Turkey	Demographic, return, volume, value, turnover, consulting, investment patter	<ul style="list-style-type: none"> <li>• General investors who have less amount of portfolio value and turnover rates, have tendency to outperform the market and shows superior performance.</li> <li>• The investors shows superior performance were those who more educated and rely on recommendations of experts while investing their money.</li> <li>• Women investors as compared to men investors and single investors as compared to married ones perform better in common</li> </ul>

Author(s) (Year)	Sample Details	Country	Factors Studied	Main Findings
Syed Tabassum Sultan and Pardhasaradhi S. (2011)	Investors	India	Socioeconomic, regularity of investment, investment decision	<p>stock investments.</p> <ul style="list-style-type: none"> <li>• Mmarital status, earnings, occupation and number of dependents were significantly associated with risk tolerance while education, basis of investment decisions and regularity of investment were not significant associated with risk tolerance level of individual investors.</li> </ul>
Sherman D. Hanna (2011)	Survey of consumer finance from 1998 to 2007	U.S.A.	age, education, job status, number of children, home ownership, household type	<ul style="list-style-type: none"> <li>• Low risk tolerance were less likely to use financial planner than those with higher risk tolerance because benefits of financial planners more related to protecting assets than increasing assets.</li> <li>• The substantial increase in the use of financial planner which provides opportunity to them for inducing more investors.</li> </ul>

### **III. RESEARCH METHODOLOGY**

The purpose of this paper is to review of empirical research on determinants of financial risk tolerance. The research question is that this paper attempt to answer is whether the demographic factors of age, annual income, education, occupation, gender, marital status, number of dependents, net assets, experience, investment pattern, investment decision, perception towards investment avenues, job status, retirement, and opinion of others have any impact on the level of financial risk tolerance. This study is important for financial service provider and personal financial planner to understand the risk tolerance level their clients to offer better products which suit them as per their risk tolerance level.

### **IV CONCLUSION**

The objective of paper is to review of empirical research on determinants of financial risk tolerance. The research has reviewed various determinants of financial risk tolerance like age, annual income, education, occupation, gender, marital status, number of dependents, net assets, experience, investment pattern, investment decision, perception towards investment avenues, job status, retirement, and opinion of others etc. The study revealed that some of the factors affect positively while others negatively to the financial risk tolerance. Annual income, gender, occupation, education, net worth have positive relationship while age, marital status, liabilities, retirement negatively related with financial risk tolerance and others having controversy on different countries. The portfolio manager can construct appropriate portfolio for their clients by assessing investor's risk profile. Financial planner can serve the different needs of the investors according to their relative importance of various demographic and other factors.

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