

**RISK, EFFORT, COST, RETURNS AND TIME AS FACTORS IN THE
COMPARISON OF OPPORTUNITY PERCEPTION BETWEEN
ENTREPRENEURS AND NON-ENTREPRENEURS**

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2012

**Risk, Effort, Cost, Returns and Time as Factors in the Comparison of
Opportunity Perception between Entrepreneurs and Non-entrepreneurs**

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Submitted to Lee Kong Chian School of Business in partial fulfillment of the
requirements for the Degree of Master of Science in Management

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2012

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Abstract

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The concept of Entrepreneurial Opportunity (Sarasvathy et al, 2005) has developed considerably as an area of interest to researchers in the past decade. Several studies have shown that opportunity is central to entrepreneurship, essentially the first step. Yet prior research has not explored the role of perceived value of the opportunity in the entrepreneur's decision to embark on the opportunity.

Julian Simon, in his Drive Effort hypothesis, posits that the amount of effort which a person will exert depends upon two factors: (a) the opportunity that the person perceives to earn additional income, and (b) the person's 'need' for additional income as measured by the person's wealth. Simply put, he argues that an individual, firm or nation would exert less effort and display less drive as they grow older, or wealthier or both. This study essentially argues that Simon's hypothesis may not be validated for every individual and in particular entrepreneurs.

Next, according to Simon, an opportunity is accepted or rejected on the basis of the perceived return of the opportunity relative to the person's

accumulated wealth. However, Simon ignores other factors such as risk, financial costs, personal effort, expected returns and time for realization of the opportunity. This thesis explores the role of these factors and the entrepreneurs as exceptions to Simon's hypothesis.

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Acknowledgement

I would like to take this opportunity to express my sincere gratitude to all those who contributed in some way or another for the completion of this thesis. First and foremost I would like to thank my supervisor Professor Tan Wee Liang for his unending support, expert advice and guidance.

I would also like to thank Professor Gilbert Tan and Professor Young Rok Choi who graciously agreed to be a part of my thesis committee and have helped me ever since. I would also like to acknowledge all my professors at the Singapore Management University who have taught me all that I know about writing a thesis. I would also like to thank everyone from the Graduate Program Office for the help and support. Lastly, I would like a special mention to all my family and friends who have backed me up throughout.

Chapter 1: Introduction

Entrepreneurship research in the last 15 years has examined opportunity as the first step (Shane, 2000). Considerable research in the last decade studied on what opportunities are, how they arise and how and why individuals and teams pursue opportunities. Entrepreneurship and entrepreneurs are central to phenomena like new processes, new markets and new ways of organizing (Schumpeter 1934). Indeed, opportunity itself is widely viewed as a key step in the entrepreneurial process—one from which, in many cases, all else follows (Baron & Ensley, 2006). Central to this is the decision by the individuals or team to embark upon the opportunity; however, before embarking on a new opportunity, it should be identified, created, discovered or recognized. An individual must be capable of successfully completing the initial stages before embarking upon opportunities that come about (Shane, 2000).

Opportunities do not come in a prepackaged form (Venkataraman, 1997), moreover, there are several ways in which an opportunity may originate. To understand this better, Sarasvathy et al. (2003), drawing from classic works by Hayek (1945), Knight (1921), and Buchanan and Vanberg (1991) derive three distinctive but not mutually exclusive views of entrepreneurial opportunity—opportunity recognition (the allocative view), opportunity discovery (the discovery view) and opportunity creation (the creative view).

Several other traits such as risk-taking, tolerance of ambiguity, locus of control, self-efficacy and goal setting (Shane, Locke, Collins, 2003) influence the

motivation levels of an individual that would in turn affect the decision-making capability of the individual in the context of new opportunities. While considerable research has been done until now, none have explored the role of perceived value of the opportunity in the decision to embark on the opportunity.

Perhaps, an attempt to explain this perceived value of an opportunity as a factor in decision-making was partially explained by a noted economist Julian Simon.

In his Drive Effort hypothesis, Simon states that with more wealth and greater age comes less drive, which implies less effort exerted. In other words, the amount of effort which a person will exert depends upon two factors: (a) the opportunity that the person perceives to earn additional income and (b) the person's 'need' for additional income as measured by the person's wealth. (Simon, 1987)

It can be depicted as:

Drive-Effort Measure = expected likelihood of a positive response to a given opportunity by an individual or nation

More particularly the hypothesis postulates that the amount of effort (drive) is a function of the arithmetic difference between the wealth with and without the opportunity in question, considered relative to person's current wealth.

In his book "Effort, Opportunity and Wealth" Julian Simon asks two general questions which are: "will an individual or a group such as a nation, undertake a particular economic opportunity which involves increased work effort? Following this are two sub questions: (a) will an alternative that would increase total money income – such as working more intensively, or spending

more time on a task be undertaken or rejected? And (b) will an alternative that seems not to be adequately profitable in money terms be undertaken anyway? (Simon, 1987)

Julian Simon offers several real life examples of individuals, firms and even nations as evidence to support his hypothesis. Simon's study appreciates that how individuals, firms and nations as a whole make decisions will greatly vary. Not all the resources available to an individual can be specified in the same fashion as for a firm (Simon, 1987). He states, "*an individual's opportunity-accepting decision can be modeled as a business like decision*" (Simon, 1987 p. 37). For the sake of simplicity, he assumes that no long-lived capital equipment needs to be purchased, and no long run contracts or customer relationships are involved. Following from this, he states that individuals simply begin by comparing expected income (money revenue) against expenditures. If the income does not exceed the initial outlay the opportunity need not be considered further. (Simon, 1987)

I agree that the concept put forth by Julian Simon is highly adequate in explaining a large number of economic situations, and proves to be relevant for several individuals, firms as well as nations; however, we argue that it cannot be applicable to all individuals. Further, the opportunity literature has also developed considerably in the last decade and several have looked at several aspects, yet to the best of our knowledge at the time of this research we find that there have been no prior studies to relate age, wealth and effort i.e. the drive effort hypothesis with entrepreneurship and opportunity.

I combine both these streams of literature- opportunity and drive-effort hypothesis and I argue that, not all individuals of a particular age who have amassed a considerable sum of wealth would always react to an opportunity with a diminished drive to exert effort. In particular, I argue that entrepreneurs are one such group who would not necessarily conform to Simon's hypothesis.

Several traits or behavior patterns of entrepreneurs can explain why they would not necessarily conform to Simon's hypothesis. Firstly, various comparative researches have shown that entrepreneurs have a more complex and less studied psychological make up (Busenitz & Barney, 1997). This somewhat explains why entrepreneurs make peculiar choices such as excessive risk-taking, being over optimistic about their entrepreneurial prospects (Puri & Robinson, 2006) and do not conform to usual retirement behavior either. Studies indicate that older individuals close to retirement may see entrepreneurial activity as a positive way of keeping themselves active, thereby increasing their social inclusion and benefiting the society with their human and social capital (Kautonen et al., 2008; Webster and Walker, 2005). This sufficiently shows that entrepreneurs do not always continue working with the primary motive of amassing wealth. They also do not stop and retire or slow down as soon as they reach a fixed age. Some studies also indicate that for individuals the probability of being self-employed strongly increases with age (Blanchflower & Oswald, 2001).

Secondly, serial entrepreneurs; described as *"those individuals who engage in multiple start ups, management buyouts, management buy-ins and combinations of these activities"* (Wright et al., 1997) are people who look at

failure as experience for their next venture and are not deterred easily.

Serial entrepreneurs are driven to start companies, grow them, and let them go only to start again. (Mayer, 2008)

Serial entrepreneurs are not discouraged by age and are considering entry into new ventures even before they exit the present one. Not all of their activities or involvement in ventures stem from a need to accumulate wealth. This also explains why serial entrepreneurs as a group would highly likely be non-conformers to the Drive-Effort hypothesis.

Additionally, entrepreneurs are becoming only more important with each day and the value of entrepreneurship to economic development is now well documented (Carree & Thurik, 2010; Lee, Yamakawa, Peng, & Barney, 2011). With the increasing number of early retirees possessing the experience and financial means for entrepreneurship (Kautonen, 2008; Dollinger et al., 1988), it is likely that the number of older business founders will be increasing. Promoting entrepreneurship in older individuals can be seen as a potential way to prolong the working life of the ageing population (Kautonen, 2008; Kautonen et al., 2008; Webster and Walker, 2005). From another outlook, this can also be considered as a solution to the economic challenges such as increasing costs of health care, welfare and pension issues, as well as dependency of a large ageing population on a decreasing number of workers (Kautonen, 2008; Visco, 2001; Webster and Walker, 2005). Our study argues that all individuals will not confirm to the drive-effort hypothesis and this has implications for individuals and entrepreneurs in their third age (above 55). The study would also be relevant to those individuals

who become self-employed or starts a new business firm employing one or more people when aged between 50 and 64 (Kautonen, 2008).

Next, as per Julian Simon, and barring exceptions, most individuals would normally accumulate wealth with age. According to his hypothesis, older or older and richer individuals would then not be as willing to accept new opportunities unless they can expect higher returns. I recognize that wealth and age are important factors in the decision making of accepting or rejecting an opportunity, however, I also feel that there are several other factors that an individual might weigh while making such a decision. Since these factors have not been addressed in the Drive-Effort Hypothesis, this provides us with another gap that this study addresses. I argue that factors such as Risk, Personal Effort, Time Period, Expected Returns and Cost of Investment will also affect the decision of accepting or rejecting an opportunity.

Essentially, the questions asked here are:

- (a) Will entrepreneurs of a certain age who have amassed some wealth decline an opportunity which would require them to exert effort
- (b) What are the factors that would influence the decision of accepting or rejecting an opportunity and how would entrepreneurs weigh each of the factors as opposed to managers.

In the next chapters, I review existing literature (Chapter 2) explaining the Drive Effort Hypothesis, some competing theories to the hypothesis, entrepreneurship, opportunity and the factors affecting the decision-making, namely, risk, effort, time, cost and expected returns. Then I proceed to present our

hypothesis adopted to address the two research questions in chapter 3. As a preliminary step, to support our initial stance I conduct an interview with an elderly serial entrepreneur. After confirming through the interview study that elderly serial entrepreneurs do not conform to Simon's hypothesis, this research proceeded to conduct a study on a larger sample to address the two research questions. The sample frame, methodology, and data collection methods are explained in chapter 4. The findings and results are described in Chapter 5. The study concludes with the implications and limitations of this research as well as suggestions for future research in Chapter 6.

Chapter 2: Literature Review

In this section I review a few strands of literature- the opportunity and entrepreneurship literature, along with Julian Simon's Drive Effort hypothesis as well as some similar or competing theories to this hypothesis to provide a deeper understanding of Simon's theory. Lastly, I introduce the factors that I consider are key in the decision of accepting or rejecting a new opportunity.

2.1 Opportunity & Entrepreneurship

Entrepreneurship has become a fast-growing subfield in management research and is increasingly appearing in economics, finance and even law (Foss & Klein, 2008). Yet, I continue to know little about entrepreneurs (Cunningham & Lischeron, 1991) and arguably, a more problematic issue is that I still lack a common understanding of what entrepreneurship, innovation, and opportunity actually mean (Davidsson 2005, Koppl 2007, McMullen et al. 2007).

I first describe entrepreneurs and their types, following which I introduce the opportunity literature.

While considerable debate lies around the notion and definition of entrepreneurs and entrepreneurship (Ucbasaran, Westhead & Wright 2006) I attempt to find some definitions.

A simple definition of an entrepreneur would be as follows:

“An entrepreneur is an independent agent who adopts a set of rules, consistent with a “search-and-satisfying” type of behavior, in order to

reach goals such as the growth and profitability of his or her company.”

(Andersson et al., 2010)

“One who is at once a product and an agent of the historical process, at once the representative and the creator of social forces which change the shape of the world and the thoughts of man” (Montanye, 2006)

What seems to be a thorough and all encompassing definition of an entrepreneur is provided in the Handbook of Entrepreneurship Research:

“An entrepreneur is an independent agent who adopts a set of rules, consistent with a “search-and satisfying” type of behavior, in order to reach goals such as the growth and profitability of his or her company. In doing this, curiosity and an instinct for exploration drive the entrepreneur – a combination in which intentional action and the faculty of making lucky and unexpected finds by accident sit side by side”

“Entrepreneurship entails bearing the risk of buying at certain prices and selling at uncertain prices.” (Stevenson & Jarillo, 1990)

An entrepreneur stems from pride, a yearning for freedom, low tolerance for any supervision, desire to do things in his or her own way and the desire to improve things (Alfonso, 2007). These are some of the personal characteristics that are essential for an individual who chooses to go down the entrepreneurial path.

With varying personal characteristics and traits as described above, entrepreneurial behavior also greatly varies. It is obvious that entrepreneurial

behavior cannot be explained by economic theory alone because psychological, cultural, and sociological factors are important, too (e.g., Campbell, 1992). Various comparative researches have shown that entrepreneurs have a more complex and less studied psychological make up. They are more prone to risk taking, innovative strategies and high levels of motivation for a longer period of time than managers or employees.

The psychological characteristics of entrepreneurs is specifically interesting and it can be described in terms such as creative; daring; aggressive and so on (Stevenson & Jarillo, 1990; Wilken, 1979). Entrepreneurs are also seen as uncertainty bearers, innovators, alert discoverer and coordinator (Ripsas, 1998). As (Alfonso, 2007) put it, an entrepreneur would take more risks, and would relinquish safety in exchange for possibility.

This leads to the understanding that entrepreneurs are definitely not a homogeneous entity. Studies suggest that different types of entrepreneurs exist (Birley and Westhead 1993; Kolvereid and Bullvag 1993). For example, Westhead and Wright (1998a) have highlighted differences between novice, serial, and portfolio entrepreneurs.

Novice entrepreneurs are individuals with no prior minority or majority business ownership experience either as a business founder, an inheritor, or a purchaser of an independent business but who currently own a minority or majority equity stake in an independent business that is either new, purchased, or inherited (Westhead et al. 2003a, Westhead, Ucbasaran, and Wright 2003b).

Serial entrepreneurs are those individuals who have sold/closed a business in which they had a minority or majority ownership stake, and they currently have a minority or majority ownership stake in a single independent business that is either new, purchased, or inherited (Westhead et al. 2003a, Westhead, Ucbasaran, and Wright 2003b). Serial entrepreneurs look at failure as a learning experience (Schutjens & Stam; 2006) and there are numerous examples where such entrepreneurs fail but start anew. This perhaps is an important explanation of the irrational behavior of serial entrepreneurs and why they do not stop. Businesses set up by serial entrepreneurs differ vastly from those started by novice entrepreneurs (Schutjens & Stam; 2006).

Portfolio entrepreneurs can be viewed as individuals who currently have minority or majority ownership stakes in two or more independent businesses that are new, purchased, and/or inherited (Westhead, Ucbasaran & Wright, 2005).

There is also the nascent entrepreneur who is defined as a person trying to start a new business, who expects to be the owner or part owner of the new firm, who has been active in trying to start the new firm in the past 12 month, and whose start-up did not have a positive monthly cash flow that covers expenses and the owner-manager salaries for more than three month. (Wagner, 2004)

An entrepreneur may choose the path of entrepreneurship for various reasons; it could either be for vocational reasons, or for a compulsive need to be self-employed. It could also be a result of family and other social circumstances

that may allow an individual to embark only on this path. Whatever the reasons, entrepreneurs must go through a long path to achieve success in their ventures; beginning with an idea, followed by financing, planning, setting objectives and goals, maintain the efforts over a long time, sidelining competition and sustaining the success. (Alfonso, 2007)

An individual who is unable to follow through the long process of becoming a successful entrepreneur or is unwilling to do so out of choice, or does not happen to come across valuable information that can be used to start a new venture, turns to organizational employment.

Essentially, In order to be a successful entrepreneur both capacity and opportunity are needed. An individual's capacity to scour for and then make use of the available opportunity makes for a successful entrepreneur. It is known that the phenomena of entrepreneurship and the existence of entrepreneurs are closely tied to opportunity.

Opportunity is widely viewed as a key step in the entrepreneurial process—one from which, in many cases, all else follows (Baron, 2006). The opportunity factor is a strong distinguisher between an entrepreneurial career and a career in an organization.

Opportunity can be defined as a situation in which new products and services or new methods of organizing can be introduced to the market at a profit (Shane & Venkatraman, 2000). (Sarasvathy, 1997; Audretsch, 2002) define it as a situation in which individuals can transform their ideas into profitable business

realities. As (Baron, 2004) puts it, opportunity involves three central characteristics *newness*, *potential economic value* and *perceived desirability*.

Past studies suggest that there can be several origins of an opportunity. While some literature suggests that opportunities pre-exist and are awaiting discovery (Kizner, 1973; Stevenson & Gumpert, 1985; Shane, 2003; Plummer et al. 2007). To this school of thought opportunity arises from gaps in the markets, and it is up to the entrepreneurs to be alert and observant enough to be able to identify these gaps or opportunities (Gaglio & Katz, 2001). This can then imply that opportunities are not entirely new but arise due to incomplete exploitation of a previous opportunity leaving a gap behind (Plummer et al., 2007).

Other research finds that opportunity is created by individuals (Gartner, Carter & Hills, 2003; Alvarez & Barney, 2006) whose experience allows them to understand the environment around them and perceive a feasible future situation (Stevenson & Jarillo, 1990). While it is established that opinions on the origins of opportunity can be different, the idea that opportunities itself may differ on various dimensions is not entirely new.

Just as all individuals are not equally capable of recognizing entrepreneurial opportunities (Venkataraman, 1997); all individuals are also not capable of perceiving them in identical ways or valuing them identically. To understand this better, Sarasvathy et al. (2003), drawing from classic works by Hayek (1945), Knight (1921), and Buchanan and Vanberg (1991) derive three distinctive but not mutually exclusive views of entrepreneurial opportunity-

opportunity recognition (the allocative view), opportunity discovery (the discovery view) and opportunity creation (the creative view).

Opportunity recognition can be defined as combining the available supply and demand requirements to recognize new opportunities. Typically, it is the initial idea that is described as the moment of opportunity recognition (Hills, 1995; Koning, 1999). Other researchers use opportunity recognition to describe the evolution of initial ideas into full-blown business concepts (Bhave, 1994; Koning, 1999). (Shane, 2003) define it as identifying ideas for new products, services, markets or means of production that are not being currently exploited.

To some extent opportunity recognition is closely linked with motivation. Motivation may be defined as the force in a person that affects the individual's direction, intensity, and persistence of voluntary behavior that initiates, guides and maintains goal-oriented behaviors (Shane, Locke, Collins, 2003). Difference in motivation would also lead to difference in recognition of opportunities that would imply a difference in its perception too. Several traits such as risk-taking, tolerance of ambiguity, locus of control, self-efficacy and goal setting (Shane, Locke, Collins, 2003) influence the motivation levels of an individual that would in turn affect the decision-making capability of the individual in the context of new opportunities.

Opportunity discovery is the act of discovering the missing side of either the source of demand or the supply. However, an individual must be capable of discovering these opportunities that come about with technological changes

(Shane, 2000). This forms one of the many differences between a successful entrepreneur and an unsuccessful entrepreneur or non-entrepreneur.

A study by (Ardichvili & Cardozo, 2001) finds a connection between opportunity recognition and discovery and argues that entrepreneurial opportunities are discovered through recognition rather than purposeful search. This could mean that not every individual maybe capable of discovering an opportunity unless they have the pre requisites for opportunity recognition. They go on to define some prerequisites for successful opportunity discovery as a combination of entrepreneurial awareness, access to extended social networks, and prior knowledge of markets and customer problems; they say that prior knowledge could exist due to work experience, personal, non-work related experiences and events, or due to relevant to these markets education. They do not believe creativity to be a very important factor in successful opportunity recognition.

Once an opportunity is discovered, a choice must be made whether or not to exploit the opportunity (C.L. Shook et al, 2003; Shane & Venkatraman, 2000) and, if the choice is made to exploit it, another decision involves how best to exploit it.

Opportunity creation is about envisioning the future scenario and creating new markets to obtain additional income. Not all opportunities are *created equal* because not all opportunities are created (Mitchell, Mitchell & Smith, 2008; Alvarez and Barney, 2007; Miller, 2007), some maybe recognized and others

maybe discovered (Sarasvathy *et al.*, 2003). Opportunity creation might require a learning process for the entrepreneurs the result of which would be formation or creation of an opportunity (Mitchell, Mitchell & Smith, 2008). Some researchers argue that the creation of entrepreneurial opportunities can actually be a result of past failures (Mitchell, Mitchell & Smith, 2008; Alvarez & Barney, 2007).

Opportunity identification can be seen as somewhat of a combined term including recognition, development and evaluation (Ardichvili, Cardazo & Ray, 2002). They hypothesize that an entrepreneur's personality traits, social networks, and prior knowledge are antecedents of entrepreneurial alertness to business opportunities. Connecting the dots, they hail Entrepreneurial alertness as a necessary condition for the success of the opportunity identification process.

Opportunity perception is a fundamental research issue in entrepreneurship research (Gaglio & Katz, 2001; Shane & Venkataraman, 2000). It is viewed as an important entrepreneurial capability (Ardichvili, Cardoza & Ray, 2003), and a source of competitive advantage (Alvarez & Busenitz, 2001; Urban, 2009).

Palich & Bagby (1995) found that entrepreneurs tend to view some business situations more positively than do non-entrepreneurs, perceiving strengths and opportunities where others seek weaknesses and threats. (Forlani & Mullins, 2000) Their work suggests that entrepreneurs do not necessarily see themselves as risk takers, but that they pursue opportunities that others do not because they simply view such opportunities differently. Busenitz and Barney (1997) found that entrepreneurs tended to employ heuristics and biases to

simplify and speed their decision making in the complex and risky decision environments, which typify start-up situations (Forlani & Mullins, 2000).

Opportunity evaluation can be described as (1) evaluations of the opportunity's attractiveness i.e. What is the potential of the opportunity to generate competitive advantage and entrepreneurial returns to the firm (Haynie et al., 2009)? Opportunity evaluation is essentially focused on the future i.e. evaluation is made based on the terms "if" the opportunity is actually exploited.

Opportunity exploitation is when an individual sees opportunities and actually translates them into a profitable venture. (Stevenson & Jarillo, 1990; Simon, Houghton and Aquino, 2000) state that opportunity exploitation is differently done by individuals because of their varying understanding of outcomes of the opportunity, or in other words, the profitability or the likelihood of the success of the venture that results of the opportunity. Personal capabilities or the resources at hand might have a role to play in this as well.

Shane and Venkatraman (2000) have stated some key reasons on why the decisions on exploitation may vary. These are due to factors such as (a) financial reward greater than the cost (Shane and Venkatraman, 2000; Kirzner, 1973); (b) varying risk perception (Shane and Venkatraman, 2000; Venkatraman, 1997) (c) prior knowledge and experience and its transfer and application (Shane and Venkatraman, 2000; Cooper, Woo & Dunkelberg, 1989) and (d) difference in optimism (Shane and Venkatraman, 2000; Cooper, Woo & Dunkelberg, 1988)

As described above, a lot of research has been done on various aspects of opportunity; however to the best of our knowledge I find that not much has been written about the decision of accepting or rejecting an opportunity based on its perceived value.

2.2 Drive-Effort Hypothesis

The drive effort hypothesis primarily indicates that the amount of effort which a person will exert depends upon two factors: (a) the opportunity that the person perceives to earn additional income, and (b) the person's 'need' for additional income as measured by the person's wealth. (Simon, 1987)

It can be depicted as:

Drive-Effort Measure = expected likelihood of a positive response to a given opportunity by an individual or nation.

In his book "Effort, Opportunity and Wealth" Julian Simon asks two general questions which are: "will an individual or a group such as a nation, undertake a particular economic opportunity which involves increased work effort? Following this are two sub questions: (a) will an alternative that would increase total money income – such as working more intensively, or spending more time on a task be undertaken or rejected? And (b) will an alternative that seems not to be adequately profitable in money terms be undertaken anyway? (Simon, 1987) At this stage it might be prudent to describe the key terms of his hypothesis- Drive, Effort, Wealth and Opportunity.

Drive is the tendency to respond with work to a particular set of conditions.

Whereas, effort is the amount of time spent in doing a task and the intensity of exertion put into the task. One may work harder, longer or both to finish a particular task. (Simon, 1987) Effort is also the force, which a person exerts to overcome the congeries of work resisting force.

It is important to measure the key concepts of this hypothesis, which have a direct and indirect impact on the drive of, and effort exerted by an individual.

Wealth maybe measured by an individual's, family or group's assets; that are valued at market prices. A person's expected stream of earnings may be the appropriate concept in some cases. Characteristics such as education that is related to income maybe used as source of the earnings. Sometimes, measuring wealth is a little more difficult but generally it can be estimated quite accurately.

The other concept; is that of opportunity. Simply put, Opportunity indicates the additional assets that can be obtained if the alternative (extra work for example) is accepted. Drive effort hypothesis says that the effort a person extends depends upon opportunity as one of the factors. The general question it addresses is: "Will an individual undertake an opportunity which involves increased work effort?" (Simon, 1987) It then goes on to prove with substantial evidence that at a certain age and having acquired a certain amount of wealth, the answer to the above question turns out to be negative.

Measurement of opportunity is the one that poses a bigger problem, because it is more subjective, and will greatly differ for people. This means that what comes across, as opportunity to one person may not be the same to another. Some cases maybe straightforward in measurement such as (a) increasing the reward to a commercial diver who hesitates to descend to a dangerous depth or (b) increasing the payment offered for an evening's overtime work. Other cases may not be as straightforward; for example, measuring a change in opportunity when an individual moves countries and jobs might prove to be more difficult. (Simon, 1987)

The drive effort concept applies to a variety of situations, and can explain various economic situations such as effects of price changes on the effort exerted by say an addict of a particular object. When the price rises, there will be need to exert more effort in order to earn more wealth so that the particular object can be purchased.

Julian Simon offers several real life examples of individuals, firms and even nations as evidence to support his hypothesis. The study appreciates that how individuals, firms and nations as a whole make decisions will greatly vary. Not all the resources available to an individual can be specified in the same fashion as for a firm (Simon, 1987). He states that how an individual makes an opportunity accepting decision can be modeled as a business like decision. For the sake of simplicity, he assumes that no long-lived capital equipment needs to be purchased, and no long run contracts or customer relationships are involved. Following from this, he states that individuals simply begin by comparing

expected income (money revenue) against outgo (expenditures). If the income does not exceed the outgo, the opportunity need not be considered further unless there are other non-profit benefits. (Simon, 1987)

The hypothesis is useful to explain various such phenomena; for the purposes of this study I take the context of explaining the behavior of individuals who should perhaps rationally slow down with age. That is, they will have lesser drive to exert effort, because they will have perhaps amassed enough wealth to not take up new opportunities. However, I feel that this may not be true for entrepreneurs.

The drive effort hypothesis is an important economic as well as behavioral concept that has not been pursued further beyond its original author. However other fields have related theories, which are highlighted in the next section in order to facilitate a better understanding of the concept at hand.

2.3 Other competing theories

Julian Simon states in his book “Effort, Opportunity and Wealth” that the drive-effort concept may be viewed as a synonym for “incentive”.

Similar to Simon’s theory, a number of other such theories exist. They may not be in the same field of studies as the current one, they can be considered comparable to Simon’s theory. These theories are more behavioral and primarily fall into the category of psychological and social psychological theories.

The next section highlights some of these theories.

2.3.1 Cussin's Approach

The most widely used method for managing construction labor in the 1950s and even in the 1960s is known as Cussin's approach or management by threat. This theory is based on the idea that, the more you yell and curse the laborers, the more productive they will be. In other words, anyone who could yell the most ought to get promoted to a supervisory position. This approach is still used to manage laborers in rural areas of under developed countries, but is vanishing as workers are becoming more aware of their rights (Halepota, 2005).

Simon's theory indicates that the effort exerted by an individual depends upon the perception of the opportunity leading to additional income and the need for it. The era, in which Cussin's approach flourished i.e. during the Great Depression and World War II, laborers were mostly war veterans who had great "need" for jobs since they were scarce and work was needed in order to even survive. The great "need" for jobs and additional income would then ideally have led to greater drive and in turn greater effort being exerted (Halepota, 2005). Yet, this approach did not increase productivity or the motivation amongst workers. The above shows that while the two theories can be considered comparable however, presently, the practical relevance of Cussin's approach can be considered to be negligible. Hence, this theory is not of much relevance anymore.

2.3.2 Maslow's Need Hierarchy Theory

Maslow's hierarchy of needs is a theory in psychology, proposed by Abraham Maslow in his 1943 paper *A Theory of Human Motivation*.

According to Maslow, a person's needs are the main motivator that drives a

human. He categorized the need in the following five levels: physiological needs, safety needs, social needs, esteem needs, and self-actualization needs (Maslow, 1954). Some of these needs are considered as deficiency needs and others as growth needs. For example, an individual might consider psychological needs as salary and wage. Safety needs may include job security and other additional benefits. Social needs may include social relationships and interaction. Esteem needs may include recognition and opportunities for advancement. Lastly, self-actualization needs may include new challenges that stimulate a person. As per the need hierarchy, the dominant needs must be relatively gratified before the next need becomes “active” (Maslow, 1954)

Maslow's theory helps us to understand human behavior and to select motivational strategies appropriate to individuals whom we are motivating. Different things motivate different individuals. A reward, which is very important and valuable for one person, may not have importance or value for another person (Halepota, 2005). Similarly, an opportunity that may be perceived as valuable and pursuable by one may not be the same for another individual.

The “needs” of a person can vary greatly, and an individual who is unsatisfied in their basic needs would satisfy with merely fulfilling their psychological needs. Another individual who is adequately satisfied with his basic needs might look to fulfill social and self-actualization needs. This concept is partially comparable to Simon’s theory, which also states that how an individual perceives opportunities would depend upon the person’s “need” among other things. However, while Maslow’s theory only touches upon the different levels of

need, which makes it a behavioral theory (linking needs to behavior), Simon's Drive- Effort hypothesis includes opportunity perception and states that how an individual perceives an opportunity would be based on their "need" for the additional income. Thus, Simon's theory has economic implications and is better suited as a basis for this research.

2.3.3 Expectancy theory of motivation

The expectancy theory of motivation is based on the works of Victor Vroom, Lyman Porter and Edward Lawler. Unlike Maslow and Herzberg, Vroom does not concentrate on needs, but rather focuses on outcomes. The theory advocates that motivation of an individual depends upon his or her perception regarding his or her capability to do a particular job, hence, the reward associated with the accomplishment of that job, and the value he or she places on the reward varies with every individual.

Vroom, hypothesizes that in order for a person to be motivated that effort, performance and motivation must be linked. He proposes three variables to account for this, which he calls Valence, Expectancy and Instrumentality. Expectancy is the belief that increased effort will lead to increased performance i.e. "if I work harder then this will be better". Instrumentality is the belief that if you perform well that a valued outcome will be received i.e. "if I do a good job, there is something in it for me". Valence is the importance that the individual places upon the expected outcome. For example, "if I am mainly motivated by money, I might not value offers of additional time off".

Expectancy theory works on perceptions – so even if an employer thinks they have provided everything appropriate for motivation, and even if this works with most people in that organization it doesn't mean that someone won't perceive that it doesn't work for them.

Comparable to Expectancy theory, Simon's theory also links effort to the reward or the outcome (effort exerted depends upon the perception of the outcome), however, the expectancy theory does not emphasize upon the "need" whereas, Simon's Drive-Effort hypothesis states that effort exerted would also depend upon the needs of the individual along with the perception of the outcome.

2.3.4 Goal setting theory

Locke & Latham first presented the goal setting theory in 1990, after extensive experiments and field research (Latham & Pinder, 2005). It is based on the primary premise that much human action is purposeful in that it is directed by conscious goals. (O' Neill & Drillings) Goal-setting theory is based on the notion that individuals sometimes have a drive to reach a clearly defined end state. Often, this end state is a reward in itself. Three features affect a goal's efficiency: proximity, difficulty and specificity.

The basic premise of the goal setting theory is that the most direct explanation of why some people perform a particular task better than the others is because they have different levels of performance goals. Performance can be attributed directly to goals. Given sufficient ability and commitment to a goal, harder the goal better will be the performance. Locke et al. (1981) examined the behavioral effects of goal setting, concluding that 90% of laboratory and field

studies involving specific and challenging goals led to higher performance than did easy or no goals. Essentially, Goal setting involves establishing specific, measurable and time-targeted objectives. Goals perceived as realistic are more effective in changing behavior.

As Goals affect the performance, the desired outcomes affect the effort exerted. In other words, the effort exerted depends upon the perception of the additional income. Here lies a similarity in the two theories, yet unlike Simon's Drive-effort hypothesis, the goal setting theory only focuses on goals and performance as the two variables.

2.3.5 Drive and drive reduction theory

Drive reduction theory states that when a person performs an action, which reduces the tension associated with a drive, then that action is reinforced. Hull (1952) asserted that motivation stemmed from physiological need deprivation, which "drove" organisms to engage in random activity until, by chance, the need was satisfied and the drive was reduced. However, early on, this theory encountered various difficulties. All needs are not physiological, not all need deprivation leads to an increase in drive, partial need satisfaction may lead to an increase in drive and finally, human beings often knowingly engage in activities that increase rather than decrease tension. (O' Neill & Drillings)

Yet, the basic premise of this theory that drive reduces as needs are satisfied can be compared to Simon's Drive-Effort hypothesis which also says that the drive to exert effort depends upon the "needs" of an individual and their desire

to fulfill these needs. While, the Drive and drive reduction theory only focuses on drive and needs, Simon's theory includes effort, wealth, opportunity, and drive as variables, thus, making it more suited to this research.

2.3.6 Incentive theory

The basic concept behind the incentive theory is goals. When a goal is present, the person makes an effort to reach that goal. While other theories of motivation support the belief that the cause of responses is internal, the incentive theory says that in fact the environment brings out behaviors. Incentives may be tangible or intangible. An intangible incentive may involve feeling good about oneself, while a tangible one may involve awards or something akin to public recognition. Intangible incentives are also known as intrinsic rewards, while tangible incentives are known as extrinsic rewards.

Tangible incentives can be compared to the income or additional income, which can explain why individuals exert effort or in the context of incentive theory, the varying goals and effort made to fulfill these goals.

Incentive theory is useful to understand human behavior when the schedules of rewards are fixed and steady. However, this theory cannot explain situations where the reward is varied or there is a possibility of delay. (Killeen, 1985) Thus, incentive theory, unlike Simon's hypothesis, cannot account for new opportunity perception since rewards or the income in such situations are neither fixed nor steady.

2.3.7 Self-determination theory

Self-determination theory is a macro theory of human motivation and personality, concerning peoples' inherent growth tendencies and their innate psychological needs. It is concerned with the motivation behind the choices that people make without any external influence and interference. Self Determination Theory begins by embracing the assumption that all individuals have natural, innate and constructive tendencies to develop an even more elaborated and unified sense of self (Handbook of SDT research). It focuses on the degree to which an individual's behavior is self-motivated and self-determined (Deci & Ryan, 2002).

The theory focuses especially on volitional or self-determined behavior and the social and cultural conditions that promote it. Self-determination theory also postulates a set of basic and universal psychological needs, namely those for autonomy, competence and relatedness, the fulfillment of which is considered necessary and essential to vital, healthy human functioning regardless of culture or stage of development. It assumes that people are active organisms with inherent and deeply evolved tendencies toward psychological growth and development. (Ryan, 2009)

The self-determination theory comparable to Simon's theory touches upon needs, however, as with other motivational theories, it does not include the economic aspect present in Simon's hypothesis that of opportunity and wealth.

While most of the theories described above are comparable and perhaps somewhat similar to the Drive-effort Hypothesis, none of these theories use opportunity as a factor or determinant. I find that Simon's theory is the most appropriate for further research since it is based on effort, drive, wealth, and opportunity among other things. The presence of opportunity allows us to relate it to the entrepreneurial opportunity literature and present our argument that entrepreneurs would not necessarily exert less effort and display a reduced drive to accept new opportunities beyond a certain age, or accumulated wealth or both.

2.4 Factors affecting the decision of a new opportunity

Entrepreneurial success in creating ventures is said to be due to how factors affecting an opportunity have influences on individuals' behaviors in the entrepreneurial process (Shane & Venkatraman, 2000; Gaglio & Katz, 2001; Kang & Uhlenbruck, 2006).

Julian Simon's hypothesis, considers only age and wealth as the factors in accepting or rejecting an opportunity, however, other factors that have a bearing on the perceived value of an opportunity have been ignored. Amongst these, risk, personal effort, financial costs, time period of investment and expected returns are considered for this study as few of the most important factors that would influence, individually or in combination, the decisions of accepting or rejecting opportunities. I proceed to describe these factors below.

2.4.1 Risk

Risk is often viewed as a function of the uncertainty of the outcomes and the likelihood and perceived value of each possible outcome (March and Shapira, 1987). Risk is fundamentally universal, regardless of context and can be defined as the probable frequency and probable magnitude of future loss (Jones, 2005)

There are various kinds of risks such as systematic and unsystematic, market risk, credit risk, political risk, country risk, foreign exchange risk and so on. Not all kinds of risks may be relevant to new economic opportunities; however, risks that may arise due to uncertainty of returns, larger investment periods as well as substantial investment amounts are valid concerns while considering new opportunities.

Risk propensity or the tendency to take risks can be simply put as the willingness or the lack of it to face the uncertainties. (Brockhaus, 1980) defines risk-taking propensity as the perceived probability of receiving rewards associated with success of a proposed opportunity. An individual would intuitively first gauge the probability of success before subjecting himself to failure. However, such gauging or estimates can at best be subjective and can perhaps come close to what actually occurs in the future.

There cannot be any certainty over what type risks will come forth or their magnitude. The perception of risk and in turn the risk taking propensity would then be heavily dependant on individual's belief in himself, their self confidence, perception of their capabilities and experience. Entrepreneurs who are known to have larger self efficacy, confidence and a higher locus of control would then be

able to estimate such risks better and by way of this, they should also display high risk taking propensity. Some prior research on risk and entrepreneurs confirms that entrepreneurs as opposed to non entrepreneurs are more inclined to risk taking (Ashraf & Qureshi, 2010) to the extent that the ratio of entrepreneurs willing to take above average risk was twice that of non entrepreneurs.

The concept of risk propensity has been the subject of both theoretical and empirical investigation, but with little consensus about its conceptualization and measurement of risk propensity ((Nicholson et al.)

However, The difference in the risk factor between organizational employment and self-employment is not often disputed.

This can also be because for the organizationally employed or in other words, managers, risk is in the context of the company as a whole, which by virtue of its size and difference in strategy to smaller sized ventures would take a different path to avoiding, accepting, transferring or rejecting risk. Comparatively, in an entrepreneurial venture, risk could be in some ways viewed as an opportunity hence requiring a different approach all together, as well as perhaps playing a bigger role in the entire process. Intuitively, entrepreneurs are expected to accept risk as a given and rather focus on controlling the outcomes at any given level of risk (Sarasvathy et al. 1998)

Interestingly, there is another school of thought which says that entrepreneurs do not have a greater risk taking propensity than entrepreneurs (Brockhaus & Horwitz, 1986; Brockhaus, 1980) instead it's the difference in the framing of the risk for example.

As (Sarasvathy et al. 1998) put it, entrepreneurs frame their problem spaces with personal values and assume greater personal responsibility for their outcomes. Employees and managers on the other hand, focus on target outcomes only-attempting to control risk within structured problem spaces and avoiding situations where they risk higher levels of personal responsibility.

While with experience, the perception of risks changes, however, there are situations where the decision maker has no control over the outcomes. These situations definitely arise in new and unknown economic opportunities and this is where entrepreneurs are more likely to accept opportunities with greater risks and in turn greater uncertainty of return.

Generally, individuals would tend not to choose ventures having a high degree of variability in the pattern of anticipated outcome (Forlani & Mullins, 2000) i.e. greater uncertainty of return, I believe that this is less likely to be true for entrepreneurs.

2.4.2 Time Period

Every new economic opportunity will be assessed before it is invested into. Most of these undergo a process containing five sequential steps; origination, screening, evaluation, structuring and post investment activities (Tyebjee & Brunto, 1984). Among these, evaluation forms an important step and within evaluation is the consideration for the investment period. The investment period implies the minimum amount of time that an investor is locked into the new opportunity or venture.

Given the risk and constraints involved within the investment period, investors will want to or have to terminate the relationship with the firm i.e. not be locked down in the investment after a more or less given period of time (Bascha & Waz, 2000). The shorter the time frame for this the less risky it is for the investor given other factors are consistent.

As with any other factor, the perception of this factor would affect the decision that an individual makes as well. This could be affected by both the personal traits of an individual, their personal and social circumstances as well as the details of the opportunity itself.

Personal traits might include factors such as motivation, commitment and the ability to persevere.

Personal and social circumstances would take into account individual's age, health, family and social situations, other obligations- for example, future ventures in the pipeline. An individual in the latter half of their life would intuitively prefer a shorter time commitment; someone with less than perfect health, or large family obligations would also not prefer an opportunity requiring longer time period.

The nature of the opportunity involved would also influence the decision of what is a desirable time period that can be invested into an opportunity. Some considerations for this would be: the resources itself- if the cost of procuring extra resources might increase with time, individuals would wish to minimise time period, and by virtue of this if the expected time period is not satisfactorily short, it might influence the decision of accepting the opportunity in a negative way.

Similarly, complicated or high financial requirements as well as size of the venture would indirectly affect the decision on the opportunity by way of the time period.

Naturally, not all opportunities come with a short-term time commitment or with a specified and fixed one either and; these may be perceived differently by different individuals. For this study, I feel that entrepreneurs would be more willing to accept an opportunity with longer time period of investment.

2.4.3 Financial Cost

As (Tyebjee & Brunto, 1984) put it; evaluation includes the investment outlay and intuitively, a higher investment requirement would be likely to discourage some individuals from accepting the new opportunity as a means to earn additional income.

Perceived risk of new opportunities is expected to be higher for those that require greater investment (investing available resources in fewer but larger opportunities limits options to diversify, and consequently, there is more to lose on one opportunity) and for opportunities where the outcome is more uncertain (greater variability in anticipated returns) or opportunities that carry the possibility of greater operating losses (March and Shapira 1987).

Financial outlay or cost for a particular opportunity would clearly be a crucial factor in deciding to accept or reject an opportunity. Several factors would tie in here, including risk taking propensity, and time period as well (how long will the money invested be locked up before providing returns would be a consideration here).

Other factors such as age of the person and their savings (older individuals would normally not be willing to part with their savings, keeping in mind impending retirement) availability of resources, market conditions (affecting the ability to borrow from the market), personal obligations (for example, dependent family members) liquidity levels (more assets than liquid cash would hinder large financial investments into a new opportunity).

Indirectly, the credit worthiness of an individual looking to invest in an opportunity (affecting borrowing capacity), their reputation, past experiences and success stories would also affect how much resources they are able to procure and in turn invest into the opportunity. If an individual does not possess enough money, they would have to borrow from an external source, which would be affected by the above-mentioned factors. Having stated all of the above, I do feel that entrepreneurs, by virtue of their high risk taking capabilities and otherwise, would be more likely to accept new opportunities requiring higher financial costs or investments.

2.4.4 Expected Returns

Expected return is described as the returns or profits on the initial outlay from any economic activity. Expected returns would depend upon the uncertainty of the environment in which they are being calculated. This is because, if accurate or close to accurate estimation is not possible, the risk of variance between expected and actual returns could be really high.

Expected returns have been linked to profit and growth. It will be perceived as more attractive if they are to be in the form of growth, and more profits in the future than merely, profits in the present with less scope of future growth and expansion (Stewart Jr. & Roth, 2001). This theory finds support in a study conducted by (Hunter & Schmidt, 1990) which showed that when entrepreneurs perceive further growth and expansion as an outcome of the opportunity, they would interpret this as higher and more attractive expected returns despite the immediate returns not being very attractive (Hessels, Gelderen, Thurik, 2008)

Ideally, if an economic opportunity is undertaken, the motivation is to generate wealth. However, how important the wealth or the income from the opportunity is to an individual, might affect how they perceive expected returns and consequently their decision on an opportunity.

For example, an individual in the midst of starting his first venture, with looming loans would put more emphasis on the wealth generation, than a serial entrepreneur who is sufficiently wealthy and might be investing into an opportunity with the motive of doing something more exciting, challenging or with the motive of learning among others. In this case, while the first individual will put greater emphasis on the kind of return he can expect, the second individual may place greater weight on other factors such as the novelty of the venture or the resultant recognition from being associated with it.

However, even in the second situation, with different primary motivations, if the individual manages to get high returns from the opportunity it

will be perceived as a positive outcome and not a negative one. In other words, every individual- entrepreneur or manager would desire attractive returns; yet I feel that entrepreneurs would be more likely to accept an opportunity with only moderately attractive expected returns as compared to managers.

2.4.5 Personal effort

Personal effort, in simple terms, is defined as the amount of effort an individual (entrepreneur or manager) would be willing to put into a new economic opportunity. In other words, Personal effort is to earnestly and conscientiously pursue an activity with the aim to do or accomplish something.

Personal effort may be linked with intrinsic motivation and locus of control. Individuals who are more motivated, in particular self motivated and possess greater locus of control are more likely to be open to exerting more personal effort than individuals who lack such motivation or have low locus of control.

Effort is manifested both in the amount of time that a person works, and in the intensity with which a person exerts himself or her during the time devoted to work. The two aspects of effort are linked in being substitute methods for achieving the same end; a person may work harder, or for longer, or both, in order to finish the job (Simon, 1987).

Research shows that there are several reasons why an individual would exert personal effort. Some of them can be (a) desire to be identified with the work that has been done, in other words, getting some credit for it (Filion, 1997 a & b); (b) need for independence or autonomy (Gibb & Scott, 1986) or greater authority. If a person is willing to undertake more tasks and exert more effort, they will either

move up the success ladder gaining more authority, or if they wish to exert more effort to do a task alone they will then achieve greater autonomy; and (c) the need to achieve.

Some researchers believe that entrepreneurs usually need to exert more effort. (Bhide, 1996) goes to the extent of saying that the problems entrepreneurs confront everyday would overwhelm most managers. Effort stems from drive to accomplish and it is common knowledge that entrepreneurs, at least the successful ones have a lot of drive to perform. Hence, perhaps the idea that they would exert more effort is not so absurd. Other studies suggest that the entrepreneur allocates effort inefficiently (Fraja, 1996); i.e. the entrepreneur puts in different levels of effort in a variety of aspects of the venture, and even more so when the external conditions are bad than when they are good. This may imply that entrepreneurs work harder than managers.

Conversely, in an organization there is a conflict of interest between principal and agent (Fraja, 1996), and, this reduces the effort exerted by managers to some extent. In a study by (McClelland & Burnham, 1976), they classified managers into various groups such as: those that need to be liked more than they get work done, those that are focused on setting goals and reaching them, which however are not always in line with the goals of the organization and lastly those that are interested in building their power through influencing. It appears that each of these groups has some reason or the other to not exert enough effort or the amount that would be expected out of them. Perhaps in situations where managers hold some personal stake in the organization they will put in the extra

effort. However, there is a need to mention that there are exceptions to every situation and so might be the case for some managers as well.

Effort needs to be exerted for any kind of task to be accomplished, hence it is obvious that entrepreneur or manager they will both be exerting effort. The differences will lie in the amount or the type of effort; however, I feel that entrepreneurs as opposed to managers would be more likely to put in extra personal effort in a new opportunity.

Based on all the literature reviewed in this chapter, as well as the gaps that I discover, I now proceed to construct the hypotheses.

Chapter 3: Hypothesis

Using the entrepreneurial opportunity literature and Julian Simon's theory I construct our first hypothesis to test if all individuals would in fact exert less effort and show less drive to accept new opportunities once they have amassed a certain amount of wealth or have reached a certain age or achieved both. I hypothesize that entrepreneurs would not confirm to Julian Simon's hypothesis.

Hypothesis 1: An increase in age and wealth does not result in a decrease in an entrepreneur's drive to exert effort and earn additional income

Entrepreneurial opportunities come in a variety of forms (Shane & Venkatraman, 2000) it varies on several dimensions and these dimensions influence the decision of accepting or rejecting the opportunity. How these factors affect an individual's behavior in the entrepreneurial process determines the success of a venture (Gaglio & Katz, 2001; Kang & Uhlenbruck, 2006).

Based on the above, I take 5 factors in order to show that these are relevant in the decision-making of accepting or rejecting new opportunities.

While it is common knowledge that intuitively, any investor, entrepreneur or otherwise, would attempt to minimize risk associated with any investment involving time, money, or simply association, (Malackowski et al) however I feel that, given the above, entrepreneurs are less likely to reject new opportunities than non-entrepreneurs.

Specifically, as a group entrepreneurs will be more likely to accept those opportunities which pose high risk, long time periods, high financial costs, large personal effort, and moderately attractive expected returns. Consistent with the hypotheses developed in similar studies (Choi, 2004) sets forth the following five hypotheses.

As described in the previous section prior research on risk and entrepreneurs has found that entrepreneurs as opposed to non-entrepreneurs are more inclined to risk taking (Ashraf & Qureshi, 2010). Thus,

Hypothesis 2: when presented with an opportunity of high risk, entrepreneurs are more likely to positively associate with the opportunity than managers.

Prior research has shown that entrepreneurs may exert more effort than non-entrepreneurs. This may be because their problems are more complex and it requires more effort (Bhide, 1996) or because entrepreneurs may feel the desire to achieve autonomy and do more by themselves. The reasons may vary but I feel that entrepreneurs would more likely accept an opportunity with larger effort requirements.

Hypothesis 3: when presented with an opportunity requiring large personal effort, entrepreneurs are more likely to positively associate with the opportunity than managers.

As stated earlier in the literature review section, since there are considerable risk and constraints involved within the investment period, investors will want to or have to terminate the relationship with the firm i.e. not be locked down in the investment more than necessary (Bascha & Waz, 2000). In spite of the best-laid plans, the time period required in new ventures is lengthy (Aldrich & Kenworthy, 1999) and unpredictable. In this context, I feel that entrepreneurs' willingness to accept opportunities with longer time periods of investment would be higher than that of managers. Thus I hypothesize,

Hypothesis 4: when presented with an opportunity involving long time periods of investment, entrepreneurs are more likely to positively associate with the opportunity than managers.

As (March and Shapira 1987) put it, the risk associated with opportunities requiring larger monetary investment is higher, and as I have already shown in the previous sections that entrepreneurs are more likely to accept higher risks, I feel that entrepreneurs would be more willing to accept opportunities that require higher financial costs. Thus,

Hypothesis 5: when presented with an opportunity requiring high financial costs entrepreneurs are more likely to positively associate with the opportunity than managers.

Entrepreneurs are known to have several different motivations behind their association with opportunities. They are known to invest in opportunities for

reasons other than mere income generation. Thus, I feel that entrepreneurs, by virtue of other motivations, would perceive even less attractive expected returns positively. Thus,

Hypothesis 6: when presented with an opportunity providing moderately attractive expected returns, entrepreneurs are more likely to positively associate with the opportunity than managers.

Before I moved to collecting data from a large sample, as a preliminary step, to support our initial stance I conduct an interview with an elderly serial entrepreneur Bala S. Manian who is a 68-year-old Silicon Valley entrepreneur of Indian Origin. He has started several technology companies such as ReaMetrix, Digital Optics and Quantum Dot Corporation and now acts as an investor and independent consultant for several other companies as well. Manian is also the receiver of an Academy Award for the application of some of the technologies developed by him in the film industry. In essence, from this interview I gather that at the age of 68 he is involved in two ventures and is open to a new one simply because he “*enjoys the challenge*”. I then proceed to collect data and analyze it to find support for our hypotheses.

Chapter 4: Methodology

4.1 Overview

This study uses conjoint analysis, a technique that requires respondents to make a series of judgments based on a set of attributes (Choi & Shepherd, 2004). Typically, respondents are presented profiles and asked to evaluate each, usually by ranking or rating. Their responses are then decomposed to calculate the importance weightings, or utility factors, for each attribute (Alriksson and Öberg 2008). This approach is similar to the use of index cards in market research to gauge user preferences.

Conjoint analysis studies have been used in several fields of research in the past. It has a potential to be used in any area requiring measurement of people's perceptions or judgment (Riquelme & Richards, 1992) and has been widely used in such decision-making based studies (Green & Srinivasan, 1990). These include research into consumer purchase decisions (Choi & Shepherd, 2004; Lang & Crown, 1993), manager's strategic decisions (Choi & Shepherd, 2004; Hitt, Dacin, Levitas, Arregle & Borza, 2000; Priem, 1994) and expert judgment (Choi & Shepherd, 2004; Davis, 1996).

Particularly, researchers have also applied conjoint analysis in various contexts to study management issues related to environmental valuation, health care management, and supply chain management to name a few (Montgomery, 2007; Farber & Griner, 2000; Gustafsson, Ekdahl, & Bergman 1999; Reutterer & Kotzab, 2000; Townend & Shackley, 2002). Conjoint analysis is suitable for this

study as it allows the respondent to assess every opportunity separately and it allows the researcher to evaluate responses to all possible scenarios and make a detailed analysis of the respondent's perception based on all the factors and all its levels. Particularly, conjoint analysis produces utility estimates for each of the factors at each level, which allows us to study the preference of the respondents for each level.

4.2 Variables

I use "likelihood of accepting an opportunity" as the dependant variable. Respondents provide their preferences for the dependant variable on a seven point Likert scale ranging from 1 (least likely) to 7 (most likely)

Respondents are asked to evaluate a series of opportunity profiles based on six attributes or factors with two levels each. These attributes are (a) Risk, (b) Personal effort, (c) Financial costs, (d) Time period and (e) Expected returns. These 5 attributes or factors form our independent variables. Table 4.1 shows each attribute and its levels accompanied with a brief description of the attributes.

Terms	Levels	Description Terms
Risk	High	The chances of not obtaining positive returns from the opportunity are relatively High .
	Low	The chances of not obtaining positive returns from the opportunity are relatively Low .
Personal Effort	Large	A Large amount of personal involvement will be required if the opportunity is undertaken.
	Small	A Small amount of personal involvement will be required if the opportunity is undertaken.
Financial Cost	High	The Financial outlay (cost) required if the opportunity is undertaken will be High .
	Low	The Financial outlay (cost) required if the opportunity is undertaken will be Low .
Time Period	Long	The number of years you are required to invest into this opportunity ranges between 5 to 10 years .
	Short	The number of years you are required to invest into this opportunity ranges between 3 to 5 years .
Expected Returns	Highly attractive	If the opportunity is undertaken; the expected returns will be highly attractive
	Moderately attractive	If the opportunity is undertaken; the expected returns will be moderately attractive

Table 4.1: description of factors and their levels

The research instrument (as approved by the Institutional Review Board under IRB-11-0035-A0043) comprised of instructions for the respondents, a description of the attributes and each of its levels. It has 22 profiles with varying combinations of the attributes and its levels. The respondents are asked to rank each of the profiles on a 7-point Likert scale with ‘1’ indicating that the respondent is least likely to accept that opportunity and ‘7’ indicating that the respondent is most likely to accept that opportunity. Figure 4.2 Displays a sample opportunity profile from the research instrument.

Opportunity	
Risk	High
Personal Effort	Large
Financial Cost	Low
Time Period	Long
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 **5** 6 7 Most Likely

Table 4.2: A sample opportunity profile

Additionally, the respondents are also asked to rank each factor to indicate the importance of the particular factor in their decision to take up an opportunity. Respondents are also asked to complete several demographic questions. These include age, gender, field of education, name of organization and number of years in the organization. The entire survey takes approximately 15-20 minutes to complete. (Appendix A shows a copy of the complete research instrument)

While responding to the survey and evaluating each of the profiles respondents are asked to assume themselves to be 55-65 years of age (unless they actually belong to that age group). Respondents are asked to make this assumption so that they can evaluate the profiles based on their preferences when they are in the age group of 55-65 years. Respondents whose actual age might be greater than the required age group of 55-65 years are also asked to assume themselves to be in the required age group. This allows consistency and allows us to control for age as a factor. However, we do note that respondents who are actually older than our

required age group may respond differently under such assumptions and this is discussed in section 6.3. The Since this study argues that age may not necessarily deter all individuals from accepting new opportunities, it is essential that our respondents are in the appropriate age group and if not, they assume to be so. Such an assumption is consistent with other studies (eg: Choi, 2004) using similar surveys where respondents are asked to “envision” a scenario.

4.3 Sample

The sample comprises of individuals based in Singapore. Data is collected by way of administering surveys to these individuals. I use entrepreneurs and managers as our sample groups. The two groups are categorized as below. Entrepreneurs are those individuals who are self employed, have their own business, and/or have invested in new ventures. Managers are those individuals who work for an organization or another individual i.e. they have an employer. Respondents are identified as entrepreneurs or managers prior to the survey.

In order to show that entrepreneurs as a group are indeed behaviorally different, I must contrast them with a control group, and for the purposes of this study Managers form our control group to facilitate comparison of data collected from the entrepreneur group. The rationale for choosing managers as our control group is as below.

Managers or individuals who are employed by another individual/organization are considerably different from entrepreneurs (these differences are explained at a later stage of this study) and yet, they are also engaged in economic activity which

makes them a suitable control group for our sample group.

They are different from entrepreneurs in the way that they work towards their organization's goals and not their own. They are answerable to their superiors as well as any other stakeholders of the organization such as shareholders of a public company. An individual, who aims to work for others, wants less risk and desires stability is well suited to be employed in an organization.

In a traditional sense, most employees are confined to their designated roles and are required to perform them to the best of their abilities.

In contrast, entrepreneurs have the liberty of making their own business decisions and being their boss. In addition, they also gain the control that could never be achieved as an employee in any organization. In comparison to managers, entrepreneurs may be more involved, starting from the planning stage of the business leading to its development and finally realization.

Managers on the other hand have less involvement, less control, lesser authority yet an assurance of a steady income with some level of job security in most cases. Several studies are based on some sort of comparisons between entrepreneurs and managers. A few of these are by (Blanchflower & Oswald, 1998), (Tan 2001), (Kolvereid, 1996) and (Stewart Jr., Watson, Carland & Carland, 1998). This suitably shows that managers do form a reasonable comparison group for entrepreneurs.

4.4 Data

The data collected is in the form of discrete rankings on a scale of 1-7 for the first 23 questions. The next section of the data provides us with information on the demographics of the respondent, particularly, actual age, stream of education, level of education, years worked in the present organization along with the name of the organization. I consider our data set to be a single large one comprising of responses of all 202 individuals. I then split the data set into two groups, those that indicated they were entrepreneurs and the others who indicated they were managers.

Chapter 5: Analysis

5.1 Descriptive statistics

A total of 202 surveys were collected. These were then sorted into two groups- entrepreneurs and managers. Amongst the sample frame of entrepreneurs 21.8% are female and 78.2% male. While each of the respondents was asked to assume themselves to be in the age group 55-65, the actual age of the entrepreneur group ranges from 21 years to 75 years. As discussed earlier in section 4.2, respondents regardless of their actual age are asked to assume themselves to be within 55-65 years of age. It is important to note that, only 3 out of 202 respondents indicate their actual age to be greater than 65. Further, in the managers group no respondent belongs to groups 11 or 12 i.e. none of the respondents are older than 65. In the entrepreneur group, 2 respondents indicate they are between 66-70 years old (group 11) and 1 indicates to be in the age group of 71-75 years (group 12). There is a wide range of representation across level of education, stream of education and years worked for the current organization. 49.8% of entrepreneurs indicated business as their stream of education and 12.9% indicated engineering. 29.7% indicated obtaining a degree or equivalent, 24.8% indicated a graduate degree or equivalent, 19.6% a diploma or equivalent. 2% of the surveyed entrepreneurs indicated they had received only primary education or below. For the number of years in the present organization, maximum responses received indicated that the respondent had worked in the organization between 1 to 5 years. Table 5.1 below displays the descriptive statistics for both managers and entrepreneurs. (See Appendix B)

ENTREPRENEURS					MANAGERS				
Descriptive Statistics					Descriptive Statistics				
	Age	Education level	Stream of education	years in org		Age	Education level	Stream of education	years in org
Mean	6.36	4.33	2.38	10.79	Mean	6.80	4.67	2.46	11.80
Median	7.00	5.00	1.00	7.00	Median	8.00	5.00	2.00	8.50
Mode	8	5	1	1.0	Mode	8	5	1	3.0
Minimum	2	1	1	0.0	Minimum	2	1	1	0.5
Maximum	12	6	5	42.0	Maximum	10	8	5	38.0
Sum	642	437	233	1068.25	Sum	689	476	248	1182.50

age (1=<20; 2=21-25; 3=26-30; 4=31-35; 5=36-40; 6=41-45; 7=46-50; 8=51-55; 9=56-60; 10=61-65; 11=66-70; 12=71-75)

education level (1= primary & below, 2=secondary or equivalent, 3=junior college or equivalent, 4=diploma or equivalent, 5=degree or equivalent, 6=graduate degree or equivalent, 7=others)

stream of education (1=business, 2=engineering, 3=liberal arts, 4=science, 5=others)

Table 5.1: descriptive statistics

As for the managers, 34.7% of the respondents were female and 64.3% male. Similar to the entrepreneur group, each of the respondent managers were also asked to assume themselves to be in the age group 55-65. The actual age of the manager group does vary and ranges from 21 years to 65 years. Managers also belong a wide range of education streams and levels. 37.6% of managers surveyed indicated business as their stream of education and 25.7% indicated engineering. 39.6% indicated obtaining a degree or equivalent, 19.8% indicated a graduate degree or equivalent, 17.8% a diploma or equivalent. Only 1% of the managers surveyed indicated they had received only primary education or below. 9% of the managers indicated having worked for their present organization for 3 years, 8% indicated 1 year and another 8% 10 years. 7% of them indicated having spent 4 years in the organization.

5.2 Analysis of variance (ANOVA)

In order to check for the significance of the factors used in this study as well to identify those that are statistically significant in the decision making of an

individual an analysis of variance (ANOVA) is conducted for every respondent in both the groups. Additionally, Hays' (1973) omega squared (w^2), a measure of explained variance, is calculated to determine the relative importance of the five attributes (Choi, 2004). The omega squared (w^2) was calculated using the formula below

$$W^2 = [SSX - (dfX * MSE)] / [SST + MSE]$$

Where SSX = treatment or regression sum of squares; dfX = degrees of freedom of X; MSE = mean squared error and SST = total sum of squares.

The omega squared (W^2) was calculated for each individual per factor and then the mean was calculated resulting in the mean omega squared (W^2) for each factor per group.

This result is presented in the table 5.2 below for managers and table 5.4 for entrepreneurs. For those factors that had significance, they are highlighted as Bold-faced (for $p < .05$) and bold-underlined (for $p < .01$) the mean omega squared estimate for effect size is provided at the bottom of the table.

Manager						
p values (significance) and mean omega squared (w^2)						
ID	Constant	Risk	Personal effort	Financial cost	Time period	Expected returns
	0.00	0.00	0.42	<u>0.00</u>	0.02	0.16
	<u>0.01</u>	0.63	<u>0.00</u>	0.25	0.76	0.95
	0.00	<u>0.00</u>	0.25	0.97	0.55	0.87
	<u>0.00</u>	0.38	0.52	0.06	0.28	0.21
	0.00	<u>0.01</u>	0.82	0.24	0.64	0.37
	0.00	<u>0.00</u>	0.04	0.13	0.35	0.87
	0.00	0.01	0.59	0.00	0.01	0.08
	0.00	0.04	0.88	<u>0.00</u>	<u>0.01</u>	0.02
	0.00	0.21	0.13	0.13	0.21	0.43
	0.00	0.82	0.31	0.96	0.21	0.59
	<u>0.00</u>	0.15	0.51	0.00	0.15	0.18

0.00	0.03	0.66	0.00	0.00	0.02
0.00	<u>0.00</u>	0.09	0.09	0.18	0.05
<u>0.00</u>	0.06	0.29	0.45	0.03	0.18
0.03	0.34	0.01	0.67	0.20	0.39
0.00	0.13	0.33	0.01	0.86	0.02
0.00	<u>0.01</u>	0.88	0.38	0.88	0.04
0.00	0.00	0.12	0.29	0.29	0.26
0.00	0.38	0.24	0.08	0.04	0.77
0.04	0.00	0.02	0.12	0.12	0.04
0.00	<u>0.00</u>	0.02	0.00	0.14	0.14
0.00	0.06	0.75	0.31	0.58	0.16
0.00	0.33	0.03	<u>0.00</u>	0.01	0.35
0.00	0.88	0.03	<u>0.00</u>	0.08	<u>0.00</u>
0.00	0.35	0.21	<u>0.00</u>	0.12	0.21
0.00	0.04	0.16	0.04	0.16	0.15
0.00	0.81	0.69	0.81	0.14	0.59
0.00	0.00	0.12	0.12	0.31	0.81
0.00	0.65	0.51	0.33	0.04	0.05
0.00	<u>0.00</u>	0.07	0.13	0.07	0.99
0.00	0.41	0.30	0.10	0.04	0.17
0.00	0.79	0.96	0.70	0.07	0.80
0.00	0.06	0.02	0.48	0.48	0.44
0.00	0.81	0.06	0.85	0.85	0.05
0.00	0.26	0.91	0.01	0.04	0.46
0.00	0.00	0.03	0.03	0.21	0.14
<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	0.12	0.39	0.28
0.00	0.50	<u>0.00</u>	0.90	0.90	0.58
0.05	0.42	0.07	<u>0.00</u>	0.58	0.09
<u>0.01</u>	0.87	0.01	0.00	<u>0.01</u>	0.76
0.00	0.12	0.06	0.20	0.20	0.02
<u>0.00</u>	0.00	0.16	0.09	0.95	0.16
0.00	0.00	0.02	0.18	0.88	<u>0.00</u>
0.00	0.00	0.33	0.33	0.20	0.22
19.87	<u>-2.41</u>	<u>-1.40</u>	0.62	1.63	1.38
<u>0.00</u>	0.00	0.09	0.09	0.55	0.77
0.00	0.19	0.81	0.14	0.04	0.02
0.00	0.65	0.31	0.14	0.28	0.75
0.00	0.72	0.01	0.01	0.18	0.99
0.00	0.00	0.98	0.01	0.44	0.02
0.00	0.11	0.11	0.60	0.55	0.38
0.01	<u>0.00</u>	0.12	<u>0.00</u>	0.82	0.19
0.00	0.69	0.01	0.19	0.69	0.51
0.26	0.86	0.01	0.00	0.03	0.36
0.03	0.03	0.16	0.03	0.05	0.71
0.04	0.31	0.35	0.04	<u>0.00</u>	0.14
<u>0.01</u>	<u>0.00</u>	0.18	0.01	0.02	0.01
0.00	0.88	<u>0.01</u>	0.08	0.26	<u>0.00</u>
0.00	0.74	0.55	0.20	0.29	0.18
<u>0.01</u>	0.30	0.87	<u>0.01</u>	0.39	0.51
0.00	0.33	0.04	<u>0.01</u>	0.01	0.04
0.00	0.30	0.03	<u>0.00</u>	0.92	0.38
0.00	0.04	0.39	0.35	0.14	0.65
0.00	0.11	0.46	0.14	0.46	0.10

	0.00	0.02	0.86	0.52	0.86	0.93
	0.00	0.74	0.18	0.69	0.00	0.76
	0.00	0.24	0.47	0.00	0.24	0.56
	0.08	0.03	0.15	0.06	0.36	0.94
	0.00	0.42	0.89	0.06	0.71	0.78
	0.00	0.24	0.05	0.12	0.18	0.89
	0.00	0.03	0.13	0.70	0.25	0.68
	0.00	0.03	0.03	0.13	0.40	0.08
	0.00	0.17	0.51	0.04	0.04	0.52
	0.00	0.49	0.00	0.16	0.35	0.87
	0.00	0.00	0.02	0.00	0.30	0.76
	0.46	0.85	0.00	0.01	0.33	0.16
	0.01	1.00	0.01	0.02	0.61	0.12
	0.00	0.07	0.07	0.01	0.11	0.48
	0.00	0.07	0.20	0.28	0.48	0.41
	0.00	0.00	0.76	0.10	0.10	0.20
	0.04	0.50	0.24	0.00	0.52	0.20
	0.00	0.00	0.35	0.01	0.46	0.01
	0.00	0.13	0.05	0.18	0.02	0.83
	0.00	0.00	0.40	0.00	0.01	0.03
	0.00	0.93	0.02	0.08	0.40	0.28
	0.00	0.29	0.06	0.06	0.23	0.04
	0.00	0.60	0.32	0.00	0.32	0.29
	0.61	0.15	0.52	0.05	0.09	0.33
	0.00	0.75	0.10	0.07	0.10	0.03
	0.00	0.10	0.44	0.00	0.02	0.53
	0.00	0.00	0.40	0.11	0.05	0.23
	0.00	0.07	0.43	0.00	0.00	0.17
	0.00	0.56	0.16	0.01	0.27	0.03
	0.00	0.03	0.94	0.01	0.10	0.70
	0.00	0.14	0.57	0.24	0.95	0.11
	0.00	0.07	0.43	0.00	0.00	0.17
	0.00	0.01	0.02	0.00	0.01	0.36
	0.00	0.00	0.30	0.00	0.03	0.91
	0.00	0.77	0.01	0.01	0.24	0.53
	0.00	0.01	0.72	0.53	0.28	0.94
	0.00	0.20	0.30	0.00	0.08	0.13
% of sig. cases (p<0.05)	25.74	26.70	28.71	32.67	24.75	18.81
% of sig. cases (p<0.01)	19.80	12.90	18.81	11.88	17.82	14.85
mean omega squared		0.18	0.09	0.15	0.03	0.02

(p<0.05= bold; p<0.01=bold underlined)

Table 5.2:p values (significance) and mean omega squared (W²) for managers

I find the significance of the factors at $p < 0.05$ and $p < 0.01$ as follows. I first highlight the values that are significant (bold for $p < 0.05$ and bold underline for $p < 0.01$). Next, I count the number of these significant cases at both levels and express it as a percentage of our total sample size (i.e. 101 per group).

For managers, taking risk as a factor, 26.73% cases are significant at $p < 0.05$ and 12.87% at $p < 0.01$. Personal effort is significant for 28.71% cases at $p < 0.05$ and 18.81% cases at $p < 0.01$. Financial cost is significant for 32.67% cases at $p < 0.05$ and 11.88% cases at $p < 0.01$ levels. Time period and expected returns is significant for 24.75% and 18.81% at $p < 0.05$ and 17.82% and 14.85% at $p < 0.01$. The size of effects (omega squared) across managers is displayed in table 5.3.

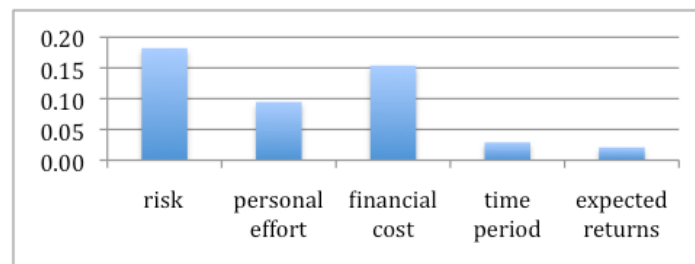


Table 5.3: Omega squared (W^2) for managers

For entrepreneurs, taking risk as a factor, 20.79% cases are significant at $p < 0.05$ and 11.88% at $p < 0.01$. Personal effort is significant for 29.70% cases at $p < 0.05$ and 15.84% cases at $p < 0.01$. Financial cost is significant for 37.62% cases at $p < 0.05$ and 23.76% cases at $p < 0.01$ levels. Time period and expected returns is significant for 17.82% and 10.89% at $p < 0.05$ and 22.77% and 13.86% at $p < 0.01$.

Entrepreneur

p values (significance) and mean omega squared (w2)						
ID	Constant	Risk	Personal effort	Financial cost	Time period	Expected returns

0.24	0.60	0.46	<u>0.17</u>	0.02	0.61
<u>0.00</u>	0.00	<u>0.01</u>	0.05	0.11	0.54
0.00	<u>0.04</u>	0.48	0.01	0.07	0.96
<u>0.00</u>	0.06	0.04	0.15	0.06	0.92
0.00	<u>0.59</u>	0.83	0.83	0.59	0.01
0.00	<u>0.40</u>	0.72	0.08	0.90	0.29
0.00	0.00	0.18	0.98	0.37	0.23
0.05	0.04	0.00	<u>0.04</u>	<u>0.45</u>	0.72
0.00	0.09	0.01	0.09	0.22	0.69
0.00	0.93	0.33	0.53	0.19	0.55
<u>0.00</u>	0.48	1.00	0.02	0.01	0.04
0.00	0.00	0.00	0.02	0.69	0.12
0.00	<u>0.30</u>	0.43	0.98	0.63	0.49
<u>0.00</u>	0.00	0.76	0.10	0.51	0.00
0.00	0.06	0.38	0.81	0.38	0.21
0.00	0.15	0.04	0.04	0.00	0.24
0.00	<u>0.57</u>	0.01	0.29	0.29	0.04
0.00	0.76	0.14	0.06	0.22	0.41
0.00	0.00	0.01	0.05	0.11	0.54
0.00	0.79	0.24	0.00	0.40	0.74
0.00	<u>0.03</u>	0.25	0.48	0.17	0.29
0.00	0.64	0.21	0.02	0.14	0.86
0.00	0.07	0.04	<u>0.21</u>	0.34	0.87
0.00	0.02	0.06	<u>0.00</u>	0.20	<u>0.02</u>
0.00	0.00	0.09	<u>0.00</u>	0.18	0.04
0.00	0.08	0.02	0.00	0.33	0.61
0.00	0.01	0.30	0.01	0.12	0.05
0.00	0.76	0.78	0.24	0.26	0.99
0.00	0.01	0.01	0.26	0.43	0.07
0.00	<u>0.38</u>	0.21	0.05	0.21	0.35
0.00	0.46	0.00	0.03	0.29	0.02
0.00	0.60	0.49	0.01	0.03	0.72
0.00	0.08	0.08	0.13	0.21	0.43
0.00	0.30	0.45	0.01	0.45	0.80
0.00	0.03	0.38	0.01	0.01	0.04
0.00	0.00	0.04	0.01	0.52	0.02
<u>0.00</u>	<u>0.22</u>	<u>0.55</u>	0.00	0.00	0.05
0.00	0.22	<u>0.83</u>	0.01	0.60	0.79
0.01	0.58	0.03	<u>0.03</u>	0.21	0.32
<u>0.00</u>	0.96	0.71	0.03	<u>0.23</u>	0.37
0.00	0.81	0.35	0.01	0.07	1.00
<u>0.00</u>	0.44	0.33	0.10	0.15	0.00
0.00	0.59	0.00	0.12	0.22	<u>0.92</u>
0.00	0.33	0.01	0.52	0.97	0.16
0.00	<u>0.12</u>	<u>0.27</u>	0.02	0.01	0.68
<u>0.00</u>	0.54	0.25	0.54	0.25	0.04
0.04	0.37	0.26	0.01	0.07	0.03
0.00	0.48	0.48	0.20	0.93	0.56
0.00	0.28	0.89	0.04	0.69	0.13
0.00	0.05	0.05	0.03	0.08	0.13
0.00	0.04	0.58	0.12	0.01	0.05
0.00	<u>0.00</u>	0.38	<u>0.43</u>	0.27	0.21
0.00	0.79	0.49	0.87	0.87	0.00

0.00	0.57	0.96	0.24	0.24	0.50
0.03	0.00	0.42	0.10	0.22	0.10
0.00	0.69	1.00	0.85	<u>0.25</u>	0.27
<u>0.00</u>	<u>0.06</u>	0.00	0.35	0.51	0.85
0.01	0.67	<u>0.28</u>	0.52	0.03	<u>0.95</u>
0.01	0.14	0.22	0.00	0.01	0.40
<u>0.00</u>	0.60	0.60	<u>0.00</u>	0.31	0.78
0.00	0.54	0.09	<u>0.05</u>	0.18	0.39
0.02	0.89	0.15	<u>0.46</u>	0.38	0.87
0.00	0.93	0.58	0.07	0.93	0.00
0.00	0.19	0.01	0.11	0.02	0.71
0.00	0.97	0.32	0.15	0.09	0.22
0.00	0.01	0.21	0.21	<u>0.81</u>	0.00
0.22	0.41	0.34	<u>0.68</u>	0.58	0.48
0.00	0.05	0.21	0.05	0.05	0.87
<u>0.00</u>	0.30	0.30	0.21	0.14	0.40
0.00	0.66	0.07	0.19	0.46	0.07
0.00	0.01	0.01	0.01	0.01	0.00
<u>0.00</u>	0.38	0.48	0.02	0.06	0.21
0.00	0.28	0.02	0.02	0.97	0.47
<u>0.00</u>	0.71	<u>0.45</u>	0.71	0.02	0.20
0.00	0.00	0.00	0.00	0.67	0.21
0.09	0.91	<u>0.01</u>	<u>0.00</u>	0.15	0.25
<u>0.01</u>	0.44	<u>0.25</u>	0.12	0.71	0.65
0.00	0.13	0.07	<u>0.00</u>	0.00	0.32
0.00	0.46	0.17	0.24	0.71	0.97
0.00	<u>0.30</u>	0.00	0.54	0.01	0.17
0.00	0.04	0.02	<u>0.86</u>	0.41	0.34
0.00	<u>0.80</u>	0.01	<u>0.90</u>	0.90	<u>0.08</u>
0.00	0.13	0.03	0.74	0.20	0.67
0.00	0.17	0.09	<u>0.22</u>	<u>0.48</u>	0.26
<u>0.00</u>	0.56	0.16	0.08	0.16	0.04
0.00	0.00	0.28	0.85	0.48	0.14
0.00	0.06	0.38	0.81	0.81	0.01
0.00	0.11	0.89	0.00	0.02	0.01
<u>0.03</u>	0.00	0.00	0.03	0.24	0.01
<u>0.00</u>	0.00	0.48	<u>0.33</u>	0.08	0.42
0.00	<u>0.37</u>	0.54	0.02	0.08	0.43
<u>0.00</u>	0.08	0.01	0.14	<u>0.63</u>	0.41
0.00	0.16	0.76	0.38	0.77	0.01
0.00	0.69	0.50	0.00	0.15	0.45
0.00	0.72	0.01	0.01	0.03	0.60
<u>0.00</u>	0.74	0.33	0.99	<u>0.74</u>	0.09
0.02	0.00	0.01	0.06	0.22	0.35
0.00	<u>0.33</u>	0.02	<u>0.00</u>	0.08	0.42
0.00	0.45	<u>0.84</u>	<u>0.07</u>	0.02	0.49
0.03	0.00	0.25	0.00	0.81	0.71
<u>0.00</u>	0.04	0.00	<u>0.02</u>	0.37	0.03
% of sig. cases (p<0.05)					
27.72	20.79	29.70	37.62	17.82	22.77

% of sig. cases (p<0.01)	5.94	11.88	15.84	23.76	10.89	13.86
mean omega squared		0.10	0.12	0.14	0.03	0.05

(p<0.05= bold; p<0.01=bold underlined)

Table 5.4:p values (significance) and mean omega squared (W^2) for entrepreneur

The size of effects (omega squared) across entrepreneurs is displayed in table 5.5.

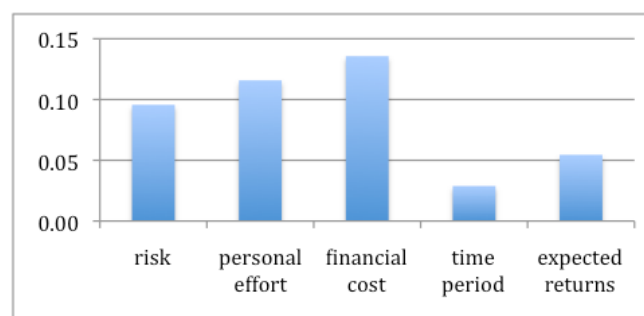


Table 5.5: Omega squared (W^2) for entrepreneurs

5.3 Regression

Next, an individual level linear regression analysis was conducted on the responses of each entrepreneur and manager to determine the regression coefficients. This is done to identify the factors that are significant in the decision-making at the aggregate level (Z statistic). Five independent variables (risk, personal effort, financial cost, time period and expected returns) were input. Each of the independent variables or factors used had two levels. The lower level of each factor (for e.g. low risk, small personal effort, low financial cost, and so on) were coded as 0 whereas, the high level of each factor (for e.g. high risk, large personal effort, high financial cost and so on) were coded as 1. The dependent variable for each regression was the 'likelihood of accepting an opportunity'.

The t statistics and the Z statistic calculated as an aggregate of the t statistics (Patell, 1976; Dechow, Huson, & Sloan, 1994; Choi, 2001) are presented in the tables below. The Z statistic is calculated using the below formula as described in other studies (Patell, 1976; Dechow, Huson, & Sloan, 1994; Choi, 2001)

$$Z = \frac{1}{\sqrt{N}} \sum_{j=1}^N \frac{\frac{t_j}{\sqrt{k_j / (k_j - 2)}}}{\sqrt{1 + (N - 1)^{-1}}}$$

Where t_j = t-statistic for individual j; k_j = degrees of freedom in regression for individual j and N = sample size.

I find that at the aggregate level, the Z statistics indicate that all factors are significant in influencing the decision of both our groups- entrepreneurs as well as managers in accepting or rejecting a new opportunity. Table 5.3 shows the t statistics and z statistics for managers.

MANAGER						
t statistics and z statistics						
ID	Constant	Risk	Personal effort	Financial cost	Time period	Expected returns
	6.27	5.88	0.83	4.05	2.67	-1.48
	3.27	-0.49	3.60	1.18	-0.31	-0.06
	7.07	3.76	1.19	0.04	0.62	0.17
	4.34	-0.91	0.67	2.01	1.11	-1.29
	6.30	2.97	0.23	1.22	0.48	-0.92
	5.07	4.23	2.27	1.62	0.97	0.16
	10.91	2.91	0.55	7.63	2.91	-1.86
	9.28	2.22	-0.15	3.80	3.01	-2.55
	5.73	1.31	1.60	1.60	1.31	-0.81
	7.59	0.23	1.05	-0.05	1.32	0.55
	3.47	1.52	0.68	4.46	1.52	-1.40
	8.68	-2.34	0.45	13.30	6.59	-2.67
	11.20	3.87	1.80	1.80	1.39	-2.08
	4.19	2.05	1.09	0.78	2.36	-1.41
	2.35	-0.99	2.76	0.44	1.33	0.88
	13.64	1.61	1.01	2.80	-0.18	-2.57
	13.47	3.02	-0.16	0.90	-0.16	-2.29
	9.10	5.57	1.66	1.10	1.10	-1.17

8.52	0.91	1.23	1.89	2.21	0.30
2.25	9.59	2.64	1.65	1.65	-2.25
9.90	3.58	2.57	6.11	1.55	-1.57
7.07	2.01	0.32	1.04	0.56	-1.47
10.06	1.00	2.43	3.38	2.90	-0.96
3.92	-0.15	2.40	3.42	1.89	-3.80
8.39	0.96	1.31	3.73	1.66	-1.30
7.91	2.27	1.48	2.27	1.48	-1.50
11.15	-0.24	0.41	-0.24	-1.54	0.55
12.74	9.72	1.63	1.63	1.06	0.25
6.66	-0.46	-0.67	1.00	2.26	-2.09
5.89	3.98	1.98	1.58	1.98	-0.01
4.70	0.85	1.08	1.76	2.21	-1.45
6.14	-0.28	-0.05	0.40	1.98	-0.26
4.47	2.05	2.57	0.73	0.73	0.79
17.59	0.24	2.00	-0.20	-0.20	-2.16
6.33	-1.18	-0.11	2.82	2.28	-0.75
8.11	7.76	2.39	2.39	1.31	-1.55
3.88	3.53	3.53	1.63	0.88	-1.12
4.95	-0.69	3.39	0.13	0.13	-0.57
2.12	0.84	1.91	6.22	0.57	-1.81
3.14	-0.17	2.78	4.47	3.20	-0.31
7.05	1.67	2.01	1.33	1.33	-2.50
3.63	5.81	1.49	1.80	-0.06	-1.48
8.20	5.77	2.61	1.42	-0.16	-3.38
7.42	5.49	1.01	1.01	1.35	-1.27
19.87	-2.41	-1.40	0.62	1.63	1.38
4.23	5.34	1.79	1.79	0.60	-0.30
12.25	-1.38	0.24	1.54	2.18	-2.57
5.57	0.46	-1.05	1.54	1.11	-0.32
6.72	0.37	2.77	2.77	1.40	0.01
7.65	7.41	-0.03	2.87	0.80	-2.60
14.40	-1.67	-1.67	-0.53	0.61	0.91
2.85	3.80	1.66	4.16	0.24	-1.36
5.11	0.41	2.84	1.39	0.41	-0.67
1.16	0.18	2.90	5.12	2.40	-0.94
2.37	2.37	1.48	2.37	2.15	-0.38
2.28	1.05	-0.97	2.23	3.41	-1.56
3.23	3.93	1.41	2.85	2.49	-2.82
21.98	-0.16	3.18	1.85	1.18	-3.90
6.55	-0.34	0.61	1.32	1.09	-1.41
3.21	1.07	0.17	3.07	0.89	-0.67
9.08	-1.00	-2.27	3.08	2.83	-2.25
5.56	1.08	2.38	4.34	0.10	0.90
5.92	2.18	-0.89	0.96	1.57	-0.46
9.90	-1.68	0.76	1.58	0.76	-1.72
10.24	-2.70	-0.18	0.66	-0.18	-0.09
4.66	-0.34	1.41	0.41	3.67	-0.31
10.34	1.22	0.75	3.58	1.22	-0.60
1.84	2.32	1.50	2.05	0.94	-0.08
4.28	0.84	0.15	1.99	0.38	-0.28
5.16	-1.22	2.14	1.66	1.42	-0.14
8.15	-2.44	1.61	0.40	1.21	0.42

	4.25	2.36	2.36	1.61	0.86	-1.90
	8.77	1.45	0.68	2.23	2.23	-0.66
	4.16	0.70	4.06	1.48	0.96	-0.17
	4.85	4.46	2.53	7.37	1.07	0.31
	0.76	0.20	4.01	3.19	1.02	-1.46
	2.99	0.00	3.14	2.62	0.52	-1.64
	4.63	1.98	1.98	3.10	1.70	-0.72
	8.89	1.95	1.34	-1.12	0.72	0.86
	8.91	4.26	0.31	1.74	1.74	-1.34
	2.23	-0.69	1.23	3.35	0.66	1.35
	5.37	3.94	-0.97	3.07	0.76	-3.06
	4.37	-1.58	2.11	1.42	2.57	-0.22
	12.87	4.52	0.86	3.91	3.30	-2.41
	4.00	0.09	2.65	1.88	0.86	1.11
	11.39	-1.09	2.05	2.05	1.26	-2.21
	6.52	-0.53	1.03	8.85	1.03	-1.09
	0.52	1.52	0.66	2.10	1.81	-1.00
	3.36	-0.32	1.73	1.98	1.73	-2.43
	4.29	-1.72	0.79	3.31	2.55	-0.64
	6.69	4.17	0.88	1.70	2.11	-1.26
	3.64	-1.98	0.81	4.70	3.31	1.44
	9.57	-0.60	1.48	2.86	1.13	-2.47
	7.41	2.41	0.08	2.75	1.75	0.39
	9.66	1.54	0.58	1.22	-0.07	-1.72
	3.64	-1.98	0.81	4.70	3.31	1.44
	4.45	-2.91	2.56	8.75	2.92	-0.94
	4.76	3.67	1.08	3.67	2.37	-0.12
	5.36	0.30	3.07	3.07	1.22	0.64
	6.94	2.91	-0.36	0.65	-1.11	0.08
	4.22	1.33	1.07	3.67	1.85	-1.61
Sum	678.13	150.34	131.29	249.54	143.89	-95.77
Average	6.71	1.49	1.30	2.47	1.42	-0.95
Z scores	52.27	11.59	10.12	19.23	11.09	-7.38

Table 5.6: t statistics and z statistics for managers

For managers, I find that low risk is positively associated with likelihood of accepting an opportunity with a positive Z value of 11.58.

Small personal effort (Z value 10.11) and short time period required (Z value

11.09) are also positively significant with the likelihood of accepting an opportunity; however, low financial cost is most significant with a positive Z value of 19.23. Moderately attractive expected return is negatively significant in the likelihood of accepting an opportunity with a Z value of -7.38.

Similarly, Table 5.5 shows the t statistics and z statistics for entrepreneurs.

ENTREPRENEUR						
t statistics and z statistics						
ID	Constant	Risk	Personal effort	Financial cost	Time period	Expected returns
	1.22	0.53	0.76	1.45	2.58	0.52
	7.33	4.59	2.93	2.10	1.69	-0.64
	13.37	-2.19	0.73	2.81	1.97	-0.06
	3.65	2.04	2.30	1.51	2.04	0.11
	15.35	0.55	0.22	0.22	0.55	-3.13
	8.19	-0.87	-0.37	1.88	-0.12	-1.11
	16.39	3.78	1.40	-0.02	0.93	-1.25
	2.12	2.26	3.44	2.26	0.78	-0.36
	3.51	1.79	2.80	1.79	1.28	0.40
	13.82	-0.09	1.00	0.64	1.37	-0.62
	0.00	0.93	0.33	0.53	0.19	0.55
	6.24	4.91	4.91	2.66	0.41	-1.66
	11.96	-1.08	-0.82	-0.03	0.50	-0.70
	3.50	6.54	0.31	1.78	0.68	-3.65
	13.92	2.04	0.90	-0.24	0.90	-1.32
	3.34	1.52	2.23	2.23	3.64	-1.24
	3.68	0.58	3.15	1.10	1.10	-2.24
	5.08	0.32	1.54	2.02	1.29	-0.85
	7.33	4.59	2.93	2.10	1.69	-0.64
	13.29	-0.27	1.23	3.50	0.86	-0.34
	6.00	2.39	1.20	0.73	1.44	-1.11
	3.38	0.47	1.30	2.67	1.57	-0.18
	6.09	1.96	2.29	1.31	0.99	-0.16
	4.46	2.69	2.01	4.39	1.33	-2.50
	6.34	4.28	1.81	3.46	1.40	-2.27
	8.32	1.86	2.72	3.57	1.01	0.53
	3.42	2.78	1.07	3.06	1.64	-2.11
	9.23	0.32	-0.28	1.21	-1.17	0.01
	7.83	2.91	3.26	1.17	0.82	-1.94
	3.51	0.91	1.31	2.10	1.31	-0.97
	6.26	0.76	3.73	2.41	1.09	-2.70
	10.61	-0.53	0.71	2.78	2.37	0.37
	7.94	1.89	1.89	1.61	1.32	-0.81
	7.33	1.07	0.78	2.82	0.78	0.25
	5.98	2.43	-0.90	2.80	3.17	-2.20
	5.63	3.61	2.30	3.29	0.66	-2.57
	5.90	1.29	0.61	5.68	3.32	-2.15

27.24	-1.29	0.23	-2.80	-0.53	-0.28
3.02	0.56	2.34	2.34	1.32	-1.03
3.40	-0.05	0.38	2.31	1.24	-0.92
4.59	-0.24	0.96	3.13	1.93	0.00
8.46	-0.79	-1.00	1.74	1.53	-3.92
4.02	-0.55	7.85	1.64	1.28	-0.10
9.91	1.01	2.77	0.66	-0.04	-1.48
15.65	1.63	1.15	2.61	3.10	-0.42
22.65	-0.62	1.20	-0.62	1.20	-2.22
2.20	0.92	1.17	3.17	1.92	-2.38
30.85	0.72	0.72	1.34	0.09	-0.60
5.26	1.13	-0.14	2.21	0.40	-1.58
4.49	2.16	2.16	2.45	1.87	-1.61
9.19	-2.30	-0.57	1.67	2.91	-2.10
7.95	3.31	0.91	-0.80	-1.15	-1.31
19.58	-0.27	-0.70	0.17	0.17	-3.99
6.07	0.59	-0.06	1.23	1.23	-0.70
2.40	3.58	0.82	1.74	1.28	-1.73
8.45	0.40	0.00	-0.19	1.19	-1.13
8.77	-2.05	3.69	0.97	0.67	0.19
3.17	-0.43	1.13	0.66	2.38	-0.06
3.01	1.57	1.27	4.21	3.04	-0.87
4.44	0.54	0.54	5.39	1.05	0.28
6.61	0.62	1.79	2.18	1.40	-0.89
2.60	0.14	1.52	0.75	0.91	-0.17
7.63	0.10	0.57	1.97	0.10	-3.86
3.39	-1.39	2.86	1.68	2.63	0.38
5.38	0.04	1.03	1.53	1.78	-1.27
7.90	2.89	1.32	1.32	-0.25	-3.40
1.28	0.84	0.98	0.42	0.56	-0.72
4.57	2.14	1.31	2.14	2.14	-0.17
4.56	1.08	1.08	1.31	1.54	-0.87
10.28	0.45	1.97	1.36	-0.76	-1.98
7.19	3.09	3.09	3.09	3.09	-4.16
6.36	-0.91	0.72	2.68	2.02	-1.32
11.83	1.13	2.58	2.58	0.04	-0.74
8.17	0.38	-0.77	0.38	2.66	-1.35
8.41	11.08	3.39	3.39	0.43	-1.32
1.81	-0.12	2.89	3.71	1.52	-1.20
3.07	0.79	1.21	1.62	0.37	-0.46
7.19	-1.59	1.96	3.94	4.73	1.02
5.84	0.76	1.45	1.22	-0.39	0.04
11.15	-1.07	4.46	0.63	2.76	-1.44
3.77	2.22	2.57	-0.18	0.85	0.98
15.72	0.26	2.94	-0.12	-0.12	-1.86
5.02	1.61	2.37	0.34	1.35	0.44
8.27	-1.44	1.82	1.27	0.73	-1.17
16.74	0.59	1.46	1.90	1.46	-2.18
4.79	10.70	1.11	0.19	-0.72	-1.56
7.87	2.07	0.91	-0.25	-0.25	-2.84
4.21	1.69	-0.14	5.13	2.61	-2.82
2.33	4.90	3.67	2.45	1.22	-3.19
4.48	3.88	0.72	1.01	1.87	-0.82

	12.04	-0.92	0.63	2.48	1.86	-0.80
	6.73	1.90	3.30	1.54	0.49	-0.84
	30.50	1.49	-0.31	-0.90	0.29	-2.96
	4.28	0.41	0.69	5.34	1.51	-0.78
	6.12	0.37	2.80	2.80	2.45	-0.53
	14.64	0.33	1.02	-0.01	0.33	-1.78
	2.63	4.02	2.85	2.06	1.28	-0.96
	3.41	1.01	2.74	3.60	1.88	-0.82
	6.79	0.78	0.21	1.92	2.50	0.70
	2.36	11.53	1.19	4.01	0.25	0.38
	9.06	2.23	3.97	2.67	0.93	-2.45
Sum	773.18	143.17	156.45	185.73	125.47	-116.44
Average	7.66	1.42	1.55	1.84	1.24	-1.15
Z scores	59.59	11.04	12.06	14.32	9.67	-8.97

Table 5.7: t statistics and z statistics for entrepreneurs

For entrepreneurs, as with managers, I find that low financial cost is most significant to the decision of accepting or rejecting an opportunity with a positive Z value of 14.3. Small personal effort (Z value 12.05) and low risk (Z value 11.03) are also positively significant to the decision-making; short time period has the lowest positive significance amongst all the factors with a Z value of 9.67. Moderately attractive expected return is negatively significant in the likelihood of accepting an opportunity with a Z value of -8.97.

5.4 Conjoint analysis

The individual ANOVA calculated provides us with the percentage of significant cases per factor per group, and the linear regression gives us the Z

statistics that shows us the significance of each factor in the decision making of the individual. Next, I proceed to analyze the importance or utility of each factor and each level and display the differences in entrepreneurs and managers.

Using the conjoint syntax on IBM's "SPSS Statistics 2.0" software, a conjoint analysis was run separately for entrepreneurs and managers. I first explain the results of the analysis for each group and then proceed to compare the results between the two groups i.e. entrepreneurs and managers.

Utility scores

Table 5.8 shows the part-worth scores and their standard errors for each factor and each of its levels.

entrepreneur				manager			
		Utility Estimate	Std. Error			Utility Estimate	Std. Error
risk	high	0.66	0.30	risk	high	0.65	0.32
	low	1.31	0.59		low	1.30	0.64
personal effort	large	0.68	0.30	personal effort	large	0.80	0.32
	small	1.36	0.59		small	1.60	0.64
financial cost	high	1.22	0.30	financial cost	high	1.04	0.32
	low	2.44	0.59		low	2.07	0.64
time period	long	0.74	0.30	time period	long	0.72	0.32
	short	1.48	0.59		short	1.45	0.64
expected returns	highly attractive	-0.47	0.29	expected returns	highly attractive	-0.62	0.31
	moderately attractive	-0.94	0.57		moderately attractive	-1.23	0.62
	attractive				attractive		
(Constant)		-0.20	0.64	(Constant)		0.41	0.70

Table 5.8: utility scores for entrepreneurs and managers

Higher utility value indicates greater preference, i.e. the particular factor carries more weight in the decision of the likelihood of accepting an opportunity.

For example presence of highly attractive expected returns corresponds to a higher utility (Green & Wind, 1973). Since the utilities are all expressed in a common unit, they can be added together to give the total utility of any combination.

Relative importance

The range of the utility values (highest to lowest) for each factor provides a measure of how important the factor was to overall preference. Factors with greater utility ranges play a more significant role than those with smaller ranges (Green & Wind, 1973). Table 5.9 provides a measure of the relative importance of each factor known as an importance score or value.

entrepreneur		manager	
Importance Values		Importance Values	
risk	17.05	risk	17.43
personal effort	20.89	personal effort	18.04
financial cost	27.06	financial cost	32.44
time period	18.90	time period	19.62
expected returns	16.11	expected returns	12.46

Table 5.9: importance values for entrepreneurs and managers

The importance score is calculated by taking the utility range for each factor separately; and then dividing by the sum of the utility ranges. The values thus represent percentages and have the sum to 100. The calculations, it should be noted, are done separately for each subject, and the results are then averaged over all of the subjects (Green & Wind, 1973).

The importance scores indicate that financial cost is of maximum relative importance to both entrepreneurs (27.06%) and managers (32.44%) as a factor in their decision of accepting or rejecting opportunities. The next most important

factor for entrepreneurs is personal effort (20.89%) and for managers is time period (19.62%). Following this, entrepreneurs weigh time period (18.9%) as the third most important factor and correspondingly managers find personal effort (18.04%) important. Risk and expected returns are the two factors that are considered least relatively important by both entrepreneurs (risk- 17.05%; expected returns 16.11%) and managers (risk- 17.43%; expected returns- 12.46%)

Factor level characteristics

As a first step, I use comparison to understand at what levels of each factor how many entrepreneurs and managers would be willing to accept the opportunity. This question asks the respondent to assume that they are at an age of 55. The responses are presented in table 5.10 below.

Entrepreneurs						Managers					
	Risk	Personal Effort	Financial Cost	Time Period	Expected Returns		Risk	Personal Effort	Financial Cost	Time Period	Expected Returns
1	22	14	19	20	0	1	22	14	23	13	1
2	20	17	13	16	1	2	21	10	18	24	0
3	15	23	30	30	3	3	18	22	27	23	1
4	27	21	26	27	13	4	23	30	25	24	14
5	15	21	9	3	23	5	12	16	4	13	21
6	1	5	3	5	27	6	3	7	2	4	34
7	1	0	1	0	34	7	2	2	2	0	30
	101	101	101	101	101		101	101	101	101	101

Table 5.10: Factor level characteristics for entrepreneurs and managers

I find that, managers and entrepreneurs at the age of 55 and above are equally risk averse, only 2 managers and 1 entrepreneur would accept an opportunity that has high risk. Managers as opposed to entrepreneurs are more likely to accept an opportunity that requires large amount of personal effort. Both entrepreneurs and managers are averse to opportunities that involve high financial

costs and long time periods of investment. Lastly, more entrepreneurs than managers would accept an opportunity only if it entails highly attractive expected returns.

Next, for each factor I segregate the profiles into the low-level and high-level groups. For every individual in both groups I proceed to find the average rankings for each level of the factors. Table 5.11 displays the results obtained. Intuitively, this directly shows the differences in the decision making of accepting or rejecting opportunities between entrepreneurs and managers.

ID	Entrepreneur		Manager	
	1	2	1	2
Risk	44.99	46.18	41.15	43.99
Personal Effort	44.15	47.02	41.00	44.14
Financial cost	43.34	47.83	39.06	46.08
Time period	45.17	46.00	41.88	43.26
Expected returns	48.43	42.74	44.23	40.91
Total	226.00	229.70	207.30	218.30

1= high risk, large personal effort, high financial cost, long time period and highly attractive expected returns

2= low risk, small personal effort, low financial cost, short time period and moderately attractive expected returns

Table 5.11: mean rankings per factor per level for entrepreneurs and managers

I find that for every factor, and each of its levels, the mean rankings of the entrepreneur group are higher than that of the manager group. This indicates that entrepreneurs rate opportunities that have high risk, large personal effort, high financial cost, long time period, and moderately attractive expected returns with higher ranks than the managers. I also find that the difference in mean rankings between high and low factor profiles for entrepreneurs (3.7) is smaller than the difference for managers (11). This finds support for our first hypothesis, which

states that not all individuals confirm to the Drive-effort hypothesis as stated by Julian Simon.

Comparison of the two groups

As described in the data section of chapter 4, I split our data set into two groups (entrepreneurs and managers) to facilitate comparisons. This is in line with the methodology of other research studies using conjoint analysis such as (Taschian et al., 1982) which used conjoint analysis to compare across demographic groups. A recent study by (Edwards et al., 2012) compares the results of conjoint analysis on similar data across four regions. Prior studies therefore indicate that a comparison of the results of conjoint analysis is indeed possible and I adopt a similar approach.

I use the linear model that indicates an expected linear relationship between the factor and the scores. I specify the expected direction of the linear relationship with the keywords MORE and LESS. MORE indicates that higher levels of a factor are expected to be preferred, while LESS indicates that lower levels of a factor are expected to be preferred. For four of the five factors used I indicate a 'linear less' relationship, only for expected returns I indicate a 'linear more' relationship. The differences in the utility estimates as obtained from the results of the conjoint analysis are displayed in table 5.12 below.

		Utility Estimate (entrepreneur)	Utility Estimate (manager)	Difference(%)
risk	high	0.66	0.65	0.31%
	low	1.31	1.30	0.61%
personal effort	large	0.68	0.80	-12.07%
	small	1.36	1.60	-24.14%
financial cost	high	1.22	1.04	18.46%
	low	2.44	2.07	36.91%
time period	long	0.74	0.72	1.46%
	short	1.48	1.45	2.92%
expected returns	highly attractive	-0.47	-0.62	14.76%
	moderately attractive	-0.94	-1.23	29.51%
(Constant)		-0.20	0.41	-60.78%

Table 5.12: difference in the utility values between entrepreneurs and managers

Table 5.13 displays the differences in the utility values in the form of a bar chart.

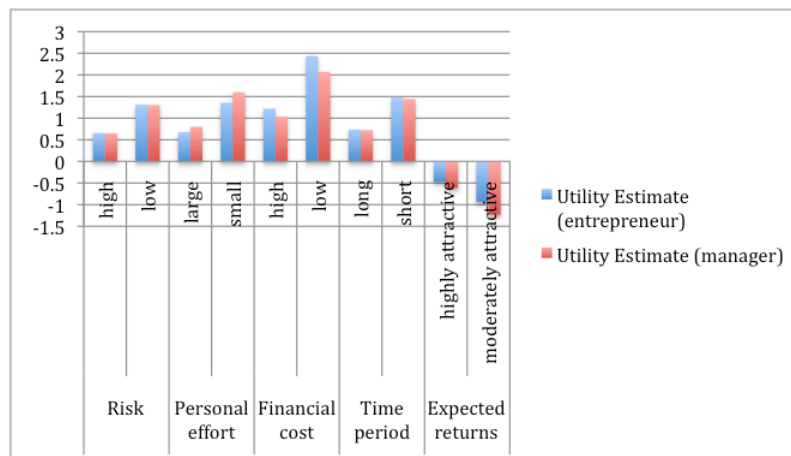


Table 5.13: difference in the utility values between entrepreneurs and managers

From table 5.12 I can see that a low financial cost is the most weighted factor for managers with a difference of 36.91% to that of entrepreneurs. Both managers and entrepreneurs groups have one respondent each whose estimates do not match the expected direction, i.e. one manager perceives high personal effort as a positive aspect in accepting new opportunities.

I look at the utility estimates for the high levels of each factor (low level for expected returns) to be able to derive the group that has greater preference for it. Entrepreneurs prefer high risk to managers implying that given an opportunity posing high risks entrepreneurs will more likely associate positively with the opportunity. However, the difference being relatively small (0.31%) I find that hypothesis 2 is not sufficiently supported.

Managers prefer large personal effort to entrepreneurs. This means that given an opportunity requiring exerting large personal effort managers are more likely to positively associate with it than entrepreneurs. With a difference in the utility estimate of 12.07% I find that hypothesis 3 is not supported.

For the third factor i.e. financial cost, I find that entrepreneurs would prefer high financial cost to managers indicating that given an opportunity requiring higher financial costs or investments entrepreneurs would more likely associate positively with the opportunity. With a difference in the utility estimate of 18.46% I find support for our 4th hypothesis.

Considering time period as a factor in the decision of accepting or rejecting opportunities I find that entrepreneurs are more likely to positively associate with opportunities posing longer time periods of involvement than managers by a difference of 1.46%. Thus, hypothesis 5 is supported.

For moderately attractive expected returns, I again find that entrepreneurs are more likely to positively associate with an opportunity predicting moderate returns as opposed to managers. With a difference of 29.51% I find that hypothesis 6 is also supported.

Chapter 6: Conclusion, Implication & Limitations

In this section I first report and discuss the findings providing any implications alongside. Next I state the limitations of the study and finally move on to making some suggestions for future research.

6.1 Discussion

The analysis of the data reveals several interesting findings. While some of our hypotheses are supported, other hypotheses have not found support.

First and foremost, I find that entrepreneurs do not conform to Simon's hypothesis. Even at the age of 55-65 years, when given opportunities, our findings suggests that they will accept some opportunities, based on the combination of factors that are best suited for them. The mean rankings obtained for the two groups indicate that entrepreneurs, in general, rank new business opportunities higher than managers. I find the mean rankings for entrepreneurs to be 226 for the high level of the factors (i.e. high risk, large personal effort and so on) and 229.7 for the low level of the factor (i.e. low risk, low personal effort and so on.). In comparison, for managers the mean rankings are found to be 207.3 for the high level of the factors (i.e. high risk, large personal effort and so on) and 218.3 for the low level of the factor (i.e. low risk, low personal effort and so on.) From our findings, based on the data collected from 101 entrepreneurs and 101 managers in Singapore, I can say that entrepreneurs' drive does not reduce or taper off, along with the effort that they are willing to exert on new opportunities even when they are over 50 or presumably adequately wealthy or both. However,

at this stage I would like to point out that I only test for the age group 55-65 years and make the assumption that the respondents while completing the survey indeed assume that they are in the age group of 55-65 years. Additionally, as stated earlier in the study, I assume that normally individuals amass wealth with time and at this age group they are presumably adequately wealthy. There might be exceptions to this assumption as there might be individuals who did not amass 'adequate' wealth with age or incurred considerable loss to it. Yet, in such situations, it is likely that these individuals may not even perceive opportunities positively as they would have the necessary resources to invest into it. Despite the assumptions, our interview as well as survey data provide similar findings that entrepreneurs have a higher likelihood to accept new opportunities even at an age that is close to the retirement.

The behavior of entrepreneurs close to retirement age is an important phenomenon and key to the future of the organization or venture the entrepreneur is associated with. This is because, unlike large firms with management teams, small businesses are usually run by one key person- the owner-entrepreneur, who bears almost all of the risks and makes most of the decisions, related to the business. Moreover, the entrepreneur also embodies most of the firm-specific knowledge capital (Chao, Szrek & Pereira; 2010). Thus the finding that entrepreneurs may continue to perceive new opportunities positively even when they are close to retirement age bears positive consequences for such ventures and organizations. The findings can have positive implications for managers and organizations too and this is highlighted below.

With corporate entrepreneurship (Burgelman, 1983) becoming an important phenomenon, firms are looking to make their managers more entrepreneurial. This would require among other things successfully altering the perception of managers towards exerting effort in older age and possessing the drive to do so. Consequently, this would then change their perception of new opportunities. This study gives an insight into the differences between managers and entrepreneurs with regards to new opportunities, and consequentially provides firms and their management the gaps that need to be addressed for managers to move towards entrepreneurial behavior. Next, I look at the individual factors that influence the decision of accepting or rejecting new business opportunities.

For risk I found that both managers and entrepreneurs, in the age group of 55-65 years are quite risk-averse. The difference between entrepreneurs' preference for high risk (.655) as compared to managers' (.652) was low compared to the difference between the two groups with regard to the other factors such as financial cost. Thus, I did not find sufficient support for hypothesis 2. While other studies have shown entrepreneurs to be more risk-tolerant than the general population (Xu & Ruef, 2004) I feel that age plays an important role here in the way that with age even entrepreneurs become less risk tolerant their behavior moving closer to that of the general population. However, it is not surprising that entrepreneurs as compared to managers do have a higher preference for high risk as a factor despite the difference being small.

Next I look at the findings for expected returns, where I found that hypothesis 6 pertaining to expected returns was supported with entrepreneurs

showing greater positive association to moderately attractive expected returns with a utility value of $-.937$ as opposed to managers in which case the utility value was -1.232 . On the assumption that a person accepting more risk would expect greater returns I find that our findings on expected returns is contrary to this. However, it somewhat displays the ‘irrational behavior’ of entrepreneurs and confirms what I state earlier in the literature review section that generation of wealth and profits may not be the only motivation behind accepting new economic opportunities.

For financial costs I found that managers were more averse to higher costs than entrepreneurs. Managers with a utility score of 2.070 are less likely to positively associate with opportunities that involve outlay of large monetary investments than entrepreneurs (2.439). Therefore, hypothesis 4 was supported. It is important to note here that our survey does not instruct the respondents to make any assumptions about the source of money being invested (personal investment as opposed to their firm’s money). This could potentially be an area of further research and it will be discussed in section 6.3.

Contrary to hypothesis 3, I found that with regard to personal effort, managers are willing to exert more effort as opposed to entrepreneurs. The preference for large personal effort was greater among managers with a utility value of $.799$ as opposed to entrepreneurs who had a utility value of only $.678$. Thus as stated in the previous chapters I found that hypothesis 3 was not supported; and; here I make an attempt to provide some explanation for it. Perhaps entrepreneurs are willing to invest in new opportunities and associate

themselves with it, but are not willing to personally put in the required effort. They may bear the costs and even accept the risks that come with association, but they may not be willing or able to put in the personal effort due to lack of time or perhaps involvement in multiple ventures.

For time period, I also find that entrepreneurs are more willing to positively associate with opportunities that pose lengthier time periods when compared with managers. Thus, I find that hypothesis 5 is supported. Intuitively, this seems to be in line with the general behavior of entrepreneurs and managers in their workplace. In most situations managers would work on strict deadlines, would be answerable to their managers and would also be responsible for completing their tasks on time so that any dependencies are not side tracked. In contrast, entrepreneurs control almost all aspects of their business/venture, they are not answerable to others and are thus at liberty to manage any dependencies as per convenience. This behavior in their own fields would lead managers to weigh time period more heavily than entrepreneurs, and in turn, as a matter of habit, not accept opportunities requiring larger time periods.

6.2 Limitations

Like any other research study, our work has several limitations too. These are highlighted below.

As per Julian Simon's hypothesis, a person who is of a certain age and has accumulated an adequate amount of wealth will have a diminished drive to exert effort on new opportunities. Here, I seek to highlight two limitations. First, I do not define 'adequate' wealth. Wealth is a relative concept and what would be

adequate for one may not even come close to adequate for another. Hence, I make the assumption that, in normal circumstances, with age, individuals would have accumulated adequate wealth or would have sufficiently planned for the retirement phase of their lives. I make this assumption the basis of asking respondents to assume they are of a certain age (between 55-65years). This leads to our second limitation. I do not include any exceptional circumstances where individuals may not have accumulated wealth with age or may have lost it in a sudden downfall.

Next, although I find sufficient evidence to suggest that entrepreneurs do not adhere to Julian Simon's Drive Effort hypothesis, I feel that comparison with only one other control group i.e. managers may not be sufficient. A comparison with just managers may not be sufficient to show the differences between entrepreneurs and the entire general population.

I find that the methodology may have some limitations as well. Some of these are expressed below.

Firstly, the number of attributes and its levels has to be decided by the researcher. A conjoint analysis cannot be conducted using too many factors and too many levels since the factorial design would produce numerous profiles for the individual to evaluate. This would result in a long survey instrument. In the present study too, a possibility that respondents may not be objective in the evaluation of all 22 profiles in the survey exists. This can be caused by "respondent fatigue" or in other words, the respondents may not be sufficiently motivated to complete the survey. It might be considered too long or the

assumptions that we require them to make may not be effectively used through the entire course of responding to the survey. I endeavored to overcome this by instructing the respondents to complete the entire survey (in the instructions page of the survey) and rejecting those surveys that might be incomplete (if any). Yet, this methodology has advantages. In this case, with 5 factors and 2 levels for each factor, conjoint analysis allows the respondent to envision an opportunity with a combination of these factors and levels, thus providing them with a clearer picture in comparison to the simple individual factor approach where respondents would merely rank each factor separately.

Secondly, some respondents who are either older or younger than our required age group (55-65 years) might find it difficult to assume that they are 55-65 years old and simultaneously provide accurate responses to the survey. Additionally, respondents who are younger than the required age group and those that are older might respond to the survey differently despite making the assumption that they are between 55-65 years. For older respondents, their past experiences might play a role in their assumptions of being younger than their actual age. In future research this can be overcome by asking potential respondents their age and only if they do not belong to the required age group should they be asked to make assumptions about their age. Alternatively, the sample could also be limited to just the respondents who are actually of the required age group.

Thirdly, although, as an improvement to Simon's age and wealth factors, I introduce five other factors that are involved in decision-making, I feel that these

may also not constitute the entire comprehensive list. In short, the perception of opportunities and the decision to invest may not be dependent simply upon the factors used here. For example, the importance of perceived risk of the market as a determinant of the feasibility of an opportunity could be another factor. In other words, although I include risk as a factor, I do not account for separately, the various types of risk. Usually, the decision to invest in an opportunity is a much more complex decision based on a lot many more inter twining factors some of which cannot be quantified or distinguished into opposites. Cultural differences, family circumstances, personal health, prior involvements and social perception are some of the other factors that may play some part in the decision of accepting or rejecting opportunities at a certain age. Incorporating the above factors into the present study could formulate into further research.

Additionally, the factors used in this study i.e. risk, personal effort, time period, expected returns and financial cost have some element of subjectivity. Some factors such as personal effort might be more subjective than others such as time period. Different respondents may interpret some of the factors and their levels differently and the implication of this is a possible limitation to our research design. Increasing the levels of the factors would perhaps reduce this possibility, for example, risk could be categorized as high, medium and low leading to less ambiguity in the interpretations. However, this would also result in an increase in the number of profiles in the survey.

Lastly, I do not develop any formal tests for comparison between the two groups and use simple comparison techniques as a preliminary step towards developing formal statistical tests in further research.

6.3 Suggestions for further research

This thesis is essentially an attempt to combine Simon's hypothesis and the entrepreneurial opportunity literature to show that entrepreneurs do not always confirm to the Drive Effort hypothesis. Our sample frame comprises of about 100 entrepreneurs and 100 managers only based out of Singapore. It might be fruitful, as future research, to replicate this research in different countries using different sampling sizes as well as groups. This would be useful to see if entrepreneurs do not confirm to Simon's hypothesis in other settings as well. Further research in this area can include more factors or more levels to see changes in perception. It would also be useful to see if the five factors used here are still relevant and if there are any other factors at play.

In our survey, I do not define the source of the financial investment (i.e. where is the money coming from). This forms another area of possible future research would be to define the source of the financial investment when collecting data from respondents. It would be interesting to see the difference in the responses (especially managers) when they are asked to make a decision on an opportunity with the knowledge that they are investing their own money or their firm's money.

As stated earlier, in the chapter 5 I find that when it comes to personal effort entrepreneurs prefer large personal effort less than managers. This is in contrast to our hypothesis and I feel can form an area of further research. It might be interesting to see if entrepreneurs' who are usually known to have higher locus

of control show a reduced preference for it with age or involvement in several ventures or both. There might be other reasons for this or a combination of several of reasons.

Lastly, In conclusion, this research is able to clarify that Julian Simon's theory has at least one exception- the entrepreneurs. The findings also support our belief that there are several factors affecting the decision of accepting/rejecting new opportunities. It shows the differences between entrepreneurs and managers in the context of age, wealth, risk, effort, time, and money as factors in a new economic opportunity.

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Appendix

Appendix A - Opportunity Perception Survey

The purpose of this survey is to understand the perception of new opportunities.

Please read the situation and the information provided and answer the questions based on it.

Instructions

1. The situation

You are an individual of a particular age (between the age of 55 to 65 years) who has been provided with a new economic opportunity, which requires some years of effort, with a certain amount of risk involved, and expected returns. Other social factors (such as health) affecting your decision are also indicated.

Based on the information provided kindly indicate the likelihood of accepting the opportunity.

2. Important information

Please keep in mind that:

For this study there are no 'right' or 'wrong' responses.

Please consider each scenario as a separate situation, independent of all the others – please do not refer back to scenarios already completed.

We understand this survey may look like a lot to do, however, we have found that it takes no more than 15-20 minutes to complete. It typically takes longer for the first few cases and less time per case thereafter.

Please respond to the questions based only on the information provided and not relying on any external information or prior knowledge.

Please respond to all questions.

Description of Terms

Terms	Levels	Description
Risk	High	The chances of not obtaining positive returns from the opportunity are relatively High .
	Low	The chances of not obtaining positive returns from the opportunity are relatively Low .
Personal Effort	Large	A Large amount of personal involvement will be required if the opportunity is undertaken.
	Small	A Small amount of personal involvement will be required if the opportunity is undertaken.
Financial Cost	High	The Financial outlay (cost) required if the opportunity is undertaken will be High .
	Low	The Financial outlay (cost) required if the opportunity is undertaken will be Low .
Time Period	Long	The number of years you are required to invest into this opportunity ranges between 5 to 10 years .
	Short	The number of years you are required to invest into this opportunity ranges between 3 to 5 years .
Expected Returns	Highly attractive	If the opportunity is undertaken; the expected returns will be highly attractive
	Moderately attractive	If the opportunity is undertaken; the expected returns will be moderately attractive

Based on the information provided with each opportunity kindly indicate the likelihood of accepting the opportunity.

Section A:

New Opportunity 1

Risk	High
Personal Effort	Large
Financial Cost	High
Time Period	Long
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 2

Risk	High
Personal Effort	Small
Financial Cost	High
Time Period	Long
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 3

Risk	High
Personal Effort	Large
Financial Cost	Low
Time Period	Long
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 4

Risk	High
Personal Effort	Large
Financial Cost	High
Time Period	Short
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 5

Risk	High
Personal Effort	Large
Financial Cost	High
Time Period	Long
Expected Returns	Moderately Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 6

Risk	High
Personal Effort	Small
Financial Cost	High
Time Period	Short
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most

Likely

New Opportunity 7

Risk	High
Personal Effort	Small
Financial Cost	Low
Time Period	Long
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most

Likely

New Opportunity 8

Risk	High
Personal Effort	Small
Financial Cost	Low
Time Period	Short
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most

Likely

New Opportunity 9

	Attractive
--	------------

Risk	High
Personal Effort	Small
Financial Cost	Low
Time Period	Short
Expected Returns	Moderately

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 10

Risk	High
Personal Effort	Small
Financial Cost	Low
Time Period	Long
Expected Returns	Moderately Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 11

Risk	High
Personal Effort	Small
Financial Cost	High
Time Period	Short
Expected Returns	Moderately Attractive

Assuming that this new opportunity described above is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 12

	Attractive
--	------------

Risk	Low
Personal Effort	Small
Financial Cost	Low
Time Period	Short
Expected Returns	Moderately

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most
Likely

New Opportunity 13

Risk	Low
Personal Effort	Large
Financial Cost	Low
Time Period	Short
Expected Returns	Moderately Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most
Likely

New Opportunity 14

Risk	Low
Personal Effort	Small
Financial Cost	High
Time Period	Short
Expected Returns	Moderately Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most
Likely

New Opportunity 15

Risk	Low
Personal Effort	Small
Financial Cost	Low
Time Period	Long

Expected Returns	Moderately Attractive
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Assuming that this new opportunity described above is provided to you, on a scale of one (least likely) to 7 (most likely),

please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 16

Risk	Low
Personal Effort	Large
Financial Cost	Low
Time Period	Long
Expected Returns	Moderately Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 17

Risk	Low
Personal Effort	Small
Financial Cost	Low
Time Period	Short
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 18

Risk	Low
Personal Effort	Large
Financial Cost	High

Time Period	Short
Expected Returns	Moderately Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 19

Risk	Low
Personal Effort	Large
Financial Cost	High
Time Period	Short
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 20

Risk	Low
Personal Effort	Large
Financial Cost	High
Time Period	Long
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 21

Risk	High
------	------

Personal Effort	Large
Financial Cost	High
Time Period	Long

Expected Returns	Highly Attractive
------------------	-------------------

likely), please indicate the likelihood of accepting this opportunity.

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 22

Risk	Low
Personal Effort	Large
Financial Cost	Low
Time Period	Long
Expected Returns	Highly Attractive

Assuming that this new opportunity described on the left is provided to you, on a scale of one (least likely) to 7 (most likely), please indicate the likelihood of accepting this opportunity.

Least likely 1 2 3 4 5 6 7 Most Likely

New Opportunity 23

If you are approached to be actively involved in a new business venture in a corporation at the age of 55 what conditions would you like in this opportunity for you to indicate that you Most Likely will accept the invitation

Conditions	Please rate by circling
Risk	Low 1 2 3 4 5 6 7 High
Personal Effort	Small 1 2 3 4 5 6 7 Large
Financial Cost	Low 1 2 3 4 5 6 7 High
Time Period	Short 1 2 3 4 5 6 7 Long
Expected Returns	Not Attractive 1 2 3 4 5 6 7 Highly Attractive

Section B:

Lastly, I would like some details about you. Please remember that all responses will be kept strictly confidential. Thank you for your time.

Name:

Name of Organization:

Designation:

Gender: ☐ Female ☐ Male

Age:

☐ 20 years and below ☐ 21 to 25 years ☐ 26 to 30 years ☐ 31 to 35 years ☐ 36 to 40 years
☐ 41 to 45 years ☐ 46 to 50 years ☐ 51 to 55 years ☐ 56 to 60 years ☐ 61 to 65 years ☐ 66
to 70 years ☐ 71 to 75 years ☐ 75 years and above

Highest level of education:

☐ Primary and below ☐ Secondary or equivalent ☐ Junior College or equivalent ☐)

Diploma or equivalent ☐ Degree or equivalent ☐ Graduate Degree or equivalent ☐ Others,

Please Specify _____

Stream of Education:

☐ Business ☐ Engineering ☐ Liberal Arts ☐ Science ☐ Other _____

How many years have you been with the current organization? ☐ years

Email Addresses:

Thank you for your time and participation in this study

Appendix B

Managers				Entrepreneurs			
Gender (M/F)				Gender (M/F)			
Frequency	Percent	Valid Percent	Cumulative Percent	Frequency	Percent	Valid Percent	Cumulative Percent
35	34.7	34.7	34.7	22	21.8	21.8	21.8
66	65.3	65.3	100	79	78.2	78.2	100
101	100	100		101	100	100	

Table 8.2.1: gender

Managers					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	4	4	4	4
	3	8	7.9	7.9	11.9
	4	10	9.9	9.9	21.8
	5	3	3	3	24.8
	6	9	8.9	8.9	33.7
	7	14	13.9	13.9	47.5
	8	31	30.7	30.7	78.2
	9	20	19.8	19.8	98
	10	2	2	2	100
	Total	101	100	100	

age (1=<20; 2=21-25; 3=26-30; 4=31-35; 5=36-40; 6=41-45; 7=46-50; 8=51-55; 9=56-60; 10=61-65; 11=66-70; 12=71-75)

Entrepreneurs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	14	13.9	13.9	13.9
	3	13	12.9	12.9	26.7
	4	5	5	5	31.7
	5	3	3	3	34.7
	6	6	5.9	5.9	40.6
	7	14	13.9	13.9	54.5
	8	22	21.8	21.8	76.2
	9	14	13.9	13.9	90.1
	10	7	6.9	6.9	97
	11	2	2	2	99
	12	1	1	1	100
	Total	101	100	100	

age (1=<20; 2=21-25; 3=26-30; 4=31-35; 5=36-40; 6=41-45; 7=46-50; 8=51-55; 9=56-60; 10=61-65; 11=66-70; 12=71-75)

Table 8.2.2: age

Managers					Entrepreneurs						
		Frequency	Percent	Valid Percent	Cumulative Percent			Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	38	37.6	37.6	38.6	Valid	1	50	49.5	51	51
	2	26	25.7	25.7	64.4		2	13	12.9	13.3	64.3
	3	7	6.9	6.9	71.3		3	7	6.9	7.1	71.4
	4	10	9.9	9.9	81.2		4	4	4	4.1	75.5
	5	19	18.8	18.8	100		5	24	23.8	24.5	100
	Total	101	100	100		Total	98	97	100		

1=Business; 2=Engineering; 3=Liberal Arts; 4=Science; 5=Others

1=Business; 2=Engineering; 3=Liberal Arts; 4=Science; 5=Others

Table 8.2.3: stream of education

Managers				
		Frequency	Percent	Valid Percent
Valid	1	1	1	1
	2	8	7.9	8.9
	3	9	8.9	17.8
	4	18	17.8	35.6
	5	40	39.6	75.2
	6	20	19.8	95
	7	4	4	99
	Total	101	100	100

1=primary & below; 2=secondary or equivalent; 3=junior college or equivalent; 4=diploma or equivalent; 5=degree or equivalent; 6=graduate degree or equivalent; 7=others

Entrepreneurs				
		Frequency	Percent	Valid Percent
Valid	1	2	2	2
	2	17	16.8	18.8
	3	7	6.9	25.7
	4	20	19.8	45.5
	5	30	29.7	75.2
	6	25	24.8	100
	Total	101	100	100

1=primary & below; 2=secondary or equivalent; 3=junior college or equivalent; 4=diploma or equivalent; 5=degree or equivalent; 6=graduate degree or equivalent; 7=others

Table 8.2.4: level of education

Appendix C

Managers					
Regression coefficients					
Constant	Risk	Personal effort	Financial cost	Time period	Expected returns
1.79	2.14	0.30	1.47	0.97	-0.52
2.31	-0.44	3.23	1.06	-0.27	-0.05
3.25	2.19	0.69	0.03	0.36	0.10
2.54	-0.67	0.49	1.49	0.83	-0.92
3.32	1.99	0.15	0.82	0.32	-0.59
2.04	2.16	1.16	0.83	0.49	0.08
2.43	0.82	0.16	2.16	0.82	-0.51
3.09	0.94	-0.06	1.60	1.27	-1.03
2.62	0.76	0.93	0.93	0.76	-0.45
3.65	0.14	0.64	-0.03	0.81	0.32
1.09	0.60	0.27	1.77	0.60	-0.53
2.04	-0.70	0.14	3.97	1.97	-0.77
3.56	1.56	0.73	0.73	0.56	-0.80
1.73	1.07	0.57	0.41	1.24	-0.71
1.73	-0.93	2.57	0.41	1.24	0.79
3.01	0.45	0.28	0.78	-0.05	-0.69
5.02	1.43	-0.07	0.43	-0.07	-1.04
2.14	1.66	0.50	0.33	0.33	-0.34
3.44	0.47	0.63	0.97	1.13	0.15
0.60	3.22	0.89	0.55	0.55	-0.72
2.57	1.18	0.84	2.01	0.51	-0.50
3.85	1.39	0.22	0.72	0.39	-0.97
2.78	0.35	0.85	1.18	1.02	-0.32
1.01	-0.05	0.78	1.12	0.62	-1.19
3.19	0.47	0.63	1.80	0.80	-0.60
2.62	0.95	0.62	0.95	0.62	-0.61
4.53	-0.12	0.21	-0.12	-0.79	0.27
2.90	2.81	0.47	0.47	0.31	0.07
4.19	-0.37	-0.54	0.80	1.80	-1.60
1.93	1.66	0.82	0.66	0.82	-0.01
2.72	0.62	0.79	1.29	1.62	-1.02
3.58	-0.21	-0.04	0.29	1.46	-0.19
2.22	1.29	1.62	0.46	0.46	0.48
5.27	0.09	0.76	-0.07	-0.07	-0.79
3.12	-0.74	-0.07	1.76	1.43	-0.45
1.98	2.41	0.74	0.74	0.41	-0.46
1.35	1.55	1.55	0.72	0.39	-0.47
3.19	-0.56	2.77	0.11	0.11	-0.45
1.03	0.52	1.18	3.85	0.35	-1.07
0.98	-0.07	1.10	1.77	1.27	-0.12
2.72	0.82	0.98	0.65	0.65	-1.18
1.54	3.14	0.80	0.97	-0.03	-0.77
2.73	2.43	1.10	0.60	-0.07	-1.37
2.82	2.65	0.49	0.49	0.65	-0.59
5.17	-0.79	-0.46	0.21	0.54	0.44
1.41	2.26	0.76	0.76	0.26	-0.12

4.97	-0.71	0.12	0.79	1.12	-1.27
3.39	0.36	-0.81	1.19	0.86	-0.24
2.57	0.18	1.34	1.34	0.68	0.01
2.43	2.99	-0.01	1.16	0.32	-1.01
4.98	-0.73	-0.73	-0.23	0.27	0.38
1.05	1.78	0.78	1.94	0.11	-0.61
2.76	0.28	1.95	0.95	0.28	-0.44
0.62	0.12	1.95	3.45	1.62	-0.61
1.40	1.78	1.11	1.78	1.61	-0.28
1.78	1.04	-0.96	2.21	3.38	-1.48
1.18	1.82	0.66	1.32	1.16	-1.26
4.33	-0.04	0.79	0.46	0.29	-0.94
3.62	-0.24	0.43	0.93	0.76	-0.95
2.32	0.99	0.15	2.82	0.82	-0.59
4.68	-0.65	-1.49	2.01	1.85	-1.41
2.24	0.55	1.22	2.22	0.05	0.44
3.80	1.78	-0.72	0.78	1.28	-0.36
4.79	-1.03	0.47	0.97	0.47	-1.02
4.81	-1.61	-0.11	0.39	-0.11	-0.05
2.44	-0.23	0.94	0.27	2.44	-0.20
2.87	0.43	0.26	1.26	0.43	-0.20
0.88	1.40	0.90	1.24	0.57	-0.05
2.44	0.61	0.11	1.44	0.27	-0.20
2.82	-0.85	1.49	1.15	0.99	-0.09
2.64	-1.00	0.66	0.16	0.50	0.17
2.23	1.57	1.57	1.07	0.57	-1.21
2.97	0.62	0.29	0.96	0.96	-0.27
2.12	0.45	2.62	0.95	0.62	-0.11
1.31	1.54	0.87	2.54	0.37	0.10
0.37	0.12	2.45	1.95	0.62	-0.86
1.50	0.00	2.00	1.67	0.33	-1.00
2.18	1.18	1.18	1.85	1.01	-0.41
3.81	1.06	0.73	-0.61	0.39	0.45
3.26	1.98	0.14	0.81	0.81	-0.60
1.52	-0.60	1.07	2.90	0.57	1.12
2.44	2.27	-0.56	1.77	0.44	-1.70
2.50	-1.14	1.53	1.03	1.86	-0.15
2.77	1.23	0.23	1.07	0.90	-0.63
2.06	0.06	1.73	1.23	0.56	0.70
3.81	-0.47	0.87	0.87	0.54	-0.90
2.19	-0.23	0.44	3.77	0.44	-0.45
0.24	0.88	0.38	1.22	1.05	-0.56
1.72	-0.21	1.12	1.29	1.12	-1.52
2.25	-1.14	0.53	2.19	1.69	-0.40
2.14	1.69	0.36	0.69	0.86	-0.49
1.72	-1.18	0.48	2.82	1.98	0.82
3.63	-0.29	0.71	1.38	0.55	-1.14
2.92	1.21	0.04	1.37	0.87	0.19
3.94	0.80	0.30	0.63	-0.04	-0.85
1.72	-1.18	0.48	2.82	1.98	0.82
1.61	-1.33	1.17	4.00	1.34	-0.42
1.45	1.42	0.42	1.42	0.92	-0.04
2.29	0.16	1.66	1.66	0.66	0.33

3.62	1.93	-0.24	0.43	-0.74	0.05
2.14	0.86	0.69	2.36	1.19	-0.99

Table 8.3.1: regression coefficients for managers

Entrepreneurs					
Regression coefficients					
Constant	Risk	Personal effort	Financial cost	Time period	Expected returns
0.70	0.39	0.56	1.06	1.89	0.36
2.32	1.84	1.18	0.84	0.68	-0.25
4.22	-0.88	0.29	1.12	0.79	-0.02
1.83	1.29	1.46	0.96	1.29	0.06
6.15	0.28	0.11	0.11	0.28	-1.53
4.30	-0.58	-0.25	1.25	-0.08	-0.71
4.54	1.33	0.49	-0.01	0.33	-0.42
0.94	1.27	1.94	1.27	0.44	-0.20
1.82	1.18	1.84	1.18	0.84	0.26
4.97	-0.04	0.46	0.29	0.62	-0.27
3.50	-0.50	0.00	1.83	2.17	-1.50
1.82	1.82	1.82	0.99	0.15	-0.59
5.97	-0.68	-0.52	-0.02	0.32	-0.43
1.26	2.98	0.14	0.81	0.31	-1.60
4.81	0.89	0.39	-0.11	0.39	-0.55
1.24	0.72	1.05	1.05	1.72	-0.56
1.88	0.38	2.05	0.71	0.71	-1.39
2.74	0.22	1.05	1.38	0.88	-0.56
2.32	1.84	1.18	0.84	0.68	-0.25
4.63	-0.12	0.55	1.55	0.38	-0.14
3.32	1.68	0.84	0.51	1.01	-0.75
1.62	0.29	0.79	1.62	0.95	-0.11
2.46	1.01	1.17	0.67	0.51	-0.08
1.72	1.32	0.98	2.15	0.65	-1.18
2.02	1.73	0.73	1.40	0.57	-0.88
2.56	0.73	1.06	1.39	0.39	0.20
1.58	1.63	0.63	1.79	0.96	-1.19
4.07	0.18	-0.16	0.68	-0.66	0.01
2.95	1.39	1.56	0.56	0.39	-0.89
2.34	0.77	1.10	1.77	1.10	-0.78
2.49	0.38	1.88	1.22	0.55	-1.31
3.37	-0.21	0.29	1.12	0.95	0.14
3.62	1.10	1.10	0.93	0.76	-0.45
3.30	0.61	0.44	1.61	0.44	0.14
2.12	1.10	-0.40	1.26	1.43	-0.95
2.25	1.83	1.17	1.67	0.33	-1.25
2.29	0.64	0.30	2.80	1.64	-1.02
4.74	-0.28	0.05	-0.62	-0.12	-0.06
1.56	0.37	1.54	1.54	0.87	-0.65
2.08	-0.04	0.29	1.79	0.96	-0.69
2.50	-0.17	0.67	2.17	1.33	0.00

5.28	-0.62	-0.79	1.38	1.21	-2.98
1.45	-0.25	3.58	0.75	0.58	-0.04
3.72	0.48	1.32	0.32	-0.02	-0.68
4.20	0.56	0.39	0.89	1.06	-0.14
4.89	-0.17	0.33	-0.17	0.33	-0.59
1.15	0.61	0.78	2.11	1.28	-1.53
6.50	0.19	0.19	0.36	0.03	-0.15
3.81	1.04	-0.13	2.04	0.37	-1.40
2.02	1.23	1.23	1.40	1.07	-0.88
4.87	-1.55	-0.38	1.12	1.95	-1.36
3.05	1.61	0.44	-0.39	-0.56	-0.61
5.92	-0.10	-0.27	0.06	0.06	-1.47
3.72	0.46	-0.04	0.96	0.96	-0.52
0.69	1.30	0.30	0.63	0.47	-0.60
5.61	0.34	0.00	-0.16	1.00	-0.92
3.81	-1.13	2.04	0.54	0.37	0.10
2.67	-0.46	1.21	0.71	2.54	-0.06
1.35	0.89	0.72	2.39	1.72	-0.47
2.28	0.35	0.35	3.52	0.68	0.18
2.23	0.27	0.77	0.93	0.60	-0.37
2.22	0.15	1.65	0.82	0.98	-0.18
4.27	0.07	0.40	1.40	0.07	-2.63
1.89	-0.98	2.02	1.19	1.86	0.26
2.85	0.03	0.70	1.03	1.20	-0.82
3.96	1.84	0.84	0.84	-0.16	-2.08
1.21	1.01	1.17	0.51	0.67	-0.83
2.19	1.30	0.80	1.30	1.30	-0.10
2.62	0.79	0.79	0.95	1.12	-0.61
4.45	0.25	1.08	0.75	-0.42	-1.04
2.56	1.39	1.39	1.39	1.39	-1.80
2.56	-0.47	0.37	1.37	1.04	-0.65
4.28	0.52	1.18	1.18	0.02	-0.32
4.69	0.27	-0.56	0.27	1.94	-0.95
1.87	3.12	0.95	0.95	0.12	-0.36
0.87	-0.07	1.76	2.26	0.93	-0.70
1.94	0.63	0.97	1.30	0.30	-0.35
2.39	-0.67	0.83	1.66	2.00	0.42
3.35	0.55	1.05	0.89	-0.28	0.03
3.45	-0.42	1.75	0.25	1.08	-0.54
1.45	1.08	1.25	-0.09	0.42	0.46
5.40	0.11	1.28	-0.05	-0.05	-0.78
2.60	1.05	1.55	0.22	0.89	0.28
4.01	-0.88	1.12	0.78	0.45	-0.69
5.06	0.23	0.56	0.73	0.56	-0.80
1.38	3.90	0.40	0.07	-0.26	-0.55
5.37	1.79	0.79	-0.21	-0.21	-2.36
2.42	1.23	-0.10	3.73	1.90	-1.97
0.75	2.00	1.50	1.00	0.50	-1.25
2.05	2.25	0.42	0.59	1.09	-0.46
5.11	-0.50	0.34	1.34	1.00	-0.42
2.52	0.90	1.57	0.73	0.23	-0.38
6.70	0.42	-0.09	-0.25	0.08	-0.79
2.05	0.25	0.42	3.25	0.92	-0.46

2.32	0.18	1.34	1.34	1.18	-0.25
5.64	0.16	0.50	0.00	0.16	-0.84
0.88	1.71	1.21	0.88	0.55	-0.39
1.55	0.59	1.59	2.09	1.09	-0.46
3.12	0.45	0.12	1.12	1.45	0.39
0.66	4.09	0.42	1.42	0.09	0.13
2.75	0.86	1.53	1.03	0.36	-0.90

Table 8.3.2: regression coefficients for entrepreneurs