Corporate Decisions in Finance, Behavioral Biases with respect to Risk Perception: A study of Developed and Developing Economy

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A thesis submitted in partial fulfillment of the requirements for the Degree of Doctor of
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FORWARDING SHEET

The thesis entitled "Corporate Decisions in Finance, Behavioral Biases with respect to Risk Perception: A study of Developed and Developing Economy" submitted by Ms. Nishwa Iqbal in partial fulfillment of PhD degree in Management Sciences with specialization in Finance, has been completed under my guidance and supervision. I am satisfied with the quality of student's research work and allow her to submit this thesis for further process as per IIU rules & regulations.

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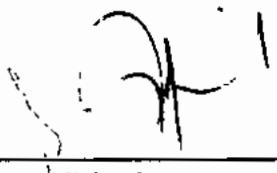
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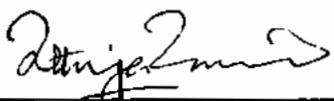
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Dedication

"Corporate Decisions in Finance, Behavioral Biases With Respect To Agent's Risk Perception, Study Of Developing Economy"

PhD Thesis by Nishwa Iqbal Dedicated

I dedicate this thesis to my Father & my beloved mother (late).

DECLARATION

I hereby declare that this thesis, neither as a whole nor as a part thereof, has been copied out from any source. It is further declared that I have prepared this thesis entirely on the basis of my personal effort made under the sincere guidenance of my supervisor.

No portion of the work, presented in this thesis, has been submitted in support of any application for any degree or qualification of this or any other university or institute of learning.

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Praise is due to Allah, Whose worth cannot be described by speakers, Whose bounties cannot be counted by calculators and Whose claim (to obedience) cannot be satisfied by those who attempt to do so. All the praises are attributed to the sole creator of the universe " the Almighty Allah", the Compassionate, the Merciful, the Source of all knowledge and wisdom, who bestowed up me health, thought & talent.

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Abstract

The undeniable role of cognitive biases and bounded rationality in managerial decision making is confirmed by previous researchers they further bring into light the ultimate behavioral cost that firms have to pay due to undesired outcomes of the decisions situations (Simon, Houghton & Aquino, 1999). This study seeks ways to resolve the unanswered questions about overconfidence bias and ambiguity aversion bias in manager's financial decision making in a cross cultural environment. For this purpose survey based data has been collected from executives/ managers of firms listed on Pakistan stock exchange and New York Stock Exchange. Results achieved found that overconfidence bias is more significantly playing role in managerial decision making for USA while ambiguity aversion bias has strong effect on the decisions taken by Pakistani managers. It has been found that manager's risk perception is a significant mediator for financing, Investment, and asset management decisions in Pakistan while it is significant for all decisions in case of USA. Study further applied moderation and moderated mediation through use of process by Hayes, 2013 and found the conditional indirect effect of uncertainty avoidance on the relationship between ambiguity aversion bias of managers and financial decisions via Risk Perception. Consequently this study has reached to extract the hidden facts and solutions to the observed issues for underdeveloped country firms through cultural differences. The cross cultural research work can also help the firms in both countries to bring integrated solutions to the problems observed. The study has found that in the decision making process of company, the managers in Pakistan avoid dividend payments to shareholders due to fear of bankruptcy and shortage of cash and raise funds via debt financing. Results concluded

that they further avoid investments due to ambiguity about the risk of loss and ultimately lead the firms towards less growth in long run. Conversely in case of USA results showed that risk perception play significant role for all decisions. Findings showed that US managers being more overconfident perceive external financing as less expensive, so they overinvest using these external funds. Consequently firm growth and cash flow also continued to keep the firm from insufficiency of funds. Furthermore these inflows also help the US firm to announce dividends on interim basis. These ground realities pertaining to growth and capital structure guides that firms should take special measures to control these biases. It will help to overcome micro as well as macro level shocks i.e. assistance to make optimal capital structure, increase in return on investments, maintaining balance between dividend payment and asset management decisions and ultimately reduce the behavioral cost of firm.

Key words: Overconfidence Bias, Ambiguity Aversion Bias, Uncertainty Avoidance, Agent's Risk Perception, Manager Decisions.

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ABBREVIATIONS

OVERB	Overconfidence Bias
AMB	Ambiguity Aversion Bias
RISKP	Risk Perception
FIND	Financing Decision
INVD	Investment Decision
DIVD	Dividend Decision
AMD	Asset Management Decision
UA	Uncertainty Avoidance
CEO	Chief Executive Officer
CFA	Confirmatory Factor Analysis

CHAPTER 1

INTRODUCTION

1.1 Historical Background

International financial system & global markets are more resilient than we presume them to be. Many past and current upsets i.e. Dot-com bubble, world wars, depressions, financial crises and unexpected Trump government establishment have placed substantial impact on global market (Meyer & Mager, 2017). Managers in such situations still work hard due to fear of loss or because of motivation to get some profit on behalf of shareholders. Researchers like Borchardt, (2010) found that these are manager's cognitive and emotional biases which initially originate from their confidence or fear of loss and then lead them to make decisions accordingly.

Psychologists Kahneman & Tversky (1979), & Thaler,(1992) dig out that in order to predict and access outcomes under the decision making process human employ emotional filters. These emotional filters are moods, personal traits, & biases which change the outcome of human decisions. Although traditional finance is bestowed with a lot of ideas, assumptions, theories & frameworks given by researchers like Fieganbaum, (1991), Jegers, (1991), Machina, (1983), Markowitz, (1952), Piron & Smith, (1995). These means and methods direct the maximization of wealth over time, but ignore the role of cognitive biases in the decision making processes of firm's manager. This room is filled with the introduction of behavioral decision theory by Kahneman & Tversky, (1979). Firm managers are mainly involved in making four major decisions i.e. investment, financing, dividend & asset management decisions. Researchers are of the view that making these decisions adds swings within the organization as well as in overall business economy (Johnston, 2018). Researchers like Russo & Shoemaker in (1990) worked on the managerial decision making process and the problems with the process; where they argued

that effective management and effective decision making are directly proportional. They further added that only a few managers get systematic training and most of them formulate unstructured judgments based on self assessment approach. Later on Rigopoulos in 2014 clarifies that these decisions taken by them may have investment appraisal issues, excessive debt financing, dividend announcement problems, and shortage of cash. Rigopoulos, (2014) further added that these limitations are linked with the risk taking approach of mangers which they feel to be present due to behavioral biases in the execution of their decisions. Rigopoulos reach at the conclusion through the verdicts of previous studies i.e. Ryan & Ryan, (2002); Brounen, Jong, & Koedijk, (2004); Verbeeten, (2006); Hermes, Smid & Yao, (2007); Gervais, (2010); Ghahremani, Abdollah, & Mostafa, (2012). Connecting the above reasons with Simon's bounded rationality (1955) findings of Barros, (2010) works here, The limited cognitive ability of people cause them to deal with risk related decisions less optimally, current study explored the role of risk perception of managers as a key idea.

Extensive efforts made by Slovic, Fischohoff, & Lichtenstein in 1982 on the notion of risk perception clarify that response of people toward risk come from the risk they actually perceive. If their perceptions about risk are intense all endeavours made at personal and public level might go erroneous (Slovic, Fischohoff, & Lichtenstein, 1982). Pruit in 1970 adhere the phenomenon of bounded rationality with risk perception of managers by arguing that the concept of bounded rationality is correlated with the variation in the perception about decision's risk. Henceforth the impact of biases on risk perception of managers is evident from the previous research work Pruit (1970). Tversky & Kahneman in 1986 suggests that limited cognitive ability of managers influence their risk perception while processing of the information related to some decisions problem of firm. Broadening the effort on risk perception of managers it is imperative

to see that what other factors may affect risk perception of managers. Where culture is found to be a predictor of risk perception and risk taking behavior as suggested by Wildavsky, & Dake (1990). In this regard Hofstede in 1984 put forward the belief about uncertainty avoidance cultural trait and proposed that culture with high uncertainty avoidance are less risk seeking in part due to fear of loss. As discussed earlier other researchers also link organizational culture to impact risk perception of people significantly. The detailed review made by Braun (2017) on work of Hofstede (1984), suggests that organizational cultural dimensions predominantly uncertainty avoidance is the influential factor on manager's risk perception through their social dynamics.

It was therefore imperative to expand the roots of behavioral decision research toward cultural aspect for managerial risk perception. Moreover in a highly globalized environment where firms are in greater need to understand preferences and priorities of people in other countries it is crucial to create awareness about the cultural differences in perception and preference. e.g. In US culture it is expected to greet one another while arriving at work while in Maxico and Latin America people discuss little bit family matters along with greeting co-workers. Yates et al; (1998) elucidates the significance of cultural variation aspect for cognitive judgments. Where, they enlightened the idea by adding that differences in cultural uncertainty avoidance might have an impact on perception related to risk. Consequently decisions and behaviors under risk for the two different groups might be different. The researchers emphasized on the need to study cultural aspect while discussing risk related decisions. According to them cultural variation between two societies originates from their market environments which actually shape those societies cultural values, perceptions and ultimately attitudes. Through cross cultural analysis of

organization's conflicts in decisions and ultimate failures can be conquered to great extent (Varner & Beamer, 1995).

Therefore knowing the risk tendency of executives toward firm's decision across USA and Pakistan can help managers in underdeveloped country to financial decisions in a better way in future. At the end it is elemental to talk about the need for awareness regarding risky behavior while taking into account the track of risk perception for better firm decisions. Risk perception involving elements of research like risk management for US finance manager's behavior covers firm's decisions in modern finance i.e. through investment projects, capital structure strategies, dividend policies and cash reserves and loans (Ricciardi, 2007). Therefore keeping in view of above discussion it is imperative to confer toward the relevant comprehension of literature in detail. This will ultimately help to find out new pathways of behavioral decision theory, manager's risk perception and cross country organizational culture together. Enlightening the underlying behaviour of business executives in countries where firm growth is slow will help to understand the difference in mind when dealing with their counterparts in other countries. Taking into account the above discussion it is imperative to discuss here the concept of behavioral finance and theories supporting the study.

1.2 Conventional Finance and Behavioral Finance

Researchers have countered a lot of debate between both traditional and behavioral finance. Traditional (Conventional) finance gives the utility maximization theory given by rational decision makers i.e. Neumann & Morgenstern (1947) and De Bondet (1998). Behavioral finance on the other introduced a new platform of discussion in theory of traditional finance by acknowledging market inefficiencies. This is embraced by behavioral finance theorists in a new way i.e. Richard Thaler, Shilfer and Vishney, Daniel Kehnman & Amos Teversky through

investigations on behavioral forces. Conventional finance links their support toward efficient market hypothesis, where the efficient-market hypothesis (EMH) emphasize on the belief that financial markets are "informationaly efficient". Consequently, one cannot consistently achieve returns in above the average market returns on a risk-adjusted basis, given that the information is on hand at the time the investment is made. Following this approach traditionalists have put light in the area of descriptive study but unfortunately they ignored subjective part of the study arguing that executives/agents are rational and they don't have lag in their behaviors while making decisions on behalf of their principals (Ricciardi., 2008).

Conversely behavioral finance considers that unfounded reasons of these irrationalities keep executives to take advantages of arbitrage opportunities (Maheran & Muhammad, 2009), the gap created by traditional finance is filled in by behavioral finance where management while making financial decisions considers value of behavioral finance. Behavioral finance elaborated that there are biases/ irrationalities which creates the tendency for decision process to deviate from balanced pathway. This deviation may range from an individual level to broad corporate level (Maheran & Muhammad, 2009). Extending the knowledge toward behavioral finance Ricciardi; quoted in 2008 that it is endowed with details of subjective and objective factors which may influence the risk. It establishes a new aspect i.e. the control of emotional and cognitive issues on risk. These emotional and cognitive issues are the biases which in turn influence the executive decision making. As a result it can be said that there is an imperative need to focus on risk issues for better understanding of decision making at micro level (Ricciardi, 2008). According to Tversky & Kahneman (1974), each heuristic may lead to numerous cognitive biases. For example, availability gives rise to the bias of irretrievability, the bias of imaginability and so on. In addition, researchers have also called attention toward reasons behind some other cognitive

biases, such as illusion of control (Langer, 1975), hindsight (Fischhoff, 1975) and overconfidence (Fischoff et al., 1977). Working extensively in the area of behavioral finance various researchers have put forward clear definitions. Among them few are given as follows:

1.3 Behavioural Biases

Different researchers have placed their arguments on the efficient-market hypothesis together empirically and theoretically. Shefrin defined bias as "it is nothing else but the predisposition towards erros" (Shefrin.H, 2007). Chira et.al. (2008) also defined bias as "a prejudice or a propensity to make decisions while already being influenced by an underlying belief" (Chira et al., 2008). Behavioral economists attribute the limitations in financial markets to a set of cognitive biases such as overconfidence, overreaction, ambiguity aversion bias, and various other predictable human errors in reasoning and information processing. Bias can be defined as "systematic deviation from a balance pathway" or "inclination toward one judgment rather than another". According to Harvey & Koehler (2008) behavioral biases of managers can be the result of cognitive limitation. These limitations are discussed in detail under bounded rationality theory in the next section. Extensive research work on behavioral biases has been conducted by psychologists such as Kahneman & Tversky (1979), Thaler (1992), & Slovic (2002). Current study targets overconfidence bias and ambiguity aversion bias under bounded rationality of managers while making firm decisions under the mediating effect of risk perception and moderating effect of culture on the risk perception in integration with these biases. Hackbarth, in this regard found the influence of personality traits on manager's decisions which in turn may affect the firm value. Such attributes might contribute towards the ambiguity or overconfidence. According to the researcher there is still room for these biases to be studied in connection with

capital structure decisions sand perception of risk about these decisions (Hackbarth , 2008, 2009).

1.3.1 Overconfidence Bias (OCB)

Overconfidence Bias (OCB) extends the link towards better than average thoughts for one's own self, positive illusions or illusion of control as given by Skala, (2008). In the light of previous studies OCB can also be defined as "overestimation of one's own actual ability, performance, phase of control, or chance of success" (Langer, 1975; Clayson, 2005; Moore & Healy, 2007). Moreover Svenson, (1981); Taylor & Brown, (1988) added to the knowledge by defining it as better than average believe of a person which leads him/her toward overconfidence bias. Behaviorists have elucidated OCB in another way by designating it as "unrealistic optimism" or "too much certainty concerning the precision of one's beliefs" (Weinstein, 1980; Moore & Healy, 2007). Current study has overlaid on the last definition in order to observe its impact on managerial decisions in develop and under develop countries.

1.3.2 Ambiguity aversion Bias (AMB)

Ambiguity is attributed to uncertainty concept given by Daniel Ellsberg in his article and in his PhD thesis respectively (Ellsberg,1961) & (Ellsberg,1962). He said that people tendency to avoid decisions with unknown probabilities is due their ambiguity aversion bias. He named this behavior as ambiguity aversion. In this context the very first introduction of ambiguity was actually given by Knight in (1921) when he put forward the concept of dissimilarity between risk and uncertainty and in his book titled "Risk, uncertainty and Profit". He argued that risk can be deducted through theoretical or statistical probabilities. Knight further added that uncertainty/ambiguity do not possess any objective probability measurement though the people still make subjective probabilities (p.226, Knight, 1921). Besides this La porta et. al, (1997)

elucidated about situations where the decisions maker is not confident about the results but he knows the possible distribution. Researchers found ambiguity behavior to work in two dimensions i.e. ambiguity averse or ambiguity seeking. In this regard research conducted in North Carina on business managers for behavior toward the ambiguous risk of storm and risk of damage is worth mentioning. Study found these managers to be ambiguity seeking as they are aware of the risks of climate change but still running businesses in that area. Researchers supported to put efforts on the ambiguity bias in connection with theories like prospect theory Wakker (2008), decisions theory Etner et al. (2012).

1.4 Risk Perception (RP)

Current study targets Risk Perception (RP) as a mediator between behavioral biases and firm decisions in developed and under developed countries. i.e. USA and Pakistan respectively. The word risk in the Oxford English Dictionary is described as "a chance of injury or loss". This definition leaves open the relative contribution of the two risk factors innate in it, namely the degree of potential losses and their chances of occurring. (RP) is defined as a person's assessment of risk inherent in a particular situation or problem (Sitkin & Wiengart, 1995). RP has been also explained by Staw, Sandelands, & Dutton (1981) in the light of threat-rigidity hypothesis where they found that under the risk related circumstances the person tend to rely heavily on previous thoughts expectations and resultantly emit conservative or risk averse behavior. Conversely March & Shapira (1987) and Thaler & Johnson (1990) worked on the risk seeking side of the RP and found that positively perceived situations put the managers to seek for opportunities in a risk seeking manner as a result of their past experiences. Morgan and King (1966), elaborated perception from the psychological point of view i.e. Tough-minded behavioralists, characterize perception as the process of segregation amongst stimuli i.e. how

individuals observe or believe toward a prospective loss. Summing up RP as a notion leads to evaluate risk related situation on the basis of instinctive judgements, personal experiences, & the available information. Current study has investigates that while doing so how it works as a mediator between behavioral biases and firm decisions.

1.5 Uncertainty Avoidance (UA)

Culture embrace set of traditions, habits, values, and beliefs that shape emotions, behavior, and life pattern of people of a nation culture has been defined enormously by previous researchers where Hofstede in 1994 defined culture as "the collective programming of the mind which distinguishes the members of one group or category of people from another". An obvious description of culture given by Spencer (2008) states that "Culture is a fuzzy set of basic assumptions and values, orientations to life, beliefs, policies, procedures and behavioral conventions that are shared by a group of people, and that influence (but do not determine) each member's behavior and his/her interpretations of the 'meaning' of other people's behavior". Taking into account the above definitions of culture this contemporary work has examined the moderating role of organizational culture in a cross country setting upon risk perception of managers. In this regard Hofstede cultural dimension (Uncertainty Avoidance) has been targeted to extend the roots of behavioral finance toward cultural theory of organizations.

Uncertainty Avoidance dimension of cultural was defined by Greet Hofstede as "The degree to which people feel threatened by indefinite situations, and have created beliefs and institutions that try to avoid these". This thesis work has used UA cultural value as a moderator given by Hofstede because of enormous support of empirical studies which shows greater impact of Hosftede cultural values than any other cultural values (Kluckhohn & Strodtbeck, 1961; Hall, 1976; Trompenaars, 1993; & Shenkar, 2001). These researchers also supported the relation

between national cultural values and workplace behavior and other organizational outcomes. Researchers further support the significance of UA cultural value under Hofstede cultural model due to its explicability for uncertainty inherent in people reactions toward a situation. High UA cultures shows rigidity towards uncertain situations while cultures with low UA comprised of relaxed attitudes toward practice as compared to principle (Kirkman et al., 2006).

1.6 Managers Decisions

Decisions can be defined under Webster's Dictionary as "the act of making up one's mind." Hastie in (2001) described that decisions involve alternatives choices, beliefs about processes, and desires/utilities. Hastie further adds to knowledge about good decisions that they link utility of decisions makers with the outcomes. Researchers supports enormously and suggested to expand knowledge on the relationship between decisions involving uncertain outcomes/Risk and emotional biases (Loewenstein & Weber 2001, & Slovic et al. 2004). Current study targets four major decisions that mangers take on behalf of shareholders. A brief description of these decisions is given as follows:

1.6.1 Financing Decisions (FD)

Capital structure decisions mainly deals with financing of firm's operations. FD is not only believed to be the proxy for many determinants including corporate taxes and corporate bankruptcy cost but is also the source of disagreement of interest among stakeholders. One can say that most controversial issues corporate finance has faced are pertaining to capital structure. Previous studies have investigated FD especially capital structure decisions under the psychological and behavioural impact of managers. Behaviourists have emphasized on the role of bounded rationality of managers while making these FD on behalf of shareholders, They also

added that while making capital structure decisions managers may follow pecking order or trade off theories (Tomak, 2013).

1.6.2 Investment Decisions (INVD)

Investment Decisions (INVD) of firms cover how to employ wealth in any new project, re-evaluate the value of already invested capital in any project, allocation of capital in other divisions, or acquire any firm. Firm INVD can be evaluated by various ways i.e. by cash flow of the projects as compared to accounting profitability method and secondly the discounting method. Cash flow method is with the advantage of covering payback period on the other hand discounting of cash flows under capital budgeting method identify risk and time value of money for the investment. Garrison & Noreen (2005) says that capital budgeting is an analysis of INVD which help to find the best option for future investment. Studies have enormously supported the idea that the decisions for investment appraisal are not free from behavioral biases as subjective processes are intervening. Keeping in view of this proclamation this modern study explored the innovative links of behavioral finance with the INVD of firm managers in developed and under developed countries. A detailed review of previous studies on the above statement is given in the subsequent chapter.

1.6.3 Asset Management Decisions (AMD)

In addition to the above mentioned long term investment decisions particularly representing the growth capital of firm, managers also face the challenge of managing short term capital of firm and take decisions on behalf of the firm's shareholders. Such decisions are known as asset management decisions (AMD). AMD covers cash management, inventory, account receivable, and account payable management. Working capital under consideration in AMD is divided into three categories i.e. Net, Operational, & Financial. Net WC considers current assets less current

liabilities; Operational WC consists of inventory, account receivables, & account payables (Knauer & Wohrmann, 2013). The third category called Financial WC considers cash item (Fleuriet et al., 1978). CEO's AMD are crucial to maintain the balance between financial constraints of firm and excessive liquidity. As suggested by researchers Biais & Gollier (1997) & Bellouma (2011) the inability to manage these assets can affect financial health of the firm and create organizational financial distress. Henceforth in order to make healthier AMD for firms in developed and under develop countries there is need the expand the roots towards behavioral aspects of managers.

1.6.4 Dividend Decisions (DIVD)

The foundations dividend policy is intimately linked to the corporate form of government in Europe and the USA. Later on Joint Stock Company was formed for the first time at the end of sixteenth century where cash and commodities were the mode of dividend payment after return from ships sailing. Gradually the dividend payment was linked to condition of disbursement from profits of company's current earnings, furthermore the initial capital impairment was held illegal. After this regular dividend announcement out of profits of firm was considered as key to offset information asymmetry between managers and shareholders. It can be said that dividend policy play major role in development and improvement capital market efficiency. Modern corporation's dividend payments policy may affect the firm performance and this variation in dividend policy is a controversial topic among decisions of firms. Keeping in view of its importance current study focus on the behavioral aspects of managers in USA and Pakistan and suggested ways to optimally take benefits from dividend policy.

1.7 Purpose of the study

Purpose of this research work is to establish theoretically and practically a connection between Simon's bounded rationality phenomenon (1955) of managers with risk perception in a cross cultural environment while targeting Hosfstede (1984) culture theory. Since economic wealth of the organizations is mainly the product of these organization's judgments and decisions therefore it was imperative to explore the novel dynamics that shape these decisions outcomes. Based upon the phenomenon of bounded rationality current study extends the strings of behavioral biases (Overconfidence Bias & Ambiguity Aversion Bias) towards manager's risk perception which in turn mediates biases impact on managerial decision making. The research work also expands its roots to study organizational cultural aspect of developed and under developed economies. This cultural aspect is tested as a moderator for the relationship between behavioral biases and manager's risk perception. In order to grasp the contemporary work it is imperative to put light on the notion of above mentioned theories.

1.8 Theoretical Significance

1.8.1 Behavioral Theory of Firm

Behavioral theory of the firm is used to explain the relationship in decision making and bounded rationality. The term "Bounded rationality' is the reflection of the cognitive limitations of the decision maker while making firm decision (Simon, 1997). Simon put light on the value of bounded rationality for behavioral economics in the decision making process and the ultimate decision outcomes. Basic assumptions of cognitive limitations of managers brought forward by Simon et al.(2000) are as follows: Managers have the limited knowledge about the world, they have limited ability to stir up information, they have limited ability to set

right consequences of performance, they have the limited ability to invoke feasible courses of action and to deal with uncertainty, Bounded rationality further assume that managers have the limited ability to adjudicate among challenging desires.

Findings suggested by Harvey & Koehler (2008) regarding manager's behavioral biases as an outcome of their bounded rationality give ways to extend the knowledge. Kahneman, Slovic & Tversky, (1982), & Camerer & Vepsalainen (1988) put their efforts to investigate cognitive biases under the theory of bounded rationality where the researchers found in their research work that people judgments and decisions do not actually comply with the expected utility maximization concept as quoted by traditional finance. Pepper & Gore, (2012) further added that bounded rationality of agents is an important element while making decisions pertaining to loss, risk, and recognizes that agents risk profile is the determining factor of agent's behavior. Under this proposition it is important to study agent's behavior under risk while perusing firm's decisions, and there is further a need to extend knowledge by detail reconsideration of behavioral model of managers while making decisions under risk. Keeping in view of the implications given by previous researchers; current study extents the roots to the perception of managers pertaining to risk under theory of bounded rationality.

Campitelli & Gobet, (2010) put forward the findings that Simon's work touches the psychological aspects of managers including perception, memory, & thoughts. In order to build in depth comprehension about the theory of bounded rationality; Gigerenzer & Goldstein (1996) stated that negation of perfect rationality under Simon's work come from two dynamics one is about cognitive limitation of humans (Simon, 1947); and other suggests that human minds are vulnerable to the real environment (Simon,1956). Researchers Kahan & Braman (2003) adjoined to the Simon's work by arguing that managers due to bounded rationality are more likely to form

perception about risk which may cause biased decisions outcomes for the firm. Keeping in view of this fact it is important to put light on the theory of risk perception, and work environment or culture. This will help to draw a clear picture of theoretical relationship among biases, risk perception and culture. Theory of risk perception and culture has been discussed in detail in the subsequent parts of same chapter.

1.8.2 Behavioral Decision Theory

In standard finance the decision maker's verdict revolve around the efficient market hypothesis while in behavioral finance the decisions are influenced by the heuristics and biases of the decision makers. Edwards in the year 1954 gave BHD and said that there are many factors including values beliefs that influence his/her decision making process.

Behavioralists Tversky & Kahneman (1981); & Baron (2008) finance considers manager's behavior different from rational manager approach. Based upon the notion of behavioral finance and bounded rationality the psychological information of the decision maker is explained by descriptive theories under behavioral decision theory. Behavioral decision theory is actually a combination of different psychological theories for which no manifest has been introduced by the utility theory. Different theorists including Economics Nobel prize winner of 1978 H.A.Simon, & Nobel Prize winner of 2002 D. Kehneman put forward the statements that knowledge and psychological method of behavioral decision theory are applicable to the areas of Economics, Business Administration and further expandable toward engineering. In this context behavioral biases are of due importance. Taking into account this information theory of bounded rationality for firm managers has been explained in detail.

1.8.3 Risk Perception Theory

In the 1970's, a group of cognitive psychologists with expertise in the experimental study of decision making turned to be interested in investigating how people respond toward risk. One of the contributions in this work was experimental studies of lotteries and other types of gambles, and in this field attempts have been made to define an abstract concept of risk and to measure it by means of psychological scaling procedures (Lopes, 1983 and Lopes, 1995). Important work was also conducted by Langer (1975). This work says something about how people react to lotteries and similar gambles, but probably little or nothing about the risk policy. Several decades of work have been devoted to psychological work on the understanding of perceived risk. Two distinct theories currently dominate the field of risk perception. One is the 'psychometric paradigm', rooted within the disciplines of psychology and decision sciences, whereas the other derives from 'cultural theory', developed by sociologists and anthropologists. One of the most important assumptions within the psychometric approach is that risk is inherently subjective. "Risk does not exist 'out there', independent of our minds and cultures, waiting to be measured" (Slovic, 1992).

Risk perception is the way people "see" or "feel" toward a possible danger or hazard (Ricciardi, 2008). Ricciardi added that risk perception elucidates the assessment of a risky situation (event) on the basis of intuitive and intricate decision making, personal understanding, and external sources of information (Ricciardi, 2008). Risk Perception (RP) has been also discussed previously by various authors where Sitkin & Weingart (1995) defined RP as "a person's estimation of riskiness of a situation in terms of probabilistic estimates of the level of situational uncertainty, how controllable that uncertainty is, and confidence in those estimates".

Risk itself is a distinct trait for each person because what one person perceives as a major risk may be perceived by the other person as a minor risk. On the other hand perception in terms of behavioral perspective in finance has been discussed in detail by Gooding in 1973. Perception has been defined by Webster as "the act of perceiving or the ability to perceive; mental grasp of objects, qualities, etc. by means of the senses; awareness; comprehension". Furthermore Wade & Tavris & Wade (1996) put forward the behavioral meaning of perception as the "process by which the brain organizes and interprets sensory information" (p. 198).

Researchers in the field of organizational behavior have offered these two viewpoints on perception. Economists including Schwartz (1987), Schwartz (1998), and Weber (2004) have also substantively discussed the idea of managerial perception about risk. According to these researchers perceived risk of managers implies that risk perception as a subjective or qualitative element needs due acknowledgement in the area of finance, accounting and economics. Research work on the risky behavior of managers from last century is evident of academic foundation of risk perception for "psychological aspects" in the areas of behavioral finance, accounting, and economics developed (Ricciardi, 2008). In this regard efforts of Slovic, Fischhoff, & Lichtenstein, at decision research institute found in 1978, for risk perception are of due importance where they found that some specific behavioral risk characteristics in psychology are applicable in the context of financial and investment decisions of firms. The tendency of risk perception depends upon the way investor process the information and this basically comply with the idea of behavioral theories influence on risk perception during the judgment process. Ricciardi, in 2008 elaborated different theories and concepts of behavioral finance which might influence the area of risk perception of managers are overconfidence, loss aversion, representativeness, framing, anchoring, familiarity bias, perceived control etc. Moreover various

other factors that might influence a person's perception of risk are also focused by researchers in the area of behavioral finance i.e. Rohrmann (1999) documented that role of cultural factors is of due importance for manager's behavioral study. Falconer (2002) further supported the extension of knowledge of RP towards cultural aspects of managers by extracting that varying reactions of people have many dimensions and are not simple response towards physical hazard itself, but they are formed by the value system apprehended by individuals and groups (p. 1) Falconer (2002).

1.8.4 Hofstede Culture Theory

Principle argument about culture is that "it is a set of norms, beliefs, shared values, and expected behaviours that serves as guiding principles in people's lives" (Hofstede 1980). Hofstede's (1984) investigated the domain of international organizations. He collected data from a large multinational organization, IBM. Through his research Hofstede concluded that "organizations are cultural-bounded". Hosftede work has also been supported and used by other researchers in these researcher's work e.g. Kwok and Tadesse (2006), Gleason, Mathur, & Mathur (2000), Tang and Koveos (2008). Most of them employed uncertainty avoidance cultural dimension to see its impact of financial performance of organizations. Griffin, et.al, (2015) found that cultural elements are the rational micro-foundation models of corporate governance and agency theory. Licht et al., (2005) also emphasized on the importance of culture for corporate. Keeping in view of above support from literature it is imperative to further explore the dimension of culture pertaining to manager's risk perception for firm decisions.

Current study targets uncertainty avoidance (UA) illustrated as reliance upon the formal ways and preference of stability in the workplace. Hofstede recognized UA at the cultural/group level i.e. not individual level like Schwarts cultural traits on individuals. Hofstede identified it as an

important measure of cultural variation and suggested that cultures with high UA would be less risk taking and cultures with low UA would tend to oppose with the desire to achieve success. This rationalization of UA thus advocates the affect of uncertainty avoidance on risk perception of managers. This helps the current study to extend the knowledge of culture in line with manager's risk perception. Researchers proposed the cultural theories related to risk perception where cultural theory of risk given by Douglas & Wildavsky in 1982 draws the concepts and methods from psychology, anthropology, and communication, this theory holds that individuals can be expected to form perceptions of risk that reflect and reinforce values that they share with others (Douglas & Wildavsky 1982). In addition to above Kahan et al (2000) focused on the importance of risk perception phenomenon at individual and collective level since risk perception express cultural commitments of people. Park & Kim, (2014) enforce on the study of culture from risk perspective where they clarify that cultural values of people groups affect their risk perception and their preference toward risk reduction. This further clarifies the impact of culture upon corporate risk taking in many decisions.

1.9 Rationale of the Study

On the contrary side behavioral finance of risk taking suggest that managers can be risk averse, risk neutral, and risk seeking, which depends upon the real or fictional context of decision made. To grasp the idea of managerial decision making under risk, it is essential to understand other elements which may also affect the managerial decisions under risk. Modern finance in this distress proposed the presence of certain cognitive biases. Behavioral finance further brings the solution by introducing the influential blow of these subconscious behavioral biases in managerial decision making e.g. Groth, Lubin & Sprung, (2012) supports the theory by quoting that it is very important for firm's managers to understand the disrupting forces inherent in their

subconscious. Researchers also emphasized on the importance of culture in behavioral finance for better understanding of manager's behavior in decision making (Licht, 2014). Keeping in view of above shortcomings of traditional finance, current study identify and brings contemporary knowledge for bounded rationality of managers by combine study of behavioral decision theory and risk perception theory with culture theory.

1.10 Gap Analysis

Researchers from 1970's and 1980's more prominently especially Slovic, Lichtenstein, Baruch Fischhoff, & Sarah conducted research on the concept risk perception from the psychological perspective and suggested on the basis of solid academic and theoretical grounds to expand the research in the area of behavioral finance (Ricciardi, 2008). Existing literature in the area of social sciences has enormously supported the influence of cognitive and emotional factors for risk perception in non financial decisions. Later on behavioral finance, behavioral accounting, economic psychology extended the new pathways of research by discovering the link between cognitive and emotional factors with manager's risk perception for the financial decision making. Where; these factors include heuristics, overconfidence, Loss aversion, representativeness, framing, anchorching, familiarity bias, expert knowledge etc. Scientists who advocated the study of the above mentioned areas included Holtgrave & Weber (1993); Schlomer (1997); Weber & Hsee (1999); Ganzach (2000); Diacon & Ennew (2001); Shefrin (2001); Warneryd (2001); Jordan & Kaas (2002); Diacon (2002, 2004); Ricciardi (2004); Byrne (2005); Koonce, Lipe, & McAnally (2005); Koonce, McAnally & Mercer (2005); Parikakis, Merikas, & Syriopoulos (2006). Before 1990s, researchers focused on the decisions research towards a wider spectrum of behavioral finance, accounting and economics. But there existed room for conducting research on managerial decisions from behavioral risk perspective. In order to fill this gap various

researchers imported the realm of risk perception from social sciences toward financial and investment decisions of firms. e.g. Olsen (1997); MacGregor, Slovic, Dremanand Berry (2000); Olsen (2000); Olsen (2001); Olsen & Cox (2001); Finucane (2002); and Olsen (2004). These findings of experts for behavioural decision theory depart from the standard finance and adhere towards the behavioral finance doctrine of bounded rationality. Recent studies have also focused on the area of behavioral decision theory and suggested that corporate decisions have considerable effect of managerial risk perception. As Lusardi & Mitchell, (2007) found that risk perception has significant impact on the investment decisions of firm. Chira et al., (2008), Azouzi & Jarboul, (2012), & Byrne & Utkus, (2013) also suggested significant role of behavioral biases and risk perception in financial decision making. Researchers from Pakistan also worked on the mediating role of risk perception for investment decisions where they found its impact valid for the expected return of the firm's investments. Mahmood., et al, (2015) & Sarwar.,et al. (2016) found the significant impact of risk perception on managerial financial decision making in Pakistan. They added that psychological factors have significant impact on the financial decision making under risk.
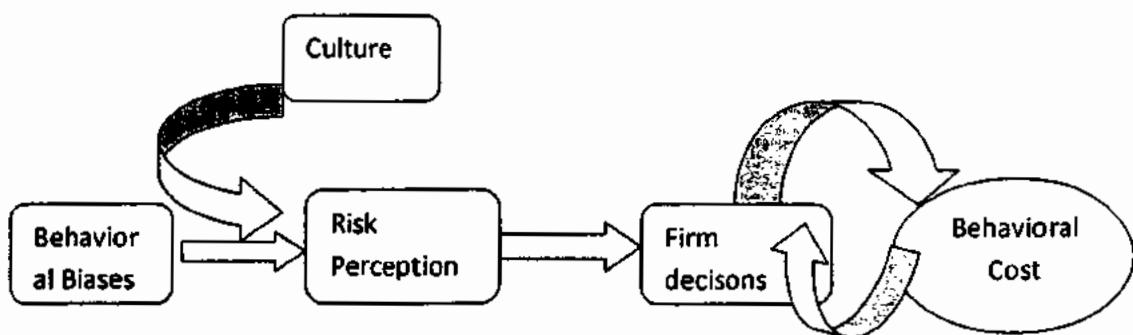
Fig: 1.1 Behavioral Cost Model under Bounded Rationality

In view of above current research work have found a major gap regarding its focus on the bounded rationality of managers and the ultimate behavioral cost which managers have to pay in

the form of suboptimal decisions. The concept of behavioral cost was given by Shefrin in 2001 where he added that behavioral cost prevents to create firm's value creation just like agency cost. He further found that this cost arises due to imperfections in the emotional and cognitive aspects of managers. Which also endeavour towards the Simon's concept of bounded rationality. It was therefore imperative to locate the concealed dynamics which cause the risk perception to affect behavioral decision making of managers. Olsen (2001) believed that adaptive nature of financial decision makers is depicted by the decision environment as it may shape the course of action utilized in the financial decision making. In this regard cultural dimension of the decision maker is an important factor which has not been studied deeply in finance previously with respect to behavioral decision making under risk perception. Current study has compared the work environments of developed (USA) and underdeveloped (Pakistan) country's firms to extract and suggest possible solutions for the role of culture in behavioral decision making under risk perception. Study explored the role of managerial risk perception for various financial decisions and suggests how to cover these shortcomings which increase the behavioral cost of firms. As avoiding the possible harmful situation under single decision might prevent the firm from depression creation for the other decisions.

1.11 Problem Statement

Financial decisions under risk normally trek managers toward a course of action which put firms into financial challenges. Observing various issues on firm's performance and value creation the Securities and Exchange Commission of Pakistan issued show cause notice to 24 listed companies in 2003 where most of them were reported to be engaged in dealing with the financial constraints in connection with creditors, financial institutions (July,03,2003). In this regard Roomi, Ramzan, & Rehman in 2015 worked on the causes of bankruptcy in Pakistan listed firms.

The researchers were of the view that management has unique understanding for the solvency, cash, capital structure, and other financial indicators. But bankruptcy happens when the management ignores the internal control system and attentive investigation of its financial statistics. So it is commendable to add here that managerial psychological competence and effectiveness play a very fundamental role in order to get relieve from bankruptcy or evade such circumstances. Financial knowledge and its optimal use is the biggest challenge of the firm managers in this fast growing world. According to researchers the young firms are found to lack the above abilities in their management. Moreover those who are old are not able to adapt according to change in the environment and are prevented from timely decisions. Therefore such aggressive or reserve decisions due to managerial psychological proficiency issues take firms to face bankruptcy.

This study will be able to find reasons behind the behavioral costs by firms' preference towards debt over equity financing, reasons for not paying dividend, change of policies by firms during the time of crises. Current study has targeted and explored the determinants of four major firm decisions i.e. Investment, Financing, Dividend, & Asset Management Decisions. Literature in behavioral finance enlightened the grey areas of managerial decision making. In this regard behavioral biases of managers are of due importance. Many organizational managers with overconfidence bias avoid debt financing because they feel it as less costly than equity and select suboptimal capital structure. They further decide to discourage dividend announcements due to same fear and prefer self source financing for investment decision. This in turn might affect the asset management and led the firm to face shortage of cash in future and bring the firm to same stage which they were trying to avoid i.e. In order to cover the shortage of funds they do debt financing and create sub optimal capital structure. As overconfidence of managers tend to

overestimate the cash inflows and underestimate the cost of the investment from the investment decision and prevent dividend announcements which might signals negatively towards the stock price of the firm Kidd, (1970); Garbarino & Sherman, (1980); Hall, (1982); Heath, Larrick, & Wu, (1999); Lovallo & Kahneman, (2003); Gervais, S. (2010). According to Barnes (1976) & Schwenk (1984) managers under overconfidence bias might discount the possible negative outcomes and the uncertainty. Resultantly they underestimate the risk linked with their decisions Hogarth (1980); Barnes (1984); Schwenk (1984); Cooper, Woo & Dunkelberg (1988); Shaver & Scott (1991); & Deshmukh, Goel & Howe, (2013). On the other hand findings from behavioral finance imply that executives/managers sometimes may also be the target of ambiguity aversion bias. They exhibit corporate policies compassing low leverage ratio, low investments or investments with low risk and ultimately lower returns, higher dividends and enormous profitability aim but with less focus on capital and research and development (Chen, Chin & Liu 2009). Though few researchers including Sturdivant, Ginter & Sawyer in 1985 have previously established that conservatism bias tend the senior management to take such decisions which prevent the organization to reach optimal profits plus they are less prone to focus on corporate social responsibility. Therefore conservatism bias partially throws in its part for less profitable results of firms.

Extending the inquest toward the grey areas of bounded rationality of managers for developed and under developed countries it has been observed that the concept of risk perception remains incomplete under the behavioral decision theory, where previous studies restricts the analysis risk perception of managers to only risk aversion or risk neutrality and ignores the study of risk seeking behavior in financial decision making (Fiegenbaum, 1990). Williams & Noyes in 2007 found that different managers may perceive different level of risk in the same decision situation

under some biases. They further said that effect of risk perception on managerial decisions making can be understood by focusing on the way the risk information is communicated and received by an individual. In this regard it is paramount to focus on all other factors which further affect the risk perception. Keeping in view of above findings by previous scholars' impact of organizational culture on managerial risk taking behavior, the uncertainty avoidance cultural dimension of Hofstede (1984) has been targeted in this thesis work. This study is advancement toward behavioral decision theory in connection with risk perception theory and theory of culture. Where risk perception of manager and its culture will be the determining factor of manager's behavior. These decisions of firm may have micro as well as macro affects on the economy (Johnstone, 2018). Current study brings into light the above mentioned problems which revolve around these behavioral biases.

1.12 Objectives of Research

- To investigate impact of behavioral biases (Overconfidence Bias & Ambiguity Aversion Bias) on manager's decisions (Investment, Financing, Dividend, and Asset Allocation).

- To investigate behavioral biases (Overconfidence Bias & Ambiguity Aversion Bias,) relation with manager's risk perception.

- To examine mediating role of manager's risk perception between behavioral biases (Overconfidence Bias & Ambiguity Aversion Bias) and manager's decisions (Investment, Financing, Dividend, and Asset Allocation).

- To investigate moderating role of cultural value (Uncertainty Avoidance) between behavioral biases (Overconfidence Bias & Ambiguity Aversion Bias) and manager's risk perception.

- Culture should no longer be treated as exogenous to fiscal models but be integrated in the notion of decision making, in order to encourage the expansion of more accurate estimations of managerial behavior pertaining to risk.

1.13 Contribution to existing research

- This study provides a detailed explanation of decision making process through theory and framework and creates a better understanding of challenges faced by the firms while making decisions.

- The study put forward innovative foundations of integration between the existing theories and fulfilled the gap present in the decisions theory from psychological and risk and cultural perspective in finance.

- The study has introduced a new path in behavioral decision theory that adds substantial knowledge toward the work of Daniel Kahneman and Amos Tversky.

- This thesis digs out the ground realities of risk seeking and averse behavior of managers for making firm's decisions in the light of Simon's bounded rationality and proposed a ground breaking model of behavioral cost which firms bear in the form of suboptimal decisions.

- This study contributes the integrated model of behavioral decision theory, Risk perception theory and cultural theory i.e. it brings a combined framework of behavioral decision model pertaining to risk so that the ground realities of the problems faced by firm's managers can be solved both in developed and underdeveloped countries.

- 4. Does Manager's cultural value (Uncertainty Avoidance) moderate the relationship between Behavioral Biases (Overconfidence Bias & Ambiguity Aversion Bias.) and Manager's Risk perception?

- 5. Does Manager's cultural value (Uncertainty Avoidance) moderates the relationship between Behavioral Biases (Overconfidence Bias & Ambiguity Aversion Bias and Firm Decisions at high/low value of Risk perception?

1.15 Work Plan

This thesis work is comprised of five main chapters. Chapter one is composed of historical background, overview, definitions, gap analysis and rational of the study, which is followed by significance of the study, theoretical Significance of the study. The subsequent chapter two comprised of literature review. Chapter two is further divided into sub parts starting from details about the bounded rationality, behavioral decision theory and cognitive biases (overconfidence bias & ambiguity aversion bias). This part advanced literature for cognitive biases (overconfidence bias & ambiguity aversion bias) and agent risk perception for both Pakistan and USA firms. Literature in this subdivision advance the knowledge by giving details about direct relationship between agent risk perception and managers decisions (financing, investment, dividend & asset management) and the mediation of agent risk perception between cognitive biases (overconfidence bias & ambiguity aversion bias) and manager's decisions (financing, investment, dividend & asset management). The subsequent part give detailed review about moderating and the moderated mediated role of cultural value (uncertainty avoidance) between two cognitive biases (overconfidence bias & ambiguity aversion bias) and mediator agent risk perception. Literature review is followed by theoretical framework along with summary of all hypotheses.

Next chapter three consists of methodology with subparts including research design, population, sample & data collection, procedure and demographics details, measures used in the investigation, equation, determinants of firm's financial decisions and expected parameterization. Third chapter also covers measures validity through particulars of discriminate and convergent validities under confirmatory factor analyses. The fourth chapter has details of results and discussion comprising of descriptive statistics and correlation analysis. This part is expanded by adding analysis including mediation, moderation and moderated mediation using Hayes (2013) process.

The fifth chapter covers results and discussion on those results, which continued to give contribution of work and limitations of the study. The last part encompasses future directions and conclusion. At the end references, tables, and questionnaire is given.

CHAPTER 2

CHAPTER 2

LITERATURE REVIEW

Traditional finance considers managers to be rational in their decisions however the traditional finance completely ignores the key aspect of human's personality in their decisions making. Behavioral finance proposed the role of bounded rationality of mangers in their decision making on behalf of firm (Tomak, 2013). This research work is a collaboration of behavioral finance and manager's risk perception in a corporate environment. Managers are often slogan as corporate agents of decision making on behalf of corporate owners. Sometimes their unfolded behaviors i.e. biases may affect the underlying decisions taken by them. These biases are further categorized into emotional and cognitive biases. According to Stateman in 2005 managers were normal in 1945 and they are also normal today rather than being rational as defined by the standard finance. Other researchers in this regard have confirmed enormously through their work i.e. Kahneman, Slovic, & Tversky (1982); Palmarini (1994); Gigerenzer & Goldstein (1996); Olsen (1998); Olsen & Khaki (1998); Shefrin (2000); Shefrin (2001); Warneryd (2001); Nofsinger (2002); Bazerman (2005); Shefrin (2005); Pompian (2006); & Ricciardi (2006).

Current research work targets the cognitive irrationalities of executives as suggested by scholars mentioned above while making financial decisions. Daniel Kahneman & Amos Tversky in 1974 introduced the idea of cognitive biases where they explained that managers while making decisions are exaggerated by number of cognitive biases which in turn influence the consequential outcomes for organizational betterment. Researchers have worked in the area of behavioral finance in order to explore those biases and also ways to overcome those biases. Shefrin, in 2000 categorized the biases and explained them i.e. cognitive biases signify the organization of information by people while emotional biases categorized the biases dealing with

emotion and feelings of people (Shefrin, 2000). Moreover Olsen in 2001 clarifies about the behavioral decision makers that they decide about things to reach the satisfaction level rather than optimization of utility. In this context efforts have been made to confirm various firm's issues concerning behavioral theory in the light of risk perception and cultural factors affecting risk perception This study integrates both areas and outlined a framework consisting of behavioral decision theory and risk perception theory for financial decision making under cultural distress. A brief review of previous work done by researchers is as follows.

2.1 Behavioral Decision Theory & Cognitive Biases

Behavioral decision theory under extensive academic history states that managers may deviate from the systematic pathways of economic rationality by miscalculating (under or over estimating) probabilities of decision choices due to some non economic factors. Researchers who worked on the area includes Edwards (1954); Slovic (1972); Slovic; Fischhoff & Lichtenstein (1977); Einhorn & Hogarth (1981); Kahneman, Slovic & Tversky (1982); Slovic, Lichtenstein, & Fischhoff (1988); Plous (1993); Weber (1994); Mellers, Schwartz & Cooke (1998); Shefrin (2001); Warneryd (2001); Gowda & Fox (2002); Bazerman (2005); Barberis & Thaler (2005); & Gooby & Zinn (2006). Behavioral decision theory has elucidated those aspects of humans which caused professional managers and executives to depart from rational choice during systematic measurement while making decisions for the firms. Moreover while making such choices managers are influenced by what they perceive in a given scenario or situation. This introduced the prominent role of bounded rationality for behavioral finance decision theory (BFDT). Bounded rationality explained by Simon in 1947, 1956 & 1997 states that decision making process of mangers is limited by their, unconscious reflex (biases), values (cultural), skills and habits. These limitations are especially concerned during decisions pertaining to risk and

uncertainty. Ricciardi in 2006 thus said that bounded rationality of economic judgements can better help the decision makers to work on the grey areas of firm in the progress and profitability as compared to constraints identified by traditional finance. The BFDT (descriptive model) established the notion of cognitive and emotional biases that have been overlooked by the assumptions of classical finance decision theory (normative science). Simon further give assumptions of bounded rationality for behavioral decision making i.e. manger's decisions are not fully rational due their bounded rationality, ii. Variation in excellence of decisions depends upon the dissimilarity in expertise of decision makers, iii. Performance based analysis are not enough to solve the problems it is crucial to bring into light the hidden aspects of cognitive limitations of the decision makers.

Researchers in cognitive psychology have identified a number of heuristics and biases that managers experienced in making judgments under uncertainty (Bazerman, 1994; Hogarth, 1980; Slovic et al., 1977; Taylor, 1975; Tversky and Kahneman, 1973, 1974; Walsh, 1995). Behavioral finance links biases to the decisions taken by managers on behalf of their organizations. Shefrin, defines bias is nothing else but the "predisposition towards error" (Shefrin, 2007). In other words, a bias is a prejudice or a propensity to make decisions while already being influenced by an underlying belief. There are many common biases humans exhibit including excessive optimism, overconfidence, Conservatism and Ambiguity Bias etc. In addition to biases, managers often make decisions by engaging in other forms of psychological influences (Shefrin, 2007). Behaviorists in the area of finance are putting their efforts to bring solution to the problem where another field i.e. culture is has acquired significant value. Yates, Zhu, Ronis, Wang, Shinotsuka, & Toda, (1989) supported by quoting that Chinese culture is very different from U.S. culture and culture can breed overconfidence at varying levels (Yates, Zhu, Ronis, Wang,

Shinotsuka, & Toda, 1989). Some evidence also exists that suggests that people raised in Asian cultures exhibit more behavioral biases than people from the United States (Yates, Lee, & Bush, 1997). Perhaps there is still need of detailed view of cultural variations among the executives which may change the relationship between financial behavior and risk perception of managers. Managers while making firm decisions are known to rely on a few judgmental rules, or heuristics, to simplify complex decision situations. Although these rules are often necessary and useful, they also introduce cognitive biases that can lead to severe and systematic errors in decision making (Kahneman et al., 1982).The choices of an individual who conforms to the axioms can be described in terms of utilities of various outcomes for that individual. The utility of risky prospect is equal to the expected utility of its outcomes, obtained by weighting the utility of each possible outcome by its probability. When faced with a choice, a rational decision maker will prefer the prospects that offer the highest expected utility (Teversky & Kehneman, 2011). Daniel Kahneman and Amos Tversky introduced the idea of cognitive biases, and their impact on decision making, in 1974. Their research and ideas were recognized when Kahneman was awarded a Nobel Prize in economics in 2002. Konow, (2000) worked in line with cognitive dissonance theory and found that investors may be biased while making cognitive decisions. In this way they may allocate the resources improperly resulting into losses (Konow, 2000). Broadly speaking these biases and behavioral psychology imprison the imagination of business experts. Researchers found that few biases still remain in the system even when the individuals are aware of their existence. This situation may affect the strategic positioning and choices of the company and it is still not fully understood by the explorers. Following are some of the important Cognitive Biases which may affect executives' decisions.

2.1.1 Overconfidence Bias

An overconfidence bias is seen when somebody relies too much on his own judgment, foresight and abilities. Managers/ Executives overconfidence may lead them toward wrong decisions. Such biased decisions may result in negative performance results of the firms. David, Graham, & Harvey, (2007) work on overconfidence bias of executives and found that overconfident executives overinvest, follow small discount rates for cash flow valuation, less expected to pay dividends, utilize more long term debts then short-term with high debt ratio (David, Graham, & Harvey, 2007).

2.1.2 Ambiguity Aversion Bias

Decisions with unknown outcomes may results into ambiguous or imprecise situations. Ellsberg (1961) in this regard quoted that decisions under such circumstances are with ambiguity aversion bias with the intension of risk aversion. Later on other researchers including Camerer & Weber (1992) coined the idea of probabilistic ambiguity of ambiguity averse managers. Which they try to avoid pertaining to decision under consideration. Ritter, (2003) added to the literature that when things change, people might under react because of the ambiguity bias.

2.2 Behavioral Biases and Manager's Decisions

Literature has numerous support evidences for behavioral basis and their impact on managerial decision making. Behavioral Finance helps to understand the market inefficiencies in a detailed manner. Decision can be defined as the course of action involving selection of a particular option from a number of alternatives (Hemanathan, 2011). Alson (2006) quoted that behavioral finance make easy to better value and forecast results due to psychological progression of decision-

making. Rostami & Dehaghani, (2015) quoted the evidences from Kahneman and Tversky (1979), Shefrin (2000), Bron and Skoboard (2007), Foacan (2010), & Zayane (2010), that behavioral finance is study of psychological effect on managerial decision making. These judgments in turn might results into firm's growth in productive or hazardous way. David, Graham, & Harvey (2009) argued that overconfidence bias leads managers to put up aggressive decisions including large investments and high leverage and vice versa happens in case of conservative managers. Current investigation focus on the influence of cognitive biases on financial decisions made by financial managers from standpoint of risk while observing the moderating affect of cultural values. Management takes four major types of financial decisions in order to maximize the wealth of shareholders. The risk perception theory and cultural theory are harmonizing in research combining them may improve the predictive and explanatory value of behavioral decision theory of executive risk-taking.

2.2.1 Manager Financing Decisions

Financial decisions of firms are very essential element of managerial decision making. Managers face diverse challenges at agency while making financial judgments. Woiceshyn, (2009) suggested that in order to handle these challenges and making the right decisions managers should encompass creative knowledge and spontaneous skills. Prior to these findings Das & Teng, (1999) found that heuristic biases are closely associated with manager's decision making, which means that these biases operate as proxy for creative knowledge and intuitive skills (Das & Teng, 1999). Bias is defined by Shefrin, (2007) as "predisposition towards erros" (Shefrin, 2007). This has started new dimensions of research targeting managerial market imperfections (Sanvicente, 2011). Previously capital structure theories were based on the basic data oriented evidences including details from agency theory. But after the introduction of human psychology

it is evident that managers are subject to some heuristics biases while making capital structure decisions (Azouzi and Jarboui, 2012). Ever since the influential work of Miller & Modigliani (1958) the behavioral finance (BF) approach have revealed useful results in the process of solving decision-makers' behaviours and thoughts

2.2.2 Manager Investment Decision

Rational Managers are well aware of basic goals and purposes of firms in which they are working. Under this rational approach manager's investment decision is stimulated by three basic objectives: (i) wealth maximisation (ii) liquidity position perpetuation; and (iii) risk minimization (Obamuyi, 2013). Somil (2007); Chandra & Kumar (2008); & Bareney & Hasterly, (1996) elaborated that Capital budgeting is the process which help the firms to decide how to invest capital in any new project, reassess the already running project, allocate capital across various divisions, and acquire other firm. It can be said that capital budgeting represents firm real assets which tend to generate cash flows, profitability and firm value.

Ghayekhloo (2011) had formerly stated that investment decisions of managers should aim principles of maximisation, self-interest and consistent choice. Researchers confirm the thought that whenever managers/agents deviate from key objectives their company, they had faced a huge downturn. Shiller in (2000) pointed out that many experts like managers were actively participating in the market just before its peak in March 2000. Where, within a very little time phase of early 1998 stock prices of IT firms raised indefinitely followed by a massive collapse in March 2000. This crash of speculative bubble raised queries that what factors cause managers to participate in this risky situation of forthcoming collapse. In order to find the contributing factors toward such judgments, behavioural finance has previously established biases phenomenon which may cause managers to act differently from balanced pathway (Kahneman and Tversky

1979). Malmendier & Tate, (2005) confirmed by adding that executives' personnel psychological characteristics are more relevant to corporate investment decisions. Taking into consideration the previous research current study targets biases (Overconfidence & Ambiguity Aversion) to investigate their impact on managerial decisions. Detailed review of earlier work for each comparative will enhance the comprehension.

2.2.3 Manager Asset Management Decision

In accounting asset management symbolize firm's liquidity position it is known as the difference between the current assets and current liabilities of a particular firm. Asset management decisions cover cash, inventory and receivable management under its umbrella. Maintaining a balanced sum of working capital is a serious challenge for managers while maximizing shareholder's wealth. Where excess accumulation leads to put potential assets idle and their ready unavailability makes liquidity constraints for the company at time of need. It is evident from previous literature that improper asset management decisions leads firms towards bankruptcy and real crises e.g. Smith & Warner (1973); Berryman (1983); Dunn & Cheatham (1993). Asset management has been studied by scholars in detail pertaining to its basic characterises. While its behavioural aspects has been greatly ignored (Belt and Smith, 1991). This contemporary thesis work targets particularly behavioral phases of managers while making asset management decisions for their firm. Executives' decisions related to asset management and their ultimate impact upon firm from bias perspective has been explored by Kahneman, Slovic, and Tversky (1982). In their study, Kahneman, Slovic, and Tversky examines manager's strategies and decisions concerning asset management in Nigerian firms via dividend payments, variance in earnings, and variance in net assets. They further added that for working capital judgments it is imperative to focus risk management factor of managerial decision making.

2.2.4 Manager Dividend Decision

Dividend decisions of managers cover the payout policy with respect to size and pattern of cash distributions to shareholders. Miller and Modigliani (M&M) (1961) augmented the literature by arguing that keeping perfect market assumption alive firm's dividend decisions are irrelevant to its value. Lintner's (1956) found that dividend decisions are mostly influenced by past dividend announcement patterns and future possible income. Baker, Farrelly, & Edelman (1985), Farrelly, Baker, & Edelman (1986), Pruitt, Stephen & Gitman (1991), DeAngelo, & Skinner (1992), Benartzi, Michaely, & Thaler (1997), & Baker & Powell (2000), also supported Lintner's efforts. Brittain (1964, 1966) and Fama & Babiak (1968) worked on Lintner's model to confirm the way managers make dividend decisions. Their results supported Lintner's view that managers choose to follow a constant pattern of dividend payments and are hesitant to raise dividends to a point that the firm cannot uphold. Black (1976) presented the concept of "dividend puzzle" by arguing that absence of rational choice in manager's dividend decision is because of underprivileged awareness of dividend policy. Shefrin & Stateman, (1984) put forward a new description of this puzzle of dividend payment by elucidating presence of biases in managerial decision making. Baker & Wurgler (2004) introduced this dividend premium puzzle as a measure of mispricing. This measure is defined as the differentiation among the dividend payers and non-payer's standard market-to-book ratio. Baker & Wurgler revealed that mispricing leads the existing payers to be overvalued at the time when company starts to pay them dividends, this in turn is followed by drop off in their performance in contrast with non- payers. Later researchers also confirm the work of Baker & Wurgler i.e. Denis and Osobov (2005), Ferris et al. (2005). Neves & Torre (2006), Li et Lie (2006), Ferris et al. (2009).

2.2.5 Overconfidence Bias and Manager Decisions

2.2.5.1 Overconfidence Bias and Financing Decisions

Literature is endowed with evidences about financing decisions of managers affected by overconfidence bias. Shefrin, (2007) give insight into the theory of bounded rationality by arguing that overconfidence bias may conserve managers from making optimal capital structure. Experts have given enormous explanations on the idea of overconfidence bias and it impact on managerial decision making e.g. Heaton (2002), Hackbarth (2004). Researchers have found that managers' decision's outcomes contradict each other due to behavioural biases. Uckar in (2012) discussed the challenges faced by managers in corporate shares valuation. This assessment occurs via the market value, this stage of valuation triggers problem of mispricing and leads to possible errors in understanding cost of capital and ultimately investment project's decisions. In addition to this these overconfident managers undervalue stock prices and prefer to go for debt financing for these projects and increase debt ratio on part of the firm (Uckar, 2012). Hence overconfident managers prefer high debt and they are prone to increase debt in future. Leverage is considered as debt burden of firm and it raise the risk of bankruptcy in future this ultimately increases the required rate of retune by investors. In this concern Barros & Silveira (2008) investigated the rationale behind high leverage preference under managerial decisions, these behavioral experts found that managers with overconfidence bias are more prone to support leverage by increase of debt financing. Hackbarth (2004) & Oliver (2005) supported the thought by confirming positive significant relation between capital structure of firm and manger's overconfidence. Shefrin (2001) & Heaton (2002) coined the findings of Uckar (2012) quoted above by adding that overconfidence bias results into managers suboptimal capital structure

decisions and less payment of dividends. This verdict pertaining to dividend decisions has been also connected with other researcher's findings in the last section.

2.2.5.2 Overconfidence Bias and Investment Decisions

Earlier research has established enormous statements regarding overconfidence bias of executives where it was found that in case of funds availability overconfident managers overvalue returns from their investment decisions. On the other hand in case of shortage of funds these executives are hesitant to issue new stock because of fear of undervaluation by the market (Roll 1986). Malmendier & Tate, (2005) supported the thought by arguing that overconfidence bias lead managers to overvalue their investment returns and induce them to envision outsourcing of funds unduly costly. In this way these equity dependent firm's managers made their investments more sensitive to cash flow (Malmendier & Tate, 2005). Ukar, (2012) supported by adding that managers erroneously considers the target projects to be of positive value which in realty have negative NPVs. This ultimately negatively affects the profitability and firm value which raised agency issues among managers and shareholders. Liu and Taffler (2008) added that firm's mergers and acquisitions decisions are taken more frankly by overconfident CEOs as compared to the rational CEOs.

Research further augments the awareness by introducing the concept of "better-than-average" from social psychology study, where managers desire to inflate their expertise relative to average. Literature tends to link this concept with the assumption that overconfident managers expect too much from new investments (Larwood & William, (1977); Svenson (1981); Deshmukh, Goel, & Howe, (2013). Researchers has given massive evidences on managers overconfidence and firm decisions including investment, financing and dividend decisions, most of them supported the idea that overconfident managers tend to overestimate the future cash

flows of their firms by underestimating the volatility attached to their cash flows moreover these mangers overweight the market signals to the information (Shefrin 2001; Heaton, 2002; Gervais, Heaton, & Odean, 2005; & Hackbarth 2006). Researchers including Malmendier & Tate (2005); Ben-David, Graham, & Harvey (2007) are in support of this notion that overconfident managers tend to overestimate return on investment projects and underestimate the cash flows expected in future. This inspiration leads them to select lower discount rates in the valuation of their investment decisions.

2.2.5.3 Overconfidence Bias and Asset Management Decisions

Kunda in (1987) put light on the importance of asset management decisions and added that working capital management can contribute to distinguish among superior and underprivileged performance firms. Future positive cash flows can contribute to mitigate external financing and ultimately increase dividend payments. Sloan in 1996 said that earning management can be used as a tool to mystify investors and to attract them to invest in overvalued stocks which can assist to augment share price (Sloan, 1996). Nofsinger (2003) put forward the findings that overconfidence bias causes managers to underestimate the risk factor attached with cash, inventory and account receivable. He further added that overconfidence can cause managers to exaggerate their abilities and skills to better analyse the situation. Literature further incorporate the details that overconfident managers are daring toward asset management and reserve approach as they prefer to utilize firm's inside funds more candidly by overestimating the future performance of firm. Nofsinger adjoined that managers are provoked to do this action by the belief that their firm worth is undervalued in the market.

Deshmukh et al. (2013) in his study ultimately established that firm's low cash flows and dividend payments are positively related in the presence of overconfident managers. Shah, Hui

and Zafar (2010) found that earning management decisions in Pakistan and China are independent of dividend policy of their firms, so conversation about dividend policies and their impact on asset management will be of less worth. Madhou et al. (2011) believed that overconfident managers are more prone to debt financing and mostly invest in overvalued projects, in doing so they invest in projects with negative NPVs. He further said that overconfident managers tend to maintain low inventory levels, high receivables and low cash holdings. Following this Ullah in (2017) maintained the assumption that overconfident managers have negative impact on asset management decisions of firm. Heaton in 2002 concluded that managers prefer to use inside funds of the firm and ultimately reduce the asset management balance (Heaton, 2002). Malmendier and Tate (2005) supported the results and established the thought that overconfident managers see external financing more expensive because of perception about firm's low market value.

2.2.5.4 Overconfidence Bias and Dividend Decisions

Bhattacharya (1979) provided the dividend signal theory which states that dividend announcement provides signal of the "insider's" expectation of the company's potential performance. Michaely (2003) stated that investments and financial decisions can be better understood by learning about the corporate payout policies. De Angelo et al. (2008) added in this direction that firm's dividend policy is mostly influenced by the manifestation of capital structure and future income. They further argued that although dividend decisions are concluded based upon free cash flow, profitability, future earnings, low agency cost, firm's security valuation but behavioral biases particularly overconfidence bias has a first order impact upon dividend decisions De Angelo et al. (2008). Ben-David et al. (2007) suggested that managerial overconfidence leads the managers to overinvest in undervalued investments, maintain cash

balance and tend to pay fewer dividends. An executive with respect to dividend decisions may be affected by various aspects of cognitive biases i.e. overconfidence bias etc. Chen, Zheng, &Wu in 2011 worked on dividend policy and found that there exists negative relationship between overconfidence of executives and dividend policy. They further added to knowledge that this relation is catalyzed by cash flow position of the firm (Chen, Zheng, &Wu, 2011). In addition to the above research work; Hirshleifer, Low, & Teoh, (2010) quoted that decisions of overconfident CEOs bring more risk to the firms because of their biased behavior. But on the other hand such firms have their investments in innovative projects and they achieve more patents and citations of patents (Hirshleifer, Low, & Teoh, 2010). Deshmukh, Goel, & Howe (2009) also found that overconfident and optimistic managers tend to pay fewer dividends with the preference to invest money in various projects. Cordeiro in 2009 worked on dividend and managers biases, through his results he supported the findings of De Anglo et al. (2009) in a very clear manner said that managers who are more optimistic about their company's future cash flows are inclined to avoid dividend payments to shareholders so that the money can be used in investment projects (Cordeiro, 2009). Deshmukh et al. (2009) established the statement that optimistic CEOs respond less positively toward dividend increase as compared to traditional CEOs. He further simplified the understanding by adding that firms with overconfident managers pay low dividends to the owners (Deshmukh et al. 2010).

2.2.6 Ambiguity Aversion Bias

2.2.6.1 Ambiguity Aversion Bias and Financing Decisions

Debt agreements are composed of leverage, interest reporting which come into subsistence by descends in firm value. Debt contracts are more sensitive to decrease in firm value than increase

in firm value as compared to equity. Consequently, gains and losses of firm are taken unevenly by the decision makers in debt and equity situation (Smith and Warner 1979). Timely recognition of loss help the managers to lighten debt without making any change in dividend or stock repurchase, such decisions may increases debt contracts usefulness through well-timed review of earnings and book values of assets, leverage and earnings based ratios. Debt markets view firm relationship between financial ratios and share prices which are with integrated information. As information may help managers to timely violate the contracts and cause lenders to prohibit loss making mangers from making further poor debt quality, risk oriented investments and acquisitions, further borrowing, dividends and stock repurchases Gilman (1939), Jensen & Meckling (1976), Smith & Warner (1979), Leftwich (1983) Watts (1977) and Holthausen &Watts (2001). Penman & Zhang, (2002) stated that the information asymmetry affect mangers ability to anticipate the risky circumstances. Current study targets the relationship between financing decisions and ambiguity aversion bias. Ambiguity aversion bias in connection with financing decisions has which has been ignored by empirical studies. Titman & Wessels (1988) worked on the said relationship found that how ambiguity aversion bias affect the capital structure decisions of firms. Taking their work along Agliardi, Agliardi, & Spanjers (2016) further explored the idea and found that ambiguity averse managers go for high leverage /debt decisions by highly scaling the volatility of asset. Other researchers including Giammarino & Neave, (1982), Nachman & Noe, (1994) also worked previously on the same relationship and quoted that managers will prefer high debt over equity if their ambiguity aversion bias is high. Hackbarth, (2008) in this regard further adjoined the findings that high ambiguity averse biased managers will avoid equity financing and prefer debt and follow a pecking order pathway.

2.2.6.2 Ambiguity Aversion Bias and Investment Decisions

Literature is evident with enormous work by previous authors regarding ambiguity aversion bias and its impact on managerial decisions. According to Ellsberg (1961) ambiguous situations are often with unknown or uncertain probabilities i.e. they are different from the risky situations having known but low probabilities. Savage (1954) findings match with thoughts of decision makers under expected utility theory where managers prefer risky over ambiguous situations. But bounded rationality theory explains that due to ambiguity aversion bias unknown probability situations prevent the managers to take decisions and ultimately cause them to under react toward the investment projects. The efforts of Ellsberg on ambiguity averse behavior of managers has given new pathways of research in the area of ambiguity aversion bias. Literature shows that despite the benefits present in the investment ambiguity aversion bias of managers prevents the decision Easley & O'Hara (2009). Researchers in twenty first century come up with novel research on the mangers investment behavior, in their effort to elucidate the notion Ball (2000), Ball et al. (2003) and Ball & Shivakumar (2005) quoted that managers who make deficit NPV choices in the past, their biased behavior may cause them to under value investment opportunities in the future and ultimately these managers will be yet again more prone to confirm bad assessments and choices. On the other hand past situation of losses can lead the managers to better understand and decide about new investments and acquisitions. Many lab experiments also conducted supports the idea that ambiguity aversion bias leads mangers to avoid ambiguous investments Hoy et al. (2013). Thaler & Johnson (1990) presented the concept of house money effect which also matches the idea prospect theory that prior loss outcomes make organizations more risk averse while gains make them less loss averse. Ritter (2003) connect this thought by adding that managers are more concerned for money they earn with efforts in comparison with the money they get effortlessly.

Charupat & Deaves, (2003) explained that this concern makes these, mangers more concerned toward sure investments than the others. Bertrand & Mullainathan in the same year worked on the investment decisions of firm managers and found that those executives who favor to have an uncontested situation at work they will circumvent making decision about investments (Bertrand & Mullainathan 2003). This action of executives is exemplified by Barberis & Thaler (2002) as a way to counteract risk of loss. Therefore the risk of loss compel ambiguity averse managers to not to invest in projects even with positive returns. Leuz, (2001); Watts, (2003); Guay & Verrecchia, (2006) elucidate the direction of relation between investment decisions and ambiguity aversion bias of managers. According to the authors managers under the said bias sacrifice positive NPV projects and dysfunction spirit of investments. Authors found that firm's returns are characterized by high volatility where managers have small investment prospects, this ultimately established negative relationship between ambiguity aversion bias and firm investment decisions.

2.2.6.3 Ambiguity Aversion Bias and Asset Management Decisions

According to Gao amangers's conservative behavior towards asset management act as safeguard for other management decisions (Gao, 2013). Beaver & Ryan, (2000) use book to market ratio and accruals as measure of accounting conservatism. Givoly & Hayn, (2000) used inventory, research and development, and advertising reserves as measures of asset management. It is further evident by the researchers asset management helps firms to save from problems through timely recognition of bad news and ultimately reduces information asymmetry (LaFond & Watts, 2008; Li, 2008). Watts (1977) also supported the thought that asset management and its reporting act as a surrogate of managers forecast through timely reporting of bad news. Therefore asset management act as a very important factor of financial system of a firm (LaFond and Watts,

2008). Ahmed et al., (2002); Moerman, (2008); Zhang, (2008); LaFond & Roychowdhury, (2008); Lara et al, (2011); & Caskey & Huges, (2012) assured that accounting conservatism bias can contribute to ease the matters between borrowers and lenders and it also help to decrease cost of capital. Bucher, et al (2014) studied the role of behavioral biases for asset management decisions of corporate managers where they added that ambiguity aversion bias of managers is negatively related with long term investment decisions while positively linked with the asset management decisions of firm. i.e. ambiguity aversion bias cause the managers to raise cash holding on behalf of firm so as to meet the liquidity requirements. Epstein & Schneider,(2010) in this regard elaborated that managers do so because due their ambiguity aversion bias they expect less from capital investment decisions in return. Therefore they prefer to raise cash holding which depicts their fear about the future uncertainty. Bucher, et al (2014) also found that the macroeconomic effect of ambiguity is of due importance which cause the managers to raise short term funds so as to cope with the increased risk with their capital expenditure decision. Current study extends the knowledge by exploring the impact of ambiguity aversion bias on firm decisions in the light of mediating role of risk perception of managers in Pakistan and USA.

Chen, Chin & Liu (2009) stated that mangers characterized by Ambiguity bias under react to the earning announcements. Fama & French, (2001) reported that since 1960s the propensity of firms to pay cash dividend has gradually declined as compared to repurchase option. Julio & David, (2004) further added that this trend has started to change progressively. As Easterbrook, (1984) said that cash dividend distribution play a positive role in firm performance. It was imperative to put light on the area from behavioral put view in literature. De Anglo et al. in 2009 presents the information related to behavioral aspect that dividend distribution to shareholder can act as a tool to alleviate informational asymmetry. Guay & Jarrad (2000) supported the idea by

arguing that dividends distribution transmits information concerning the future investments of the organization. Jensen (1986) argues that dividend payouts can help control agency problems by getting rid of the excess cash that could be spent on unprofitable projects.

2.2.6.4 Ambiguity Aversion Bias and Dividend Decisions

Dividend policies used by managers in order to announce and distribute the dividend are very important for firm value in short run as well as in long run. Dividend payment in case of low ambiguity aversion bias has been found to be true by researchers recently where Agliardi.et.al. (2016) quoted that less ambiguity averse managers find it more expensive to hold the idle cash in reserves than to pay in the form of dividend. So they prefer to follow a dividend payment policy toward the shareholders of their firm.

2.3 Mediation

2.3.1 Risk Perception

Previous studies are evident of the fact that situation based risk affect managerial perception about risk. Perception can be defined as the mental elucidation of physical sensation formed by stimuli from the outer world (Fischhoff, 1994). Whereas risk perception of people is affected by many factors including personalities, behavioral, attitudinal, and situational biases. Relationship between risk and personality factors has been not studied in detail previously but few authors have put light on the area from different standpoints. Cooper et al (2003) presented a model of risk perception which he shaped from findings of Luthans & Martinko, (1982) & Freid & Ferris, (1987). According to him risk perception is the interactive combination of situational, attitudinal and behavioral factors.
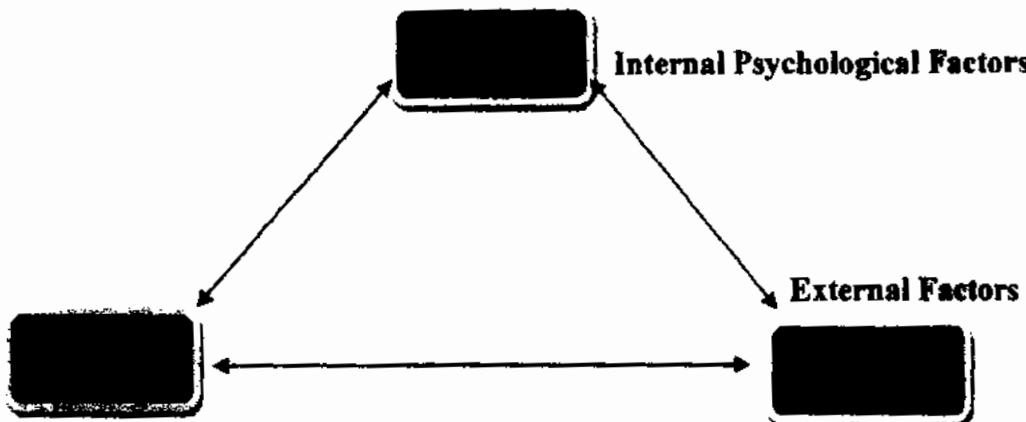
Fig 2.1: Risk Perception Model

Current thesis work is focused on the behavioral aspect of managers which in turn cause manager's risk perception to affect the firm decisions. This ultimately results into increase in difference in the decision making process i.e. Risk perception of managers is taken as a main factor to represent the behavioral decision theory.

Besides above this contemporary research work also articulates that it is manager's disposition or risk status which affects the risk perception. A better comprehension of the contributing factors can enhance the association between risk perception and decision made under the risk perception. Bromely & Curly, (1992) developed the idea that some people has high risk propensity while some has low toward danger. This propensity to take risk is determined by managers' perception of the situation about risk, past experience, and his personality. Studying risk perception under bounded rationality it is assumed that in the decision making process agents tries to minimize their downside risk (Gupta, 1987; Chatterjee & Lubatkin, 1990; Hill, 1988). Empirical evidence has provided mixed evidences with regards to behavioral decision theory's assumptions and managerial risk aversion, from finance and economics (Hoskisson 1989; Larcker, 1987; Walkling & Long, 1984). Literature is evident that behavioral decision

theory utilizes a narrow and conventional view of managerial risk taking, which reduces its

capacity to study the risk aspect of mangers explicitly. Linking behavioral decision theory and

bounded rationality of managers with theory of risk perception give rise to news path ways of

learning in the mentioned areas.

2.3.2 Behavioral Biases and Risk Perception

Interaction of behavioral finance in finance gives birth to the notion that managerial decisions

may be linked with riskiness. Demsetz (1983) added that manager's preference to be part of a

project may depend upon risk seeking or avoiding nature, he argued that managers simply enjoy

managing certain projects more than others. It is conceivable that managers who are risk seeking

would enjoy managing riskier projects, and hence will be more favourably disposed toward

riskier projects. Managers also may honestly overestimate their ability to manage certain kinds of

businesses, so they end up overinvesting in these types of businesses (Roll, 1986). This may also

lead them to select more risky businesses than the shareholders would be comfortable with. As

opposed to classical decision theory (Pratt, 1964; Arrow, 1971) it is essential to understand that

financial policies affect firms' policies to acquire or dispose off assets and needed funds to do so.

Studies have been made to explore the area of asset management where researchers found that

executives/CEOs sometime take risk by getting into deals-orders with depressing wealth grip. In

this way the executives show their over confidence in the deal.

Billett, & Qian, (2008) worked on CEOs overconfidence in managerial investment acquisition

decisions and finally concluded that such decisions are controlled by executives self attribution

bias which in turn are influenced by their overconfidence (Billett, & Qian, 2008). Risk taking

behavior of executives is studied by various researchers in detail arguing that risk taker

executives are normally overconfident. While on the other hand risk averse managers do not

invest in high positive NPV value projects due to risk related with them. Gervais et al. (2009) in this regard they build the theoretical relation between managerial conservative and compensation contract. They made the arguments that after the manager is hired, he makes the firm's investment decisions. While doing so risk averse managers do not invest in risky projects with positive value of return. In order to motivate managers to do the right decisions firms normally offer them incentives, but such incentives offered are normally low for the overconfident managers as they are already motivated to make risky decisions with higher returns (Gervais et al. 2009).

Investigators have given support toward the concept that strategic and risky decisions are influenced by cognitive biases (Coff & Laverty, 2001). Overconfident managers prefer to go for risky situations in investment decisions (Simon, & Houghton, 2003). Gervais, (2009) also worked on the overconfident manager's decision making and found that in capital budgeting decisions overconfident managers tend to overinvest and face negative outcomes.

Pursuing higher risk strategies by definition is implicated with the probability of poor outcomes. In case of poor outcomes but not failure of firm, a manager may face loss of job or he may behave conservatively toward project decisions. In fact, he practise strategies that condense his job risk (Amihud & Lev, 1981; & Gomez-Mejia & Baikin, 1992). Cooper, (1997) says that it is not true that every person lie homogenously on risk perception scale, different people perceive risk differently. Explorers have supported the idea by connecting this disparity to the behavioral biases Nicholoson et al. (2000). Fischoff (1992) step-in by tying up the notion to overconfident managers. According to Fischoff overconfident managers also try to mitigate risk but in doing so they underestimate the risk and this is the answer to the inexplicable incidents resulted due to the overconfident managers decisions. (Fischoff, 1992). Charness & Gneezy (2010) found that

ambiguity aversion and risk aversion are positively correlated. Bruguier, et al (2010) further supports the positive relation between risk perception and ambiguity aversion bias. Research supports that idea that in doing so manager's risk perception and behavior may be affected by cognitive heuristics (Slovic, Fischhoff & Lichtenstein, 1982). Diacon in (2004) also maintained that different conducts of judgments and thoughts known as heuristics give rise to cognitive biases which in turn affect the risk perception of managers. Barbosa & Fayolle, (2007) advanced the concept by quoting that affect of heuristics is opposite in direction towards risk perception and decision making which depends upon positive or negative frame in which the information is provided. Barbosa & Fayolle further clarified that the agent's risk perception and risk seeking behavior are negatively linked and labelled as negatively correlated whereas the relationship is positive towards ambiguity risk averse behavior.

2.3.3 Risk Perception and Firm's Decisions

Risk as belief refers to our inborn and spontaneous response to hazard. Risk analysis helps to put forward solutions, logical reasoning in decision making and estimation of risk (Peters et al, 2006). Risk may have a positive relation with investment decision in case of positive returns while it may be negatively related with investment in case of higher losses (Khan, 2015).

Previous researchers has found risk related decisions to be more linked with perceived loss probability as compared to the standard deviations estimates (Klos, Weber, & Weber, 2005). Kogan & Wallach, (1964) linked the idea that willingness of taking risk plays vital role risk related decisions. Researchers further signal the risk propensity as main factor to take or avoid risk in decision (MacCrimmon & Wehrung, 1990). Levitt & March, (1988) extended the knowledge by arguing that high perceived risk is negatively related with risky decisions. Where people try to link the risky situations with the negative consequences. Highhouse & Yuce,

(1996); Sitkin & Pablo, (1992); & Singh, (1986) in light of above also added that uncertainty and clench ability of results also construe risky decisions. Higher the uncertainty higher will be the risk of decisions.

Literary personnel including Krueger and Dickson, (1994); Sutcliffe, (1994) has emphasized on the relationship between risk perception and manager's decisions though with some inefficiencies. Sitkin and Pablo (1992) defined risk perception as a judgemental factor about risk in certain situations. This means risk perception is affected by the positive or negative framing situation of a problem along with the level of risk. Kahneman & Tversky (1979) devised that positive and negative framed situations cause risk averse and risk seeking decisions respectively. Sitkin and Pahlo (1992) also supported the Kahneman & Tversky above statement and added that above work is in consistency with the notion of negative relationship between perceived risk and risky decisions of firm managers. Investment decisions of managers are very crucial for firm performance where risk factor and manager's perception about risk cannot be ignored. Nosic and Weber in (2010) worked on managerial risk taking behavior and found that historical returns and risk figures are poor predictors than anticipated risk and return method. This thought has been confirmed previously by Drgoslav & Krasulja, (1998) with the argument that probability of a project's expected risk and return represents the risk inherent in that investment decision. Markowitz (1959) suggested that downside risk is of due importance in manager's investment decisions since they are more concerned with the loss than higher returns.

Riaz, & Hunjra, (2015) added information on the relationship between risk perception and manager's investment decisions by arguing that risk perception hold impact of manager's behavioural aspects for their investment decisions. Thus it can be said that risk perception play an important role in investment decisions affected by their behavioural aspects. Researchers also

expand their work towards capital structure decisions where they found risk as important factor in framing of firm's capital structure (Baum, Caglayan, & Rashid, 2014).

Work of Baum, Caglayan, & Rashid was previously confirmed by Myers and Majluf in (1984) where they found that higher debts may contribute negatively toward profitability of firm. As a result they concluded that profit earning firms tend to use internal sources for investments rather than raising debts and avoid risk of bankruptcy. Researchers also reinforced on the notion of firm's dividend decisions where Venkatesh (1989) increased the understanding by saying that dividend policy and risk has negative causal relationship while there exist positive relationship between leveraged capital structure and risk of firm.

2.3.4 Mediating Role of Manager's Risk Perception between Behavioral Biases and Firm's Decisions

Risk perception as an important determinant of behavioral finance factors have been studied by previous researchers. Ricciardi (2004) put forward an ample list of behavioral risk characteristics examined by researchers of risk perception in behavioral finance and accounting within a financial and investment setting. He also provides the specific behavioral risk indicators that were examined by researchers in these two disciplines i.e. 12 risk behavioral attributes (characteristics) within behavioral accounting based on 12 research studies for the time period of 1975 to 2003, and 111 behavioral risk indicators within behavioral finance for 71 endeavors for the time period of 1969 to 2002.

Risk Perception of managers is indispensable concern of discussion in the current uncertain atmosphere of business where agency problem is not ignorable. Kehneman & Tversky (1979) put forward the idea of prospect theory where they posit that positive and negatively framed situations tend to result in risk averse and risk seeking decisions respectively taken by the agents.

Later on Levitt & March, (1988) added that risky decision making is negatively related with high risk perception because managers/agents link risk with negative outcomes. While decisions carrying low level of risk are positively related to perceived level of risk. Boivie et. al in (2011) forced that executive's and manager's characteristics are very crucial mania to study for making an understanding of firm's strategic choices. Role of risk perception in firm decisions has been elaborated in detail where Schneider & Lopes, (1986) stated that risk averse managers overestimate the probability of loss over loss and weight negative outcomes. On the other hand risk seeking managers overestimate probability of gains over loss and weight positive outcomes. This standing of risk seeking and risk aversion of managers depicts their risk perception inherent in their decisions and ultimately signals towards agency problem (Brockhaus, 1980; Vlek & Stallen, 1980). It is obvious from previous literature that risk perception has immensely drawn attention of researchers because of its impact on managerial decisions through under or overestimation of risk by them (Bazerman, 1986; Roll, 1986; Slovic, 1972). Researchers also quoted that risk perception has an influence on managers ability to process their knowledge perceive risk differently (Monroe, 1976; Rao & Monroe, 1988). Various schools of thought supported the idea that risk perception of managers leads them to perform under risky situations depending upon how they perceive the risk (Allman, 1985; March & Shapira, 1987; Slovic, Fischhoff, & Lichtenstein, 1980).

Sitkin & Pahlo (1992) theorized about the mediating role of risk perception and proposed that managerial behavior regarding risky decision making was not a direct effect instead it is because of mediating role of risk perception. Where risk perception in part mediates the risk propensity of management which in turn prevents them from making fair judgements and ultimately generate agency conflicts. They further assumed that there is negative association between risk seeking

behavior and risk perception. Hamid et.al in (2013) connected the partial role of risk perception toward risk taking or risk averseness of managers. They extended their work and found that propensity to take or avoid risk in managerial decisions is dominated by psychometric factors. Researchers also extended the roots of research and found that risk perception play a mediating role in the relationship between manager behavioral biases firm's decisions in Pakistan (Riaz , Hunjra & Azam, 2012).

2.3.5 Mediating Role of Manager's Risk Perception between overconfidence and Firm's Decision

Managers employ cognitive beliefs in making firm financial decisions is evident from vast research in the area of behavioral finance, this thought was supported enormously by previous research including Sullivan in (1997). Sullivan said that decision process of managers is affected by their cognitive thoughts which in turn distress their behavior toward risk seeking or risk averseness. Risk management has been recommended by researchers as an important factor of managerial decisions pertaining to cash management, capital structure and discount rate decisions (Graham and Harvey, 2001). Some other scholars has also supported the role of risk and its impact upon financial, investment, asset management and dividend decisions e.g. (Smith & Thompson, 2007; Moosa, 2007; Abrams, et al, 2007; and Zheng & Shen 2008). Broihanne., Merli, & Roger, (2015) focused on the relationship between risk, agent's behavioral biases and risk perception and found that risk is positively related to overconfidence bias and negatively related with risk perception. Therefore it can be said that overconfidence bias is negatively related to risk perception of managers, and risk perception is further negatively related with investment decisions and positively related with capital structure decisions. This finding clarifies the mediating role of risk perception between agent cognitive behavior and decisions, and depicts

agency cost of firm. Corporate risk management in investment decisions is of due importance when survey in light of prospect theory (Kahneman and Tversky, 1979). Where manager's verdict toward healthy investment in terms of cost confirm risk far above the ground. Scholars have agreed on the mediating role of risk perception for overconfidence bias. Where Hackbarth in (2008) said that overconfident managers underestimate the risk of their firm and go for higher debt financing and ultimately face financial distress and leverage of firm. He further added that risk perception is negatively related with risk taking henceforth overconfident managers with low risk perception go for high debt levels (Hackbarth, 2008). Since personality traits and situational perception has been considered as determinant of risk related behavior of executives by Sitkin and Pablo in (1992). Consequently part of behavioral biases and mediating role of risk perception is on the right side.

In addition to above while talking about dividend decisions it is important to quote here that role of behavioral aspects of managers for dividend decisions was first introduced by Shefrin & Statman in (1984). Later on, Baker and Wurgler in (2004) proposed catering theory of dividends where they said that overpriced firm's managers are reluctant to discontinue payments while in case overconfident managers dividend payout is low. They further added that dividend payment and growth rate are negatively related and in case of overconfident managers dividend payout is less for both low and high growth levels. Henceforth it can be said that overconfident managers operate as a weak ingredient in the firm's growth. Corporate asset management is another aspect where agents may be the victim of behavioral biases & risk perception. Asset management decisions may pertain to cash, inventory, account receivable and account receivable management decisions (Belt & Smith, 1991). Authors have declared that liquidity position of firm shows the risk associated with financial crises (Tirole & Holmstrom, 2000; Naimy, 2009; Vanden. 2010).

Keeping in sight of above arguments regarding mediating role of agent's risk perception in firm's decision making under overconfidence bias it is worthwhile to mention here that firm decisions if not handled well can lead organizations toward unenthusiastic outcomes.

H1a. Risk perception mediates the relationship between Overconfidence Bias and

      Investment Decisions

H1b. Risk perception mediates the relationship between Overconfidence Bias and

      Financing Decisions

H1c. Risk perception mediates the relationship between Overconfidence Bias and

      Dividend Decisions

H1d. Risk perception mediates the relationship between Overconfidence Bias and

      Asset Management Decisions

2.3.6 Mediating Role of Manager's Risk Perception between Ambiguity Aversion Bias and Firm's Decision

Risk perception as a mediator plays another part in the relationship between ambiguity aversion bias and firm decisions. Sitkin & Weingart, (1995) focused on the risk related behavior of executives and said that risk perception is an important determinant of risk. On the other hand in ambiguity averse managers avoid the outcomes with uncertain/unknown outcome. As discussed above executives with ambiguity aversion bias has positive association with high risk perception. Researchers has enforced on the significance of risk perception for investment behavior of managers. Where they referred behavioral aspects of managers as defining factors of

the situation. Moreover high risk perception as a mediating factor causes them to demand higher discount rates for their investment returns (Singh & Bhowal, 2008). It is clear from previous literature that ambiguity averse managers may under estimate the value of their firm and may perceive high risk then they should and ultimately misinterpret the investment value. In addition to this scholars are of the view that biased managers take debt decisions different from the optimal judgments (Mac Crimmon & Wehrung, 1986). Work of Kocher & Trautmann (2013) also link in the same dimension i.e. according to them risk seeking and ambiguity seeking are related to each other. Butler et al (2011) ambiguity aversion bias and manager's perception about risk taking in the same direction. Researchers further suggests the mediating role of risk perception for decisions makers biased behavior. Literature has clearly defined the distinct nature of risk perception and ambiguity aversion bias. i.e. Sutter et al. (2013) added that there exist a moderate negative relation between the two. Researchers in this lure found that ambiguity aversion bias is achieved as a normalized differentiation between the certainty equivalents of ambiguous and risky situations (Cubitt et al. 2011, & Akay et al. 2012).

Vukovic & Mijic, (2011) extended the knowledge by working on ambiguity aversion bias and investment decisions. Vukovic & Mijic were of the view that manager's risk perception may prevent them from making investment decision and this may help them to avoid risk temporarily but may lead them to face uncertain future by not investing. Myers & Majluf, (1984); Deshmukh, Goel, & Howe, (2013) asserted it is obligatory for managers to decide among capital expenditures and dividend distributions. However, Rozeff in (1982) supported the decrease in dividend payments for firm' possible growth due to increased investment. Researchers added that ambiguity averse managers are of the view that greater growth will be associated with lower dividend payments (Skinner,1994; Hackbarth, 2008; LaFond & Watts, 2008).

H2a. Risk perception mediates the relationship between Ambiguity Aversion Bias and

Investment Decisions

H2b. Risk perception mediates the relationship between Ambiguity Aversion Biass and

Financing Decisions

H2c. Risk perception mediates the relationship between Ambiguity Aversion Bias and

Dividend Decisions

H2d. Risk perception mediates the relationship between Ambiguity Aversion Bias and

Asset Management Decisions

2.4 Moderation

2.4.1 Uncertainty Avoidance

Organizational culture and its impact on manager's personality have been presented by Geert Hofstede in (1980) in an organized and efficient manner. Through his work on the cultural values of IBM workers Hofstede found that organizational workers may diverge based upon six dimensional values i.e. masculinity versus femininity, collectivism versus individualism, uncertainty avoidance versus tolerance. Hofstede further updated the relevant knowledge in 2001 and 2011 through his work on culture. Current study targets the uncertainty Avoidance cultural dimension to explore its moderating effect on the manager's psychological values which in turn upshot firm decisions under the mediating role of risk perception. Hofstede in 1980 worked on the uncertainty avoidance cultural value and categorized the societies into uncertainty accepting and uncertainty avoiding societies. According to Hofstede in uncertainty accepting society

antagonism and conflict is controllable phenomenon under rules of fair play while the latter case i.e uncertainty avoiding society considers competition and conflict as destructive towards the formal structure and therefore should be avoided. Covin & Slevin, (1989) expanded the knowledge on the phenomenon by adding that organizations with more eagerness to interact with the environment augment the proactive firm behavior and therefore can be tagged as uncertainty accepting organizations. This can easily open the doors towards negative relationship between uncertainty avoidance and overconfidence bias while positive relationship with ambiguity aversion bias. Literature supports the idea by adjoining that executives welcoming uncertainty in cultures foresee outer environment full of opportunities as compared with uncertainty avoiding ones (Mueller & Thomas, 2001). Mueller & Thomas findings confirms the previously given work of Lieberman & Montgomery, in 1988 where they were also of the view that managers accommodating the uncertainty culture will prefer risky choices in contemporary marketplace thus supports the theory that proactive managers behaviours are negatively related to uncertainty avoiding cultural value.

2.4.2 Moderating and Moderated Mediating Role of Uncertainty Avoidance

Enormous literature is available in support of the role of cultural values in the relationship between cognitive biases, risk and financial decision making. In order to explain the affect of culture on the relationship between cognitive biases, risk and financial decisions Levinson, & Peng in (2007) held that psychological biases impact on the firm's decisions can be reduced to some extent by better understanding of the cultural stance of employees. Similarly many other investigators has worked and provided integrated model of culture and cognitive behaviors along with financial values outcomes. Cultural dimensions with respect to investment decisions have been studied by Siegel, Licht, &, Schwartz, (2010). The study elaborates how

cultural dimension among various countries affect the investment decisions taken by investors. Researchers found that when such experiences vary due to difference of culture it may affects the decision maker's risk behavior while making an investment decision (Statman, 2008). Different managers have different risk perception for the same decision because their culture is changing the biasness toward a decision. Tse, Lee, Vertinsky, & Wehrung, (1988) previously supported the theory by arguing that decisions of the executives from the People's Republic of China and Canada are significantly affected by Chinese culture where decisions made by the executives working in China actually from Hong Kong were more concerned for Chinese cultural values. Traditional and behavioral finance differ from each other based upon the stance of rationality, where traditional finance enforced on the presence of rationality in manager's decisions. Rational decisions of managers mean judgments having no room of difference in choice based upon the cultural values. Authors from modern finance argued on the traditional view and proposed that cultural variations may cause disparity in the rational choice of managers regarding risk taking, investment decisions including mergers and acquisitions (Hens & Wang, 2007). Authors have also confirmed about the negative effect of uncertainty avoidance on the prompt and proactive behaviors of managers' financial decision making (Kreiser, Marino, Dickson, & Weaver, 2010). This supports the current study that uncertainty avoidance is negatively related to overconfidence bias.

Role of risk perception and behavioral biases is obvious in managerial decision making but role of culture in firm's decision making under behavioral finance has been ignored previously. Previous literature supports on the risk related cultural values which in turn moderate the relationship between behavioral biases and risk perception of firm's managers. Deal & Kennedy, (1982) in this concern believed that risk taking orientation act as the distinguishing factor among

organizational culture. Consequently firms with moderate risk values will take slow but accurate decisions than firms with risky cultural values. Cultural theory of manager's risk perception was given by Douglas and Wildavsky for individuals, groups and organizations (Bontempo, Bottom, and Weber, 1997; Weber, 1988; Slovic, 1997).

H3a. Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Risk Perception with low value of Uncertainty Avoidance

H3b. Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Risk Perception with high value of Uncertainty Avoidance

Culture is a system comprises of combined values which differentiate the group of people from another (Hofstede, 1980). Uncertainty avoidance deals with the capability of a people in a society to cope with the difficulties and ambiguities in life. People in a high uncertainty avoidant culture rely heavily on written rules and regulations, embrace formal structures to deal with uncertainty and have little space of tolerance for ambiguity (Mueller & Thomas, 2001, & Hofstede, 1980). Arosa et al., 2014 prefer cultural dimensions of Hofstede as better measure of culture. Researchers are of the view that controlling the firm and country specific factors different firm from different cultures has varying capital structure, investment, dividend and asset management decisions. Wang & Esqueda (2014) work on the variation in capital structure among various cultures of emerging countries. Chui et al. (2002); Gray et. Al, (2013); Wang & Esqueda (2014); & Arosa et al. (2014) work n the uncertainty avoidance cultural dimension and found its negative relation with firm leverage. They further added that reason might be because firms prioritize certainty over uncertainty. Firms with high uncertainty avoidance are reluctant o go for higher debt where they tie up for long term interest payments. In this regard where Pakistani firms prefer high debt even when they are uncertainty avoidant the reasoning given by

Zheng et al. (2012) give the answer through their findings that uncertainty avoiding country's firms prefer to go for short term debt financing. Researchers also found negative relationship between uncertainty avoidance and investment decisions i.e. Guiso et al., (2008); and Botazzi et al., (2010). Li et.al, (2013) found that the risk taking is considered one of the key to success while high uncertainty avoidance leads to avoid circumstances of risk so there is also a relationship between risk taking and cultural values. Therefore firms with high uncertainty avoidant cultures spend not as much on investments (Tran et.al, 2016). Antoczyk and Salzmann (2012) found negative relationship between uncertainty avoidance cultural dimension and investment decisions. In addition to investment decisions researchers has also extended the cultural studies towards dividend polices of the firms e.g. Fidrmuc & Jacob (2010); and Shao et al., (2010) found that dividend decisions executed by finance managers are linked with the preferences an behaviours inherent in their cultures. Zheng & Ashraf in this regard quoted that firms in high uncertainty avoidance cultures tend to pay less dividends hence uncertainty avoidance has a negative relation with dividend payout (Zheng & Ashraf, 2014). Furthermore previous explorers also link the role of cultural characteristics with cash holdings of the firms. Chen. et al in 2015 study the asset management decision's positive relationship with the uncertainty avoidance cultural dimension (Chen et al., 2015). Current study not only targets the impact of culture on above mentioned decisions but also its impact on the stability of the outcomes in the light of behavioral biases and risk perception.

Cronqvist, Low, & Nilsson in 2007 worked and found that firms' policies are significantly affected by their culture. They added that spinoff firms and parent company policies for investment, financing & operational decisions are similar. Where; firms maintain their cultures by keeping those managers with them who suits their culture (Cronqvist, Low, & Nilsson, 2007).

It is very essential for an organization to understand the culture in which it operates. Various authors have also emphasized on the need and importance of understanding the impact of national culture on the organization. Sagiv & Schwartz in 2007 pay attention on national culture and its importance for a business by examining the cultural values affect upon organizational values. They extracted that firm values have both direct & indirect influence of societal culture through employee's personal values and organizational strategies while making decisions (Sagiv & Schwartz, 2007). The influence of cultural values on the organizational performance has been also checked by various researchers. Where; they found that firms with mastery and conservative cultural values are comprised of lesser debt to equity ratio. They further explain that reason behind such financial condition is the risk averse behavior of the organizational management (Chui, Lloyd, & Kwok, 2002). Research studies have emphasized on the augmenting value of culture for financial matters. Scholars have emphasized on the area cultural finance as it is getting importance with globalization of economic world. Cultural aspects can be given due importance to exhibit the financial decisions making in an integrated way (Breuer & Quinten, 2009). Previously behavioral finance has ignored the area of cultural differences among various countries while taking into account the decisions taken by the management of the organization. It was assumed by researchers that cultural aspects are universal while estimating the financial values. But with the passage of time it was realized by them that cultural aspects of organizational workers needs to be studied as wheel i.e. Levinson & Peng in 2007 found significant cultural variations while estimating the financial values (Levinson & Peng, 2007).

H4a. Low Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Financing Decisions such that Risk Perception Weakens.

H4b. Low Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Investment Decisions such that Risk Perception Weakens.

H4c. Low Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Asset Management Decisions such that Risk Perception Weakens.

H4d. Low Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Dividend Decisions such that Risk Perception Weakens.

H5a. High Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Financing Decisions such that Risk Perception Strengthens.

H5b. High Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Investment Decisions such that Risk Perception Strengthens.

H5c. High Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Asset Management Decisions such that Risk Perception Strengthens.

H5d. High Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Dividend Decisions such that Risk Perception Strengthens.

2.5 Justification of the study

This study added to the theory a comprehensive framework by collaborating theory of bounded rationality and behavioral decision theory with risk perception and cultural theories developing and developed economies while taking into account major decisions in finance i.e. investment, financing, asset management & dividend policy decision. Study of psychological aspects of managers in relation with cultural and risk issues are compatible as suggested by researcher in the light of Mary Douglas in 1991. Where Dake in 1991 argued that cultural aspects need to be

studied in combination with psychology of people at organization as their variation may cause the risk perception to change differently for managerial behaviors (Dake, 1991). This study explored the impact of cultural value on the relationship between behavioral biases and risk perception of executives. Behavioral finance is a broad field having many areas which needs to be understands and explored so that managers/ executives can comprehend the market situations in a proper manner. They can also avoid diverse biases in behaviors in order to make better decisions making on behalf of firms they are representing. Researchers throughout the world are working to dig out the hidden paths of better decision making in finance. Various researchers from Pakistan also work to explore the solutions to the behavioral problems faced by management while making decisions in the area of finance. Ahmed, Ahmad, & Khan in (2011) put their efforts in the area of decisions making by agents on small scale in Lahore stock exchange. Researchers found that such decisions are affected by the theories proposed by behavioral finance i.e. theory of bounded rationality and behavioral decision theory. They further added that decision making is affected by heuristics (Ahmed, Ahmad, & Khan, 2011). Shah, Raza, & Khurshid in (2012) supports the theory by arguing that overconfidence behavior of investors is positively related with market efficiency. Because such investors focus more in gathering information required to make right investment decisions. Scholars concluded that perception about future market efficiency is enhanced in the presence of overconfidence bias (Shah, Raza, & Khurshid, 2012).

2.6 Theoretical Framework

Model.1

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                    ┌──────────────────────┐
                    │ Uncertainty Avoidance │
                    └──────────┬───────────┘
                               │
┌─────────────────────┐        ▼         ┌──────────────────────┐
│ • Overconfidence Bias│   ┌─────────────┐│ • Investment Decision│
│                      │──▶│Risk Perception│─▶│ • Financing Decision│
│ • Ambiguity Aversion │   └─────────────┘│ • Dividend Decision  │
│   Bias               │                  │                      │
└─────────────────────┘                  └──────────────────────┘
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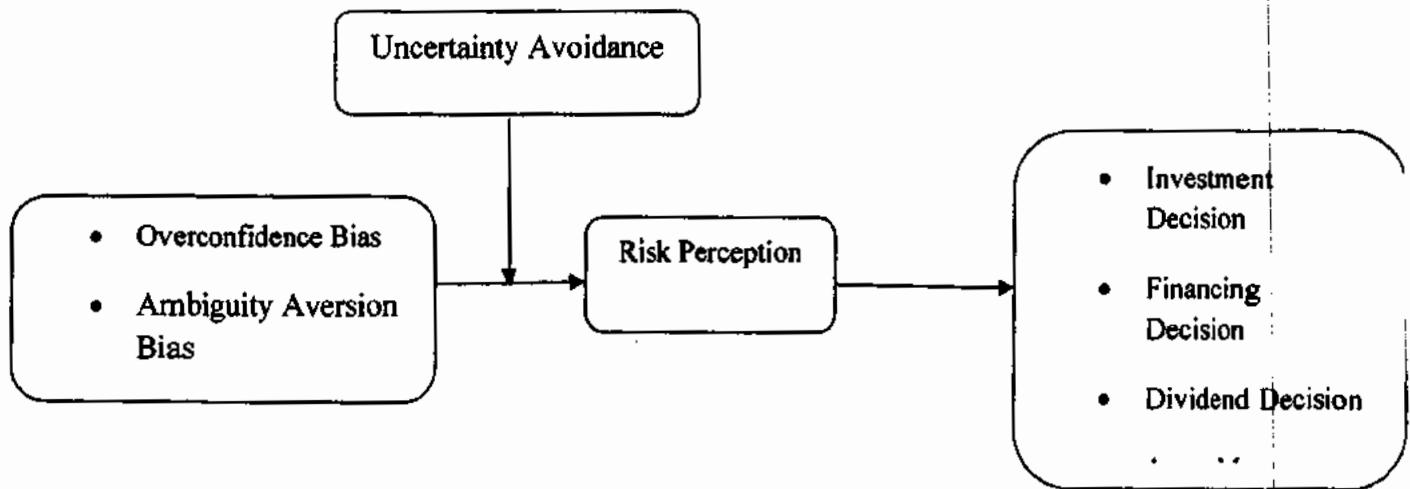
Fig.2.2 Corporate Decisions in Finance, Cognitive Biases with respect to risk perception

and Uncertainty Avoidance

2.7 Hypothesis Summary

*H1a. **Risk** perception mediates the relationship between Overconfidence Bias and*

Financing Decisions

*H1b. **Risk** perception mediates the relationship between Overconfidence Bias and*

Investment Decisions

*H1c. **Risk** perception mediates the relationship between Overconfidence Bias and*

***Asset** Management Decisions*

*H1d. **Risk** perception mediates relationship between Overconfidence Bias and*

Dividend Decisions

*H2a. **Risk** perception mediates the relationship between Ambiguity Aversion Bias and*

Financing Decisions

H2b. Risk perception mediates the relationship between Ambiguity Aversion Bias and

Investment Decisions

H2c. Risk perception mediates the relationship between Ambiguity Aversion Bias and

Dividend Decisions

H2d. Risk perception mediates the relationship between Ambiguity Aversion Bias and

Asset Management Decisions

H3a. Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Risk Perception with low value of Uncertainty Avoidance

H3b. Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Risk Perception with high value of Uncertainty Avoidance.

H4a. Low Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Financing Decisions such that Risk Perception Weakens.

H4b. Low Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Investment Decisions such that Risk Perception Weakens.

H4c. Low Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Asset Management Decisions such that Risk Perception Weakens.

H4d. Low Uncertainty Avoidance moderates the relationship between Overconfidence Bias and Dividend Decisions such that Risk Perception Weakens.

H5a. High Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Financing Decisions such that Risk Perception Strengthens.

H5b. High Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Investment Decisions such that Risk Perception Strengthens.

H5c. High Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Asset Management Decisions such that Risk Perception Strengthens.

H5d. High Uncertainty Avoidance moderates the relationship between Ambiguity Aversion Bias and Dividend Decisions such that Risk Perception Strengthens

CHAPTER 3

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Research Design

Present study completed is based upon the survey responses gathered from managers working in non financial companies listed at Pakistan Stock exchange and New York Stock Exchange. Since survey based research work for behavioral finance has been supported enormously by researchers both from outside world and researchers from Pakistan with the room to explore more dimensions (Barberis & Thaler, 2003; Gore & Pepper, 2010; Hassan, Shahzeb, Shaheen, Abbas, & Hameed, 2013. Therefore it was imperative to expand the knowledge through highlighting the grey areas under behavioral decision theory and finding solutions to cover them. This study will help the organizations and industries for better performance both in developed and underdeveloped economies. With the growing focus on research in the area of behavioral finance, where many research works have been published in recognized journals, various new techniques have been introduced to work on experimental research e.g. Madi & Yousaf, (2018); Gill et.al, (2018). Current study explored the mediation, moderation and mediated moderation moderated mediation effect on the relationship as given in Fig.2.2. In order to see the behavioral biases mediated and moderated effect on firm decisions models given by Hayes in 2008 are most suitable. The sobel test and boot strap techniques of Hayes 2013 helps to test the hypothesis as well normality of distribution. Furthermore the benefit of using Hayes model is that it also handles the problem of multicolinearity. Therefore use of this research paradigm help to handle the data in a better way and leads to deliver the results in more efficient manner.

In order to confirm the impact of variables signified by Model 1 the mediation and moderation has been applied on the sample data. Cognitive biases in the model are taken as independent variable which includes overconfidence bias, & ambiguity aversion bias. Dependent variable in the model is managers' decisions making which has further proxies for four major decisions in finance i.e. investment, financing, dividend, & asset management. In addition to this risk perception has been taken as mediator between independent and dependent variables in Model 1 representing manager's risk perception (Jureviciene & Ivanova, 2013). Study also added to verify the moderating affect of culture on the relationship between cognitive biases and agent's risk perception in the model (Sajjad, Shafi, & Dad, 2012; Shi & Veenstra, 2015). This contemporary research work conducted followed the cross sectional method because it is suitable for the study of multi-industry financial effort as supported by previous research (Ketchen, et.al. 1997). Scope for longitudinal study is limited as suggested by researchers through their concerns for validity of data, time, & money (Summer, et.al, 1990). Pettigrew also put forward the limitations observed for longitudinal study and link it to be more suitable in organizational case study method of research (Pettigrew, 1990). Later on investigators chained the previous findings and maintained preference for cross sectional study for multi industry research work as compared to longitudinal study based upon the validity feature exhibited by data under cross sectional study (Rindfleisch, Malter, Ganesan, & Moorman, 2008).

3.2. Population

The population targeted under concurrent study were financial agents serving as CEO/CFO, Director Finance, Chief Accountant, Managing Director, General Manager , Finance Manager, Controller, Financial Project Analyst, & Treasure in the firms. These firms were from capital

intensive industries listed at Karachi Stock exchange and New York Stock Exchange. The target population includes top, middle level management for the survey based data under convenient sampling. Parahoo in 1997 described population as "the total number of units from which data can be collected", such as individuals, artifacts, events or organizations (Parahoo 1997: 218). The survey work conducted targets firm's from all over the Pakistan including Central Punjab, South Punjab, KPK & Sindh, while survey worked conducted from USA was mostly done through online response from firms in New York and Washington DC. Getting response from the top and middle level management was a challenging task due to their busy schedule and job rotation among the firm's multiple offices.

3.3. Sample & Data Collection

Polit et al (2001:234) elucidate about sample as "a proportion of a population". The current study is quantitative in nature and in order to gather data convenient sampling technique is used. In this regard sample size of Pakistani firms for primary data used in the survey was 309 while 100 for USA firms. Although the number of companies at New York Stock Exchange is more than Karachi Stock Exchange but the data accessibility was a big challenge due to distance. Data was collected from the managers/executives of firm's through physical and online distribution. Since rationale of this work was to attain the answer for unsolved challenges faced by managers in financial decision making. Consequently only those employees were marked in the survey that had a clear knowledge and experience of working in the area of finance. Henceforth not every manager of the firm was given the response document. According to Parahoo (1997:52, 325), a research instrument is "a tool used to collect data. Whereas an instrument is a source designed to calculate knowledge attitude and ability". The study includes firms were from Energy & Oil,

Sugar, Cement, Chemical, Textile, Engineering/Electronics listed at Karachi Stock exchange and New York Stock Exchange.

3.4. Procedure

Survey based data has been collected through questionnaire adapted. Questionnaires distributed were in English language. Total questionnaires distributed to Pakistani firms were 400 out of which 309 questionnaires were received back with a response rate of 77% in total. Whereas total questionnaire distributed to US managers were 150 out of which only 100 were having information in complete form with a response rate of 67%. The time taken in data collection was almost one year and three months because of reserve environment of organizations and security concerns of current days. Manager's response toward the survey was sluggish and sometime with incomplete information. In addition to this the survey was targeted for the finance experts so it was very challenging to get response of executives without any reference especially in developed market. Therefore personal reference and cover letter were used to do the survey. Among the physically distributed questionnaires, few of them were returned by respondents in partial information or without adequate facts because of their busy routines in the offices. Keeping in view of the completeness of information out of 400 only 309 were added to the investigation from developing and out of 150 only 100 were added to the research analysis.

3.5. Demographic

Data collection is done from capital intensive industries. Managers/Executives working in finance department of the mentioned sectors were targeted to get the responses. Whereas 81% of them were males respondents while rest of them was females showing the dominating role of males in the corporate sector management.

Management targeted includes 1% working as chief accountants, 1% were working as CFO/CEO and director finance each, 4% as managing director and general managers each, 31% of the respondents were finance manager, 19% as controller, 16% project analyst, 15% Treasurer, 8% from others. Population distribution of managers with respect to education ranged 3% as graduates, 52% as ACMA/ACCA/CFA qualified and 45% with masters' degree. In addition to this the respondents age group information adjoin the that 8% of the management was in the age group of 18-25, 48% were in the age of 26-35, 29% employees were between 36-45, 14% of the response was from the age group of 46-55 and 1% of the respondents were 56 or above. Work experience of the respondents covered the information as follows: 7% of the respondents were having job experience under 5 years, 55% of them were having experience at work between 6 to 10 years, 30% were between 11 to 15 years, 8% were having job experience between 16 to 20 years. On the other hand data collected from US firms includes 51% from engineering/electronics sector, 36% from other sectors, 9% response from chemical and 4% from cement sector. Managerial persons working in finance departments of the said state's firms of USA were requested to give answers to the questions. Whereas 68% of them were males respondents while rest of them were females showing the dominating role of males in the corporate sector but the percentage was less as compared to the percentage for underdeveloped country's firms. This shows a reduced sum of dominance of the male in US firms than in Pakistani firms. Management targeted includes 41% working as chief accountants, 34% as finance managers, 11% as controller, 8% treasurer, 5% managing director, & 1% as general manager. Population distribution of managers with respect to education ranged 55% as ACMA/ACCA/CFA qualified and 45% with masters' degree. The age group information link up the facts that 63% of the management was in the age group 26-35, 33% employees were

between 36-45, 2% of the response was from the age group of 18-25 years and 2% of the respondents were between 45-55 years. Work experience of the respondents covered the information as follows: 79% of the respondents were having job experience less than 6 to10 years, 19% of them were having experience at work between 11 to 15 years, and 2% were having experience less than 5 years.

3.6. Measures

Measures have been used from previous studies because literature supports the idea that existing questions are previously reviewed by researches therefore probability of imprecision is condensed to some extent (Biemer & Lyberg, 2003:120). All measures employed have been previously used in local and foreign counties studies. It is suggested by scholars that chances of errors in results can be controlled or reduced by using already tested measures. All measures used are on 7 point likert scale to make steadiness of responses. Researchers argued that items having miscellaneous formats could be confusing for the respondents while answering (Bagozzi and Baumgartner 1994; Green and Rao 1970). Language of questions asked was English because it was convenient for the literate management for giving their responses.

3.7 Measures Validity

Confirmatory Factor Analysis has been used to see the construct validity of the proposed theory. Where construct validity is the degree to which all the measured items actually reflect the theoretical latent construct they are designed to measure.

Construct validity is made up of four important components:

1. Convergent validity

2. Discriminant validity

3. Nomological validity

4. Face validity

In order to ensure the validity of measures, convergent and discriminant validity method has been used. The basic difference between convergent and discriminant validity is that convergent validity tests whether constructs that should be related, are related. Discriminant validity tests whether believed unrelated constructs are, in fact, unrelated. In order to maintain discriminant validity Confirmatory factor Analysis (CFA) has been employed using AMOS (2013). CFA permits explorers to provide evidence for the assertion that a hypothesized multi-dimensional scale discriminates between sub-scales (Carter, 2016). In addition to above Hayes (2013) PROCESS method has been used in SPSS 20 to evaluate the model having moderation and mediation analysis. Based upon the above validity tests representative bias and conservatism bias from independent variables and individualism, power distance from cultural dimensions were not considered in the study. Moreover Hofstede cultural dimensions refer to explore the impact of cultural values of managers/groups rather than individuals upon their decisions. Validity and precision of the analysis can be ensured through statistical reliability. Dr. Daniele Fanelli in 2009 found at The University of Edinburgh and quoted in his research work that dropping of an observation due to lack of statistical evidence under the theatrical umbrella is permissible (Lebied, 2018).

3.7.1 Overconfidence Bias

Study used measures from Svenson (1981), Bernartzi & Thaler (1999) which are further confirmed by Shiller (2000), and Daniel & Huberman (2003). All measures used were on a 7 point liker scale where 1 indicates strongly disagree and 7 indicates strongly agree. A 7 item scale of Overconfidence bias is used to collect managers' responses. Sample measures used in the study are "Gains in my company's investments must be attributed to my competence as an

Investor", "I think I am a good or above average driver compare with the drivers I encounter on the road". Chronbach's alpha has been used which is believed by scholars as symbol of reliability and inner consistency. Chronbach's alpha is recognized as a label of quality of scales. It also helps to remove low valued items from the construct to make the study reliable and consistent (Peter, 2014).

Chronbach's Alpha for the scale was 0.90. Convergent validity for under developed country's data is also confirmed hence all items are in the range of 0.71 to 0.78 with AVE= 0.60 given in Table.3.4 of Appendix.1. Presence of discriminate validity through single factor CFA results was confirmed (x^2= 22, df = 13, CFI =.96, NFI = .97, GFI = .98, AGFI = .96 and RMSEA = .05) as shown in Table 3.1. Chronbach's Alpha for the scale in case of USA was 0.83. Convergent validity for developed country's data is also confirmed as all items are in the range of 0.70 to 0.75 with AVE= 0.62 given in Table 3.12 of Appendix 1. Presence of discriminate validity through single factor CFA results was also confirmed (x^2= 20, df = 10, CFI =.95, NFI = .96, GFI = .96, AGFI = .96 and RMSEA = .06) as shown in Table.3.2.

3.7.2 Ambiguity Aversion Bias

Measures from Seibert et al. (1999) are used in the study which are further confirmed by Martinez & Gonzalez (2012). Ambiguity Aversion Bias related answers are gathered through 7 items scale. All measures were on 7 point likert scale. Whereas sample Items used are I am always alert to anything which can improve my life", " It's exciting for me to see how my ideas can change situations" & "Uncertainty surrounding my work prevents me from working in a better way". Chronbach's Alpha for the scale was 0.80. Convergent validity for underdeveloped county was confirmed hence all items were in the range of 0.66 to 0.78 with AVE= 0.56 as shown in Table.3.5 of Appendix.1. Presence of discriminate validity through single factor CFA

results was also confirmed (x^2= 20, df = 11, CFI =.97, NFI = .98, GFI = .97, AGFI = .94 and RMSEA = .06) as shown in Table.3.1. Chronbach's Alpha for the scale was 0.60 for USA. Convergent validity for developed county was confirmed as all items were in the range of 0.69 to 0.74 with AVE= 0.58 as shown in Table.3.13 of Appendix.1. Presence of discriminate validity through single factor CFA results was also confirmed (x^2= 11, df = 10, CFI =.94, NFI = .95, GFI = .95, AGFI = .96 and RMSEA = .05) as shown in Table.3.2.

3.7.3 Financing Decision

Measures used in the study have been adopted from Pruitt & Gitman (1991). All measures used were on a 7 point liker scale where 1 indicates Not Important at all while 7 indicates Very Important. A 6 item scale of Financing Decision is used to collect managers' responses. Sample measure used in the study are" Potential costs of bankruptcy, near-bankruptcy or financial distress of company is "The influence of firm's risk on the amount of new debt and/or equity it issues is ". Chronbach's Alpha for the scale was 0.90. Convergent validity for underdeveloped country was confirmed hence all items were in the range of 0.58 to 0.75 with AVE= 0.55 as shown in Table.3.6. This is further followed by CFA of Financing Decision in Appendix.2 and Figure.6. Presence of discriminate validity through single factor CFA results was confirmed (x^2= 200, df = 90, CFI =.95, NFI = .96, GFI = .96, AGFI = .97 and RMSEA = .07) as shown in Table.3.1. Chronbach's Alpha for the scale was 0.75 whereas the convergent validity for developed country was confirmed as all items were in the range from 0.53 to 0.72 with AVE= 0.51 as shown in Table.3.14. This is further followed by CFA of Financing Decision in Appendix.2 and Figure.7. Presence of discriminate validity through single factor CFA results was confirmed (x^2= 100, df = 40, CFI =.95, NFI = .95, GFI = .97, AGFI = .97 and RMSEA = .06) as shown in Table.3.2.

3.7.4 Investment Decision

Measures used in the study have been adopted from Pruitt & Gitman (1991). All measures used were on a 7 point liker scale where 1 indicates Not Important at all while 7 indicates Very Important. A 8 item scale of Investment Decision is used to collect managers responses. Sample measures used in the study are "I think that the relationship among the returns of different projects is ", " I think that risk and uncertainty of Capital Investment Project is ". Chronbach's Alpha for the scale was 0.80. Convergent validity was confirmed for underdeveloped country hence all items were in the range of 0.65 to 0.77 with AVE= 0.58 as shown in Table.3.7 of Appendix.1. Presence of discriminate validity through single factor CFA results was confirmed (x^2= 80, df = 39, CFI =.96, NFI = .97, GFI = .97, AGFI = .98 and RMSEA = .05) as shown in Table.3.1. For developed country Chronbach's Alpha for the scale was 0.70 while the convergent validity was confirmed hence all items were in the range of 0.62 to 0.74 with AVE= 0.53 as shown in Table.3.15 of Appendix.1. Presence of discriminate validity through single factor CFA results was confirmed (x^2= 41, df = 22, CFI =.95, NFI = .94, GFI = .96, AGFI = .97 and RMSEA = .06) as shown in Table.3.2.

3.7.5 Asset Management Decision

Measures used in the study have been adopted from the work of Pruitt & Gitman (1991). All measures used were on a 7 point liker scale where 1 indicates Not Important at all while 7 indicates Very Important. An 8 item scale of Asset Management Decision is used to collect managers responses. Sample measure adapted in the study are 9 item scale of Asset Management Decision is used to collect managers responses. Sample measure used in the study are "I think that Cash and liquidity Risk is", "think that Consideration of level of inflation for inventory and cash management decisions is ". Chronbach's Alpha for the scale was 0.80 for underdeveloped

country i.e. Pakistan. Convergent validity for Pakistan was confirmed by getting all items in the range of 0.65 to 0.79 with AVE= 0.59 as shown in Table.3.8 of Appendix.1. This is further followed by CFA of Asset Management Decision in Appendix.2 and Figure. 6. Presence of discriminate validity through single factor CFA results was confirmed (x^2= 61, df = 31. CFI =.96, NFI = .96, GFI = .98, AGFI = .96 and RMSEA = .06) given in Table.31. Chronbach's Alpha for the scale in case of USA was 0.77. Convergent validity for USA was confirmed by getting all items in the range of 0.64 to 0.75 with AVE= 0.55 as shown in Table.3.16 of Appendix.1. This is further followed by CFA of Asset Management Decision in Appendix.2 and Figure.7. Presence of discriminate validity through single factor CFA results was confirmed (x^2= 30, df = 14, CFI =.95, NFI = .96, GFI = .96, AGFI = .97 and RMSEA = .05) given in Table.3.2.

3.7.6 Dividend Decision

Measures in the study has been used from the work of Pruitt & Gitman (1991).All measures used were on a 7 point liker scale where 1 indicates Not Important at all while 7 indicates Very Important. A 8 item scale of Investment Decision is used to collect managers responses. Sample measure used in the study are 7 item scale of Dividend Decision is used to collect managers responses. Sample measure adapted in the study are" Desire to conform to the industry's dividend payout ratio is ", Preference to pay dividends instead of undertaking risky reinvestments is". Chronbach's Alpha for the scale was 0.72. Convergent validity in case of underdeveloped country was confirmed hence all items were in the range of 0.59 to 0.72 with AVE= 0.53 as shown in Table.3.9 of Appendix.1. This is further followed by CFA of Dividend Decision in Appendix.2 and Figure.6. The presence of discriminate validity through single factor CFA results was confirmed (X2= 15, df = 7, CFI =.90, NFI = .92, GFI = .96, AGFI = .95 and RMSEA = .05) given in Table.3.1. Chronbach's Alpha for the scale was 0.70 for USA. Moreover

the convergent validity for USA was further confirmed by getting all items in the range of 0.55 to 0.75 with AVE= 0.56 as shown in Table.3.17 of Appendix.1. Presence of discriminate validity through single factor CFA results was confirmed (X2= 10, df = 5, CFI =.91, NFI = .93, GFI = .95, AGFI = .96 and RMSEA = .07) given in Table.3.2.

3.7.7 Confirmatory Factor Analysis for Moderator & Mediator

3.7.7.1 Risk Perception

Measures in the study have been used from the research of Mac Crimmon & Wehrung (1990) which is further confirmed by Simon, Hougton, & Aquino (1999). All measures used were on a 7 point liker scale where 1 indicates very low and 7 indicate very high. A 7 item scale of Risk Perception is used to collect managers' responses. Sample measure used in the study is "The probability of unfortunate outcome of my decision for the company is very high.", "Chances of negative consequences out of unusual corporate future decision are ". Chronbach's Alpha for the scale was 0.90. Convergent validity was confirmed hence all items are in the range of 0.61 to 0.75 with AVE= 0.54 for underdeveloped country given in Table.3.10. Presence of discriminate validity through single factor CFA results was confirmed (X2= 60, df = 33, CFI =.96, NFI = .97, GFI = .97, AGFI = .95 and RMSEA = .06) given in Table.3.1. Chronbach's Alpha for the scale was 0.70 while convergent validity for developed country was confirmed with items in the range of 0.63 to 0.74 with AVE= 0.55 Table.3.18. Presence of discriminate validity through single factor CFA results was confirmed (X2= 45, df = 23, CFI =.96, NFI = .95, GFI = .97, AGFI = .97 and RMSEA = .05) given in Table.3.2.

3.7.7.2 Uncertainty Avoidance

Measures in the study has been used from the research of Hofstede's (1984) which are further confirmed by many authors including Wu (2006) All measures used were on a 7 point liker scale

where 1 indicates strongly disagree and 7 indicates strongly agree. A 4 item scale of Uncertainty Avoidance is used to collect managers' responses. Sample measure used in the study is "I often feel nervous at work ". Chronbach's Alpha for the scale was 0.75. Convergent validity for under developed country was confirmed hence all items are in the range of 0.72 to 0.78 with AVE= 0.57 as shown in Table.3.11 of Appendix.1. This is further followed by CFA of Uncertainty Avoidance in Appendix.2 and Figure. 6. Presence of discriminate validity through single factor CFA results was confirmed (X2= 70, df = 41, CFI =.90, NFI = .95, GFI = .90, AGFI = .92 and RMSEA = .07) given in Table.3.1. Chronbach's Alpha for the scale was 0.60 for USA. Convergent validity for developed country was confirmed hence all items are in the range of 0.70 to 0.74 with AVE= 0.55 as shown in Table.3.19 of Appendix.1. Presence of discriminate validity through single factor CFA results was confirmed (X2= 46, df = 20, CFI =.91, NFI = .94, GFI = .96, AGFI = .96 and RMSEA = .05) given in Table.3.2.

Table 3.1 Confirmatory Factor Analysis Model Fit Results for Pakistan

	$x2$	Df	$x2/df$	CFI	NFI	GFI	AGFI	RMSEA
OVERCB	22	13	1.69	0.96	0.97	0.98	0.96	0.05
AMB	20	11	1.8	0.97	0.98	0.97	0.94	0.06
FIND	200	90	2.22	0.95	0.96	0.96	0.97	0.07
INVD	80	39	2.05	0.96	0.97	0.97	0.98	0.05
DIVD	15	7	2.14	0.90	0.92	0.96	0.95	0.05
AMD	61	31	1.96	0.96	0.96	0.98	0.96	0.06
RISKP	60	33	1.81	0.96	0.97	0.97	0.95	0.06
UA	70	41	1.70	0.90	0.95	0.90	0.92	0.70

OCB=Overconfidence Bias, , AMB= Ambiguity Aversion Bias, FD= Financing Decisions, ID= Investment Decisions, DD= Dividend Decisions, AMD= Asset Management Decision, ARP= Agent Risk Perception, UA= Uncertainty Avoidance

Table. 3.2 Confirmatory Factor Analysis Model Fit Results for USA

	x^2	Df	x^2/df	CFI	NFI	GFI	$AGFI$	$RMSEA$
OVERCB	20	10	2	0.95	0.96	0.96	0.96	0.06
AMB	11	10	1.1	0.94	0.95	0.95	0.96	0.05
FIND	100	40	2.5	0.95	0.95	0.97	0.97	0.06
INVD	41	22	1.86	0.95	0.94	0.96	0.97	0.06
DIVD	10	5	2	0.91	0.93	0.95	0.96	0.07
AMD	30	14	2.14	0.95	0.96	0.96	0.97	0.05
RISKP	45	23	1.95	0.96	0.95	0.97	0.97	0.05
UA	46	20	2.30	0.91	0.94	0.96	0.96	0.05

OCB=Overconfidence Bias, AMB= Ambiguity Aversion Bias, FD= Financing Decisions, ID= Investment Decisions, DD= Dividend Decisions, AMD= Asset Management Decision, ARP= Agent Risk Perception, UA= Uncertainty Avoidance

3.8 Equations

3.8.1 Mediation, Moderation, Moderated Mediation Equations Pakistan

$$FINDpk = \alpha_0 + \beta_{1a}(OVERB_i) + \beta_{2a}(AMB_i) + \varepsilon_i$$

$$FINDpk = \alpha_0 + \beta_{1a}(OVERB_i) + \beta_{2a}(AMB_i) + \beta_{M1a}(RP) + \beta_{M2a}(RP) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1a}(OVERB_i) + \beta_{2a}(AMB_i) + \varepsilon_i$$

$$INVDpk = \alpha_0 + \beta_{1b}(OVERB_i) + \beta_{2b}(AMB_i) + \varepsilon_i$$

$$INVDpk = \alpha_0 + \beta_{1b}(OVERB_i) + \beta_{2b}(AMB_i) + \beta_{M1b}(RP) + \beta_{M2b}(RP) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1b}(OVERB_i) + \beta_{2b}(AMB_i) + \varepsilon_i$$

$$AMDpk = \alpha_0 + \beta_{1c}(OVERB_i) + \beta_{2c}(AMB_i) + \varepsilon_i$$

$$AMDpk = \alpha_0 + \beta_{1c}(OVERB_i) + \beta_{2c}(AMB_i) + \beta_{M1c}(RP) + \beta_{M2c}(RP) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1c}(OVERB_i) + \beta_{2c}(AMB_i) + \varepsilon_i$$

$$DIVDpk = \alpha_0 + \beta_{1d}(OVERB_i) + \beta_{2d}(AMB_i) + \varepsilon_i$$

$$DIVDpk = \alpha_0 + \beta_{1d}(OVERB_i) + \beta_{2d}(AMB_i) + \beta_{M1d}(RP) + \beta_{M2d}(RP) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1d}(OVERB_i) + \beta_{2d}(AMB_i) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1e}(OVERB_i) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1e}(OVERB_i) + \beta_{2e}(UA) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1e}(OVERB_i) + \beta_{2e}(UA_i) + \beta_{3e}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1f}(AMB) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1f}(AMB) + \beta_{2f}(UA) + \varepsilon_i$$

$$RPpk = \alpha_0 + \beta_{1f}(AMB_i) + \beta_{2f}(UA_i) + \beta_{3f}(AMB_i)(UA_i) + \varepsilon_i$$

$$RPMpk = \alpha_0 + a_{1g}(OVERB_i) + a_{2g}(UA_i) + a_{3g}(OVERB_i)(UA_i) + \varepsilon_i$$

$$FINDpk = \alpha_0 + \beta_{1g}(RPM_i) + \beta_{2g}(OVERB_i) + \beta_{3g}(UA_i) + \beta_{4g}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPMpk = \alpha_0 + a_{1h}(OVERB_i) + a_{2h}(UA_i) + a_{3h}(OVERB_i)(UA_i) + \varepsilon_i$$

$$INVDpk = \alpha_0 + \beta_{1h}(RPM_i) + \beta_{2h}(OVERB_i) + \beta_{3h}(UA_i) + \beta_{4h}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPMpk = \alpha_0 + a_{1i}(OVERB_i) + a_{2i}(UA_i) + a_{3i}(OVERB_i)(UA_i) + \varepsilon_i$$

$$AMDpk = \alpha_0 + \beta_{1i}(RPM_i) + \beta_{2i}(OVERB_i) + \beta_{3i}(UA_i) + \beta_{4i}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPMpk = \alpha_0 + a_{1j}(OVERB_i) + a_{2j}(UA_i) + a_{3j}(OVERB_i)(UA_i) + \varepsilon_i$$

$$DIVDpk = \alpha_0 + \beta_{1j}(RPM_i) + \beta_{2j}(OVERB_i) + \beta_{3j}(UA_i) + \beta_{4j}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPMpk = \alpha_0 + a_{1k}(AMB_i) + a_{2k}(UA_i) + a_{3k}(AMB_i)(UA_i) + \varepsilon_i$$

$$FINDpk = \alpha_0 + \beta_{1k}(RPM_i) + \beta_{2k}(AMB_i) + \beta_{3k}(UA_i) + \beta_{4k}(AMB_i)(UA_i) + \varepsilon_i$$

$$RPMpk = \alpha_0 + a_{1l}(AMB_i) + a_{2l}(UA_i) + a_{3l}(AMB_i)(UA_i) + \varepsilon_i$$

$$INVDpk = \alpha_0 + \beta_{1l}(RPM_i) + \beta_{2l}(AMB_i) + \beta_{3l}(UA_i) + \beta_{4l}(AMB_i)(UA_i) + \varepsilon_i$$

$$RPMpk = \alpha_0 + a_{1m}(AMB_i) + a_{2m}(UA_i) + a_{3m}(AMB_i)(UA_i) + \varepsilon_i$$

$$AMDpk = \alpha_0 + \beta_{1m}(RPM_i) + \beta_{2m}(AMB_i) + \beta_{3m}(UA_i) + \beta_{4m}(AMB_i)(UA_i) + \varepsilon_i$$

$$RPMpk = \alpha_0 + a_{1n}(AMB_i) + a_{2n}(UA_i) + a_{3n}(AMB_i)(UA_i) + \varepsilon_i$$

$$DIVDpk = \alpha_0 + \beta_{1n}(RPM_i) + \beta_{2n}(AMB_i) + \beta_{3n}(UA_i) + \beta_{4n}(AMB_i)(UA_i) + \varepsilon_i$$

3.8.2 Mediation, Moderation, Moderated Mediation Equations USA

$$FINDus = \alpha_0 + \beta_{1a}(OVERB_i) + \beta_{2a}(AMB_i) + \varepsilon_i$$

$$FINDus = \alpha_0 + \beta_{1a}(OVERB_i) + \beta_{2a}(AMB_i) + \beta_{M1a}(RP) + \beta_{M2a}(RP) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1a}(OVERB_i) + \beta_{2a}(AMB_i) + \varepsilon_i$$

$$INVDus = \alpha_0 + \beta_{1b}(OVERB_i) + \beta_{2b}(AMB_i) + \varepsilon_i$$

$$INVDus = \alpha_0 + \beta_{1b}(OVERB_i) + \beta_{2b}(AMB_i) + \beta_{M1b}(RP) + \beta_{M2b}(RP) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1b}(OVERB_i) + \beta_{2b}(AMB_i) + \varepsilon_i$$

$$AMDus = \alpha_0 + \beta_{1c}(OVERB_i) + \beta_{2c}(AMB_i) + \varepsilon_i$$

$$AMDus = \alpha_0 + \beta_{1c}(OVERB_i) + \beta_{2c}(AMB_i) + \beta_{M1c}(RP) + \beta_{M2c}(RP) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1c}(OVERB_i) + \beta_{2c}(AMB_i) + \varepsilon_i$$

$$DIVDus = \alpha_0 + \beta_{1d}(OVERB_i) + \beta_{2d}(AMB_i) + \varepsilon_i$$

$$DIVDus = \alpha_0 + \beta_{1d}(OVERB_i) + \beta_{2d}(AMB_i) + \beta_{M1d}(RP) + \beta_{M2d}(RP) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1d}(OVERB_i) + \beta_{2d}(AMB_i) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1e}(OVERB_i) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1e}(OVERB_i) + \beta_{2e}(UA) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1e}(OVERB_i) + \beta_{2e}(UA_i) + \beta_{3e}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1f}(AMB) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1f}(AMB) + \beta_{2f}(UA) + \varepsilon_i$$

$$RPus = \alpha_0 + \beta_{1f}(AMB_i) + \beta_{2f}(UA_i) + \beta_{3f}(AMB_i)(UA_i) + \varepsilon_i$$

$$RPMus = \alpha_0 + a_{1g}(OVERB_i) + a_{2g}(UA_i) + a_{3g}(OVERB_i)(UA_i) + \varepsilon_i$$

$$FINDus = \alpha_0 + \beta_{1g}(RPM_i) + \beta_{2g}(OVERB_i) + \beta_{3g}(UA_i) + \beta_{4g}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPMus = \alpha_0 + a_{1h}(OVERB_i) + a_{2h}(UA_i) + a_{3h}(OVERB_i)(UA_i) + \varepsilon_i$$

$$INVDus = \alpha_0 + \beta_{1h}(RPM_i) + \beta_{2h}(OVERB_i) + \beta_{3h}(UA_i) + \beta_{4h}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPMus = \alpha_0 + a_{1i}(OVERB_i) + a_{2i}(UA_i) + a_{3i}(OVERB_i)(UA_i) + \varepsilon_i$$

$$AMDus = \alpha_0 + \beta_{1i}(RPM_i) + \beta_{2i}(OVERB_i) + \beta_{3i}(UA_i) + \beta_{4i}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPMus = \alpha_0 + a_{1j}(OVERB_i) + a_{2j}(UA_i) + a_{3j}(OVERB_i)(UA_i) + \varepsilon_i$$

$$DIVDus = \alpha_0 + \beta_{1j}(RPM_i) + \beta_{2j}(OVERB_i) + \beta_{3j}(UA_i) + \beta_{4j}(OVERB_i)(UA_i) + \varepsilon_i$$

$$RPMus = \alpha_0 + a_{1k}(AMB_i) + a_{2k}(UA_i) + a_{3k}(AMB_i)(UA_i) + \varepsilon_i$$

$$FINDus = \alpha_0 + \beta_{1k}(RPM_i) + \beta_{2k}(AMB_i) + \beta_{3k}(UA_i) + \beta_{4k}(AMB_i)(UA_i) + \varepsilon_i$$

$$RPMus = \alpha_0 + a_{1l}(AMB_i) + a_{2l}(UA_i) + a_{3l}(AMB_i)(UA_i) + \varepsilon_i$$

$$INVDus = \alpha_0 + \beta_{1l}(RPM_i) + \beta_{2l}(AMB_i) + \beta_{3l}(UA_i) + \beta_{4l}(AMB_i)(UA_i) + \varepsilon_i$$

$$RPMus = \alpha_0 + a_{1m}(AMB_i) + a_{2m}(UA_i) + a_{3m}(AMB_i)(UA_i) + \varepsilon_i$$

$$AMDus = \alpha_0 + \beta_{1m}(RPM_i) + \beta_{2m}(AMB_i) + \beta_{3m}(UA_i) + \beta_{4m}(AMB_i)(UA_i) + \varepsilon_i$$

$$RPMus = \alpha_0 + a_{1n}(AMB_i) + a_{2n}(UA_i) + a_{3n}(AMB_i)(UA_i) + \varepsilon_i$$

$$DIVDus = \alpha_0 + \beta_{1n}(RPM_i) + \beta_{2n}(AMB_i) + \beta_{3n}(UA_i) + \beta_{4n}(AMB_i)(UA_i) + \varepsilon_i$$

3.9 Discussion

3.9.1 Financing Decisions

The financing decision involves two sources from where the funds can be raised: using a company's own money, such as share capital, retained earnings or borrowing funds from the outside in the form debenture, loan, bond, etc. The objective of financial decision is to maintain

an optimum capital structure, i.e. a proper mix of debt and equity, to ensure the trade-off between the risk and return to the shareholders. After the introduction of human psychology it was found that managers are subject to some biases while making capital structure decisions (Azouzi and Jarboui, 2012), Uckar, 2012), Agliardi, Agliardi, & Spanjers (2016).

3.9.2 Investment Decisions

Investment Decisions considers how to employ wealth in any new project, re-evaluate the value of already invested capital in any project, allocation of capital in other divisions, or acquire any firm. Moreover capital budgeting is an analysis of investment decisions which help to find the best option for future investment. Three basic objectives: (i)wealth maximisation (ii)liquidity position perpetuation; and (iii) risk minimization.

Overconfidence bias lead managers to overvalue their investment returns Malmendier & Tate, (2005) . The risk of loss compel ambiguity averse managers to not to invest in projects even with positive returns (Barberis & Thaler, 2002).

3.9.3. Asset Management Decisions

CEO's AMD are crucial to maintain the balance between financial constraints of firm and liquidity. Improper asset management decisions leads firms towards bankruptcy and real crises Bellouma (2011).Smith & Warner (1973); Berryman (1983); Dunn & Cheatham (1993). Overconfident managers prefer to utilize firm's inside funds more candidly. Ambiguity Aversion Biased managers prefer to raise cash holding which depicts their fear about the future uncertainty. Epstein & Schneider,(2010). Working capital under consideration in AMD is divided into three categories i.e.

- **Net WC** considers current assets less current liabilities.

- **Operational** WC consists of inventory, account receivables, & account payables .

- **Financial** WC considers cash item.

3.9.4 Dividend Decisions

Dividend decisions of managers cover the policy of dividend distributions to shareholders. Dividend announcement out of profits of firm was considered as key to offset information asymmetry between managers and shareholders. Deshmukh, Goel, & Howe (2009) also found that overconfident and optimistic managers tend to pay fewer dividends in order to invest money in various projects. Agliardi.et.al. (2016) ambiguity averse managers feel it save to hold cash in reserves than to pay in the form of dividend.

3.9.5 Overconfidence Bias

"overestimation of one's own actual ability, performance, phase of control, or chance of success". According to researchers overconfident managers try to mitigate risk but in doing so they underestimate the risk and this is the answer to the inexplicable incidents resulted due to the overconfident managers decisions (Fischoff, 1992), (Merli, & Roger, 2015).

3.9.6 Ambiguity Aversion Bias

"people tendency to avoid decisions with unknown probabilities is due their ambiguity aversion bias." Literature suggests that ambiguity averse managers may under estimate the value of their firm and may perceive high risk then they should and ultimately misinterpret the decision value (Singh & Bhowal, 2008).

3.9.7 Risk Perception

Perception

Perception is the process of recognizing and interpreting sensory stimuli.

Risk Perception

(RP) is defined as a person's assessment of risk inherent in a particular situation or problem. Risk averse managers and risk seeking managers overestimate/ underestimate the probability of loss respectively due to their risk perception and ultimately results into unfortunate decisions outcomes in the form of firm performance (Boivie et. al, 2011), (Hamid et.al, 2013).

Two modes

High/Low

3.9.8 Uncertainty Avoidance

"The degree to which people feel threatened by indefinite situations".

Two Modes

High/Low

High UA cultures shows rigidity towards uncertain situations while cultures with low UA comprised of relaxed attitudes (Kirkman et al., 2006). Levinson, & Peng in (2007) held that psychological biases impact on the firm's decisions can be reduced to some extent by better understanding of the cultural stance of employees.

3.9 Expected Parameterization

Table 3.3. Expected Parameterization

Coefficient	Sign +/-	Coefficient	Sign +/-	Coefficient	Sign +/-
OCB-FD	+ve	AMB-FD	+ve	RP-FD	-ve
OCB-INVD	-ve	AMB-INVD	-ve	RP-INVD	+ve

OCG-AMD	-ve	AMB-AMD	+ve	RP-AMD	+ve
OCB-DIVD	-ve	AMB-DIVD	-ve	RP-DIVD	-ve
OCB-RP	-ve	AMB-RP	+ve	UA-RP	+ve

CHAPTER 4

CHAPTER 4

4.1: Descriptive Statistics

In order to find the relationship between behavioral biases with managerial decisions survey based study has been conducted. Data collected through survey was checked for presence of any abnormality. Descriptive statistics including mean, standard deviation, correlation and reliability was done for all variables. Values given in Table.4.1 shows that mean value for Pakistan where overconfidence bias (OVERCB) mean value was (M=3.90, S.D=0.79) which was greater than mean for Ambiguity Aversion Bias (AMB) (M=3.48, S.D=0.60).

Table.4.1 Mean, Standard Deviation, Correlation & Reliabilities for Pakistan

	Mean	St.Dev	1	2	3	4	5	6	7	8
1.OVERCB	3.90	0.79	(0.90)							
2.AMB	3.48	0.60	-.26**	(0.75)						
3.FIND	4.18	0.50	.53**	.45**	(0.90)					
4.INVD	2.78	0.80	-.34**	-.14**	.15**	(.80)				
5.DIVD	3.29	0.75	-.39**	-.39**	-.37	-.26**	(0.72)			
6.AMD	4.70	0.60	-.37**	.45**	-.28**	-.20**	-.66**	(0.80)		
7.RISKP	2.18	0.87	-.40**	.47**	.39**	-.24**	-.37**	.29**	(0.90)	
8.UA	4.48	0.60	-.24**	.33**	-.24**	.09	.05	.20**	.36**	(0.77)

**Correlation is significant at 0.01 level (Two Tailed)
*Correlation is significant at 0.05 level (Two Tailed)
N=309

In addition to this mean values for the rest of variables in Table.4.1 were as follows i.e. Mean value for Financing Decision (FIND) was (M=4.18, S.D=0.50), Mean of Investment Decision (INVD) was (M=2.78, S.D=0.80), Dividend Decision (DIVD) (M=3.29, S.D=0.75), Asset

Management Decision (AMD) (M=4.70, S.D=0.60), Risk Perception (RISKP) (M=2.18,S.D=0.87), Uncertainty Avoidance (UA) (M=4.48, S.D=0.60). Correlation results shown in table 4.1 explain the bi-variate relationship between the variables under study.

Table.4.2 Mean, Standard Deviation, Correlation & Reliabilities for USA

	Mean	St.Dev	1	2	3	4	5	6	7	8
1.OVERCB	4.90	0.63	(0.83)							
2.AMB	3.57	0.71	-0.16	(0.60)						
3.FIND	4.10	0.50	.29**	.26**	(0.75)					
4.INVD	2.57	0.70	-.41**	-.55**	.52**	(.70)				
5.DIVD	3.17	0.66	-.19**	-.04	-.46**	-.46**	(0.70)			
6.AMD	3.98	0.77	-.30**	.27**	-.10**	-.49**	-.66**	(0.77)		
7.RISKP	2.21	0.80	-.23**	.21**	.24**	-.56**	-.30**	.59**	(0.70)	
8.UA	4.87	0.55	-.27**	.22**	-.08	.09	0.20**	.48**	.22**	(0.60)

**Correlation is significant at 0.01 level (Two Tailed)
*Correlation is significant at 0.05 level (Two Tailed)
N=309

Table.4.2 shows mean, standard deviation, correlation and reliabilities for USA. The mean values for overconfidence bias (OVERCB) was (M=4.90, S.D=0.63) and mean value for (M= 3.57, S.D=0.71). Mean and standard deviation for the rest of variables were as follows i.e. Mean value for Financing Decision (FIND) was (M=4.10, S.D=0.50), Mean of Investment Decision (INVD) was (M=2.57, S.D=0.70), Dividend Decision (DIVD) (M=3.17, S.D=0.66), Asset Management Decision (AMD) (M=3.98, S.D=0.77), Agent Risk Perception (RISKP) (M=2.21, S.D=0.80), Uncertainty Avoidance (UA) (M=4.87, S.D=0.55). Correlation results have shown in table 4.2explain the bi-variate relationship between the variables under study for USA.

4.2 Correlation

4.2.1 Correlation Analysis for Pakistani Firms

Results for the correlation under data examination for Pakistan shows that OVERCB was found to also have negative but significant correlation with AMB (r= -.26 at p<0.01). This is also confirmed by previous studies (Shengle & Rassanti, 2011). OVERCB was positively associated with FIND (r=0.53) results shows highly significant relationship between the variables. Correlation results for OVERCB with INVESD (R= -.34), DIVD (r= -.39), AMD (r= -.37), RISKP (r= -.40), UA (r= -.24) were negative but significant. Among them correlation between OVERCB and RISKP was high as compared to other bi-variate relationships. Previous studies also confirm the results depicting that manager's OVERCB and its relation to variables in the light of risk (Broihanne. et al. 2015).

Ambiguity aversion bias as explained by previous researchers depicts managers behavioral approach toward making decisions while considering risk in their mind i.e. Ambiguity aversion bias let managers to make decisions in a very much concerned state when faced with a new situation (Barberis, et.al. 1998). Substantiating the previous author's efforts current study results shows that AMB has negative correlation with INVD (r= -.14) & positive correlation with FIND (r= .45). Results further supports the theory with positive correlation of AMB with RISKP (r= .47), AMD (r= .45) & UA (r= .33). Results show the presence of negative correlation between AMB and DIVD (r= -.39). FIND was found to have significant positive correlation with INVD (r= 0.15). Results shows negative correlation between FIND and AMD (r= -.28), ARISKP (r= -.39), UA (r= -.24), DIVD (r= -.37). This shows a trend of manager's behavior toward ambiguity averse bias as well as for overconfidence bias perhaps the impact is higher for the earlier one in

their decisions. INVD were found to have negative correlation with DIVD ($r= -.26$), AMD ($r= -.20$) & positive with RISKP ($r= .24$). Correlation between INVD and UA was positive but insignificant i.e. ($r= .09$). DIVD was significantly correlated with AMD ($r= -.66$). DIVD was negatively related with RISKP ($r= -.37$) but insignificant with UA ($r= .05$), whereas the relationship between the variables was positive. AMD was positively correlated with RISKP ($r=.29$) and also correlated with UA ($r= .20$), where as the relationship in both bi-variate correlations was significant. RISKP was positively correlated with UA ($r= .36$) with significant relationship.

4.2.2 Correlation Analysis for US Firms

Results for the correlation under data examination for USA shows that OVERCB was found to also have negative but significant correlation with AMB ($r= -.16$ at $p<0.01$). OVERCB was positively associated with FIND ($r=0.29$) results shows highly significant relationship between the variables. Correlation results for OVERCB with INVD ($r= -.41$), DIVD ($r= -.19$), AMD ($r= -.37$), RISKP ($r= -.23$), UA ($r= -.27$) were negative but significant. Among them correlation between OVERCB and INVD was high as compared to other bi-variate relationships. This also supported by Fabricius & Buttgen, (2015).

In order to confirm the relationship of ambiguity aversion bias with the target variables in current study correlation test was applied. The results among the variables under study are as follows for US. Substantiating the previous author's efforts current study results shows that AMB has negative correlation with INVD ($r= -.55$) & positive with FIND ($r= .26$). Results further supports the theory with positive correlation of AMB with RISKP ($r= .21$), AMD ($r= .45$) & UA ($r= .22$). Results show the presence of positive but significant correlation between

AMB and DIVD (r= -.04) was negative and significant, and the correlation between AMB & AMD (r=.27) was positive and significant. FIND was found to have significant positive correlation with INVD (r= 0.52). Results shows negative correlation between FIND and AMD (r= -.10), RISKP (r= -.24), UA (r= -.08), DIVD (r= -.46). INVD were found to have negative correlation with DIVD (r= -.46), AMD (r=-.49) & positive with RISKP (r= .56). Correlation between INVD and UA was positive but insignificant i.e. (r= .09). DIVD was significantly correlated with AMD (r= -.66). DIVD was negatively related with RISKP (r= -.30) & UA (r= .20). AMD was positively correlated with RISKP (r=.59) and also correlated with UA (r= .48), where as the relationship in both bi-variate correlations was significant. RISKP was positively correlated with UA (r= .22) with significant relationship. Previous studies also confirm the results where Fabricius & Buttgen, (2015) found to have correlation among the target variables. Keeping in view of both countries results it is clear that correlation is significantly present for both overconfidence and ambiguity aversion bias with the firm decisions in case of Pakistan as well as US. But impact of ambiguity is stronger for Pakistani managers than US managers. Whereas for US managers correlation results are higher for overconfidence bias as compared to ambiguity aversion bias. Further analysis will help to make a comparative analysis of both countries keeping in view of risk factor in their decision making.

4.3 Regression Analysis

The direct effect has been checked through linear regression analysis prior to mediation and moderation tests for the proposed hypothesis. The direct effect was confirmed through process by Hayes (2008). Preacher & Hayes (2008) introduced more convenient method for testing indirect effect through Sobel test than the procedure suggested by Baron & Kenny in (1986). Indirect relationship for mediation has been checked using process by Preacher and Hayes

(2008). The mediation hypothesis was also tested by bootstrap technique suggested by Preacher

and Hayes in 2008. The current study used macro PROCESS (Hayes, 2013; available on

http://afhayes.com). Bootstrap confidence intervals used helps to avoid and correct the

irregularity of the sampling distribution in indirect effects as suggested by Preacher and Hayes,

(2008). Sobel (1986) test is also applied to recheck the indirect effect with the assumption of data

being normal. Since this assumption of data normality is not fulfilled always therefore

bootstrapping is preferred over Sobel test. Current study has applied both techniques to verify the

indirect relationships. Biased corrected bootstrap technique has been used in macro PROCESS

by Hayes, (2013) for mediation where results both direct and indirect relationships were

achieved. Model 4 of the Process was used for mediation analysis of proposed hypothesis.

Results achieved for direct and indirect relationships for both countries are given below in later

sections. The moderated multiple regression analysis was applied to see moderating role of

uncertainty avoidance for behavioral biases and manger's risk perception. The moderation was

done under the suggestions of previous researchers (Cohen, et.al, 2003). The moderator and

independent variables were centred by subtracting overall mean from individual values. Later on

product terms (uncertainty avoidance x overconfidence bias and uncertainty avoidance x

ambiguity aversion bias) were created from centred values. Moreover tolerance statistics

(Tabachnick & Fidell, 2001) and Variance Inflation Factor (VIF) scores (Hair et.al, 1998) were

used to see the multi colinearity among the predictors. The analysis was found to be free from

multi colinearity problem. At the end plots were created with low and high mean values given by

Stone & Hollenbeck (1989).

4.3.1. Regression Analysis for Pakistani firms

Saleem et.al (2018) worked on the theory of bounded rationality in Pakistan and added that managers have tendency to take uncertain decisions based upon certain psychological biases which are result of manager's bounded rationality. Under this assumption of bounded rationality current study has checked the direct and indirect effect of behavioral biases on managerial decision making. Study found OVERCB is positively related to FIND which is confirmed by the values in Table.4.3 (β=0.17, p,<.001). The relationship between overconfidence bias and investment decisions in Table 4.4 shows (β=-0.10, p, <.001 values for the predicted negative relationship between OVERCB and INVD which is found to be significant. Furthermore the negative relationship between OVERCB and AMD is not confirmed in results given in Table 4.5 (β=0.-0.03, p, = 0.26 >0.001). Results for expected negative relationship between OVERCB and DIVD is confirmed by results given in Table 4.6 (β=0.-0.05, p,<.001. AMB with FIND was assumed to be negatively related which is true on the basis of results given in Table 4.7 (-0.17, p,<.001). Existence of negative relationship between AMB and INVD was found given in Table 4.8 (-0.25, p, <.001). Positive relationship between AMB AMD was confirmed based on the values shown in Table 4.9 (0.20, p, <.001). AMB and DIVD relationship was negative in results shown in Table 4.10 as (-0.04, p= .98>.001). Study also found direct relationship between independent variables and the mediator. OVERCB was negatively related with RISKP under Table 4.3 (-0.12, p, <.001). Moreover positive relationship between AMB and RISKP was confirmed by values given in Table 4.7 (0.23, p, <.001). The negative relationship between RISKP and FIND which is confirmed by values given in Table 4.3 as (-0.31, p,<.001). Study further found negative relationship between RISKP and INVD which is confirmed with (-0.29, p, <.001) in Table 4.4. For RISKP and AMD positive relation was found given in Table 4.5 (0.22,

p,<.001), RISKP and DIVD, the relation was positive but no significant impact was found in the relationship (0.07, p=.16>.001) given in Table 4.6 for Pakistani firms.

4.3.2 Regression Analysis for US firms

Marsh & Kacelnik, in (2002) added that managers tend to be more risk prone when talk about losses. Under this assumption current study extend the work toward US managers to find the indirect effect of behavioral biases on managerial decision making. In addition to this, current study analyzed the direct relationship of behavioral biases with manger's financial decision making. Current data analysis found that OVERCB is negatively related to FIND which is confirmed by the values in Table.4.16 (β=-0.06, p,<.001). Study further achieve results with negative relationship between overconfidence bias and investment decisions results in Table 4.17 shows (β=-0.16, p,<.00. Negative insignificant relationship between OVERCB and AMD is reported in results given in Table 4.18 (β=0.-0.01, p=0.20>.001). Results for expected negative relationship between OVERCB and DIVD is confirmed by results given in Table 4.19 (β=0.-0.03, p,<.001. AMB with FIND was assumed to be negatively related which is given in Table 4.20 (-0.20, p,<.001). Existence of negative relationship between AMB and INVD was also found true but not significant as given in Table 4.21 (-0.18, p=0.09>.001). AMB positive relation with AMD under was significant based on the values shown in Table 4.22 (0.12, p,<.001). Results show negative relationship between AMB and DIVD which is insignificant on the basis of results shown in Table 4.23 as (-0.11, p=.21>.001).

Study also examined the direct relationship between independent variables and the mediator. OVERCB was expected to be negatively related with RISKP which was confirmed by values OVERCB to RISKP Table 4.16 (-0.17, p,<.001). Moreover positive relationship between AMB

and RISKP was confirmed by values given in Table 4.20 (0.28, p,<.001). Study further found negative insignificant relationship between RISKP and FIND with values given in Table 4.16 as (-0.08, p=0.06>.001). Negative relationship between RISKP and INVD with (-0.31, p,<.001) in Table 4.17. Relationship between RISKP and AMD was significant given in Table 4.18 (0.11, p,<.001).Study found negative relationship between RISKP and DIVD, the relation was proved significant (0.23, p,<.001) given in Table 4.19 for the US firms.

4.4 Mediation Analysis for Pakistani Firms

4.4.1. Bootstrap for Indirect effects of Overconfidence Bias on Financing Decision through Agent Risk Perception

Hypothesis *H1a* proposed mediating role of RISKP for OVERCB and FIND. Results in table 4.3 show that there exist negative relationship between OVERCB for RISKP i.e. (β = -0.12, p< .001) and RISKP and FIND (β = -0.31, p< .001). However the direct effect of OVERCB on FIND was positive (β = 0.17, p< .001). Results also show significant indirect effect as the bootstrap confidence interval did not take into account zero value between upper and lower limits, .02 CI(.01,.04). Sobel Test for Indirect Effect using normal Distribution was significant for Financing Decision i.e. (Sobel z=3.05, p<.00). Consequently hypothesis *H1a* is established significantly.

Table 4.3 Regression Results for Pakistan Direct and Indirect Effect Mediation of Risk Perception in Overconfidence Bias and Financing Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Overconfidence Bias MED on IV	-0.12	0.02	-3.76	0.00
Financing Decision on Risk Perception DV on MED	-0.31	0.05	-5.42	0.00
Financing Decision on Overconfidence Bias DV on IV	0.17	0.02	8.47	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)				
	Effect	Boot S.E	LL95%CI	UL95%CI
	0.02	0.01	0.01	0.04
Sobel Test for Indirect Effect using normal Distribution				
	Effect	S.E	Z	P
	0.02	0.01	3.05	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.4.2. Bootstrap for Indirect effects of Overconfidence Bias on Investment Decisions through Risk Perception

Hypothesis *H1b* proposed the mediating role of RISKP for OVERCB and INVD. Results in Table 4.4 show that there exists negative relationship between OVERCB and RISKP i.e. (β = -0.12, p< .001). RISKP and INVD has negative relationship (β = -0.29, p< .001). Results add to facts that the direct effect of OVERCB on INVD was negative (β = -0.04, p<.001). The bootstrap confidence interval was free from consideration of zero value between upper and lower limits i.e. -0.02 CI(-0.09, -0.04) which signals that indirect effect is significant. Sobel Test for indirect effect also confirmed significant results of Investment Decision i.e. (Sobel z= -2.56 , p<.00). Hence Hypothesis *H1b* is accepted.

Table 4.4 Regression Results for Pakistan Direct and Indirect Effect Mediation of Risk Perception in Overconfidence Bias and Investment Decision relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Overconfidence Bias MED on IV	-0.12	0.02	-3.76	0.00
Investment Decision on Risk Perception DV on MED	-0.29	0.08	3.63	0.00
Investment Decision on Overconfidence Bias DV on IV	-0.10	0.02	-3.64	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)

Effect	Boot S.E	LL95%CI	UL95%CI
-0.02	0.08	-0.09	-0.04

Sobel Test for Indirect Effect using normal Distribution

Effect	S.E	Z	P
-0.02	0.01	-2.56	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.4.3. Bootstrap for Indirect effects of Overconfidence Bias on Asset Management Decisions through Risk Perception

Hypothesis *H1c* proposed the mediating role of RISKP for OVERCB and AMD. Results in Table 4.5 show that there exist negative relationship between OVERCB and RISKP i.e. (β = -0.12, p< .001). While RISKP and AMD has positive significant relationship (β = 0.22, p< .001). Results also added to knowledge that direct effect of OVERCB on AMD was negative but insignificant i.e. (β = -0.03, p=0.26> .001). The bootstrap confidence interval do not consider zero value between upper and lower limits, -.01(-.14, -0.02) which explains that indirect effect is significant. Sobel Test for indirect effect with the help of normal distribution is also confirmed

significant results of Asset Management Decision i.e. (Sobel z=-2.23, p<.00). Hence hypothesis

H1c is accepted.

Table 4.5 Regression Results for Pakistan Direct and Indirect Effect Mediation of Risk Perception in Overconfidence Bias and Asset Management Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Overconfidence Bias MED on IV	-0.12	0.02	-3.76	0.00
Asset Management Decision on Risk Perception DV on MED	0.22	0.07	2.87	0.00
Asset Management Decision on Overconfidence Bias DV on IV	-0.03	0.02	-1.11	0.26

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)			
Effect	Boot S.E	LL95%CI	UL95%CI
-0.01	0.07	-0.14	-0.02

Sobel Test for Indirect Effect Using Normal Distribution			
Effect	S.E	Z	P
-0.01	0.08	-2.23	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.4.4. Bootstrap for Indirect effects of Overconfidence Bias on Dividend Decision through Agent Risk Perception

Hypothesis *H1d* proposed the mediating role of RISKP for OVERCB and DIVD. Results given

in table 4.6 show that there exist negative relationship between OVERCB and RISKP i.e. (β = -

0.12, p< .001) while negative but insignificant relationship between RISKP and DIVD (β = -.07,

p=.16> .001). In addition to this the direct effect of OVERCB on DIVD was also negative (β = -

0.05, p< .001). Results also show significant indirect effect as the bootstrap confidence interval

did not take into account zero value between upper and lower limits, -.03(-.12,.14). Sobel Test

for Indirect Effect using normal distribution also confirm insignificant results for Dividend Decision i.e. (Sobel z=1.97, p<0.00). Consequently hypothesis *H1d* is rejected.

Table 4.6 Regression Results for Pakistan Direct and Indirect Effect Mediation of Risk Perception in Overconfidence Bias and Dividend Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Overconfidence Bias MED on IV	-0.12	0.02	-3.76	0.00
Dividend Decision on Risk Perception DV on MED	-0.07	0.02	-1.40	0.16
Dividend Decision on Overconfidence Bias DV on IV	-0.05	0.01	-3.53	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)				
	Effect	Boot S.E	LL95%CI	UL95%CI
	-0.03	0.02	-0.12	0.14
Sobel Test for Indirect Effect using normal Distribution				
	Effect	S.E	Z	P
	-0.05	0.02	1.97	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.4.5. Bootstrap for Indirect effects of Ambiguity Aversion Bias on Financing Decisions through Risk Perception

Hypothesis *H2a* proposed the mediating role of RISKP for AMB and FIND. Results in Table 4.7 show that there exist positive relationship between AMB and RISKP i.e. (β = 0.23, p< .001). While RISKP and FIND has positive relationship (β = -0.31, p< .001). Results show negative direct significant relationship between AMB on FIND i.e. (β = 0.18, p< .001). The bootstrap confidence interval was free from consideration of zero value between upper and lower limits i.e. .12 CI (0.01, 0.08) which signals that indirect effect is significant. Sobel Test for indirect effect

also confirmed significant results of Financing Decisions i.e. (Sobel z=2.06, p<.00). Hence Hypothesis *H2a* is accepted.

Table 4.7 Regression Results for Pakistan Direct and Indirect Effect Mediation of Risk Perception in Ambiguity Aversion Bias and Financing Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Ambiguity Aversion Bias MED on IV	0.23	0.03	2.21	0.00
Financing Decision on Risk Perception	-0.31	0.05	3.42	0.00
DV on MED				
Financing Decision on Ambiguity Aversion Bias	0.18	0.03	4.72	0.00
DV on IV				

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)				
	Effect	Boot S.E	LL95%CI	UL95%CI
	0.02	0.01	0.01	0.08
Sobel Test for Indirect Effect using normal Distribution				
	Effect	S.E	Z	P
	0.02	0.01	2.06	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.4.6. Bootstrap for Indirect effects of Ambiguity Aversion Bias on Investment Decisions through Risk Perception

Hypothesis *H2b* proposed the mediating role of RISKP for AMB and INVD. Results in Table 4.8 show that there exist positive relationship between AMB and RISKP i.e. (β = 0.23, p< .001). Whereas RISKP and INVD also has negative relationship (β = -0.29, p< .001). In addition to this AMB on INVD under direct effect showed negative relationship (β = -0.25, p< .001). The bootstrap confidence interval do not include zero value between upper and lower limits i.e..02 CI(-0.10,-0.07) which means that indirect effect is significant. Sobel Test for indirect effect also

show significant results of Investment Decisions i.e. (Sobel z=2.20, p<.0.00). Hence Hypothesis

H2b is accepted.

Table 4.8 Regression Results for Pakistan Direct and Indirect Effect Mediation of Risk Perception in Ambiguity Aversion Bias and Investment Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Ambiguity Aversion Bias MED on IV	0.23	0.03	2.21	0.00
Investment Decision on Risk Perception DV on MED	-0.29	0.08	-3.63	0.00
Investment Decision on Ambiguity Aversion Bias DV on IV	-0.25	0.04	-5.51	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)			
Effect	Boot S.E	LL95%CI	UL95%CI
-0.02	0.01	-0.12	-0.07
Sobel Test for Indirect Effect using normal Distribution			
Effect	S.E	Z	P
-0.02	0.01	-2.20	0.00

Note. N = 309. Unstandardized regression coefficients are reported.

Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.4.7. Bootstrap for Indirect effects of Ambiguity Aversion Bias on Asset Management Decisions through Risk Perception

Hypothesis *H2c* proposed the mediating role of RISKP for AMB and AMD. Results in Table 4.9

show that there exist positive relationship between AMB and RISKP i.e. (β = 0.23, p< .001).

RISKP and AMD has positive relationship (β = 0.22, p< .001). Results add to facts that the direct

effect of AMB on AMD was also positive (β = 0.20, p< .001). The bootstrap confidence interval

was free from consideration of zero value between upper and lower limits i.e.0.11(0.01, 0.03),

which shows that indirect effect is significant. Sobel Test for indirect effect also confirmed

significant results of Asset Management Decision i.e. (Sobel z=2.49, p<.00). Hence Hypothesis

H2c is accepted.

Table 4.9 Regression Results for Pakistan Direct and Indirect Effect Mediation of Risk Perception in Ambiguity Aversion and Asset Management Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Ambiguity Aversion Bias MED on IV	0.23	0.03	2.21	0.00
Asset Management Decision on Risk Perception DV on MED	0.22	0.07	2.87	0.00
Asset Management Decision on Ambiguity Aversion Bias DV on IV	0.20	0.04	4.42	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)			
Effect	Boot S.E	LL95%CI	UL95%CI
0.11	0.07	0.01	0.03

Sobel Test for Indirect Effect using normal Distribution			
Effect	S.E	Z	P
0.01	0.08	2.49	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.4.8. Bootstrap for Indirect effects of Ambiguity Aversion Bias on Dividend Decisions

through Risk Perception

Hypothesis *H2d* proposed the mediating role of RISKP for AMB and DIVD. Results in Table

4.10 show that there exist positive relationship between AMB and RISKP i.e. (β = 0.23, p<.001).

Moreover RISKP and DIVD have negative insignificant relationship (β = -0.07, p=0.16> .001).

Results adjoined to facts that the direct effect of AMB on DIVD was also positive and

insignificant (β = -.04, p=.98> .001). The bootstrap confidence interval was free of zero value

between upper and lower limits i.e. -.03 CI(-.01,.04) which signals that indirect effect is

insignificant. Sobel Test for indirect effect also set insignificant results of Dividend Decisions i.e. (Sobel z=-1.24 , p<.00). Hence Hypothesis *H2d* is rejected.

Table 4.10 Regression Results for Pakistan Direct and Indirect Effect Mediation of Risk Perception in Ambiguity Aversion Bias and Dividend Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Ambiguity Aversion Bias MED on IV	0.23	0.03	2.21	0.00
Dividend Decision on Risk Perception	-0.07	0.02	1.40	0.16
DV on MED				
Dividend Decisions on Ambiguity Aversion Bias	-0.04	0.01	-0.02	0.98
DV on IV				

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)			
Effect	Boot S.E	LL95%CI	UL95%CI
-0.03	0.03	-0.01	0.04

Sobel Test for Indirect Effect using normal Distribution			
Effect	S.E	Z	P
-0.03	0.03	-1.24	0.21

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.5. Moderation Analysis for Pakistan

4.5.1 Interactive effect of Overconfidence Bias and Uncertainty Avoidance on Risk Perception

Hypothesis *H3a* proposed moderating role of Risk Perception between Overconfidence Bias and Uncertainty Avoidance. The moderation analysis is done by taking Overconfidence Bias and Uncertainty Avoidance in step 1 while interaction term was entered in the 2nd step. Risk Perception was taken as the dependent variable in this moderation. The control variables were not found to be significant in the results. Results for this moderation analysis are given in Table 4.11 that depicts that the interaction term of Overconfidence Bias and Uncertainty Avoidance

Fig.4.1

Interactive effect of OVERCB and UA on RISKP for PK
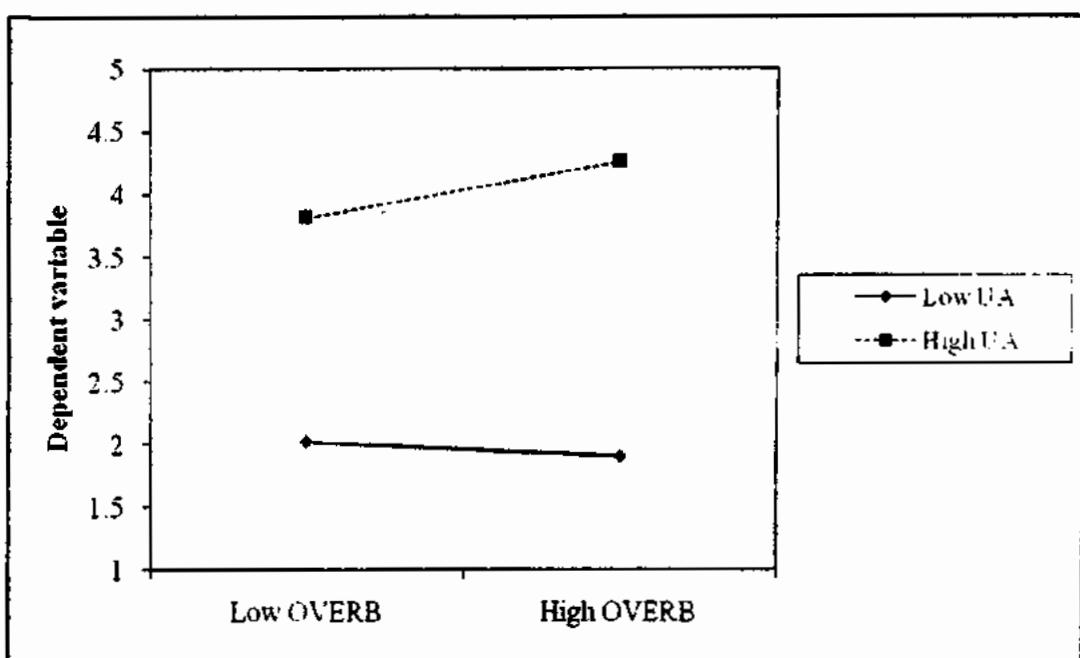
4.5.2 Interactive effects of Ambiguity Aversion Bias and Uncertainty Avoidance on Risk Perception

Hypothesis *H3b* proposed moderating role of Risk Perception between Ambiguity Aversion Bias and Uncertainty Avoidance. The moderation analysis is done by taking between Ambiguity Aversion Bias and Uncertainty Avoidance in step 1 while interaction term was entered in the 2nd step. Risk Perception was taken as the dependent variable in this moderation. The control variables were not found to be significant in the results. Results for this moderation analysis are given in Table 4.12 that depicts that the interaction term of between Ambiguity Aversion Bias and Uncertainty Avoidance was significant ($\beta = 0.11$, $p< .005$ $\Delta R2 = 0.18$, $p< .005$). The positive relationship between Ambiguity Aversion Bias and Risk Perception was week at low value of uncertainty avoidance and stronger at high value of uncertainty avoidance given in Fig.4.2which is according to the proposed hypothesis. Therefore hypothesis *H3b* was accepted.

4.6. Moderated Mediation Analysis for Pakistan

This study further checks the conditional indirect effect at different moderation levels. Researchers in the area of behavioral finance (Gorondutse & Hilman, 2016) conducted moderated mediation analysis under techniques used by preachers and Hayes in 2008. In this regard Model 7 of Preacher and Hayes, 2013 has been applied. Bootstrap size used for the study is 1000 and 95% as confidence interval.

4.6.1. Conditional indirect effect Of Uncertainly Avoidance on Financing Decisions through Ambiguity Aversion Bias And Risk Perception

Hypothesis 5a for Pakistan suggested the conditional indirect effect of AMB ON FD through RP at various levels will be different and strengthens at high level of UA. Results shown in Table 4.13 provides the evidence for significant conditional indirect effect of AMB on FD through RP for low (B=.10 , bootstrap CI= .01, .06), average (B = .020, bootstrap CI = .01, .04) and high $(B = .10$, bootstrap CI = .02, .05) levels of UA. The positive relationship between AMB and FD is stronger at high value of UA and weaker at low level of UA. Therefore hypothesis 5a is accepted.

Table 4.13 Results for Moderated Regression of Risk Perception for PK

Conditional Indirect Effect of Uncertainty Avoidance Through Risk perception				
Moderator : Uncertainty Avoidance	Boot Indirect Effect	Boot S.E	LLCI	ULCI
-1 SD(2.22)	0.10	0.01	0.01	0.06
M (4.60)	0.20	0.01	0.01	0.04
+1 SD (4.77)	0.31	0.01	0.02	0.05

N=309. Unstandardized regression coefficients are reported
Boot strap Sample size 1000
*LL= lower limit; CI= confidence interval, ; UL=upper limit*

4.6.2. Conditional Effect Of Uncertainly Avoidance On Investment Decisions Through Ambiguity Aversion Bias And Risk Perception

Hypothesis 5b suggested the indirect effect of AMB ON INVD through RP at various levels will be different and strengthens at high level of UA. Results shown in Table 4.14 provides the evidence for significant conditional indirect effect of AMB on INVD through RP for low (B=.10 , bootstrap CI= .01, .20), average (B = .20, bootstrap CI = .10, .50) and high *(B = .20, bootstrap CI = .36, .62)* levels of UA. The negative relationship between AMB and INVD is stronger at high value of UA and weaker at low level of UA. Therefore hypothesis 5b is accepted.

Table 4.14 Results for Moderated Regression of Risk Perception for PK

Conditional Indirect Effect of Uncertainty Avoidance Through Risk perception				
Moderator : Uncertainty Avoidance	Boot Indirect Effect	Boot S.E	LLCI	ULCI
-1 SD(2.22)	0.10	0.01	0.01	0.20
M (4.60)	0.20	0.01	0.10	0.50
+1 SD (4.77)	0.20	0.01	0.36	0.62

N=309, Unstandardized regression coefficients are reported
Boot strap Sample size 1000
LL= lower limit; CI= confidence interval, ; UL=upper limit

4.6.3. Conditional Effect Of Uncertainly Avoidance On Asset Management Decisions Through Ambiguity Aversion Bias And Risk Perception

Hypothesis 5c suggested the indirect effect of AMB on AMD through RP will vary at diverse levels and will show strong relation at high level of UA. Results shown in Table 4.15 provide the evidence for significant conditional indirect effect of AMB on AMD through RP for low (B=.10 , bootstrap CI= -.03, -.05), average (B = .11, bootstrap CI = -.02, -.03) and high *(B = .12,*

bootstrap CI = -.02, -.04) levels of UA. Relationship between AMB and AMD is stronger at high value of UA and weaker at low level of UA. Therefore hypothesis 5c is accepted.

Table 4.15 Results for Moderated Regression of Risk Perception for PK

Conditional Indirect Effect of Uncertainty Avoidance Through Risk perception				
Moderator : Uncertainty Avoidance	Boot Indirect Effect	Boot S.E	LLCI	ULCI
-1 SD(2.22)	0.10	0.01	-0.03	-0.05
M (4.60)	0.11	0.07	-0.02	-0.03
+1 SD (4.77)	0.12	0.08	-0.02	-0.04

N=309, Unstandardized regression coefficients are reported
Boot strap Sample size 1000
LL= lower limit; CI= confidence interval, ; UL=upper limit

4.7. Mediation Analysis for US

4.7.1. Bootstrap for Indirect effects of Overconfidence Bias on Financing Decision through Risk Perception

Hypothesis *H1a* proposed mediating role of RISKP for OVERCB and FIND. Results in table 4.16 show that there exist negative relationship between OVERCB for RISKP i.e. (β = -0.17, p< .001) and insignificant relationship between RISKP and FIND (β = -0.16, p< .001). However the direct effect of OVERCB on FIND was significant (β = 0.20, p< .001). Results also show no significant indirect effect as the bootstrap confidence interval do not takes into account zero value between upper and lower limits i.e. .05 CI (.03,.09). Sobel Test for Indirect Effect using normal Distribution was significant for Financing Decision i.e. (Sobel z=2.39, p<.001). Consequently hypothesis *H1a* is accepted for US managers.

Table 4.16 Regression Results for USA Direct and Indirect Effect Mediation of Risk Perception in Overconfidence Bias and Financing Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Overconfidence Bias MED on IV	-0.17	0.05	-2.34	0.00
Financing Decision on Risk Perception DV on MED	-0.16	0.04	-2.89	0.00
Financing Decision on Overconfidence Bias DV on IV	0.20	0.02	2.61	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)

	Effect	Boot S.E	LL95%CI	UL95%CI
	0.05	0.07	0.03	0.09

Sobel Test for Indirect Effect using normal Distribution

	Effect	S.E	Z	P
	0.04	0.06	2.39	0.16

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.7.2. Bootstrap for Indirect effects of Overconfidence Bias on Investment Decisions through Risk Perception

Hypothesis *H1b* proposed the mediating role of RISKP for OVERCB and INVD. Results in Table 4.17 show that there exists negative relationship between OVERCB and RISKP i.e. (β = -0.17, p< .001). RISKP and INVD has negative relationship (β = -0.31, p< .001). Results add to facts that the direct effect of OVERCB on INVD was negative (β = -0.16, p< .001). The bootstrap confidence interval was free from consideration of zero value between upper and lower limits i.e. -0.03 CI (-0.18, -0.09) which signals that indirect effect is significant. Sobel Test for indirect effect also confirmed significant results of Investment Decision i.e. (Sobel z=-2.15, p<.00). Hence Hypothesis *H1b* is accepted.

Table 4.17 Regression Results for USA Direct and Indirect Effect Mediation of Risk Perception in Overconfidence Bias and Investment Decision Relationship

	Direct and Total Effects			
	β	S.E	T	P
Risk Perception on Overconfidence Bias MED on IV	-0.17	0.05	-2.34	0.00
Investment Decision on Risk Perception DV on MED	-0.31	0.08	-.96	0.00
Investment Decision on Overconfidence Bias DV on IV	-0.16	0.04	-3.79	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)

	Effect	Boot S.E	LL95%CI	UL95%CI
	-0.03	0.02	-0.18	-0.09

Sobel Test for Indirect Effect using normal Distribution

	Effect	S.E	Z	P
	-0.03	0.02	-2.15	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.7.3. Bootstrap for Indirect effects of Overconfidence Bias on Asset Management Decisions through Risk Perception

Hypothesis *H1c* proposed the mediating role of RISKP for OVERCB and AMD. Results in Table 4.18 show that there exist negative relationship between OVERCB and RISKP i.e. (β = -0.17, p< .001). While RISKP and AMD has positive significant relationship (β = 0.11, p< .001). Results also added to knowledge that direct effect of OVERCB on AMD was negative and insignificant (β = -0.01, p=0.20). The bootstrap confidence interval do not consider zero value between upper and lower limits, -.05(-.03, -0.01) which explains that indirect effect is significant. Sobel Test for indirect effect also confirmed significant results of Asset Management Decision i.e. (Sobel z=-2.73, p<.001). Hence hypothesis *H1c* is accepted.

Table 4.18 Regression Results for USA Direct and Indirect Effect Mediation of Risk Perception in Overconfidence Bias and Asset Management Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Agent Risk Perception on Overconfidence Bias MED on IV	-0.17	0.05	-2.34	0.00
Asset Management Decision on Risk Perception	0.11	0.04	2.78	0.00
DV on MED				
Asset Management Decision on Overconfidence Bias DV on IV	-0.01	0.02	-0.78	0.20

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)				
	Effect	Boot S.E	LL95%CI	UL95%CI
	-0.05	0.08	-0.03	-0.01

Sobel Test for Indirect Effect using normal Distribution				
	Effect	S.E	Z	P
	-0.05	0.08	-2.73	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.7.4. Bootstrap for Indirect effects of Overconfidence Bias on Dividend Decision through Risk Perception

Hypothesis *H1d* proposed the mediating role of RISKP for OVERCB and DIVD. Results given in table 4.19 show that there exist negative relationship between OVERCB and RISKP i.e. (β = -0.17, p< .001) and negative relationship between RISKP and DIVD (β = -0.23, p< .001). In addition to this the direct effect of OVERCB on DIVD was also negative (β = -0.03, p< .001). Results also show significant indirect effect as the bootstrap confidence interval did not take into account zero value between upper and lower limits, -.02(-.06,-.01). Sobel Test for Indirect Effect using normal distribution also confirm insignificant results for Dividend Decision i.e. (Sobel z=-2.17, p<0.00). Consequently hypothesis *H1d* is accepted.

Table 4.19 Regression Results for USA Direct and Indirect Effect Mediation of Risk Perception in Overconfidence Bias and Dividend Decision Relationship

	Direct and Total Effects			
	B	S.E	T	P
Risk Perception on Overconfidence Bias MED on IV	-0.17	0.05	-2.34	0.00
Dividend Decision on Risk Perception DV on MED	-0.23	0.06	-3.86	0.00
Dividend Decision on Overconfidence Bias DV on IV	-0.03	0.03	-2.11	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)			
Effect	Boot S.E	LL95%CI	UL95%CI
-0.02	0.01	-0.06	-0.01

Sobel Test for Indirect Effect using normal Distribution			
Effect	S.E	Z	P
-0.02	0.01	-2.17	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.7.5. Bootstrap for Indirect effects of Ambiguity Aversion Bias on Financing Decisions through Risk Perception

Hypothesis *H2a* proposed the mediating role of RISKP for AMB and FIND. Results in Table 4.20 show that there exist positive relationship between AMB and RISKP i.e. (β = 0.28, p< .001). While RISKP and FIND has positive relationship (β = 0.16, p<.001). Results show negative direct significant relationship between AMB on FIND i.e. (β = 0.10, p< .001). Moreover the bootstrap confidence interval was free from consideration of zero value between upper and lower limits i.e. 0.04 CI (0.03,0.09) which signals that indirect effect is significant.

Sobel Test for indirect effect also confirmed significant results of Financing Decisions i.e. (Sobel z=2.78, p=0.07). Hence Hypothesis *H2a* is accepted.

Table 4.20 Regression Results for USA Direct and Indirect Effect Mediation of Risk Perception in Ambiguity Aversion Bias and Financing Decision Relationship

	Direct and Total Effects			
	B	**S.E**	**T**	**P**
Risk Perception on Ambiguity Aversion Bias MED on IV	0.28	0.13	2.20	0.00
Financing Decision on Risk Perception	0.16	0.04	2.89	0.00
DV on MED				
Financing Decision on Ambiguity Aversion Bias	0.10	0.05	3.55	0.00
DV on IV				

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)			
Effect	Boot S.E	LL95%CI	UL95%CI
0.04	0.02	0.03	0.09

Sobel Test for Indirect Effect using normal Distribution			
Effect	S.E	Z	P
0.04	0.02	2.78	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.7.6. Bootstrap for Indirect effects of Ambiguity Aversion Bias on Investment Decisions through Risk Perception

Hypothesis *H2b* proposed the mediating role of RISKP for AMB and INVD. Results in Table 4.21 show that there exist positive relationship between AMB and RISKP i.e. (β = 0.22, p< .001). Whereas RISKP and INVD also has negative relationship (β = -0.31, p< .001). In addition to this AMB on INVD under direct effect showed negative relationship (β = -0.18, p=0.09). The bootstrap confidence interval do not include zero value between upper and lower limits i.e. -0.12(-0.03,-0.01) which means that indirect effect is significant. Sobel Test for indirect effect

also show significant results of Investment Decisions i.e. (Sobel z=-2.20, p<.0.00). Hence

Hypothesis *H2b* is accepted..

Table 4.21 Regression Results for USA Direct and Indirect Effect Mediation of Risk Perception in Ambiguity Aversion Bias and Investment Decision Relationship

	Direct and Total Effects			
	β	S.E	T	P
Risk Perception on Ambiguity Aversion Bias MED on IV	0.22	0.13	2.20	0.00
Investment Decision on Risk Perception	-0.31	0.08	-3.96	0.00
DV on MED				
Investment Decision on Ambiguity Aversion Bias	-0.18	0.11	-1.67	0.09
DV on IV				

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)			
Effect	Boot S.E	LL95%CI	UL95%CI
-0.12	0.05	-0.03	-0.01
Sobel Test for Indirect Effect using normal Distribution			
Effect	S.E	Z	P
-0.12	0.01	-2.20	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.7.7. Bootstrap for Indirect effects of Ambiguity Aversion Bias on Asset Management Decisions through Risk Perception

Hypothesis *H2c* proposed the mediating role of RISKP for AMB and AMD. Results in Table 4.22 show that there exist positive relationship between AMB and RISKP i.e. (β = 0.28, p< .001). RISKP and AMD has positive relationship (β = 0.08, p< .001). Results add to facts that the direct effect of AMB on AMD was also positive (β = 0.12, p< .001). The bootstrap confidence interval was free from consideration of zero value between upper and lower limits i.e. 0.02 CI (0.01,0.08), which shows that indirect effect is significant. Sobel Test for indirect effect also

confirmed significant results of Asset Management Decision i.e. (Sobel z=2.46 , p<.00). Hence

Hypothesis *H2c* is accepted.

Table 4.22 Regression Results for USA Direct and Indirect Effect Mediation of Risk

Perception in Ambiguity Aversion Bias and Asset Management Decision Relationship

	Direct and Total Effects			
	β	S.E	T	P
Risk Perception on Ambiguity Aversion Bias MED on IV	0.28	0.13	2.20	0.00
Asset Management Decision on Risk Perception	0.08	0.04	2.15	0.00
DV on MED				
Asset Management Decision on Ambiguity Aversion Bias DV on IV	0.12	0.05	2.39	0.00

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)

	Effect	Boot S.E	LL95%CI	UL95%CI
	0.02	0.01	0.01	0.08

Sobel Test for Indirect Effect using normal Distribution

	Effect	S.E	Z	P
	0.02	0.01	2.46	0.00

Note. N = 100. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.7.8. Bootstrap for Indirect effects of Ambiguity Aversion Bias on Dividend Decisions

through Risk Perception

Hypothesis *H2d* proposed the mediating role of RISKP for AMB and DIVD. Results in Table

4.23 show that there exist positive relationship between AMB and RISKP i.e. (β = 0.28, p<

.001). Moreover RISKP and DIVD have negative relationship (β = -0.26, p< .001). Results

adjoin to facts that the direct effect of AMB on DIVD was negative and insignificant (β = -0.11,

p=0.21). The bootstrap confidence interval was free of zero value between upper and lower

limits i.e. -0.07 CI (-0.27,-0.23) which signals that indirect effect is significant. Sobel Test for

indirect effect also set significant results of Dividend Decisions i.e. (Sobel z=-2.24, p<.001).

Hence Hypothesis *H2d* is accepted.

Table 4.23 Regression Results for USA Direct and Indirect Effect Mediation of Risk Perception in Ambiguity Aversion Bias and Dividend Decision Relationship

	Direct and Total Effects			
	β	S.E	T	p
Risk Perception on Ambiguity Aversion Bias MED on IV	0.28	0.13	2.20	0.00
Dividend Decision on Risk Perception	-0.26	0.06	-4.47	0.00
DV on MED				
Dividend Decisions on Ambiguity Aversion Bias	-0.11	0.07	-1.84	0.21
DV on IV				

Bootstrap Results for Indirect Effect of IV on DV through MV (Bias corrected Confidence Intervals)				
	Effect	Boot S.E	LL95%CI	UL95%CI
	-0.07	0.03	-0.27	-0.23

Sobel Test for Indirect Effect using normal Distribution			
Effect	S.E	Z	P
-0.07	0.03	-2.24	0.00

Note. N = 309. Unstandardized regression coefficients are reported.
Bootstrap sample size = 5,000. LL = lower limit; CI = confidence interval; UL = upper limit

4.8. Moderation Analysis for US firms

4.8.1 Interactive effect of Overconfidence Bias and Uncertainty Avoidance on Risk Perception

Hypothesis *H3a* proposed moderating role of Risk Perception between Overconfidence Bias and Uncertainty Avoidance for US firm managers. The moderation analysis is done by taking Overconfidence Bias and Uncertainty Avoidance in step 1 while interaction term was entered in the 2nd step. Risk Perception was taken as the dependent variable in this moderation. Results for this moderation analysis are given in Table 4.24 that depicts that the interaction term of Overconfidence Bias and Uncertainty Avoidance was not significant (β = -0.12, p=0.03 ΔR2=

0.09, p=0.03). The slope test also depicted that slope was not significant. Moreover as opposed to the hypothesis proposed the negative relationship between Overconfidence Bias and Risk Perception was week at low value of uncertainty avoidance and stronger at high value of uncertainty avoidance as shown in Fig 4.3. Therefore hypothesis *H3a* was rejected.

Table 4.24 Results for Moderated Regression of Risk Perception for USA

Moderator : Uncertainty Avoidance	Risk Perception			
	β	ΔR^2	LLCI	ULCI
Step 1				
Uncertainty Avoidance	0.38		1.28	2.05
Overconfidence Bias	-0.35		-1.14	-1.84
		0.29		
Step 2				
OCB x UA	-0.12		-0.29	0.03
		0.09		

Note. N = 100

*p<.05, **<.01, ***p<-.001

Fig.4.3

Interactive effect of OVERCB and UA on RISKP for USA
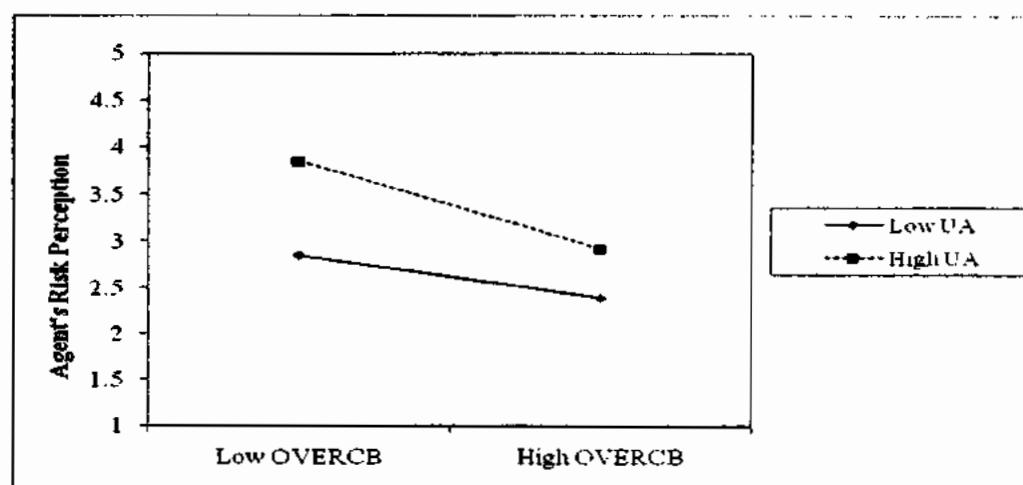
4.8.2 Interactive effects of Ambiguity Aversion Bias and Uncertainty Avoidance on Risk Perception

Hypothesis *H3b* proposed moderating role of Risk Perception between Ambiguity Aversion Bias and Uncertainty Avoidance. The moderation analysis is done by taking between Ambiguity Aversion Bias and Uncertainty Avoidance in step 1 while interaction term was entered in the 2nd step. Risk Perception was taken as the dependent variable in this moderation. The control variables were not found to be significant in the results. Results for this moderation analysis are given in Table 4.25 that depicts that the interaction term of between Ambiguity Aversion Bias and Uncertainty Avoidance was significant ($\beta = 0.26$, p< .005 $\Delta R2$=0.15, p< .005). The graphical representation of the relationship shows that the positive connection between ambiguity aversion bias and risk perception was strong at high value of uncertainty avoidance which depicts that the relationship was significant. While the relationship is weak at low value of uncertainty avoidance. This is again showing its insignificance as shown in Fig.4.4. Therefore hypothesis *H3b* is partially accepted.

Table 4.25 Results for Moderated Regression of Risk Perception for USA

Moderator : Uncertainty Avoidance	Risk Perception			
	β	ΔR^2	LLCI	ULCI
Step 1				
Uncertainty Avoidance	0.38		0.03	0.15
Ambiguity Aversion Bias	0.16		0.43	0.11
		0.14		
Step 3				
AMB x UA	0.26		0.12	0.80
		0.15		

Note. N = 309
*p<.05, **<.01, ***p<-001

Fig.4.4

Interactive effect of AMB and UA on RISKP for USA
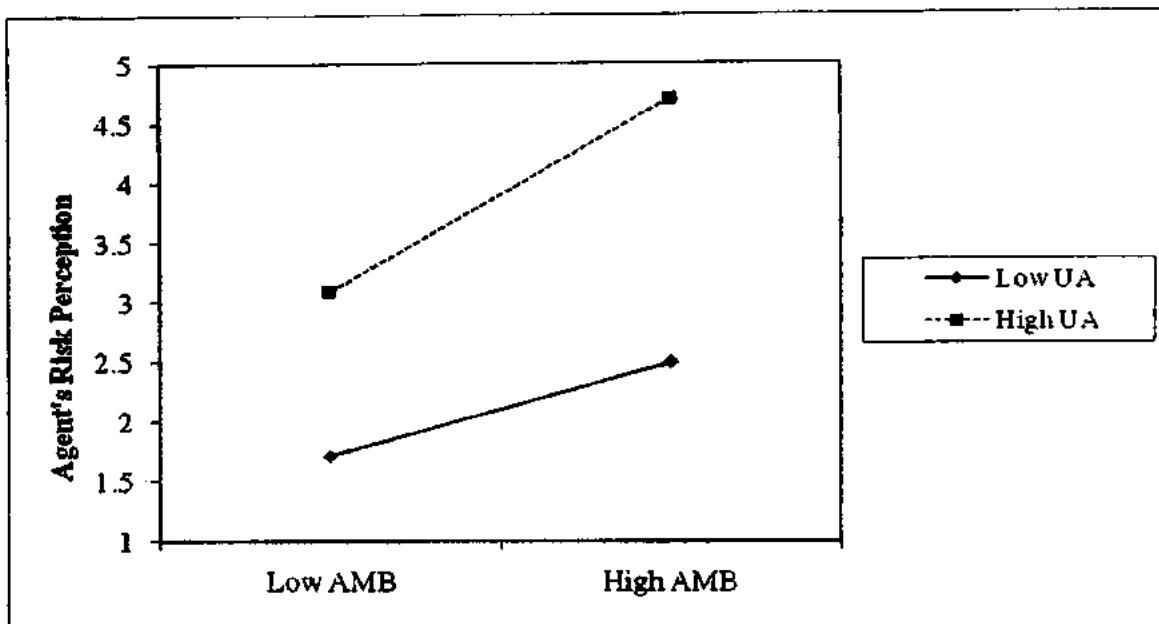
4.9. Moderated Mediation Analysis for USA

4.9.1. Conditional Indirect Effect of Uncertainly Avoidance On Financing Decisions Through Ambiguity Aversion Bias And Risk Perception

Hypothesis 5a suggested the indirect effect of AMB ON FD through RP at various levels will be different and strengthens at high level of UA. Results shown in Table 4.25 provide the evidence for significant conditional indirect effect of AMB on FD through RP for low (B=.04 , bootstrap CI= .01, .09), average (B = .05, bootstrap CI = .02, .10) and high $(B = .06$, bootstrap CI = .02, .13) levels of UA. Relationship between AMB and FD is stronger at high value of UA and weaker at low level of UA. Therefore hypothesis 5a is accepted.

Table 4.26 Results for Moderated Regression of Risk Perception for USA

Conditional Indirect Effect of Uncertainty Avoidance Through Risk perception
Moderator : Uncertainty Avoidance

	Boot Indirect Effect	Boot S.E	LLCI	ULCI
-1 SD(3.45)	0.04	0.02	0.01	0.09
M (4.87)	0.05	0.02	0.02	0.10
+1 SD (5.28)	0.06	0.03	0.02	0.13

N=309, Unstandardized regression coefficients are reported
Boot strap Sample size 1000
LL= lower limit; CI= confidence interval ; UL=upper limit

4.9.2. Conditional Effect Of Uncertainly Avoidance On Investment Decisions Through Ambiguity Aversion Bias And Risk Perception

Hypothesis 5b suggested the indirect effect of AMB on INVD through RP at various levels will be different and strengthens at high level of UA. Results shown in Table 4.26 provide the evidence for significant conditional indirect effect of AMB on INVD through RP for low (B=.12 , bootstrap CI= .03, .24), average (B = .15, bootstrap CI = .08, .26) and high *(B = .19, bootstrap CI = .07, .33)* levels of UA. Relationship between AMB and INVD is stronger at high value of UA and weaker at low level of UA. Therefore hypothesis 5b is accepted.

Table 4.27 Results for Moderated Regression of Risk Perception for USA

Conditional Indirect Effect of Uncertainty Avoidance Through Risk perception				
Moderator : Uncertainty Avoidance				
	Boot Indirect Effect	Boot S.E	LLCI	ULCI
-1 SD(3.45)	0.12	0.06	0.03	0.24
M (4.87)	0.15	0.05	0.08	0.26
+1 SD (5.28)	0.19	0.08	0.07	0.33

N=309, Unstandardized regression coefficients are reported
Boot strap Sample size 1000
LL= lower limit; CI= confidence interval, ; UL=upper limit

4.9.3. Conditional Effect Of Uncertainly Avoidance On Dividend Decisions Through Ambiguity Aversion Bias And Risk Perception

Hypothesis 5c suggested the indirect effect of AMB on DIVD through RP at various levels will be different and strengthens at high level of UA. Results shown in Table 4.27 provide the evidence for significant conditional indirect effect of AMB on DIVD through RP for low (B=.07, bootstrap CI= .01, .17), average (B = .10, bootstrap CI = .04, .18) and high $(B = .12$, bootstrap CI = .04, .24) levels of UA. The negative relationship between AMB and DIVD is stronger at high value of UA and weaker at low level of UA. Therefore hypothesis 5c is accepted.

Table 4.28 Results for Moderated Regression of Risk Perception for USA

Conditional Indirect Effect of Uncertainty Avoidance Through Risk perception				
Moderator : Uncertainty Avoidance	Boot Indirect Effect	Boot S.E	LLCI	ULCI
-1 SD(3.45)	0.07	0.04	0.01	0.17
M (4.87)	0.10	0.04	0.04	0.18
+1 SD (5.28)	0.12	0.05	0.04	0.24

N=309, Unstandardized regression coefficients are reported
Boot strap Sample size 1000
LL= lower limit; CI= confidence interval, ; UL=upper limit

4.9.4. Conditional Effect of Uncertainly Avoidance on Asset Management Decisions Through Ambiguity Aversion Bias And Risk Perception

Hypothesis 5d suggested the indirect effect of AMB ON AMD through RP at various levels will be different and strengthens at high level of UA. Results shown in Table 4.28 provide the evidence for significant conditional indirect effect of AMB on AMD through RP for low (B=.02 , bootstrap CI= .01, .06), average (B = .03, bootstrap CI = .02, .07) and high $(B = .03$, bootstrap

CI = .03, .09) levels of UA. The positive relationship between AMB and AMD is strong at the

higher value of UA and weaker at low level of UA. Therefore hypothesis 5d is accepted.

Table 4.29 Results for Moderated Regression of Risk Perception for USA

Conditional Indirect Effect of Uncertainty Avoidance Through Risk perception				
Moderator : Uncertainty Avoidance	Boot Indirect Effect	Boot S.E	LLCI	ULCI
-1 SD(3.45)	0.02	0.01	0.01	0.06
M (4.87)	0.03	0.02	0.02	0.07
+1 SD (5.28)	0.03	0.02	0.03	0.09

N=309, Unstandardized regression coefficients are reported
Boot strap Sample size 1000
LL= lower limit; CI= confidence interval, ; UL=upper limit

CHAPTER 5

CHAPTER 5

RESULTS AND DISCUSSION

5.1 Digest of the Results

Current study proposed 18 hypotheses both for US and Pakistan out of which 10 are accepted for Pakistan 13 were accepted for USA. Total number of indirect effect hypothesis were 08 where 06 got accepted for underdeveloped country while 08 for developed country. Overconfidence bias was found to have significant direct impact on all financial decisions except asset management decision. Ambiguity aversion bias in case of underdeveloped country is found to have significant relationship with financing, investment and asset management decisions but insignificant with dividend decisions. For US firm's overconfidence has direct significant impact on all decisions except asset management whereas ambiguity aversion bias for US firms has significant impact on financing and asset management but not on investment and dividend decisions. Overconfidence bias and ambiguity aversion bias were significantly related with manager's risk perception for both countries. Moreover risk perception was found to be significantly related with all financial decisions under direct effect except dividend decision in case of Pakistan and in case of USA significant for all decisions. The indirect effect was checked under 8 hypothesis where 6 were approved in under developed country's (Pakistan) case while it significant for 08 hypothesis in case of USA. Agent's risk perception was found be a better mediator for ambiguity aversion bias and financial decisions as compared to mediator for overconfidence bias and financial decisions in case of Pakistani firms while vice versa in case of USA. For moderation analysis out of 2 hypotheses one was completely rejected while one was accepted in both countries. i.e. Under moderation analysis uncertainty avoidance was found to significantly affecting ambiguity version bias and in two way interaction plots the directions in the results were according to the proposed one. Therefore the effect of moderator for ambiguity version

bias can be considered significant. Further analysis of moderated mediation is restricted for those (dividend) in under developed case which does not fulfilled the obligatory conditions placed by Hayes in 2013. Previous studies also supports the conditions for moderated mediation to be fulfilled to go further Little.et.al. (2007).

5.2 Discussion under Direct effect, indirect effect and Moderation

5.2.1 Direct Effect

5.2.1.1 Overconfidence Bias and Ambiguity Aversion Bias

Behaviorlists indentified that bounded rationality of managerial decisions making causes managers to deviate from normal pathways (Chira, Adams, & Thornton.2008). The evidence from previous research work supports the pecking order theory for Pakistani and US firms. Findings suggest that investment decisions and dividend payment decisions are negatively related to manager's overconfidence bias while positive with excessive financing. Previous researchers also supports for the same results in developed and under developed countries. According to previous researchers firms prefer to use internal funds and profits and then at second step use financing techniques to raise funds at time of need of money for investment purpose. But strength of direct effect of overconfidence on financing and dividend decision was stronger in case of Pakistan than USA. Roll in (1986) found that overconfident mangers go for sub optimal contracts as they over value the benefits from the investment by underestimating the risk associated with the investment decision. In this regard investment decisions US firm manager's overconfidence bias has more impact than Pakistani firm's managers (Shah & Hijazi, 2004, Hijazi & Tariq, 2006, Rafiq et al. 2009, Afza & Mirza, 2010), which shows that US managers are more overconfident than Pakistani managers for investment decisions. Another behavioral

bias in this study was ambiguity aversion bias; the introduction of insecurity into ambiguous situations has been well documented previously. Where "Ellsberg Paradox" arises when people prefer certain/known probabilities over unknown probabilities related to a decision. Previous studies suggested that ambiguity averse managers show high tendency toward low probabilities while high tendencies toward high probabilities decisions. Results depicted direct negative relationship of ambiguity aversion bias with and investment decisions and positive with financing and asset management decisions in case of Pakistan. Dividend decisions were insignificantly related with ambiguity version bias for US managers as well as for Pakistan. In depth analysis of the results found that the strength of ambiguity aversion bias for asset management was higher for Pakistani firms as compared to US firms. The positive relationship between financing and ambiguity aversion bias was stronger in case of Pakistan than USA which also coincide with the relationship between overconfidence with financing decisions in case of US and Pakistan.

5.2.1.2 Risk Perception

The study proposed a ground breaking fact inherent in the managerial decisions making under the theory of bounded rationality and behavioral decision theory. Kouabenan, (1998) explains in this regard that bias may distress the people perception about risk which leads into drastic outcomes. Moreover if risk perception plays an important role in the relation between biases and decisions it means that by influencing the risk perception one can change the effect of behaviors/attitudes toward the decisions. In this regard importance of risk perception in undeniable for behavioral biases of firm managers. Furthermore researchers enforced on the differentiation of personal risk perform general risk (Drottz-Sjöberg & Persson, 1993). Henceforth policy makers take measures differently depending the nature of risk under consideration.

This thesis work established a hypothesis about the mediating role of risk perception between the behavioral biases and firm decisions the managers take on behalf of shareholders. Weber with his colleagues put forward the knowledge that manager's risk preference might differ due to situational, domain-related diversity in the risk perception (Weber & Milliman, 1997; Weber, 2001; and Singh & Bhowal, 2008). Current study found that overconfidence is negatively related to risk perception in both courtiers which is also confirmed by previous researchers i.e. According to Simon & Houghton, (2003); Li & Tang, (2010) and Nosic & Weber, (2010) Overconfidence Bias of managers tend to dwindle the perception of mangers about risk which in turn mediates the risk related behavior of managerial decision making. Conversely study found positive relation between the ambiguity aversion bias and risk perception of managers in USA and Pakistan as discussed by Barbosa & Fayolle (Barbosa & Fayolle, (2007). Bertrand & Mulainathan (2003) added that conservative act of manager is a way to counteract the risk of loss of control. Way to this biased manager's risk perception link with the financial decisions of firms is very high. Keeping view of such behaviors this study explored risk-risk situation under ambiguity aversion bias to find the impact of risk perception on managers decisions as suggested by Viscusi & Chesson (Viscusi & Chesson, 1999). Current study tests the indirect effect of overconfidence bias and ambiguity aversion bias on financial decisions of firm managers.

5.2.2 Indirect Effect

The indirect effect show that risk perception has significant mediating role on manger's financial decision making which may lead firms to face behavioral cost and ultimately decrease in the firm value. Perception of risk goes beyond the individual, and it is a social and cultural construct reflecting values, symbols, history, and ideology (Weinstein, 1989). Buttgon & Fabricius (2015) extended the knowledge in this regard by arguing that firm manager's risk

perception serves as a mediator between overconfidence bias and risk assessment linked with the decision making process. Study focused on the mediating role of risk perception between behavioral biases and firm decisions in developed and underdeveloped economy. Researchers also established that ambiguity aversion biased managers' focus on the situations where an ambiguous situation of risk related decisions involves (Viscusi & Chesson, 1999).

A brief discussion of mediating of role risk perception in the light of results and previous literature is as follows: the study will help the managers to correct the shortcomings in the less developed economies to find the loop holes and solve them.

5.2.2.1 Financing Decisions

Financing decisions are of due importance for the firms to raise capital for future running of business and its growth in times when it could not find sufficient funds from own sources. Tversky & Kahneman (1984) argued in this regard that in a highly uncertain and unpredictable era managers do not decide rationally about the capital structure of the firm. They further enforced on the need to explore the role of risk perception in the decisions related to debt equity mix and growth mechanism of firms. Current study explored the mediating role of risk perception between behavioral biases and financing decision of US and Pakistani firms. The results show significant mediating role of risk perception of managers in the relationship between overconfidence bias of mangers and financing decisions and the relationship between ambiguity aversion bias of managers and financing decisions. But the effect for ambiguity aversion bias was stronger in case of Pakistan. Griffin & Tversky (1992) worked on the overconfidence bias and financing decisions and found that financial experts are more overconfident than a beginner because they perceive less risk about the situation. Shah et al, (2018) worked on the overconfidence bias of Pakistani managers and find that overconfidence

bias leads mangers to go for maintaining high cash flows, high debt financing. Similarly for US managers, Hackbarth (2008) found that managerial overconfidence drive the decisions towards high debt financing in US firms. Results show that the relationship between overconfidence bias and financing decision was significantly mediated by risk perception in both countries but relation was stronger for US managers in relation with debt financing as compared with the Pakistani firms. On the other hand mediating role was found also significant for ambiguity aversion bias but the mediation was strong for Pakistani firm managers. This shows that US mangers prefer high debt by perceiving low risk overestimating their abilities. Pakistani managers on the other hand prefer to go debt financing by perceiving more risk related to issuance of equity. As suggested by Sturdivant.et al (1985) risk perception is associated with the risk aversion. They further added that managers who prefer financing basically underestimate the risk associated with their financing decisions. Researches further added that ambiguity aversion bias may affect to go for the optimum leverage in a situation where cash flows decisions ignite the risk of bankruptcy. Current study tested the mediating role of risk perception which cause the manages perceive to less risk pertaining to debt financing as compare to equity financing and cash flows. Furthermore researcher added that managers are risk averse toward the liquidity position of firm linked with the presence of sufficient cash flows to meet it short term needs. Izhakian, Yermack, & Zender, (2017) added that high uncertainty over the known probability outcomes (risk perception) leads to less leverage while high uncertainty over the unknown probability outcomes (high ambiguity aversion) may cause the managers to take high leverage.

5.2.2.2 Investment Decisions

CEO's investment decisions are associated with the wealth maximization of shareholders and ultimately affect the firm value in long run. Investment decisions are also known as capital

budgeting or capital expenditure decisions. Current investment decisions pertains to long term investment decisions while short term /working capital management decisions are discussed in asset management decisions of firms under this thesis work. Previous literature detailed about the common factors which may influence the investment decisions of firm managers. Among those factors risk perception of managers is very crucial and an intact aspect (Longjie & Anfeng, 2017). Ishtiaq.et al. (2017) in this regard worked on investment decisions of Pakistani firm managers and found that mangers decisions are influenced by some other factors in addition to the bounded rationality of their personality. As the principle of capital budgeting advice to maintain balance between over and under investment. The principle further advice to get advantage of investment decisions for long run which results in the growth of firm ultimately. As these decisions are done via future series of investments for long run the risk factor also adheres in the journey. Nishimura & Ozaki (2007), added that managers may feel uncertain about the capital investment decisions with the fear of irrecoverable funds invested. According to the researchers this uncertainty characterized by set of probability measures is known as ambiguity 'knightian uncertainty'. Researchers quoted the relationship between the capital investment decision and ambiguity in the light of previous literature i.e. Knight (1921), Ellsberg, (1961); Bewley, (1986); Gilboa & Schmeidler, (1989). Current study analyzed this risk perception as a mediator between manager's overconfidence, ambiguity aversion bias with decisions as suggested by previous researchers in Pakistan (Ishtiaq.et al. 2017). Current study found that risk perception mediates the relationship between behavioral biases and investment decisions significantly in both countries. Study further found significant relationship between risk perception and investment decisions but this proposed relationship is stronger in case of USA. The reason may be because of the strong relationship between overconfidence bias and low risk perception. Odean (1998)

supported in his regard that overconfident manager's decision results in low expected utility as compared to rational manager where he argued that overconfident managers under value their firms so underestimate the profit from the investment decisions. Turdivant, Ginter, & Sawyer, (1985) worked on ambiguity bias of managers and associated it with the low performance outcomes. Results further shows that overconfidence and ambiguity aversion bias has significant relation with the investment decisions in both countries (Atif, 2014 & Kengatharan, 2014). Moreover overconfidence bias is found to be more strongly related with low risk perception in case of US managers while ambiguity aversion bias is more strongly linked to high risk perception in case of Pakistani managers. Previous research also supports the findings i.e. This leads US managers to over invest but at a higher rate than the Pakistani managers. Furthermore the developed market having more investment opportunists creates paths for the managers to invest more aggressively as compared to under developed markets where managers have very small markets and opportunities to invest. Buttgon & Fabricius (2015) elaborated that the manager's investment behavior regarding projects is greatly affected by overconfidence bias. Researchers extend the knowledge by adding that overconfidence bias of managers leads them to evaluate project's risk more optimistically and ultimately results into an overvalued project. Thus the risk is insufficiently reflected in the project evaluation and results into failures. On the other hand Marcia et al. (2014) found regarding the ambiguity bias that it is manager's ambiguity due to which he perceive low payoff from the investment project. Anderson et al., (2009) & Drechsler, (2010) worked on the role of ambiguity aversion bias on investment decisions and found that there exists negative relationship between the manager's ambiguity and capital expenditure decisions as the risk of facing loss as proposed by prospect theory force them to respond conservatively towards the investment. Hunjra & Rehman (2015) worked on risk

perception and information asymmetry impact on investment decisions in Pakistan and found significant relationship for investment decisions of firm.

5.2.2.3 Asset Management Decisions

Literature is evident that asset management of firm including cash, reserves has depicted that it acts a s a security for the liquidity shocks which a firm may face at the time of investment or repayment of loans. Breuer, Rieger, & Soypak (2013) quoted that cash holding are of due importance when managerial investment decisions come up with deficit investments. Keynes (1936) in the early 20th century put light on the importance of cash holdings befits and costs.

Current study targets the indirect effect of agent's risk perception on the relationship between overconfidence bias and ambiguity aversion bias with asset management decisions of managers in Pakistan and USA. The role risk perception was found significant for the variables under study. Furthermore the role of risk perception was stronger for ambiguity aversion bias for both countries. Results for the overconfidence bias shows that risk perception play its significant mediating role but the impact was more strong for ambiguity aversion bias. This is the reason firms prefer to raise cash holdings for future needs. Deshmukh et.al, (2015) worked on the overconfident manger's perception about risk. According to researchers overconfidence manger's risk perception led them to perceive the cost external financing to be low in future because of which they are less concerned about raising cash reserves. This perception makes them confident to fund investment growth opportunities through low cost debt available to them. In this regard similar findings have been previously suggested by other researchers as well. Hackbarth (2008) added that managers with overconfidence bias perceive low risk to avoid raising cash reserves to finance via debt rather than using its cash holdings because they feel it will be less costly for them. Malmendier & Tate (2005) findings also supports in this regard where they added that

overconfident mangers being optimistic about self financing will prefer to use internal cash funds to meet the financial needs of firm then they prefer to for debt and at the end equity. Conversely researchers found ambiguity averse managers to perceive more risk regarding the working capital management of firms. Study of scholars shows that asset management decisions are positively related with ambiguity aversion bias. Agliardi.et.al. (2016) added that high ambiguity aversion bias with high risk perception leads firm to keep cash balances for long time period as compared to a situation where managers have low ambiguity aversion bias with less risk perception (Agliardi.et.al. 2016). Researchers also added that for investment decisions the ambiguity bias and its risk perception is high for the loss domain which leads managers to reduce investment. Agliardi.et.al. quoted that such concerns of managers prevents them from availing investment opportunities. This elucidates the facts added in previous section.

5.2.2.3 Dividend decisions

According to behavioralists the dividend payment is considered as an efficient way to consume capital gains and to avoid the mental costs linked with the reinvestment. They further proposed that dividends are signals of firm's stability and a tool for valuation of firm by the stakeholders. Therefore shareholders demand the payment of dividends from firms (Graham, Harvey, & Huang, 2009). The mediating role of agent's risk perception was investigated in the current study for the relationship between overconfidence bias and dividend decisions and between ambiguity aversion bias and dividend decisions. Results showed that risk perception play significant role for overconfidence bias and ambiguity in case of USA but the relation was stronger for overconfidence bias. Malmendier & Tate (2005, 2008) work on the overconfidence bias and dividend is worth mentioning here where they studied US companies dividend policy during 1980-1994. Their findings suggests that US overconfident CEOs tend to pay less dividend

due less risk perception of not paying dividend as compared to use that money reinvestment purpose. Ben-David et al. (2007) indicated that managerial overconfidence results in more investments, so in order to invest through available funds they prefer to do not pay dividend. Researchers coined the words by saying that overconfidence bias of managers is sensitive risk of falling into difficult situation or loss which forces them to take measures to save from bankruptcy. As a result of such risk concerns for low cash funds they prefer to pay less dividends and ultimately ignore the risk attached to the signals generated via non payment of dividends (Lin et .al., 2008). Current study results showed insignificant mediating role of risk perception in case of Pakistan for dividend decisions. This shows that there might be some other factors which affect the behavioral biases to divert from balance path way for making efficient dividend policy. Mediating role of ambiguity aversion bias is significant for USA but the effect of low risk perception for overconfidence bias greater than high risk perception for ambiguity aversion bias. The reason may be that most of the US managers are more overconfident so they have more strong effect on dividend decisions and it also evident in the results. Kisgen (2006) worked on the role of risk perception for dividends payment and found that dividend payment is positively affect the value of firm while it works against the phenomenon of biased managers for negative relation between risk perception about dividend. Previously researchers like Bertrand & Mullainathan (2003) also added that CEOs with ambiguity bias follow a generous policy dividend payment toward shareholders. Several theories attempt to explain why investors like dividends. The significant direct relation but insignificant mediating role of risk perception for Pakistan might be because there are some other factors setting the relationship between overconfidence bias and dividend decisions in Pakistan. In this regard research suggests that the firms in Pakistan have ownership centered to the Board of Directors, cash dividends are likely to be paid regularly moreover they feel it more secure to decide about their money (Shah et al., 2012). Moreover, the

firms of larger size and having high gearing are found reluctant in paying cash dividends as mangers are more confident to invest in long term investments (Afza & Mirza, 2010, & Asif et al., 2011). They further added that the impact of dividend yield is positive (Asif et al., 2011). Such previous findings are enough to answer the unsaid question before regarding the dividend decisions and biased behavior of Pakistani firm managers.

5.3 Moderation & Moderated Mediation

Researchers from around the world have enormously adopted the Hofstede cultural dimensions to link them to other areas of study. The economists and experts from behavioral finance also extend the knowledge of finance and psychology toward the cultural aspects of managers. In this regard Graham & Sathye (2017) recently worked on the uncertainty cultural dimension of Hofstde for Indonesian and Australian listed firm's financial decisions. They added that uncertainty has influence on the economic, social and legal aspects of financial decisions. Researchers also found that uncertainty avoidance is high in Indonesia as compared to Australian culture. The role of uncertainty avoidance as moderator was found insignificant for overconfidence bias in both countries while the effect was significant for ambiguity aversion bias via risk perception as mediator for both countries. In order to explain the results it is worth mentioning to quote here the huge support of impact of culture on the risk perception of firm's managers. Brenot et al. (1998) found the week effect of cultural dimension on the risk perception of firm managers i.e. it explains only 6% of the relation variability. The researchers before this already worked on the same thought and found the similar results. e.g. Sjoberg (1995), Seifert & Tongersen (1995) & Marris et al. (1996). Later on Sjoberg (2000) elaborated his results that the cultural theory under his study explains up to 10% of the variability of risk perception. Literature supports on the need to find the role of culture for the risk perception of firm managers where Keown (1989) compared the cultural differences for the risk perception. The researcher added that culture

brings change in the risk perception of managers in an environment where control and regulations of

risk was available. This shows the role of culture to affect the risk perception of firm managers.

CHAPTER 6

CHAPTER 6

6.1 Conclusion

The findings of the study depicted that behavioral biases influence on corporate performance, as the managers take decisions under the influence of personal feelings, perceptions, and intuitions. Barnewall (1987) supports the presence of psychological biases in failure of decisions taken by firm managers. He investigated psychological characteristics of the managers and discussed how a good investment strategy could turn into failure by making emotional financial decisions. Through the detailed analysis and discussion of results of responses from targeted firms in Pakistan and USA study found significant mediating role of risk perception for behavioral biases and financial decisions. Results show that risk perception is the determining factor for the behavioral cost firms pay in the form of sub optimal decisions taken by managers. Study also added that in the uncertainty avoidance aspect of cultural dimension moderates the relation between ambiguity aversion attribute and risk perception of managerial behavior in both courtiers. Study further check the moderated mediation effect on the relationship between behavioral biases and firm decisions in the presence of risk perception and find uncertainty avoidance to significant influence at higher level for ambiguity aversion bias in both countries. Deshmukh, Goel & Howe, (2013) in support of same thoughts concise the decisions taken by managers and relate it to their risk perception regarding future treacherous situations. According to the researchers CEO with psychological bias have low risk perception for not maintaining internal cash flows and risk linked with nonpayment of dividend to shareholders. As these executives avoid external financing initially and overinvest internal funds in projects by considering their firm undervalued they ignore the risk of future haphazard situation due to shortage of funds. In this way they rush for excessive debt financing to meet the shortage of

internal funds and funds needed to pay for the investments going on. On the other hand literature supports the maintenance of cash holdings and more dividend payments in case of high ambiguity aversion bias. The overinvestment habit of overconfident managers is also found true recently by Longjie & Anfeng, (2017).

In lure of above study established ground breaking facts concerning the behavioral cost that firms pay due to high risk perception distress about the decisions in case of Pakistan while low risk perception in case of USA under the moderating effect of cultural aspects of mangers. Risk perception was strong mediator for ambiguity aversion bias in Pakistan than overconfidence bias and firm decisions except dividend decisions while risk perception more strong for overconfidence bias in case of US firm' mangers. But the moderating effect of uncertainty avoidance cultural dimension was found be present. Results confirm that low value of investments due to risk of loss and high leverage ratio due to risk of bankruptcy by decreasing internal cash flows are observable in Pakistani firms more importantly due to ambiguity aversion bias. It is also observable that managers prefer debt in order to get tax shields against the funds raised through financing. As supported by Bradely,et.al. (1984) managers even with highly risk averse behavior tend to go for high debts in order to get tax shield specially when cash flows are highly volatile. Fama & French, (2015) confirm the trade-off and pecking order models by arguing that firms with fewer investments have higher dividend payouts. Thus behavioral biases and risk perception play significant part in the financial decision making process. Conversely for US managers the strong negative relationship between overconfidence bias and risk perception which signals towards low cash reserves as they perceive debt financing to be less costly so amongst them with overconfidence bias do high debt financing, overinvestment in undervalued projects, less payment of dividend as most part of funds use in investments. Overinvestment by

US firm has one positive aspect though i.e. more investments by US firms with as compared to Pakistani firms tend to show high growth opportunities. This is the reason that developed countries' firm like USA firms have the ability to generate more cash flows and mitigate the risk of bankruptcy which can arise due to non payment of debt. This also shows that Pakistani firms need to give due importance to capital budgeting and dividend decisions for which the other two decisions are mainly performed. Current study provides new ways for development and enhancement of managerial practices in Pakistan especially under Pakistan United States Science & Technology Cooperation Program. Projects aim to contribute to build research capacity in Pakistan while strengthening U.S Pakistan cooperative relationships in one or more dimensions. Better knowledge of the behavioral aspects of Pakistani as well as USA managers will help to avoid problems arising due to such factors. i.e. The more the firms are capable of understanding the nature of their executives the better they will be in reducing the behavioral cost and ultimately enhance their performance and growth.

6.2 Future Implications

The findings of Kouabenan, (1998) are enough to give reasons of such well expanded research work. Where he found that risk perception role is undeniable between the behavioral biases and managerial financial decisions. Current study work on to find the four major decisions which has been hesitated by the previous researchers. The study recommends how these biases are considered for all decisions of firm simultaneously. This will guide the policy makers to consider the results faced by firms and the economy after every decision at the same time. Moreover what interactive steps towards risk perception and cultural variations can secure the firm decisions at the same time.

6.2.1 Theoretical Implications

With the approval of behavioral finance sociological factors have achieved due importance in the area of financial decision making and exposure of information. Previous studies have enforced to see the mediating factors which may be part of behavioral aspect affecting organizational performance (Bloomfield, 2009). Current study targets the theory of bounded rationality to be determining factors of managerial financial decision making. In this concern the mediating role of manager's risk perception and moderating role of culture by uncertainty avoidance has been checked. Similar relationship has been also studies previously by researchers in various fields of study Gervais et al., (2003) explored the idea of overconfidence for investment decisions of managers, Deshmukh et al., (2013) worked on the dividend decisions and overconfidence bias and ambiguity aversion bias. Malmendier & Tate, (2008) expand the work on managerial decisions on mergers and their behavioral biases. They also worked on the sensitivity of cash and investment under the impact of behavioral biases (Malmendier & Tate, 2005). The study targets survey based work to see the response of the managers and then the compliance of the results with the actual firm financial decisions outcomes simultaneously in the light of cultural aspect. The need to expand the research was fulfilled by testing the whole model via financial data so that the current study survey based findings may be confirmed and verified. Such future research will generate a widespread platform to explore more pathways for both traditional and behavioral finance theories including capital budgeting theory, Pecking order theory, Trade off Theory, Cultural Theory & Prospect theory. Furthermore investigation of the behavioral aspects through primary and secondary data analysis simultaneously is also useful.

6.2.2 Managerial Implications:

This study will help the organizations/ principals manufacturing industries to better understand the behavioral aspects of their managers and their forthcoming decisions pathways. It will help the managers to overcome the psychological challenges in the light of risk perception which leads to increase the conflict between the shareholders and management. Impact of psychological biases on the managers in corporate sectors has been studies enormously by previous scholars' e.g Roll in (1986) proposed the "hubris hypothesis" according to which managerial overconfidence leads them to overbid for the investment targets. Heaton (2002) further elaborates the effect of overconfidence in affecting managerial actions. This effect has been studies under multiple problems' dimensions. This study will help the managers on the above mentioned decisions areas in corporate sector to cope with their risk perception controlled biases and their impact of the decisions which further have their cultural effect though not strong but with little significance. Daniel et al. (2002) suggested in this regard that proper rules should be followed by firms for healthy decisions making by managers in the light of corporate governance. Singh, Grann & Fazal (2008) and Singh & Fazal (2010) further enforced to provide directions and guidance to managers so that they can understand, observe and to cope with the manager's personal risk. Researchers should put efforts on behavioral biases and risk perception factors of managers in both courtiers to find the presence of biases and their ultimate impact on the firm decisions in the form of behavioral cost. This will help the firms in both courtiers to control the impact of these biases on firms and both courtiers' economies to the possible extent.

6.3 Limitations of the study

It was not easy during the whole period of survey to obtain financial information from the executives and managers especially across country. This may be because managers are mostly conscious about

the financial information disclosure to people in such open manner specially dividend and investment decisions. Agency issues evident by literature are always there which may cause management to be reluctant to tell about financial leverage information as well. During this course of survey it was very challenging to get response with full positivity. It is suggested to target small and medium firms (SMEs) in future study. There is a need to extend the work on cultural aspects in a more exclusive manner as the impact was found partial on the manager's risk perception. It is also suggested that this study found risk perception to a significant mediator between psychological biases and firm decisions there a need is to explore further elements which influence the risk perception to further amplify the studied psychological biases. Research work has targeted convenient sampling technique from data collection. Since response rate of manager's was very low. Future research can be extended through use of secondary data along with survey based data to explore new dimensions of research.

CHAPTER 7

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Appendix 1

Table 3.4 Factor Loadings, AVE & Reliability of Overconfidence Bias for PK

OVERCB	Factor Loadings	SqMultiple Correlations	AVE	Reliability
OVERCB1.	0.71	0.52		
OVERCB2.	0.74	0.55		
OVERCB3.	0.75	0.57		
OVERCB4.	0.75	0.56		
OVERCB5.	0.72	0.51		
OVERCB6.	0.71	0.50		
OVERCB7.	0.78	0.59		
			0.60	0.90

AVE = Average Variance extracted

Table 3.5 Factor Loadings, AVE & Reliability of Ambiguity Aversion Bias for PK

AMB	Factor Loadings	SqMultiple Correlations	AVE	Reliability
AMB1.	0.75	0.53		
AMB2.	0.72	0.51		
AMB3.	0.68	0.50		
AMB4.	0.78	0.57		
AMB5.	0.66	0.49		
AMB6.	0.73	0.50		
AMB7.	0.77	0.58		
			0.56	0.80

AVE = Average Variance extracted

Table 3.6 Factor Loadings, AVE & Reliability of Financing Decision for PK

FD	Factor Loadings	SqMultiple Correlations	AVE	Reliability
FD1	0.61	0.43		
FD2	0.58	0.41		
FD3	0.64	0.53		
FD4	0.66	0.56		
FD5	0.75	0.66		
FD6	0.73	0.61		
			0.55	0.90

AVE = Average Variance extracted

Table 3.7 Factor Loadings, AVE & Reliability of Investment Decision for PK

INVD	Factor Loadings	SqMultiple Correlations	AVE	Reliability
INVD1.	0.66	0.41		
INVD2.	0.68	0.45		
INVD3.	0.74	0.55		
INVD4.	0.76	0.57		
INVD5.	0.65	0.40		
INVD6.	0.72	0.53		
INVD7.	0.70	0.51		
INVD8	0.77	0.58		
			0.58	0.80

AVE = Average Variance extracted

Table 3.8 Factor Loadings, AVE & Reliability of Asset Management Decision for PK

AMD	Factor Loadings	SqMultiple Correlations	AVE	Reliability
AMD 1	0.77	0.54		
AM D2	0.71	0.51		
AMD 3	0.68	0.46		
AM D4	0.66	0.45		
AMD5	0.79	0.56		
AMD6	0.65	0.43		
AMD7	0.69	0.48		
AMD8	0.70	0.49		
AMD9	0.78	0.56		
			0.59	0.80

AVE = Average Variance Extracted

Table 3.9 Factor Loadings, AVE & Reliability of Dividend Decision for PK

DD	Factor Loadings	Sq Multiple Correlations	AVE	Reliability
DD1	0.60	0.45		
DD2	0.63	0.48		
DD3	0.59	0.41		
DD4	0.71	0.57		
DD5	0.68	0.52		
DD6	0.72	0.58		
DD7	0.64	0.50		
			0.53	0.72

AVE = Average Variance extracted

. Table 3.10 Factor Loadings, AVE & Reliability of Risk Perception for PK

RISKP	Factor Loadings	SqMultiple Correlations	AVE	Reliability
RISKP1	0.67	0.46		
RISKP2	0.66	0.44		
RISKP3	0.61	0.41		
RISKP4	0.70	0.51		
RISKP5	0.62	0.43		
RISKP6	0.71	0.54		
RISKP7	0.75	0.57		
			0.54	0.90

AVE = Average Variance Extracted

Table 3.11 Factor Loadings, AVE & Reliability of Uncertainty Avoidance for PK

UA	Factor Loadings	SqMultiple Correlations	AVE	Reliability
UA 1	0.76	0.56		
UA2	0.75	0.42		
UA 3	0.72	0.50		
UA4	0.78	0.45		
			0.57	0.75

AVE = Average Variance Extracted

Table 3.12 Factor Loadings, AVE & Reliability of Overconfidence Bias for USA

OVERCB	Factor Loadings	SqMultiple Correlations	AVE	Reliability
OVERCB1.	0.70	0.51		
OVERCB2.	0.73	0.52		
OVERCB3.	. 0.75	0.51		
OVERCB4.	0.74	0.53		
OVERCB5.	0.71	0.50		
OVERCB6.	0.72	0.51		
OVERCB7.	0.70	0.51		
			0.62	0.83

AVE = Average Variance Extracted

Table 3.13 Factor Loadings, AVE & Reliability of Ambiguity Aversion Bias for USA

AMB	Factor Loadings	SqMultiple Correlations	AVE	Reliability
AMB1.	0.69	0.55		
AMB2.	0.70	0.52		
AMB3.	0.73	0.51		
AMB4.	0.72	0.53		
AMB5.	0.74	0.50		
AMB6.	0.70	0.54		
AMB7.	0.71	0.53		
			0.58	0.60

AVE = Average Variance Extracted

Table 3.14 Factor Loadings, AVE & Reliability of Financing Decision for USA

FD	Factor Loadings	SqMultiple Correlations	AVE	Reliability
FD1	0.71	0.55		
FD2	0.53	0.50		
FD3	0.55	0.52		
FD4	0.56	0.52		
FD5	0.70	0.51		
FD6	0.72	0.61		
			0.51	0.75

AVE = Average Variance Extracted

Table 3.15 Factor Loadings, AVE & Reliability of Investment Decision for USA

INVD	Factor Loadings	SqMultiple Correlations	AVE	Reliability
INVD1.	0.62	0.55		
INVD2.	0.63	0.43		
INVD3.	0.74	0.50		
INVD4.	0.71	0.56		
INVD5.	0.66	0.52		
INVD6.	0.70	0.51		
INVD7.	0.71	0.57		
INVD8	0.72	0.56		
			0.53	0.70

AVE = Average Variance Extracted

Table 3.16 Factor Loadings, AVE & Reliability of Asset Management Decision for USA

AMD	Factor Loadings	SqMultiple Correlations	AVE	Reliability
AMD 1	0.74	0.50		
AM D2	0.64	0.55		
AMD 3	0.63	0.43		
AM D4	0.65	0.46		
AMD5	0.75	0.50		
AMD6	0.70	0.51		
AMD7	0.76	0.52		
AMD8	0.71	0.48		
AMD9	0.60	0.53		
			0.55	0.77

AVE = Average Variance Extracted

Table 3.17 Factor Loadings, AVE & Reliability of Dividend Decision for USA

DD	Factor Loadings	Sq Multiple Correlations	AVE	Reliability
DD1	0.55	0.45		
DD2	0.75	0.41		
DD3	0.72	0.40		
DD4	0.60	0.41		
DD5	0.62	0.53		
DD6	0.71	0.52		
DD7	0.73	0.54		
			0.56	0.70

AVE = Average Variance Extracted

Table 3.18 Factor Loadings, AVE & Reliability of Risk Perception for USA

RISKP	Factor Loadings	SqMultiple Correlations	AVE	Reliability
RISKP1	0.63	0.50		
RISKP2	0.64	0.55		
RISKP3	0.62	0.52		
RISKP4	0.73	0.53		
RISKP5	0.74	0.40		
RISKP6	0.65	0.55		
RISKP7	0.70	0.56		
			0.55	0.70

AVE = Average Variance Extracted

Table 3.19 Factor Loadings, AVE & Reliability of Uncertainty Avoidance for USA

UA	Factor Loadings	SqMultiple Correlations	AVE	Reliability
UA 1	0.70	0.51		
UA2	0.71	0.40		
UA 3	0.73	0.50		
UA4	0.74	0.42		
			0.55	0.60

AVE = Average Variance Extracted

Appendix 2
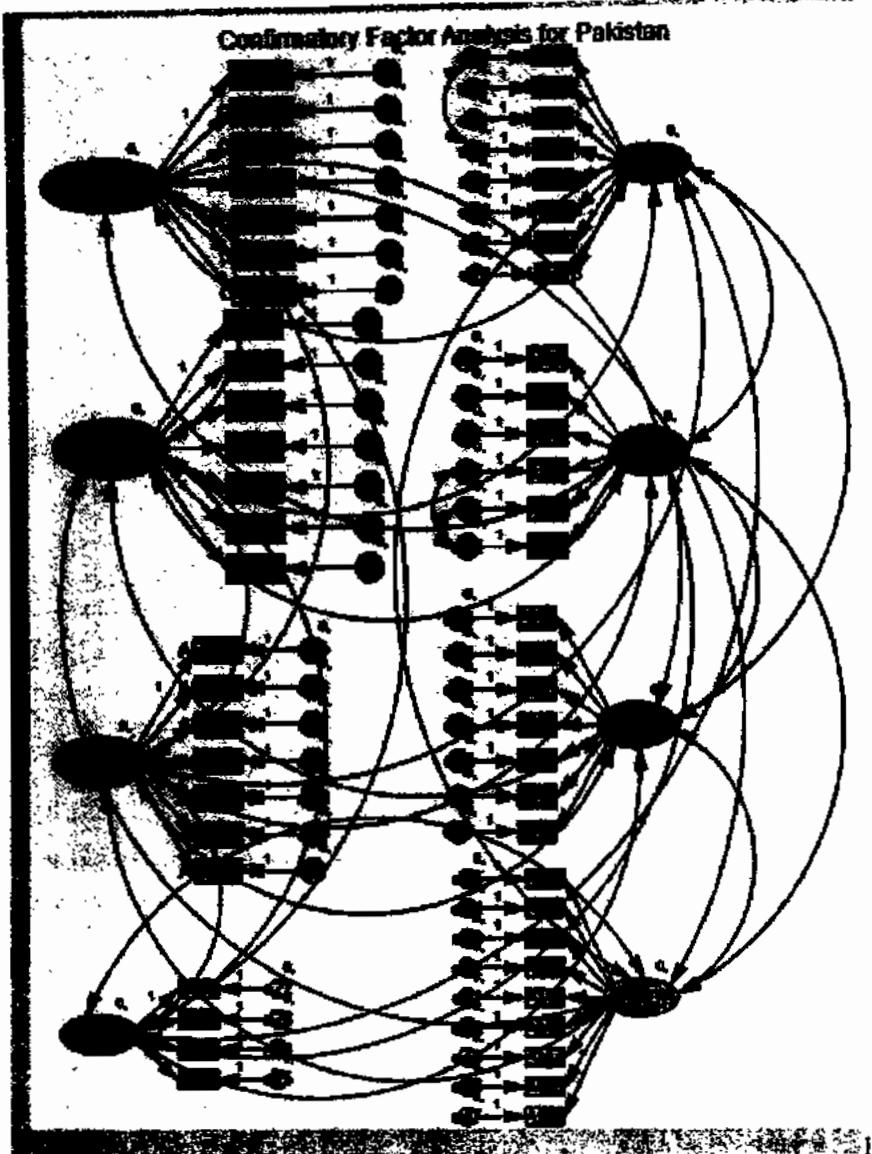
Fig.3.1 Confirmatory Factor Analysis
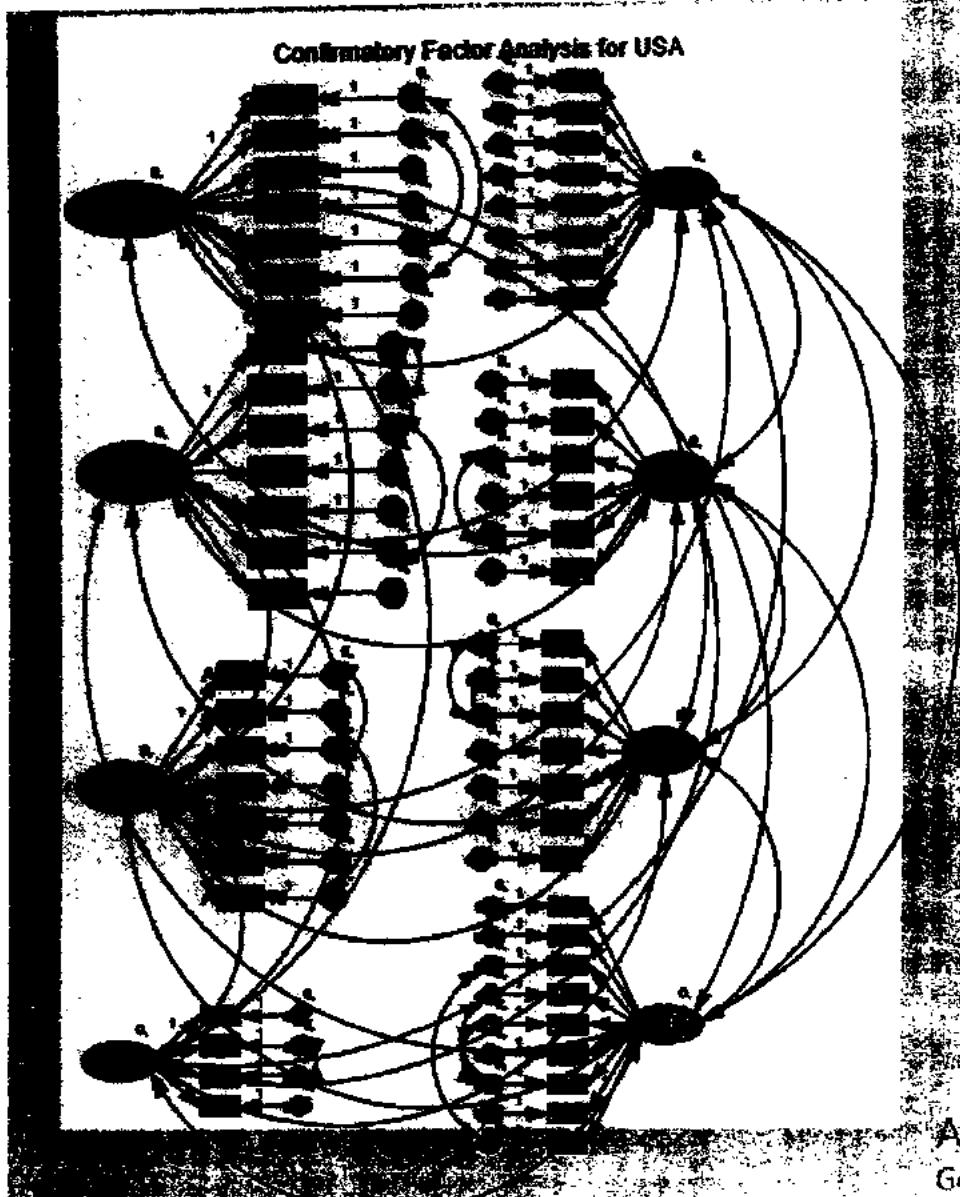
Fig.3.2 Confirmatory Factor Analysis

Appendix 3

1. Overconfidence bias (OVERCB)

S.No	Statement
1	Losses in my company's investments have frequently been caused by external circumstances such as macroeconomics developments.
2	Gains in my company's investments must be attributed to my competence as an Investor.
3	My company's failed investments have often been the result of unfavorable circumstances.
4	My instinct has often helped me to make good investment for the company.
5	I am capable of identifying the low point of the market.
6	When I think about financial investment, I will spend more time thinking about potential gain rather than potential loss.
7	I think I am a good or above average driver compare with the drivers I encounter on the road.

2. Ambiguity Aversion Bias (AMB)

S.No	Statement	Opinion
AMB1.	Uncertainty surrounding my work prevents me from working better	1 2 3 4 5 6 7 ☐☐☐☐☐☐☐
AMB 2.	I enjoy working in situations of high uncertainty	1 2 3 4 5 6 7 ☐☐☐☐☐☐☐
AMB 3.	I get irritated when unexpected events spoil my plans	1 2 3 4 5 6 7 ☐☐☐☐☐☐☐
AMB 4.	I enjoy the challenge of an uncertain situation	1 2 3 4 5 6 7 ☐☐☐☐☐☐☐
AMB 5.	I am always alert to anything which can improve my life	1 2 3 4 5 6 7 ☐☐☐☐☐☐☐
AMB 6.	In any situation I tend to act as a driver to promote constructive change	1 2 3 4 5 6 7 ☐☐☐☐☐☐☐
AMB 7.	It's exciting for me to see how my ideas can change situations	1 2 3 4 5 6 7 ☐☐☐☐☐☐☐

3. Risk Perception (ARISKP)

S.No	Statement
1	The probability of unfortunate outcome of my decision for the company is very high.
2	The chance that the company could lose substantial amount after my decision is
3	The uncertainty of predicting how positive decisions will result is
4	The overall riskiness of making company's decision is
5.	I would rank unfamiliar initiative as a potential loss
6.	Chances of negative consequences out of unusual corporate future decision are
7	The probability of company losing a great deal by taking risky decision is

4. Uncertainty Avoidance (UA)

S.No	Statement
1	I often feel nervous at work
2	One can be a good manager without having answers to most questions
3	Competition between employees does more harm than good
4	A company's or organizational rules should not be broken even if the employee thinks it is in the company's best interest

5. Financing Decisions (FD)

S.No	Statement
1	For me ensuring the long term survivability of the company is
2	For me projected cash flow or earnings from assets financed is
3.	For me volatility of the company's earnings and cash flows is

4	For me the level of interest rates of company are
5	Potential costs of bankruptcy, near-bankruptcy or financial distress of company is
6	The influence of firm's risk (as measured by its beta value) on the amount of new debt and/or equity it issues is

6. Dividend Decision (DD)

S.No	Statement
1	For me the company's stability of earnings is
2	For me the company's pattern of past dividends is
3	For me the company's level of expected future earnings is
4.	For me the company's concern about affecting the stock price is
5	Desire to conform to the industry's dividend payout ratio is
6	Preference to pay dividends instead of undertaking risky reinvestments is
7	Financing considerations such as the cost of raising external funds (debt & equity)is

7. Investment Decision (INVD)

S.No	Statement
1	I think that risk and uncertainty of Capital Investment Project is
2	I think that the effect of project risk on corporate overall profitability is
3	I think that the relationships among various un-certainty factors of company is
4	I think that the relationship among the returns of different projects is
5	I think that risk analysis via use of probability distribution of net cash flow for each period and producing expected value of NPV of the company is
6	I think that risk analysis via Capital Asset Pricing Model of the company is

7.	I think that adjustment of cash flow subjectivity for cost of risk premiums (Insurance) of the company is
8	I think that use of certainty equivalents of cash flows for the company's project risk and uncertainty is

8. Asset Management Decision (AM)

S.No	Statement
1.	I think that Return on Investment as value metric for (WCM) is
2	I think that Risk Management as value metric for (WCM) is
3	I think that Cash and liquidity Risk is
4.	I think that Interest rate risk is
5	I think that Consideration of level of inflation for inventory and cash management decisions is
6	I think that Consideration of interest rate for cash management decisions is
7	I think that Control on Bad debts as percentage of total sales is
8	I think that credit risk and potential cost of bankruptcy due to short term loans is
9.	I think that Credit rating during short term loan is

Appendix 4

Result Summary for Proposed Mediation and Moderation Effect for Pakistan

Hypothesis	Analysis	Determinant	DV	Findings
H1a	Mediation	OVERB-RISKP	FIND	Accepted
H1b	Mediation	OVERB-RISKP	INVD	Accepted
H1c	Mediation	OVERB-RISKP	AMD	Accepted
H1d	Mediation	OVERB-RISKP	DIVD	Rejected
H2a	Mediation	AMB-RISKP	FIND	Accepted
H2b	Mediation	AMB-RISKP	INVD	Accepted
H2c	Mediation	AMB-RISKP	AMD	Accepted
H2d	Mediation	AMB-RISKP	DIVD	Rejected
H3a	Moderation	UA-OVERCB	RISKP	Rejected
H3b	Moderation	UA-AMB	RISKP	Accepted
H5a	Moderated Mediation	MRP-UA-AMB	FIND	Accepted
H5b	Moderated Mediation	MRP-UA-AMB	INVD	Accepted
H5c	Moderated Mediation	MRP-UA-AMB	AMD	Accepted

Result Summary for Proposed Mediation and Moderation Effect for USA

Hypothesis	Analysis	Determinant	DV	Findings
H1a	Mediation	OVERB-RISKP	FIND	Accepted
H1b	Mediation	OVERB-RISKP	INVD	Accepted
H1c	Mediation	OVERB-RISKP	AMD	Accepted
H1d	Mediation	OVERB-RISKP	DIVD	Accepted
H2a	Mediation	AMB-RISKP	FIND	Accepted
H2b	Mediation	AMB-RISKP	INVD	Accepted
H2c	Mediation	AMB-RISKP	AMD	Accepted

H2d	Mediation	AMB-RISKP	DIVD	Accepted
H3a	Moderation	UA-OVERCB	ARISKP	Rejected
H3b	Moderation	UA-AMB	ARISKP	Accepted
H5a	Moderated Mediation	MRP-UA-AMB	FIND	Accepted
H5b	Moderated Mediation	MRP-UA-AMB	INVD	Accepted
H5c	Moderated Mediation	MRP-UA-AMB	AMD	Accepted
H5D	Moderated Mediation	MRP-UA-AMB	DIVD	Accepted