Entrepreneurs: A separate breed or just different thinkers?

- A study of entrepreneurs & corporate managers decision-making styles

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ABSTRACT

Entrepreneurs and corporate managers are said to differ in their decision-making styles. In this study we aimed to investigate if and why these presupposed differences exist by examining entrepreneurs and corporate managers differences to information processing as well as risk-taking propensity in business situations. We developed a theoretical framework which synthesized and integrated a cognitive (dual-process theory and cognitive experiential self-theory) and behavioral approach (business risk-propensity) to an entrepreneurial and managerial context. By conducting a survey-based research with close-ended and standardized questionnaire based on three already validated measures, we found support in line with previous research in this field. We found significant differences that suggest that (1) entrepreneurs are more likely to use an intuitive decision-making style than corporate managers; that (2) entrepreneurs are more likely to manifest higher business risk-propensity, while (3) corporate managers are likely to manifest a lower willingness to take risks in business situations. The study did, however, not find any significant difference suggesting that (4) corporate managers are more likely to use a rational decision-making style.
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1. INTRODUCTION

We take decisions every day, some more important and some less, some successful and some not. Choosing between mocha latte and espresso, your vacation destination, or simply which brands to choose from during your shopping-spree, are some examples of more daily and routine decisions. Similarly, business practitioners must take decisions in a daily manner. However, in contrary to the former, they are characterized by a more complex and uncertain nature and are often decided under time pressure. It might be everything from choosing the company’s future strategic direction, starting up a new venture, forecasting the estimated value of a stock, and so on. Predicting the future and evaluating how good the decision that has been made is not always a simple task. Some decision-makers fail at this, whereas others manage it successfully.

There seems to be a fascination with how entrepreneurs reason and manage when identifying and creating new opportunities (Alvarez & Busenitz, 2001). Entrepreneurs are perhaps among the few who have received extensive amount of scholarly attention as they have been acknowledged for their heterogeneity in relation to other decision-makers (Alvarez & Busenitz, 2001). In trait-based theories, for instance, the typical entrepreneurial characteristics are recognized through their thrive on change, opportunity seeking- and pursuing behavior, pro-activeness, idea generation, and innovativeness (Sadler-Smith et al., 2008, pp. 35-55). Therefore, plentiful interest has been shown among scholars of entrepreneurship and management regarding if, how, and why, entrepreneurs differ from corporate managers (e.g. Alvarez & Busenitz, 2001; Baron, 1998; Busenitz, 1999; Busenitz & Barney, 1997; Kaish & Gilad, 1991; Smith, Gannon, Grim, & Mitchell, 1988; Stewart, Watson, Carland, & Carland, 1999). That is, in terms of their risk willingness, decision-making style and how they typically process information (Ibid).

Differences have been found when looking at whether these two decision-makers are founders or non-founders of a firm (Begley & Boyed, 1987; Busenitz & Barney), how they choose to seek information (Kaish & Gilad, 1991), their decision-making behavior (Smith et al., 1988), their degree of achievement motivation (Stewart et al., 1999), the degree to which they rely on heuristics, self-fulfilling prophecies and overconfidence, as well as their business risk-propensity (Busenitz & Barney, 1997; Busenitz, 1999; Stewart et al., 1999). Worth
mentioning is that risk-propensity, in particular, is often considered to be an important underlying factor when trying to understand the differences between corporate managers and entrepreneurs (Busenitz & Barney, 1997). Yet, research on individual risk-taking characteristics has not managed to show any relatively consistent differences (e.g. Begley & Boyd 1987). As there are multiple explanations to what defines an entrepreneur, we have chosen to follow Busenitz and Barney’s (1997) definition, which is “…those who have founded their own firms and are currently involved in the start-up process…” but also their definition of corporate managers, which is “…individuals with middle to upper level responsibilities with substantial oversight in large organizations.” (p.10).

Despite the general interest in understanding the entrepreneur-related phenomenon, there has been some disillusionment among scholars attempts to show what sets entrepreneurial decision-makers apart from corporate managers (Mitchell et al., 2002). However, according to Mitchell et al. (2002) “…the fundamental idea that entrepreneurs are members of a homogeneous group that is somehow unique, has not gone away.” (p.95). Ironically, both entrepreneurs themselves, and those immersed within the entrepreneurial world, ignore and disconfirm the research findings that disregard the entrepreneurial uniqueness (Mitchell et al., 2002). In fact, they continue to believe, and act upon the idea, that the uniqueness of entrepreneurs is a fact, and that they are somehow distinct from non-entrepreneurial decision-makers (Mitchell et al., 2002). Some scholars mean that the reason for this disillusionment can be due to inadequate methodologies and methodological tools (Ginsberg & Buchholtz, 1989; cited in Busenitz & Barney, 1997). According to Mitchell et al. (2002), research from the cognitive viewpoint can serve as an effective tool when trying to investigate and explain if, and why, entrepreneurs differ in their decision-making process compared to non-entrepreneurs. Mitchell et al. (2002) additionally contend that by using tools or frameworks from the cognitive decision-making approach, we might be able to better understand and demonstrate how and why entrepreneurs act and do things in a certain way.

Management theories have long tried to tackle the dilemma of whether effective decision-making can be reached through the business practitioner’s use of intuition or rational thought (Bazerman & Moore, 2013; Sadler-Smith, 2004; Sadler-Smith, Hodgkinson, & Sinclair, 2008, pp. 35-55; Slovic et al., 2004; Stanovich & West, 2000). Management scholars have stressed a long-standing concern regarding the business practitioners capacity to process information in relation to decision uncertainties and complexities that are commonly prevalent in an
entrepreneur’s and corporate manager’s day-to-day business (e.g. Bazerman & Moore, 2013; Bauer, Schmitt, Morwitz, & Winer, 2013; Busenitz & Barney, 1997; Guercini, La Rocca, Runfola, & Snehota, 2014; Sadler-Smith, 2004). While some scholars argue for the utility of intuition (Bauer et al., 2013; Sadler-Smith, 2004; Sadler-Smith et al., 2008, pp. 35-55), others oppose the latter by contending that many of the systematical biases in decision-making stem from the use of intuition and argue that a rational-analytical reasoning is the preferred manner when taking decisions (Bazerman & Moore, 2013; Tversky & Kahneman, 1974).

Interestingly, in contemporary dual-process theory (DPT) research, scholars have suggested that there are variances in how decision-makers use these two processing modes – that is, the rational- and the experiential system. In fact, many discussions have taken into account the role of individual differences, thinking style and decision-making style (Evans, 2008; Stanovich & West, 2000), which opposes the more traditional view and studies of normative theories in decision-making.

The idea that business practitioners might differ in how they process information when trying to take various business decisions can be an important area of investigation, to both scholars and practitioners for several reasons. There is an increasing need for business practitioners, no matter the size of the organization; to follow the growing information demand, since today’s business environment is increasingly characterized as being highly dynamic, uncertain, complex, and unpredictable. By understanding how entrepreneurs and corporate managers differ in their decision-making style (e.g. organizing and processing business information), business practitioners might better understand on what basis they made their decisions. Based on that, they might be able to learn how to regulate these two distinct systems during the decision-making process, by questioning how they actually arrived at the decision and status quo. By doing this, they can increase the likelihood to generate more effective decisions and judgments. The norm has often been the deceptively comprehensible portrayal of assumptions of rationality and actions as rational choice, but in order to understand economic reality we need to endorse the idea of limited rationality as a natural extension of how individuals actually behave in an economic context.

In addition, the general idea of successful entrepreneurs’ ability to create innovation and creativity has made companies more interested in finding possible ways to innovate in order to stay competitive (Thornberry, 2003). Therefore, many large firms are investigating how
they can utilize a so-called “corporate entrepreneurship” (Ibid). That is, if they can through management education and learning projects, turn managers into corporate entrepreneurs and mitigate the sometimes slow and bureaucratic organization that often accompany the size (Ibid). Therefore, this study might also serve well for larger organizations trying to utilize entrepreneurial decision-making in order to create new business value. It might also assist them in trying to detect potential pitfalls and problems that many times are said to accompany the entrepreneurial decision-making process, and vice versa (Ibid).

Consequently, the study’s purpose is to investigate if there are any differences between entrepreneurs and corporate managers decision-making style to information processing and risk-propensity in business decision.

Drawing on Mitchell et al.’s (2002) argument of implementing a cognitive viewpoint to the entrepreneurial-related phenomenon, it is important to stress that this study does not aim to further build on cognitive research per se. Rather, we intend to use it as a validated and necessary research machinery in order to investigate whether these proposed variances are congruent with the notion that decision-making differences exist between entrepreneurs and corporate managers, and why they do so.

### 1.1. Disposition

In Chapter 2 we explain the common agreements in DPT. The theory of DPT is treated as an umbrella concept and will set the background for the Cognitive Experiential Self-theory (CEST) and individual differences theory. These theories will elaborate on how decision-makers process and utilize information. After this, we will look at research on entrepreneurs and corporate managers. The chapter concludes with a summary model of the theoretical framework, to illustrate how we have synthesized our logic and how each theory in the framework are linked to each other, and how they are used. In Chapter 3 we explain the used methodology for answering the study’s purpose. Research design, sampling, respondents, and measures are some of the research procedures that are explained in this section. Chapter 4 will further present the study’s results retrieved from the data collection and derived through statistical analysis. In Chapter 5 we will try to make sense of the study’s results. The study ends in Chapter 6 by providing discussions and conclusions, to finally give further suggestions for future research and practical implication.
2. THEORY

2.1. Dual-Process Theory

A rich stream of research on human judgment and decision-making has produced numerous amounts of evidence about the way people make decisions. One theory frequently referred to is the cognitive dual-process theory (DPT). The DPT-theory attempts to understand how decision-makers’ information processing operates, and how these decision-makers normally organize and sort information when trying to arrive at a decision. The notion of DPT has been discussed and investigated within different domains, such as cognitive- and social psychology, behavioral science, and judgment and decision-making research, and comes therefore in different flavors (Epstein, 2008, pp.23-37; Evans, 2008). A considerable agreement within the influential DPT-research is that the way humans process information is primarily based on two different reasoning systems (or cognitive processes) – a topic of considerable interest during the last couple of decades (e.g. Epstein, 1994; Stanovich & West, 2000; Kahneman & Frederick, 2002). A common notion for the majority of scholars in this field, is that humans have one system, or mode, that processes information automatically, rapidly and unconsciously, while the other system is more deliberative, slow and conscious (Evans, 2008).

The two systems are, however, many times labeled differently among different scholars. For example, Stanovich and West (2000), contrast the two systems by labeling them System 1 (e.g. automatic) and System 2 (e.g. deliberative); Wilson (2002) refers to the adaptive unconscious- and conscious system; Hammond (1996) names them the intuitive- and analytical system (cited in Evans, 2008); while Epstein (1994) contrasts the two kinds of thinking by labeling them the experiential- and the rational system. Nevertheless, and despite the nuanced terminology used among these scholars, the common agreement regarding the two contrasting processing modes has repeatedly been demonstrated.

Perhaps one of the most recognized frameworks within this field is the Cognitive Experiential Self-Theory (CEST) developed by Epstein (1994). However, in this framework the notion of affect and intuition is far more stressed as opposed to other theories in the DPT-family (Epstein, 2008, pp.23-37). Epstein’s (1994) framework of the contrasting modes in DPT has contributed to an elucidated understanding of the various facets of managerial, entrepreneurial, and human cognition (Sadler-Smith et al., 2008, pp. 35-55). We will
therefore, in subsequent sections, further elaborate on the notion of the CEST-framework and how it operates.

2.1.1. The Cognitive Experiential Self-theory
The CEST-framework puts forth the notion that decision-makers, when processing information, use two systems. According to Epstein (1994) these two distinct systems that decision-makers use when utilizing information are mainly the (1) experiential-intuitive system and the (2) rational-analytical system. Not only do these systems function in parallel, as they are independent, they also operate in an interactive manner (Epstein, 1994). Noteworthy, is that Epstein (1994) contends that the rational system in the CEST-framework is, more or less, aligned with the general ideas held among scholars in the DPT-field, meaning that the framework does not add any particular new dimension to the rational system. However, the interesting notion with CEST is that it underlines how decision-makers are additionally induced by their experiential system and that it operates in an unconscious manner and is emotionally and affectively driven (Epstein, 1994).

2.1.1.1. The Experiential-Intuitive System
The incoming information to the experiential system is processed rapidly (Epstein, 2008, pp.23-37; Cerni, Curtis, & Colmar, 2012). The system’s ability to process this information in a fast and simplistic manner is mostly due to the decision-maker’s unconscious reliance on his or her feelings and emotions (Epstein, 2008, pp.23-37). Epstein (2008) contends that the way the experiential system function is through an automatic, holistic and associative manner (pp.23-37). The latter lets us skip delving into each individual judgment in order to come to a conclusion or choice (Ibid). Though this might make our everyday decisions and judgments easier, the interesting aspect is how this system influences us when we are confronted with decisions that are of greater importance (Ibid). According to Epstein (2008), decision-makers tend to use the experiential system more when the situation is emotionally engaging (pp.23-37). The latter rationale stems from the idea that the experiential system is subjective in nature, and is imbued with one’s own reality of the world (Ibid). The experiential system is thus built upon the decision maker’s experiences and beliefs that he or she has acquired and accumulated over the years (Ibid). As a result, when specific instances and situations are more emotionally engaging, decision-makers arrive at a choice by utilizing their experiential
system. In this sense, one can say that the decision-maker is less inclined to use their rational, analytical, and more deliberative system – thus, relying on their gut feelings (Ibid).

Information processing through the experiential system is positively correlated with the decision-maker’s use of heuristics (Epstein, 2008, pp.23-37). Slovic et al. (2004) found that differences between decision-makers risk-taking, in relation to affect, could further be linked to the experiential system. A decision-maker marks specific feelings to previous experiences and when he or she is confronted with a situation that is perceived as risky, past associations to similar experiences steps in (Slovic et al., 2004). As a result, the decision-maker’s choice will be made based on his or her gut feelings (Ibid). Noteworthy is that risk and feelings have a negative correlation, meaning that if a person has positive emotions or affect towards a situation, they will perceive the risk to be low and vice versa (Ibid). In that sense, one might additionally add that there seem to be a clear link between risk, affect, and intuition and that this is typically processed though the experiential system (Ibid).

Even though CEST puts forth the notion that the experiential system operates unconsciously, the framework does also propose that this factor is intertwined with the decision-maker’s pre-consciousness (Epstein, 2008, pp.23-37). This pre-consciousness comes from the decision-maker’s preexisting rules of certain instances (Ibid). Therefore, the pre-consciousness is not apart of the decision-maker’s immediate awareness per se, but can often be recalled if wanted (Ibid).

**2.1.1.2. The Rational-Analytic System**

The incoming information to the rational system takes more time and is slower to process (Epstein, 1994; Cerni, Curtis, & Colmar, 2012). The information that enters this system is mainly ruled by logical and deliberative processing (Epstein, 2008, pp.23-37). When the decision-maker arrives at a decision, he or she relies on judgments that are based on analytical reasoning (Ibid). According to Epstein (1994), the rational system is more appropriate for decisions or tasks that does not need immediate attention. The rationale is that this system requires a rather extensive consideration and cognitive capacity from the decision-maker. This is why the author claims that most decision-makers typically use their experiential system to a greater extent than their rational system. Worth mentioning, however, is that as the CEST-framework incorporates the notion of context (Ibid). The situation that the decision-maker is confronted with is of great importance, that is, when considering which system he or she is
typically more prone to use when making judgments and decisions (Epstein, 2008, pp.23-37). The decision-maker tends to use the rational system when he or she is less emotionally invested (Ibid). As a result, the less self-relevant the decision or judgment is, the more the decision-maker experience that relying on gut feelings is difficult and unreliable (Ibid). Interestingly, there seem to be a negative correlation between the use of heuristics and the rational system (Ibid).

In a similar vein to the experiential system, the rational system has also stored preexisting rules (Ibid). However, in contrast to the more automatic and intuitive system, the rational system’s rules are developed through education and formal information (Ibid). These preexisting rules, according to the CEST-framework, are used when judging or deciding more general cases (Ibid).

2.1.2. Individual Differences in Decision-Making Style

As previously outlined in the DPT-section (see section 2.1.), the two processing systems work in parallel, and are considered to be independent (Epstein, 1994). Based on that, scholars believe that the degree and propensity to which a decision-maker relies on one of the systems might vary, and that one of these modes are typically dominating in how he or she chooses to process information and arrive at a decision (Betsch, 2008, pp.3-22; Epstein, Pacini, Denes-Raj, & Heier, 1996; Leybourne & Sadler-Smith, 2006). This particular idea is many times seen as an individual difference variable (Epstein et al., 1996). Meaning that some decision-makers might be more prone to use one system over another. That is, some might be more inclined to use the rational-analytical system, while others tend to use the affective and experiential-intuitive system to a greater extent (Leybourne & Sadler-Smith, 2006).

Notably, however, is that one should also be aware that it is not only individual differences in cognition and the decision-maker per se that influences how one arrives at a decision. Additional factors might contribute to why some decision-makers are more prone to use one system over the other. For instance, according to Thunholm (2004) these factors might be the situation and context the decision-maker is confronted with, but also the type and nature of the task he or she is trying to solve. Thunholm (2004) contends that these factors might, de facto, affect individuals’ decision-making style. Consequently, one can argue that the notion
that individual differences exist in how people process information and make decisions has been modestly verified. This has further been advocated, implied and demonstrated in the field of decision-making and management research.

Worth mentioning, is that both the CEST-framework and the notion of individual differences have contributed to a better understanding of how management cognition, and behavior, operates in decision-making (Sadler-Smith et al., 2008, pp. 35-55). In the three following subsections we will see how scholars have taken an interest in attempting to explain and understand these individual differences. In particular, when investigating entrepreneurs and corporate managers decision-making styles (e.g. Stewart et al., 1999). That is, since entrepreneurs are many times considered to be a so-called “separate breed” compared to other decision-makers (Bird, 1988; Busenitz & Barney, 1997).

### 2.2. Differences: Entrepreneurs versus Corporate Managers

Busenitz and Barney (1997) contend that there are differences between entrepreneurs and corporate managers. The authors argue that causal observations indicate that decision-makers working in large organizations are different from decision-makers who have started their own firms (Busenitz & Barney, 1997). While entrepreneurs have been identified as risk-taking decision-makers, corporate managers have been described as risk-averse, and more professional decision-makers (Ibid).

Kaish and Gilad (1991) investigated the differences between entrepreneurs and corporate managers information-seeking behavior. They found that entrepreneurs are more prone to respond to risk cues and have a higher inclination to employ untraditional sources of information (e.g. patent filings and strangers) (Kaish & Gilad, 1991). Corporate managers, on the other hand, are more prone to use immediate sources of information (e.g. professional acquaintances, subordinates, clients and customers), and seem to respond more to economic cues (Ibid). Hence, the authors argue that corporate managers rely mostly on conventional economic analysis, as opposed to entrepreneurs (Ibid).

Smith et al. (1988) also investigated the differences between entrepreneurs and corporate managers, but focused more on their decision-making behavior. Their study found that professional managers in larger firms follow a more formal and rational decision-making
process compared to entrepreneurs (Smith et al., 1988). Stewart et al. (1999) contend that entrepreneurs have a stronger inclination for innovation, higher achievement motivation and a greater risk-taking propensity, compared to corporate managers.

Busenitz and Barney’s (1997) and Busenitz’s (1999) findings showed that there are, de facto, differences between these two decision-makers. The two studies suggested that entrepreneurs use biases and heuristics in their decision-making process to a greater extent than corporate managers. Busenitz and Barney (1997) more specifically found that entrepreneurs have a higher degree of overconfidence (e.g. over-precision, overestimation, and over-placement) and employs the representativeness heuristic (e.g. judgments made on objects based on traits of previous stereotypes) more than corporate managers. Ironically, the overconfidence heuristics are sometimes called “the mother of all biases” (Bazerman & Moore, 2013). When a decision-maker has a higher degree of overconfidence in a decision-making process, or when making a judgment, he or she tends to forgo signs that may suggest choosing an alternative decision (Bazerman & Moore, 2013). That is, if the decision-maker strongly believes that the decision or judgment made is correct, he or she will avoid alternative perceptions, information and evidence (Ibid). Busenitz’s (1999) study further showed that since entrepreneurs use more heuristics than corporate managers, they view business opportunities more positively. This in turn, is argued to be one possible contributor to why entrepreneurs might perceive less risk in decision situations, while corporate managers perceive higher risk in decision situations (Busenitz, 1999).

2.2.1. Entrepreneurs

The idea that entrepreneurs can be considered as a “separate breed” and different from other decision-makers (e.g. Alvarez & Busenitz, 2001; Baron, 1998; Busenitz & Barney, 1997) has also gained interest in the field of cognitive research. In fact, both entrepreneurial trait-theory and cognitive research have common grounds in that they suggest that entrepreneurs’ decision-making and strategic choices are mostly intuitive, as their environments are often characterized as highly dynamic (Alvarez & Busenitz, 2001; Baron, 1998; Busenitz & Barney, 1997; Sadler-Smith et al., 2008, pp. 35-55). Whether entrepreneurs are a reflection of their rare traits, or as a consequence of their situation and context, is not something we regard as an “either-or” argument. In our opinion, we believe that the entrepreneurial uniqueness can be explained as a combination of these two theoretical approaches.
Furthermore, in Alvarez and Busenitz (2001) view, entrepreneurial cognition can be defined as “... the extensive use of individual heuristics and beliefs that impact decision-making.” (p. 758). These heuristics are derived from the entrepreneur’s previous key experiences and beliefs (Ibid). Alvarez and Busenitz’s (2001) definition is noteworthy and deserves perhaps added emphasis. That is, since their explanation of what constitutes entrepreneurial cognition seem to be in line with the CEST-framework and the conceptualization of the experiential-intuitive system (Sadler-Smith et al., 2008, pp. 35-55). The latter rationale is derived from the idea that entrepreneurial cognition often is depicted as “acting precedes thinking” (Busenitz & Barney, 1997; Gartner, Bird, & Starr, 1992), indicating the use of intuitive and affective judgments. In addition, as entrepreneurs use heuristics to a greater extent in their decision-making compared to corporate managers (Alvarez & Busenitz, 2001; Baron, 1998; Busenitz & Barney, 1997), one could argue that entrepreneurs tend to be more prone to use the experiential-intuitive system, rather than the rational and more deliberative system.

The notion that entrepreneurs’ environment is considered to be highly dynamic and uncertain is not to say that corporate managers do not face dynamic challenges and uncertainties. In fact, they most certainly do. Corporate managers face many challenges and these have received plentiful attention in research (e.g. Tversky & Kahneman, 1974; Bazerman & Moore, 2013). However, what might set an entrepreneur’s environment apart from a corporate manager’s environment is perhaps the degree of the uncertainty and dynamism. For instance, an entrepreneur’s environment has a higher degree of ambiguity, time pressure, uncertainty and incomplete information (Alvarez & Busenitz, 2001). The decision uncertainties for entrepreneurs are often greater as they many times do not have access to historical data and enough market information to base their judgments on (Busenitz & Barney, 1997; Sadler-Smith et al., 2008, pp. 35-55). Thus, they are faced with numerous decisions that they have to take, but with scarce information at their disposal (Ibid). However, we believe that the latter may not always be the case as, for instance, some entrepreneurs might have previous experiences and expertise to draw from.

It has further been noted that the complexity of the decision-making context for entrepreneurs tends also to be greater than those for corporate managers (Busenitz & Barney, 1997; Gartner et al., 1992). That is, since fully formed decision-making polices and procedures have not yet been established during the entrepreneur’s start-up process of the new venture (Busentiz &
Barney, 1997). As entrepreneurs are characterized by being opportunity-seeking (Alvarez & Busenitz, 2001; Busenitz & Barney, 1997), the role of stakeholders becomes increasingly important. The rationale here is that the entrepreneur’s ideas and venture proposals must be conceived as credible (Busenitz & Barney, 1997). Hence, adding an additional dimension to the degree of complexity and uncertainty that they are faced with, but also a reason why they might need to use fast and frugal heuristics (Bauer et al., 2013; Guercini et al., 2014).

With the above-mentioned clarifications, we hypothesize that entrepreneurs are more inclined to use the experiential system since many of their decisions seem to rely on intuition.

\[ H1a: \] Entrepreneurs are more likely to use the experiential-intuitive system (or intuitive decision-making style) in their decision-making than corporate managers.

2.2.1.1. Entrepreneurs Risk-propensity

Furthermore, entrepreneurs’ risk-propensity has also been a discussed topic in research (Sadler-Smith et al., 2008, pp. 35-55; Stewart et al., 1999). Evaluating and taking risks is a common undertaking for the entrepreneur when dealing with different tasks and judgments. Due to the highly dynamic environment (e.g. no historical information), and the fact that it is the entrepreneur who bears the ultimate responsibility for the decision, they are generally considered to entail more risk-taking behavior than corporate managers (Stewart et al., 1999). The latter has been particularly demonstrated when it involves business risk (Stewart et al., 1999). Important to note, however, is that this willingness to undertake greater risks does not in any way distinguish whether or not the entrepreneur will succeed or fail (Stewart et al., 1999). The fact that entrepreneurs tend to have more risk-seeking behavior can additionally be linked to the intertwined connection between risk and affect, and that the entrepreneur has been characterized to have high achievement motivation and opportunity-seeking behavior (Alvarez & Busenitz, 2001; Epstein, 2008, pp.23-37; Chan & Park, 2013; Slovic et al., 2004; Stewart et al., 1999).

We have hypothesized that entrepreneurs are more prone to use the experiential system due to highly uncertain and complex business decisions (see H1a) (Busenitz & Barney, 1997). And since affect (feelings, moods and emotions) is included in the experiential-intuitive system and correlates with risk (Slovic et al., 2004); we further hypothesize that entrepreneurs exhibit
a higher business risk-taking propensity compared to corporate managers. That is, since entrepreneurs also tend to have higher achievement motivation and opportunity-seeking behavior (Stewart et al., 1999), meaning that they are more likely to associate positive emotions to the decisions they face (Slovic et al., 2004).

\textit{H2a:} Entrepreneurs are more likely to manifest a higher risk-taking propensity than corporate managers in business decisions.

In sum, one might argue that this “separate breed’s” tackling of market dynamics, seem to rest much upon hunches and gut feelings (e.g. Alvarez & Busenitz, 2001; Busenitz & Barney, 1997; Sadler-Smith et al., 2008, pp. 35-55; Stewart et al., 1999). That is, where insufficient information is likely to be left to intuition and where the experiential-intuitive system is the one giving the final call.

\textbf{2.2.2. Corporate Managers}


While entrepreneurs use intuition and heuristics to a greater extent, corporate managers are said to use these “mental short-cuts” less (Alvarez & Busenitz, 2001). Hence, they try to rely more on fact-based processing when making a judgment or decision (Alvarez & Busenitz, 2001; Baron, 1998; Busenitz & Barney, 1997). This does not mean that corporate managers do not use heuristics, gut feelings or intuition in their decision-making processes. However, due to different individual, environmental, and contextual factors, corporate managers might not be as solely dependent to (emphasis added) base their judgments on heuristics and intuition to the same extent as entrepreneurs. The fact that more established companies have a greater information access means that corporate managers have the possibility to, for instance, look at past performance levels and relevant market information (Alvarez & Busenitz, 2001; Busenitz & Barney, 1997; Sadler-Smith et al., 2008, pp. 35-55). Hence, facilitating the quest to mitigate uncertainties and complexities in their decision-making. Worth mentioning is that the latter is considered to have a relatively low cost for corporate managers, while it on the
other hand is argued to be rather costly for entrepreneurs (Thompson, 1967; cited in Busenitz & Barney, 1997).

With the use of factual- and formal information, corporate managers reduce the complexity of the decision-making context (Busenitz & Barney, 1997). Therefore, corporate managers are better equipped in handling decision complexities. That is, since they can rely on established procedures and policies when arriving at decisions, but also since they often try to incorporate rational models in the evaluation process for different decisions (Alvarez & Busenitz, 2001; Busenitz & Barney, 1997). This indicates that intuition and affect is not as heavily involved in the decision-making process for corporate managers compared entrepreneurs (Alvarez & Busenitz, 2001; Sadler-Smith et al., 2008, pp. 35-55).

With the above-mentioned arguments, we hypothesize that corporate managers use the rational system to a greater extent than entrepreneurs. That is, since they have greater access to historical data and can use immediate sources of information (Busenitz & Barney, 1997; Kaish & Gilad, 1991).

\[ \text{H1b: Corporate managers are more likely to use the rational-analytical system (or rational decision-making style) in their decision-making than entrepreneurs.} \]

\[ \text{2.2.2.1. Corporate Managers Risk-propensity} \]

The risk-taking willingness for corporate managers, in business situations, is said to be lower than for entrepreneurs (Stewart et al., 1999). According to Busenitz and Barney (1997) and Stewart et al. (1999) the reason why corporate managers have a tendency to have a lower risk-taking propensity is due to the larger organization’s more structured practices and guidelines. These can be used as aids or tools when the corporate manager is confronted with a decision (Busenitz & Barney, 1997; Stewart et al., 1999). Even though corporate managers do in fact take decisions that are exceptions and unpredictable, their access to immediate sources of information, tools and aids (Busenitz & Barney, 1997; Kaish & Gilad, 1991; Stewart et al., 1999) might assist them in taking more informed decisions.

Arriving at a final decision in established companies is not a “one man’s show”. In fact, in larger organizations the responsibility authority is often distributed among several key managers and personnel (Busenitz & Barney, 1997). In addition, larger organizations
typically have their own risk assessment models and frameworks when evaluating probabilities of specific outcomes to see how certain strategic decisions might influence the company objectives. Thus, one might reason that; as risk can be considered subjective in nature (Slovic et al., 2004); and as the risk evaluation steps goes through several stages with different key individuals in the organization; the different risk perceptions and risk-taking propensities of managers might balance each other out.

Another motivation to why corporate managers tend to have a lower business risk-taking propensity is because corporate managers are typically not as focused on growth and profits as entrepreneurs are (Busenitz & Barney, 1997; Sadler-Smith et al., 2008, pp. 35-55; Stewart et al., 1999). The latter rationale stems from the idea that entrepreneurs often have limited and constrained resources compared to corporate managers working in established firms (Ibid). According to Begley and Boyd (1987), the pressures that corporate managers and entrepreneurs’ experience differs. Corporate managers settle for generating comfortable profits rather than maximum profits (Begley & Boyd, 1987), which might indicate that they do not prefer to engage in decisions that entail greater risks or decisions that are mostly based on the decision-makers leap of faith (Stewart et al., 1999). In addition, while entrepreneurs are often driven in a more opportunity-seeking manner when confronted with new prospects, corporate managers can see this more as a concern and a need for developing new defensive strategies in order to protect themselves from what they believe might be external threats (Alvarez & Busenitz, 2001).

We hypothesized that corporate managers are more likely to use the rational-analytical system due to better access of immediate sources of information, providing them with better possibilities to make systematical analyzes and more informed decisions. And as corporate managers are more likely to settle for generating comfortable profits, and the responsibility for the decisions and their outcomes rest upon a number of individuals in the organization; we further hypothesize that corporate managers have lower business risk-taking propensity than entrepreneurs.

\[ H2b: \] Corporate managers are more likely to manifest a lower risk-taking propensity than entrepreneurs in business decisions.
In sum, we believe that corporate managers can be seen as the more cautious decision-maker in comparison (emphasis added) to the entrepreneur, and will therefore tend to have lower risk-taking willingness in business decisions and situations.

2.3. Summary of Theoretical Framework

The model below demonstrates the logic behind the theoretical framework and how each component, or concept, are linked to each other. Below follows an overview of how we initially reasoned and how the theoretical framework’s operationalization went about:

Previous research suggests that entrepreneurs are different from corporate managers. The latter can be explained or linked to the decision-makers different preferences to information processing and the situational factors they are confronted with. For example the degree of complexity and uncertainty in their environment, which in turn can influence these decision-makers preferred style and their propensity towards business risks. The CEST-framework, part of the DPT-family, incorporates the latter by bringing forth the notion of individual differences, which in turn is derived from how decision-makers sort and organize information during the decision-making process. The two distinct processing modes are (1) the
experiential-intuitive system and (2) the rational-analytical system. These can further be paralleled to an intuitive decision-making style and an analytical-rational decision-making style. In sum, the theoretical model illustrates the notion of differences between entrepreneurs and corporate managers decision-making process, or style, and sheds light upon why these differences might exist.
3. METHODOLOGY & RESEARCH PROCEDURE

3.1. Research Design

In order gain a better pre-understanding of whether entrepreneurs and corporate managers differ in their decision-making, it became evident to us that the study’s starting point, as implied by our purpose, should be within the theoretical field (Bryman & Bell, 2011, pp.11-14; Saunders et al., 2009, pp.124-125). Corporate managers, entrepreneurs, dual-process theory (DPT), Cognitive Experiential Self-theory (CEST), and individual differences are the concepts that we have examined. The fact that scholars have acknowledged certain differences between entrepreneurs and corporate managers decision-making style, was what helped us to draw parallels to the concepts of DPT, CEST, and individual differences – that is, the idea that decision-makers vary in how they process information. The latter indicated to us an existing foundation of both a theoretical and practical interest in investigating this specific analogy and phenomenon. Consequently, and with this congruence, it was in our opinion appropriate to touch upon theories and frameworks within the DPT-family. Worth mentioning, is that both entrepreneurial- and managerial research scholars suggest that; when investigating if, and why, differences between entrepreneurs and non-entrepreneurs exists, the use cognitive tools and frameworks are by far best suited (Mitchell et al., 2002). The latter is an additional motivation to why we chose to implement Epstein’s (1994) validated CEST-framework as the necessary research machinery for this study. Thus, by starting from prior scholarly research we managed to gain a better understanding about the different theoretical frameworks, but also a better understanding of how previous research in this domain has reasoned when investigating this phenomenon. We chose therefore to deduce our hypotheses from preexisting theory (Bryman & Bell, 2011, pp.11-14; Saunders, Lewis, & Thornhill, 2009, pp.124-125).

To test our hypotheses and to meet the aim of the study, we adopted an explanatory research design. An explanatory design was best suited, since our primary goal is to investigate if, and why, these presupposed differences exist between entrepreneurs and corporate managers in their judgments and decision-making processes (Saunders et al., 2009, pp.140-141). That is, if they differ in decision-making style as well as business risk-propensity.

To fulfill the study’s goal and to seek answers to our questions, we needed to assess entrepreneurs’ and corporate managers’ rationality and intuition, but also their risk-
propensity. In order to do so, we chose to implement a quantitative approach (Saunders et al., 2009, p.125; Trost, 2012, p.18). That is, since we intended to further implement a statistical analysis, consisting of an independent-samples t-test and logistic regression analysis, in order to measure the chosen variables and concepts, and through that contribute to the study’s theoretical synthesis. We have derived measures from Epstein and colleagues (Epstein et al., 1996) CEST-framework called the Rational Experiential Inventory (REI), and Sitkin and Weingart’s (1995) Business Risk Propensity Scale (BRPS). The REI and BRPS scale is further elaborated under the section 3.4. Measures & Variables.

3.2. Sample & Respondents

The two drawn sample populations encompass entrepreneurs and corporate managers. These respondents were the primary sources in our empirical investigation. As a reminder, the study’s operative definition of an entrepreneur and a corporate manager followed Busenitz and Barney’s (1997) conceptualizations (see in 1. Introduction). However, in terms of entrepreneurs, we chose those that are involved in their start-up process with an average time, since founding, of 1-3 years. We reasoned that this restriction served the study’s purpose well, as these entrepreneurs’ start-up ventures have not yet developed any major policies and procedures. The sampling frame for corporate managers was drawn from personal contacts and networks, while the sampling frame for entrepreneurs was drawn from both personal contacts as well as from different websites that we found with listed entrepreneurs. Some examples of the websites that we have used for this study were for instance: www.aretsungaforetagare.se, www.disruptive.nu, www.foundersalliance.com, and www.kickstarter.com/discover/countries/SE. The way we were able to contact these entrepreneurs was by browsing the different websites, and through that, follow the links that redirected us to their own company webpages. When clicking on their individual webpages, we firstly tried to use email-addresses that were directly addressed to the specific founder(s). However, in situations where we did not find any direct addresses, we sent an inquire email, and asked if they had the possibility to redirect our attached introduction letter and questionnaire link to the founders themselves.

We received a total of 192 responses from both corporate managers (71 responses) and entrepreneurs (121 responses). However, as we decided to restrict the entrepreneur sample to consist of those involved in their start-up process with the time limit, since founding, of no
more than 3 years, we needed to exclude 33 responses of the received answers. In addition, the study did also have a response loss consisting of 9 entrepreneurs. As these respondents left the majority of the survey questions empty, we decided to exclude them all together before running our data through SPSS. Meaning that they did not affect our dataset in anyway. As a result, we ended up with a total of 150 responses, where 71 of the respondents consisted of corporate managers in established firms, and where 79 of the respondents consisted of entrepreneurs with 1-3 years of involvement in their start-up.

The sampling technique for this study consisted of convenience sampling. This non-probability sampling method helped us to choose our respondents based on their accessibility (Saunders et al., 2009, p. 241). While it made it perhaps more difficult for us to know how large the sample size needed to be, and how we should evaluate if our respondents accurately represents our sample population (Anderson, 2009, p. 290; Ferber, 1977), we considered it to be the best option, due to the study’s cost and time constraints (Ferber, 1977). In addition, we reasoned that since our study aims to obtain different perspectives and explanations to our hypotheses, as well as investigate entrepreneurs and corporate managers as two different social groups, we did not see any major disadvantages with this technique (Ibid). As our intention was to investigate entrepreneurs and corporate managers as two distinct groups, and as our respondents consists specifically of entrepreneurs and corporate managers, we argue that our sample and sampling technique can be considered relevant and suitable to our study.

3.3. Data Collection

The empirical study was designed as a survey-based research, using a structured and standardized questionnaire. More specifically, an online questionnaire was used and distributed to our respondents. Worth mentioning, however, is that we are aware that alternative data collection methods could have been used instead, such as interviews or questionnaires with open-ended questions. While its qualitative nature could have assisted us in acquiring more in-depth information from fewer respondents, it was in our opinion that a quantitative, standardized, closed-ended survey research was the appropriate choice in order for us to answer the study’s purpose. The motivation to why the study used a structured and standardized questionnaire was that it allowed us to access a larger dataset more efficiently in a fast and easy manner (Bryman & Bell, 2011, pp. 262-267; Saunders et al., 2009, pp.144-145). The standardized design and the close-ended questions would facilitate the process of
comparing the respondents’ answers to each other as well as to theory (Saunders et al., 2009, p.362). Another motivation to why we chose this type of data collection method is that we hoped to achieve a sample large enough in order to make some kind of generalization.

The rationale behind why we chose to conduct an online survey was due to the many benefits it provided to how we sought to seek answers. This type of questionnaire can be considered as an efficient data collection method (Saunders et al., 2009, p.395-398). The response time of online surveys are on average shorter than traditional research methods. We reasoned that our respondents’ could easily click through the different questions, while we at the same time could gather the information automatically. The latter was important as it provided us with the opportunity of not spending valuable time waiting for the respondents to fill out and hand in the survey. Hence, the online questionnaire increased the potential response rate and time, and made the results accessible at all times (Saunders et al., 2009, pp.395-398). This in turn made it easier for us to accumulate the answers, run it through IBM SPSS, a well-known statistical program, and then analyze the data. Another motivation to why we chose to use an online questionnaire was that we wanted to decrease biases and potential human factors. The rationale was that; if answers were to be manually inserted in a statistical program, we might not have entered all details correctly. That is, since there is a risk that the researcher might lose some of the attentiveness that is crucial for this type of procedure. This survey is not only convenient for the researcher, but also the participants. As our respondents consist of entrepreneurs and corporate managers, we reasoned that they would be rather busy. We therefore wanted to make the questionnaire easily accessible for them. We also reasoned that the online questionnaire would make our respondents feel safer, as they for instance could fill out the survey in an anonymous environment. The latter increases the likelihood of receiving more truthful answers.

Important to note is that we were aware that online surveys also have their limitations. One major concern for us was the possibility of another person, who does not fit the study’s sample population, would answer the questionnaire. Having this in mind, we chose to administer the questionnaire via email, hence mitigating the possibility of receiving responses from those who do not fit our target group. By administering an email questionnaire and drawing the sampling frame from personal contacts as well as some websites, the assurance that the right individual would answer the survey became greater (Saunders et al., 2009,
The latter helped us to generate answers that might be of a higher quality. Finally, as the questionnaires were digital it was also advantageous in that we could disperse them geographically (Saunders et al., 2009, pp. 395-398), as some of the respondents were located outside of Sweden.

3.4. Measures & Variables

The empirical part of the study was based on a self-reporting questionnaire survey, utilizing measures of the variables (1) rational thinking, (2) intuitive thinking, and (3) business risk-taking propensity. Important to stress, is that we are fully aware of the caution that needs to be taken when using self-reporting questionnaires. That is, as these are sometimes considered to be a disadvantage in survey-based research. However, as the interest is to understand entrepreneurs and corporate managers cognition and perceptions of, for instance, preferred decision-making style, the self-reporting questionnaire can also be considered positive to our investigation. The rationale behind the latter is that cognition and perceptions are in some sense subjective in nature, meaning that the self-reporting data serves well. More importantly, the primary motivation to the self-reporting approach is that the questionnaire was designed in this manner by the researchers themselves (e.g. Epstein et al., 1996). Consequently, as these have already been validated, we do not consider any negative effects on our data or results.

The first (rational thinking) and second (intuitive thinking) measures were derived from the CEST-framework called the Rational Experiential Inventory (REI). The REI-scale has been confirmed, both as a valid theoretical construct, but also as a valid empirical construct (Epstein et al., 1996). As a reminder, we did, in the theory section, hypothesize that; if entrepreneurs are more inclined to use the experiential-intuitive system, they might also have a higher willingness to take risks– and vice versa – that is, since risk has been linked to affect (Slovic et al., 2004), which in turn has been linked to the experiential system (Epstein, 2008, pp.23-37). As Stewart et al. (1999) suggests that entrepreneurs’ risk-propensity is higher than corporate managers when it comes to business risks, we chose to derive the third measure from Sitkin & Weingart's (1995) study called the Business Risk Propensity Scale (BRPS). Worth mentioning, is that the BRPS-scale was not accessible in the original article. However, we managed to derive the measures from Huff et al. (1997) article instead, which also succeeded to validate the BRPS-scale.
3.4.1. Rational Experiential Inventory (REI)

The REI-scale is a theoretically motivated, based on the CEST-framework, self-report questionnaire that aims to measure and assess decision-makers’ preferences to process information based on either intuition (experiential system) or rationality (rational system). The REI-scale is further separated into two different subscales consisting of Need for Cognition (NFC) – decision-makers inclination towards effortful cognitive undertakings – and Faith in Intuition (FI) – decision-makers inclination towards relying on feeling and intuition. The NFC subscale consists of indicators and questions that measure the decision-makers use of the rational-analytical system. A sample question for this subscale is, for instance, “I try to avoid situations that require thinking in depth about something”. On the contrary, the FI subscale consists of indicators and questions that aim to measure the decision-makers use of the experiential-intuitive system. A sample question for this subscale is, for instance, “I believe in trusting my hunches”.

There are different versions of the REI-scale. However, for this study we chose to use the short form of the REI-scale. The motivation for the latter choice is that the other scales are considerably longer, consisting of either 31-40 items, or more. The rationale is that if the respondents experience the questionnaire to be too exhaustive, then the truthfulness of the answers might become somewhat biased. That is, since the respondents attention towards the questions might deteriorate, and hence making them more inclined to rush through the questions without considering what actually is asked.

The short form of the REI-scale consists of 10 questions, where 5 of the questions include the NFC subscale, and the other 5 the FI subscale. The short form REI-scale that is used in this study is scored on a five point Likert scale from completely false to completely true (Epstein et al., 1996). Despite critiques concerning that Likert scales do not have the same distance between each category, we argue that this type of scale was necessary. The motivation for the latter is based both on the idea that the researchers themselves have used this scaling method (Epstein et al., 1996); but also on that ordinal scales assisted us in our statistical analysis, as we additionally intended to look at the frequency distribution between entrepreneurs and corporate managers in relation to intuition and rationality.
3.4.2. Business Risk Propensity Scale (BRPS)

Decision-makers inclination, or willingness, towards taking or avoiding risk is what can be defined as risk propensity (Sitkin & Weingart, 1995). A decision-makers risk propensity can, however, be changed over time. These modifications of a risk-propensity are deduced from the decision-makers learning and experiences (Huff & Prybutok, 2008). Decision-makers that accept higher risks have a higher willingness to take risks compared to decision-makers that do not accept higher risks (Huff & Prybutok, 2008). Decision-makers that emphasize the importance of potential gains are said to typically have higher risk-propensity, than those focusing on expected costs (Huff & Prybutok, 2008). Risk-propensity can further be considered as a function of the decision-makers individual risk preferences, previous behavioral patterns and their outcome history (Huff & Prybutok, 2008). The latter was the motivation to why we considered the BRPS to be well suited for our study. That is, since the decision-maker’s risk-propensity is a function of individual preferences and previous learnings and experiences, it goes well hand-in-hand with the notion suggested in the CEST-framework as well as our hypotheses concerning risk and the experiential and rational systems (see H1b and H2b).

The fact that the BRPS narrows the variable of risk propensity down to a business context made the scale all the more relevant for us to use in the study. The BRPS originally created by Sitkin & Weingart (1995) is a questionnaire that aims to measure and assess decision-makers’ risk propensity. The BRPS further consists of 5 different questions. In the original version, answers are scored on a nine point Likert scale, ranging from extremely less than others to extremely more than others (Huff et al., 1997). For this study we have, however, modified this nine-category ranking scale to one consisting of a five-category scale. The motivation for the latter is that we needed to have similar scales in order to compare the study’s different results. Furthermore, a sample question for the BRPS is, for instance “Your tendency to choose more or less risky alternatives which could have a major impact on the strategic direction of your organization?”

3.5. Pre-testing & Piloting

Before conducting the actual survey we did a pilot and pre-test on the questionnaire. While standardized questionnaires with closed-ended questions are beneficial as it makes the comparison process of the informants’ answers easier (Saunders et al., 2009, p.394), there are
still some concerns that are important to address. One example can, for instance, be existing interpretation differences between the informants, meaning that each informant will have his or her own subjective perception of what is asked in the questionnaire (Bryman & Bell, 2011, pp.262-267). Worth mentioning, however, is that the used measures in this study have already been validated, meaning that we did not need to worry about low validity (Bryman & Bell, 2011, pp. 262-267; Epstein et al., 1996; Huff et al., 1997). However, as we wanted to be fully assured that the survey would be comprehensible, we decided to mitigate any potential issues and interpretation difficulties by piloting the questionnaire.

The piloting was divided in two phases. In the first phase, the number of participants consisted of a total of five informants. Two of the participants consisted of business students, while the other three consisted of corporate managers. However, after modifying the original questions and distributing the questionnaire, we got further feedback from some of the respondents claiming that some questions were still difficult to interpret. As a result, we decided that it was highly necessary to conduct a re-run of the initial pre-test. This meant that we needed to exclude the previous questionnaire-link together with the informants’ answers. After the second re-run of the questionnaire, we created a new digital link with the new modified questions, hence separating the excluded answers from the new ones. The number of participants during the second phase consisted of a total of nine informants, two business students, two entrepreneurs and five corporate managers.

The pre-testing was carried out in-person, where we observed the participants during the completion of the survey. The motivation to the latter is because we wanted to observe if there was any hesitation or confusion during the answering process. We informed each participant to give us continuous feedback every time they felt uncertain of how they should interpret a question. The verbal feedback from each participant was written down and was coded by frequency. We coded the frequency of both questions and potential wording difficulties. After the completion of the survey we, together with the participant, continued with a general debrief of the questionnaire. Here, each informant was able to give individual feedback and overall comments on what they thought about the questionnaire.

Each pilot-participant answered the REI questions rather fast. The time spent on answering the REI questions were relatively short and took more or less 4 minutes for each informant to

25
answer. The participants felt that the REI questions were, for the most part, clear and comprehensible. There were, however, some questions that created some hesitation, these were further adjusted and modified (see Table 1). The BRPS questions took a bit longer for the informants to answer. It took them more or less 5-7 minutes to answer. The majority of the informants raised questions regarding the Likert scale’s anchors, as well as the wording ‘tendency’ in each question. The participants forgot to look at the short introduction for the BRPS when answering the questions and were continuously reminded to look at the short introduction. That is, as they forgot to envision themselves as a manager of a major project, when giving their answers.

Table 1 - Questionnaire Adjustments

<table>
<thead>
<tr>
<th>Original Questions</th>
<th>Modified Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>I prefer complex to simple problems. (REI)</td>
<td>I prefer to solve complex problems compared to simple problems.</td>
</tr>
<tr>
<td>I believe in trusting my hunches. (REI)</td>
<td>I believe in trusting my hunches’ (hunch = a feeling or guess based on intuition rather than known facts).</td>
</tr>
<tr>
<td>Thinking hard and for a long time about something gives me little satisfaction. (REI)</td>
<td>Thinking hard and for a long time about something does not give me a lot of satisfaction.</td>
</tr>
<tr>
<td>I can usually feel when a person is right or wrong even if I can’t explain how I know. (REI)</td>
<td>I can usually feel when a person is right or wrong, even if I cannot explain how I know it.</td>
</tr>
<tr>
<td>As the manager of a major project, you face a decision that affects your organization’s financial future. Given this circumstance, how would you rate: (BRPS –Intro text)</td>
<td>As the manager of a major project, you face a decision that affects your organization’s financial future. Given this circumstance, how would you, in relation to others, rate your tendency:</td>
</tr>
<tr>
<td>Your tendency to choose more or less risky alternatives based on the assessment of others on whom you must rely? (BRPS)</td>
<td>To choose risky alternatives based on the assessment of others on whom you must rely on?</td>
</tr>
<tr>
<td>Your tendency to choose more or less risky alternatives which rely upon analyses high in technical complexity? (BRPS)</td>
<td>To choose risky alternatives which rely upon analyses that are high in technical complexity?</td>
</tr>
<tr>
<td>Your tendency to support a decision when you are aware that relevant analyses were done while missing several pieces of information? (BRPS)</td>
<td>To support a decision when you are aware that relevant analyses were done while you are missing several pieces of information?</td>
</tr>
</tbody>
</table>

Table 1 – Added modifications to questionnaire (the modifications are from the second re-run of the piloting.

After reviewing all the participants’ overall feedback as well as our frequency coding, we modified the BRPS questions, the introduction text, and the online survey’s design. As the informants had difficulties in understanding the anchors of the Likert scale, we decided to clarify the introduction text for the BRPS. That is, by underlining that the informants should
consider that their answers should be in relation to others (see Table 1). We further chose to exclude the wordings ‘more or less’ in every BRPS question, as these added further confusion for the informants. In terms of the participants forgetting to read the introduction text, we decided to design the online survey in two parts. In the first part the participants answered the REI questions. After completing the REI questions, they were automatically redirected to a new page with the BRPS questions. As the questions now had their own page, the introduction text became easier for the informants to notice.

Furthermore, research has shown that the ordering of questions in the questionnaire influences how the informants’ answer, and that it is usually the first two- or three questions that normally receive the informant’s fullest attention (Krosnick & Alwin, 1987). The first two questions should, in addition, give the participant an indication of what the purpose of the survey is (Sauders et al., 2009, pp.387-388). Therefore, we decided to rearrange the REI questions in the survey, and to start with two questions that we believed would contribute to a better understanding of the survey’s overall purpose (see Appendix 1). The motivation to the re-arrangement of the questions is that we did not want to show any clear patterns (Krosnick & Alwin, 1987), in order to obtain as truthful answers as possible. That is, since we noticed that some of the informants, during the piloting process suspected certain patterns. An additional motivation was that we wanted to create a variation in the questioning order, to retain the informant's interest during the whole answering process. Worth mentioning, is that the survey questions, derived from the theoretical framework, were kept in their original language and were not translated to Swedish. The primary motivation is that some of the informants were not located in Sweden and could not speak or read Swedish. Another motivation was that we considered the English and Swedish vocabulary to be rather different, meaning that a translation would perhaps give some questions and words faulty meanings. In the end, the piloting participants could not think of any further, or major topic omissions, nor did they feel uneasy about answering all of the questions.

3.6. Statistical Tools & Testing

In order for our responses to reveal answers to our study’s purpose, we have used different statistical tools, which helped us to measure our data and attain results to use for our analysis. Worth mentioning is that we have in this study followed Pallant’s (2013) recommendations and guidelines for using the statistical software IBM SPSS. The first statistical tool used was
an independent-samples t-test. This helped us to test our hypotheses and see if there were any differences between our two sample populations. However, to take the analysis one step further we additionally chose to conduct a logistic regression analysis, that is, as our dependent variable is dichotomous (Pallant, 2013, pp.175-176). Unlike a regular regression analysis, the dichotomous logistic regression model is used to estimate or measure the probability or likelihood of a relationship between the dependent variables and the predictive independent variables (Ibid). Our logistic regression model is presented below:

\[
\text{CorM/Entp} = \beta_0 + \beta_1 \text{Intuition} + \beta_2 \text{Rational} + \text{Risk} + \varepsilon
\]

As our dichotomous dependent variable consist of our decision-makers corporate managers and entrepreneurs, we needed to code them. Corporate managers were coded with the value of 0, and entrepreneurs were coded with the value of 1. In our model we have added our three independent variables intuitive thinking (Intuition), rational thinking (Rational) and business risk-taking propensity (Risk). As we had five questions measuring each of these variables we needed to summarize all five questions for each of the variables in order to create three categories in total. Thus, Intuition in our model actually stands for the sum of all the intuitive thinking questions; Rational stands for all of the rational thinking questions; while Risk stands for all of the business risk-taking propensity questions.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Labeled in Model</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent</td>
<td>Decision-Makers</td>
<td>Corporate Managers = 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entrepreneurs = 1</td>
</tr>
<tr>
<td>Independent 1</td>
<td>Intuition</td>
<td>Sum of answers for questions 2, 4, 6, 8, 10</td>
</tr>
<tr>
<td>Independent 2</td>
<td>Rational</td>
<td>Sum of answers for questions 1, 3, 5, 7, 9</td>
</tr>
<tr>
<td>Independent 3</td>
<td>Risk</td>
<td>Sum of answers for questions 11, 12, 13, 14, 15</td>
</tr>
</tbody>
</table>

*Table 2 – Variable Coding*

*Table 2 – Different variable coding used for our equation model and for running the data through IBM SPSS.*
Important to mention is that the output from the logistic regression model might not be entirely generalizable. The motivation for the latter rational is that when using a logistic regression analysis you should normally have large sample, as this statistical tool is considered to be rather sensitive to both sample size and the number of independent variables you put in the model (Pallant, 2013, p.176). According to Pallant (2013, p.176) the logistic regression analysis will become more difficult to analyze if you, for instance, have both a small sample size and too many independent variables. While we might have the weakness of a small sample size, we still have a rather simple model as we only included three independent variables. Thus, while not entirely generalizable, the results from the logistic regression model can still give us a somewhat good indication to how it might be.

3.7. Operationalization of Variables

Below (see table 3) we have demonstrated an overview of how we operationalized the study’s variables in order to make it possible for us to measure each theoretical concept we have investigated in this study. Both the concepts experiential-intuitive system and rational-analytical system were derived from the CEST-framework. The conceptual definition of the experiential-intuitive system is that it is a cognitive mode that decision-makers utilize in a fast, automatic, affective and associative manner to information processing (Epstein, 1994). Our operationalization of this conceptual definition for this study is that; a decision-maker who favors this cognitive mode, reflects a preference for an intuitive decision-making style. Meaning, that it aims to assess the decision-maker’s reliance on intuition. This was measured with questions 2, 4, 6, 8, and 10 in our questionnaire (see Appendix 1).

The conceptual definition of the rational-analytical system is that it is a cognitive mode that decision-makers utilize in a slow, simplistic, non-affective and deliberative manner to information processing (Epstein, 1994). Our operationalization of this conceptual definition for this study is that; a decision-maker who favors this cognitive mode reflects a preference for a rational decision-making style. Meaning, that it aims to assess the decision-maker’s reliance on rationality and analyses. This was further measured with questions 1, 3, 5, 7, and 9 in our questionnaire (see Appendix 1).
Table 3 – Variable Operationalization

<table>
<thead>
<tr>
<th>Concept</th>
<th>Conceptual Definition</th>
<th>Operational Definition</th>
<th>Measures</th>
<th>Questions (See Appendix 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Experiential-Intuitive System (CEST)</td>
<td>Fast, automatic and affective information (cognitive) process. (Epstein 1994)</td>
<td>A measure that reflects the preference of an intuitive decision-making style for corporate managers and entrepreneurs.</td>
<td>Faith in intuition (Epstein et al., 1996)</td>
<td>2, 4, 6, 8, 10</td>
</tr>
<tr>
<td>The Rational-Analytical System (CEST)</td>
<td>Deliberative, slow and analytical information (cognitive) process. (Epstein, 1994)</td>
<td>A measure that reflects the preference of a rational decision-making style for corporate managers and entrepreneurs.</td>
<td>Need for cognition (Epstein et al., 1996)</td>
<td>1, 3, 5, 7, 9</td>
</tr>
<tr>
<td>Business Risk Propensity</td>
<td>The degree of risk-taking willingness in business contexts. (Sitkin &amp; Weingart, 1995)</td>
<td>A measure that reflects the willingness to accept or avoid risk in decision-making for corporate managers and entrepreneurs.</td>
<td>Business risk propensity (Sitkin &amp; Weingart, 1995)</td>
<td>11, 12, 13, 14, 15</td>
</tr>
</tbody>
</table>

Table 3 – The operationalization of our variables and how we have managed measured them.

The conceptual definition of business risk-propensity is the degree of risk-taking willingness a decision-maker is comfortable to take in business situations (Sitkin & Weingart, 1995). Our operationalization of this definition is how much the decision-maker manifests an acceptance or avoidance in taking risks in business situations. This was measured with questions 11, 12, 13, 14, and 15 in our questionnaire (see Appendix 1).
4. RESULTS

4.1. Hypotheses Testing - Independent-Samples t-test

To compare the mean differences between entrepreneurs and corporate managers and to see whether they are statistically significant or not we need to look at table 4 and 5. In terms of a preferred rational and analytical decision-making style, corporate managers (M=15,3099, SD=2,89626) have a slightly higher mean than entrepreneurs (Mean=14,6835, SD=2,25630). However, the latter does not point to any major differences, which we further can see in table 5, since the independent-samples t-test shows that there is no significant difference (p-value=0,145) between corporate managers and entrepreneurs’ use of a rational thinking.

Table 4 – Group Statistics

<table>
<thead>
<tr>
<th>Decision-Makers</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rational</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate Managers</td>
<td>71</td>
<td>15,3099</td>
<td>2,89626</td>
<td>,34372</td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>79</td>
<td>14,6835</td>
<td>2,25630</td>
<td>,25385</td>
</tr>
<tr>
<td>Intuition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate Managers</td>
<td>71</td>
<td>12,7042</td>
<td>2,41658</td>
<td>,28679</td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>79</td>
<td>16,5570</td>
<td>1,93978</td>
<td>,21824</td>
</tr>
<tr>
<td>Risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate Managers</td>
<td>71</td>
<td>12,5775</td>
<td>2,04703</td>
<td>,24294</td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>79</td>
<td>16,3924</td>
<td>1,85650</td>
<td>,20887</td>
</tr>
</tbody>
</table>

Looking at the preference for intuitive decision-making style, we can see that entrepreneurs (Mean=16,5570, SD=1,93978) have a relatively higher mean than corporate managers (Mean=12,7042, SD=2,41658). The independent-samples t-test shows that this difference is significant (p-value=0,000), and that entrepreneurs do in fact tend to use an intuitive thinking more than corporate managers. The mean for corporate managers (Mean=12,5775, SD=2,04703) business risk-propensity is lower than entrepreneurs (Mean=16,3924, SD=1,85650). This is also showed to be statistically significant (p-value=0,000), meaning that entrepreneurs manifest a higher risk-propensity, while corporate managers tend to manifest a lower risk-propensity. Consequently, the result of the independent-samples t-test supports hypotheses H1a, H2a, H2b, but rejects hypothesis H1b.
Table 5 – Independent-Samples t-test

<table>
<thead>
<tr>
<th></th>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Rational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>4,588</td>
<td>.034</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intuition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>1,674</td>
<td>.198</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.669</td>
<td>.415</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 – This table shows the results from the independent-samples t-test, which we used to test our hypotheses.

Important to note, however, is that even though entrepreneurs and corporate managers are relatively comparable in terms of size, we are still aware that one possible explanation to why some differences are higher than others might be due to the different sample sizes for each group. That is, as the number of respondents for entrepreneurs (N=79) are higher than the number of respondents for corporate managers (N=71).

4.2. Correlation Analysis

Before continuing with the logistic regression analysis we conducted a preliminary analysis in order to ensure that there is no violation of assumption regarding multicollinearity. Multicollinearity is when the independent variables are highly correlated with each other (Pallant, 2013, p.157). The reason why multicollinearity is not preferred is that when two (or more) independent variables strongly co-varies, it becomes difficult to understand how much of the effect on the dependent variable can be explained from a specific independent variable. Therefore, a correlation analysis and collinearity diagnostics was conducted on our independent variables rational thinking, intuitive thinking, business risk-taking propensity and our dependent variable decision-makers, consisting of corporate managers and entrepreneurs.
Table 6 – Multicollinearity

<table>
<thead>
<tr>
<th></th>
<th>Decision-Makers</th>
<th>Rational</th>
<th>Intuition</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision-Makers</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rational</td>
<td></td>
<td>-0.121</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Intuition</td>
<td>0.664 **</td>
<td>-0.023</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>0.701 **</td>
<td>-0.153</td>
<td>0.577 **</td>
<td>1</td>
</tr>
</tbody>
</table>

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

*Table 6 – The table shows a Pearson correlation matrix.*

In the correlation matrix above (see table 6), we can see that two of our independent variables, intuitive thinking and business risk-taking propensity, have relatively strong and positive co-variation with our dependent variable decision-makers (values of 0.664 and 0.701), and are statistically significant at the 1% level. Our variable rational thinking seems to have a rather weak negative relationship to our dependent variable decision-makers (value of –0.121) and is not statistically significant. Moreover, we can also see that none of our independent variables co-varies strongly with each other, as none of the independent variables have bivariate correlation of 0.7 or above (Pallant, 2013, p.164). The latter means that there seem to be no detection of any multicollinearity (Pallant, 2013, pp.163-164).

Noteworthy, however, is that Pallant (2013) contends that IBM SPSS does not yet have a formal way to test for multicollinearity in the logistic regression procedure. Therefore, the author suggests that one could use a collinearity diagnostics for a regular regression procedure instead (p.176). However, when receiving this output one should ignore the rest of the columns, and instead, only focus on the column named Collinearity Statistics (Ibid). Hence, to rule out any multicollinearity assumption and to further strengthen the output from the correlation matrix, we decided to run this particular diagnostics.
Collinearity diagnostics was conducted to be sure that there are no problem with multicollinearity. The collinearity statistics found in table 7, confirm that there are no problems with multicollinearity. We can see this by looking at our tolerance values, which are all above 0.1, and our Variance Inflation Factor (VIF) values, which are all below 10 (Pallant, 2013, p.164). Consequently, as we do not violate any assumptions of multicollinearity, we can continue with our logistic regression analysis.

4.3. Logistic Regression Analysis

To assess the impact of intuitive thinking, rational thinking and business risk-taking propensity (independent variables) on the likelihood that the respondents are either entrepreneurs or corporate managers (dependent variable), a logistic regression analysis was performed. The full model with all independent variables (see section 3.6.) showed to be statistically significant, Chi^2 (3df, N=150) = 118,54 with a p-value < 0.001 (see Omnibus Test of Model Coefficients in Appendix 2). The latter suggests that our model could successfully distinguish entrepreneurs from corporate managers (Pallant, 2013, p.182). As a whole, the model was further able to explain between approximately 54.6% (Cox and Snell R square) and 72.9% (Nagelkerke R squared) of the variance in our dependent variable decision-makers, and managed to classify 87.3% of the cases (see Appendix 2). The Hosmer and Lemeshow test (see Appendix 2) also supported our model as being worthy with a p-value of 0.058 (Pallant, 2013, p.183).

In table 8, in forth column labeled p, we can see that out of our three independent variables in the model only two of them – intuitive thinking and business risk-taking propensity – were statistically significant, while the variable rational thinking was not. The variables of interest are therefore intuitive thinking and risk-taking propensity.

<table>
<thead>
<tr>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rational</td>
<td>.970</td>
</tr>
<tr>
<td>Intuition</td>
<td>.663</td>
</tr>
<tr>
<td>Risk</td>
<td>.648</td>
</tr>
</tbody>
</table>

Table 7 – Collinearity Diagnostics was conducted to be sure that there are no problem with multicollinearity.
Table 8 – Logistic Regression Predicting Likelihood of being an Entrepreneur

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95.0% C.I. for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rational</td>
<td>-0.156</td>
<td>0.121</td>
<td>1,672</td>
<td>1</td>
<td>0.196</td>
<td>0.855</td>
<td>0.675 to 1.084</td>
</tr>
<tr>
<td>Intuition</td>
<td>0.564</td>
<td>0.132</td>
<td>18,289</td>
<td>1</td>
<td>0.000</td>
<td>1.758</td>
<td>1.357 to 2.277</td>
</tr>
<tr>
<td>Risk</td>
<td>0.688</td>
<td>0.145</td>
<td>22,537</td>
<td>1</td>
<td>0.000</td>
<td>1.989</td>
<td>1.498 to 2.642</td>
</tr>
<tr>
<td>Constant</td>
<td>-15.885</td>
<td>3.1000</td>
<td>26,263</td>
<td>1</td>
<td>0.000</td>
<td>1.000</td>
<td>1.000 to 1.000</td>
</tr>
</tbody>
</table>

Furthermore, by looking at the column odds ratio we can see that the variable business risk-taking propensity is the strongest predictor for being an entrepreneur, with an odds ratio of 1.99. The latter indicates that entrepreneurs are approximately two times more likely to take riskier decisions in business situations than corporate managers, that is, under the assumption that all other factors in the model are held controlled. The odds ratio for intuitive thinking is recorded at a value of 1.76, meaning that entrepreneurs are approximately 1.7 times more likely to use an intuitive (thinking) decision-making style than corporate managers.

4.4. Summary of Results

To summarize the results, we have conducted an independent-samples t-test in order to test the study’s hypotheses. Before conducting the logistic regression analysis we checked for multicollinearity in order to not violate any important assumption. As the assumptions seemed to hold we continued with the logistic regression analysis in order to predict what outcomes and relationships our variables have on corporate managers and entrepreneurs. We managed to find support indicating that entrepreneurs have a higher likelihood to use an intuitive decision-making style as well as to be more likely to take greater risks in business situations than corporate managers. This additionally indicates that corporate managers manifest a lower business risk-propensity than entrepreneurs. However, our hypothesis concerning corporate managers being more likely to use a rational and analytical decision-making style than entrepreneurs did not find any support.
5. ANALYSIS

5.1. Entrepreneurs – Intuitive decision-making style

The study managed to find empirical support of the widely debated topic of how entrepreneurs, to a greater extent, use intuitive reasoning and decision-making to information processing compared to corporate managers. By understanding entrepreneurial cognition one might also be able to better understand why certain traits are typically associated with entrepreneurs and their decision-making style. For instance, the cognitive CEST-theory contends that a decision-maker that bases his or her judgments on intuition and gut feelings is typically engaged in situations that are self-serving (Epstein, 2008, pp. 23-27). We also know from theory, that entrepreneurs are often attributed as being innovative, welcoming change and new ideas, and are willing to both seek and pursue opportunities behind new doors (Alvarez & Busenitz, 2001; Sadler-Smith et al., 2008, pp. 35-55). Drawing parallels to the former and the latter, one potential reason to the commonly held views regarding entrepreneurial characteristics, might derive from that entrepreneurs are in fact more emotionally invested than corporate managers. The rationale is that entrepreneurs often need to finance some of their investments themselves, and make personal guarantees, during their start-up process. Therefore, one might argue that entrepreneurs have more at stake than corporate managers. Some might, for instance, experience pressure to financially provide for their family, pressure not to lose their house or family farm, or pressure to make sure that they gain enough profit in order to not risk any major long-term debts and damaged credit scores. The latter reasoning might be one potential explanation to why some scholars claim that entrepreneurs experience more pressure than corporate managers, and that they typically strive to generate maximum profits rather than comfortable profits (Begley & Boyd, 1987).

However, the connection does not need to solely be monetary in order for it to be self-serving and emotionally engaging. Given that entrepreneurs are founders of their own firms, as per Busenitz and Barney’s (1997) definition, it is perhaps fair to reason that they have emotionally invested themselves in their endeavors, meaning that that they make decisions that are based on their own beliefs, feelings and instincts. One example might be entrepreneurs who initiate a venture creation based on their strong belief and confidence in their business ideas. The rationale stems from our reasoning that there are many entrepreneurs who are passionate about their inventions, and have put a lot of sweat and soul into the start-up, making them affectively connected to what they feel is a customer-validated product and
idea. The latter can be a potential reason to why some scholars claim that entrepreneurial cognition can be explained as their commonly use of individual beliefs and heuristics (Alvarez & Busenitz, 2001), which in turn might explain why entrepreneurs “Achilles heel” is that they tend to have an above-average dose of confidence (Busenitz & Barney, 1997).

The above-mentioned does not come as a surprise to us, since many new businesses, innovations, and companies that today are worth over a billion dollars, would have never been started if an entrepreneur did not fully believe in his or her product, and certainly not if he or she were not willing to take any risks. A commonly referred to example of the latter is, for instance, Steve Jobs and how he managed to make Apple a multibillion-dollar company despite continuous industry-related critiques. Jobs was many times praised for and known to insist on following his intuition and gut feelings. Consequently, by connecting the rationale of entrepreneurs being invested in situations that are more self-serving in nature, with the idea that entrepreneurial cognition can be explained through their use of heuristics, more specifically overconfidence, we believe that our finding becomes all the more logical. This is also in line with the CEST-theory, which contends that the experiential system is positively correlated to the use of heuristics (Epstein, 2008, pp.23-27).

It is not only that the situation might be self-serving and emotionally engaging that can be considered as an explanation to entrepreneurial cognition, behavior and characteristics. We believe that another reason for our findings might be the challenging, complex and ambiguous problems that entrepreneurs face in a business environment characterized as highly dynamic and uncertain (Alvarez & Busenitz, 2001; Busenitz & Barney, 1997; Sadler-Smith et al., 2008, pp. 35-55). Deficient information, barely any market data, and venturing into unknown territories, can explain entrepreneurs’ inclinations to apply intuition, gut feelings and hunches as a guide in their decision-making. Willingly venturing into unknown territories might also explain why entrepreneurs are generally characterized as opportunity-seeking individuals, as stated by Alvarez and Busenitz (2001) and previously by Busenitz and Barney (1997). Therefore, intuition can be said to be one potential way for entrepreneurs to learn how to cope with these uncertainties when taking decisions. As entrepreneurs in new start-ups do not always have the sufficient amount of information to base their judgments on, they may feel that there are no better alternatives for them than to simply trust their gut feelings and take a leap of faith.
We believe that the above-mentioned might clarify why, for instance, Kaish and Gilad (1991) argue that entrepreneurs are more inclined to employ untraditional sources of information. However, unlike Kaish and Gilad (1991) we believe that untraditional sources of information are perhaps not only limited to patent filings and strangers. In fact, in our opinion, and based on our survey questions nature, we believe that another way entrepreneurs might try to mitigate the uncertainty of their environment is to seek advise from people whom they trust, which we believe can further be linked to an individual’s use of intuition. An alternative motive, however, might be that entrepreneurs must put a great amount of trust in their own decision-making abilities as well. The latter can for instance be in situations when presenting a novel venture initiative for potential investors. Given that they are presenting a new venture proposal, the chances are that the proposal will be presented with some incomplete information. The focus might therefore be on the idea itself and that it is perceived as a believable business venture for the potential partners to invest in. Hence, we also concur with the reasoning made by Bauer et al. (2013), and shared by Guercini et al. (2014), that such instances may call for applying gut feelings and heuristics. As a result, an entrepreneurs’ starting position, when faced with a business decision, might be by default one that may require intuitive thinking.

5.2. Corporate Managers – Rational decision-making style

Even though this study did not manage to find any support to our initial suspicion regarding corporate managers use of a more rational decision-making style, compared to entrepreneurs, we still consider this finding interesting.

Our finding could indicate that corporate managers might likewise use gut feelings, heuristics and intuition in their decision-making process. The latter rationale is derived from our reasoning that, while corporate managers might have greater access to historical information, previous market analyses and data (Busenitz & Barney, 1997), does not necessarily mean that they will exclusively use such resources simply because they have them at their disposal. In fact, we reason that in cases of conflicting information and data reports, corporate managers might find such resources of information perhaps confusing and overwhelming. One could also argue that corporate managers utilization of organizational information resources, may not entirely help to diminish their decision-making uncertainties, but rather potentially cause information overload instead. Thus, undermining the sole purpose of using these resources,
and instead leading corporate managers into what we believe can be seen as “bias-traps”, which in turn may conclude to a situation where they make strategically wrong decisions.

Even though corporate managers have the option to utilize factual information to aid them in their decision-making processes (Busenitz & Barney, 1997; Busenitz, 1999), we believe that it does not automatically suggest that they are better equipped to handle complex decision-making tasks. Instances may occur where they are faced with decisions in business situations that have novel circumstances, where current procedures and policies are no longer appropriate to rely on as guidance (e.g. an unexpected disruptive market transformation). These instances may therefore call for employing an intuitive thinking. The latter rationale might be an additional motive to why theory suggests that situational factors can influence an individual’s decision-making style (Thunholm, 2004).

Another reasoning to why corporate managers might not be as inclined to use a rational decision-making style as we initially thought, can for instance be derived from the CEST-theory. This theory contends that decision-makers generally use an intuitive thinking when confronted with decision-situations that need immediate attention (Epstein, 2008, pp. 23-37). Consequently, our results can indicate that corporate managers might often times face urgent business decisions, at least those of our respondents whom consisted of top-level managers. Hence, making them more inclined to use a higher degree of intuitive thinking instead of rational thinking in such circumstances. As a result, corporate managers might also, in a subconscious manner, employ intuition and the experiential system in their decision-making, but to a lesser extent than entrepreneurs.

5.3. Entrepreneurs – Business Risk-Propensity

In this study we found empirical support, in line with theory, indicating that entrepreneurs have a higher willingness to take business risks than corporate managers (Busentiz & Barney, 1997; Stewart et al., 1999). This could also explain why Kaish and Gilad (1991) claim that entrepreneurs are more prone to respond to risk cues compared to corporate managers. Theory has revealed that entrepreneurs perceive business opportunities more positively (Busenitz’s, 1999), which we believe could explain why they have higher business risk-taking propensity, as the results in our study also indicates. The latter might be because entrepreneurs are said to show a higher degree of overconfidence than corporate managers (Busenitz & Barney, 1997).
Our reasoning is that entrepreneurs might overestimate the potential success rate of their new business venture, while at the same time underestimate the risks such opportunities might bring.

In addition, entrepreneurs’ uncertain and complex environment might also explain why the study managed to find empirical support to our presupposed beliefs. While both corporate managers and entrepreneurs take business risks on a daily basis, we believe that one potential explanation is that entrepreneurs with new start-ups do normally have task roles that are less structured. The rationale is that in every new start-up nearly all decisions encompass a certain amount of risk. However, that is not to say that larger organizations are confronted with risk-free decisions, but rather that, unlike these more established companies, newly started ventures might not have enough necessary resources in order to make more informed decisions. The latter might further explain why some scholars argue that entrepreneurs experience more complexity in decision-situations (Busenitz & Barney, 1997; Gartner, 1992), but also that their not yet fully established decision-making policies and procedures, increases the complexity of their task roles (Busenitz & Barney, 1997).

Furthermore, while entrepreneurs might experience business opportunities more positively, due to their use of heuristics, compared to corporate managers, we still would like to be careful with this reasoning. That is, we would like to emphasize that we do not believe that our findings, in any way, suggest that entrepreneurs are just some reckless risk-seekers. And we do not believe that just because entrepreneurs manifest a higher risk-propensity in business contexts that they would willingly gamble and bet all of their life-savings on something just for fun. Rather, in our opinion, we argue that entrepreneurs might be more motivated to take higher business risks because of the pressures they face both financially and emotionally. As a result, these pressures might further lead to a situation where the entrepreneur does everything in his or her power to avoid losses in order to generate gains. The latter might be an additional explanation to why scholars have found that entrepreneurs typically demonstrate a higher use of heuristic than corporate managers (Busenitz & Barney, 1997; Busenitz, 1999). That is, as the former rationale regarding losses and gains might indicate the use of loss aversion, which in turn might suggest that entrepreneurs have a survivorship bias since they may have a fear of failure.
The amount of risk-taking can also be considered to be regulated by the entrepreneur’s associations to risk. That is, if an entrepreneur has negative emotions or affect towards a situation, they will perceive the risk to be high, whereas if an entrepreneur has positive emotions and affect towards a situation, they will perceive the risk to be low (Slovic et al., 2004). Arguably, entrepreneurs associate their emotions to preceding experiences and when faced with risky circumstances, their previous associations to comparable experiences steps in (Ibid). Perhaps it is then fair to assume that if entrepreneurs believe they are making a correct decision, they might automatically and unconsciously ignore signs that go against their innate judgments. That is, regardless of the accompanying risks and especially in circumstances where comparable previous experiences have had positive outcomes. Hence, an entrepreneur may justify his or her decision-making actions as valid by employing the representativeness heuristic. This might also explain why we found that entrepreneurs are both more likely to use an intuitive decision-making style as well as manifest a higher business risk-propensity. That is, as risk, affect and intuitive thinking can be linked to each other (Epstein, 2008, pp. 23-27; Slovic et al., 2004).

5.4. Corporate Managers – Business Risk-Propensity

The study’s results further indicated that corporate managers manifest a lower business risk-propensity compared to entrepreneurs. One potential explanation to our finding is that, as corporate managers are not defined as the founders of their own companies (Busenitz & Barney, 1997) the responsibility for making fundamental risk decisions is normally shared between key individuals in the organization. As a result, each manager’s opinion needs to be taken into consideration in the decision-making process, meaning that different decision-makers, with different risk-taking willingness, might balance-out the final risk-decision outcome that the company takes.

Another possible explanation to our finding we believe can be derived from Kaish and Gilad’s (1991) reasoning regarding corporate managers inclination to focus more on conventional economic analysis. The rationale here is that corporate managers might be more cautious in decisions that might threaten the organization’s overall financial future and stability. We also believe that when it comes to taking more risky decisions, corporate managers might be prevented by their fear or anxiety of taking a decision that later could result into a negative outcome for the company. Thus, even though risky decisions might have the potential to be
impactful if the outcome is positive, we reason that corporate managers fear for taking a risky decision, albeit a collective one, might make them more inclined to avoid certain risks, especially those that might involve unfamiliar matters. The latter can hence indicate that corporate managers are more risk-averse than entrepreneurs, which we also can link back to theory (Stewart et al., 1999). This in turn, might make it fair for us to believe or assume that corporate managers are perhaps less opportunity-seeking individuals as well.

Given that corporate managers in this study are working for established organizations they may not be automatically as focused on creating maximum profits (Begley & Boyd, 1987). That is, to the degree entrepreneurs tend to be, given that they do not have much choice than to aim for maximum revenues if they want their firms to survive beyond the start-up phase. Therefore, corporate managers might seek to take smaller risks if it means that they are able to generate comfortable profits to keep the firm going, rather than greater risks to generate maximum profits but where the risky decision has the potential to backfire on the organization. So, while corporate managers do take risks, they might be more likely to do so when the risks are perceived to be of a lesser magnitude. And by that, avoid certain risks that may put the firm’s continuous growth in jeopardy, and by association, their jobs.
6. DISCUSSION & CONCLUSION

The idea that entrepreneurs and corporate managers react to business risks in different manners and have different decision-making styles does not claim in any way that one is superior to the other. Even though an entrepreneur’s intuition is sometimes labeled as a driver of innovation, we believe that at some point in time this founder and creator of a new venture and product will need to conduct more rational and analytical reasoning in order to cope with its business growth. Entrepreneurs in later phases of their start-up process must acknowledge that their initial invention is in need of a managerial decision-making style that perhaps encompasses a bit more established policies and procedures, as well as a style that can incorporate and utilize new management technologies and metrics. Entrepreneurs must therefore also be able to analyze and collect data when, for instance, the venture no longer has the ability to be ruled on pure gut feelings alone in order for it to grow successfully. The latter does, however, not imply that larger organizations and established companies are doing everything right and optimally. On the contrary, it seems as companies in today’s business milieu, which requires innovation in order to thrive, are constantly looking for answers in how they could learn from entrepreneurs creative venturing and ideas. In fact, larger organizations are now looking at new possibilities for them to include a so-called “corporate entrepreneurship” in order to be more innovative and generate more business value (Thornberry, 2003). Whether the latter will help larger and well-established companies to really acquire value and innovation we believe is arguable, as entrepreneurs and corporate managers might considerably vary in terms of business risk-propensity.

To prosper and strive on innovation and novel business inventions is something that will require not only corporate managers but also the top management teams confidence to take greater risks. As this study and previous research has indicated, corporate managers that are working in larger organizations are not always willing to take a leap of faith. While being innovative and creative is not really a rational process, it still needs some further analysis in order to complete and implement an idea. It is thus not something that limits itself to the sometime rigid bureaucracy that can be found in larger organizations. The common and conventional wisdom of “think outside of the box” is clearly not always accepted in larger organizations. If organizations want to incorporate what they call corporate entrepreneurship in order to seize innovative opportunities, they need to foster an environment that welcomes
entrepreneurial thinking. They need to dare to listen to ideas that do not at first make any sense, or perhaps allow themselves to sometimes be bold in their risk-taking.

Thus, to seize these opportunities and at the same time to prevent falling into loopholes, a combination of these two management styles might be the most effective one. We would, however, like to underline that we are aware that such a balanced combination might be exceptional. To teach someone how to better analyze, to better gather information, and to look at valuable metrics might not be too difficult. However, to teach someone how to use intuitive thinking and decision-making style in order to seize new opportunities and creative solutions can be difficult. Larger and more established companies must therefore make some more room for corporate managers to think freely.

In conclusion, and to sum-up, this study found indications that there are differences between entrepreneurs and corporate managers. The latter is encouraging in many respects and can contribute to valuable insights to the long debated uniqueness of the entrepreneurial-related phenomenon. Entrepreneurs and corporate managers information processing and risk-taking propensity in business decisions varies. Entrepreneurs seem to show a tendency to place trust in their intuition more than corporate managers do, hence they are more inclined to use an intuitive decision-making style. Our study subsequently indicates that entrepreneurs’ have a higher business risk-propensity than corporate managers. The study shows no significant differences that corporate managers use a more rational decision-making style than entrepreneurs. We reason that this might be because corporate managers, in a subconscious manner, employ intuition in their decision-making as well, but might do so to a lesser extent than entrepreneurs. Despite the fact that we did not manage to find support to our notion of corporate managers rational decision-making style, we argue that our initial suspicion regarding that these two decision-makers differed in business decisions and risk decisions was not entirely of the chart.

We would like to add that by finding support to some of our hypotheses from a cognitive perspective, we feel that many of the discussed aspects of the entrepreneurial uniqueness are slowly unfolding and revealing themselves in a new light. Thus, the cognitive viewpoint can be said to be the underlying factor that explains why entrepreneurs and corporate managers are said to differ in both characteristics and behavior. Are entrepreneurs born as opportunity-seeking and innovative risk-takers or do they just think differently?
6.1. Further Research

Due to the time limitations, one suggestion for future research is to retest this investigation by improving some of the weaknesses we feel that the study had. For instance, it would be interesting to retest the study to see whether our findings would still hold with (1) a larger sample size, that is, as the logistic regression analysis can be said to be sensitive to the sample size, but also to retest it with a (2) better sampling technique, such as for instance, a random probability sampling method.

Another suggestion for future research is to study the differences between entrepreneurs and corporate managers use of heuristics and biases in decision-making. To us, this is perhaps the most intriguing and interestingly itching area of investigation. Both entrepreneurs and corporate managers take decisions that are exceptions. As the complexity of taking a decision might vary due to situational and contextual factors, corporate managers and entrepreneurs might be more prone to use certain types of heuristics more than others, in order to tackle day-to-day business decisions they are confronted with.

Based on the retrieved information from our study’s results and analysis, and the empirical support we found regarding entrepreneurs reliance on intuition, we believe that another interesting area of investigation could perhaps be to examine entrepreneurs underlying motivations. The rationale behind the latter is that if entrepreneurs basis for using intuition, is that they perceive the situation to be self-serving, it would be interesting to see what these decision-makers actually aspire when going with their gut. That is, are they driven by an external and monetary motivation or do they aspire something they consider to be internally profound and important.

6.2. Practical Implications

Organizations trying to create corporate entrepreneurship by, for instance, recruiting entrepreneurs might need to reconsider how they evaluate these individuals during the recruitment process. Many well-established and large organizations fail to see the value of failure, and are therefore looking for entrepreneurial candidates that have an impeccable resume. Rather than honoring the entrepreneur’s failure and that it happened on someone else’s dime, organizations often see it as the candidate’s personal inadequacy.
Organizations constant race for “the sure thing” inhibits them to truly understand the virtue of the entrepreneur’s trials and errors. That entrepreneurs are guided by their intuition and tend to be more risk-taking, we believe can be important for organizations to understand. They need to understand that entrepreneurial process is a so-called creative destruction, and that their failure, or likelihood of failure, can be an important skill to have in the company. Raised concerns about how productivity is slowing down in today’s business, goes hand-in-hand with concerns regarding the essential need for innovation. Business today looks different from what it did a decade ago. Organizations need people who are intuitive, who are not afraid to take risks and try things that perhaps are out of the organizations comfort zone. Organizations need to understand how entrepreneurs take decisions. They have to understand that in order to truly generate business values from entrepreneurs, they need let entrepreneurs, or corporate managers for that matter, push the envelope and make mistakes.

However, not only is this study valuable for organizations focusing on corporate entrepreneurship and innovation, but also for consultants who work with entrepreneurs. By understanding how entrepreneurs act or think in a decision-making process, consultants can try to assist these entrepreneurs of alternative problem-solving skills. That is, to perhaps help them with alternative analysis tools, metrics, administrative tasks and so on. By doing this, consultants may be able to help the entrepreneur to learn how to cope with uncertainties and situational factors to be able to make their new start-up more likely to succeed.
REFERENCES


Epstein, S., 1994, “Integration of the cognitive and the psychodynamic unconscious”, American Psychologist 49(8), 709.


APPENDICES

Appendix 1 – Survey Questions

Part 1 – Decision-Making Style

1) I prefer to solve complex problems compared to simple problems.

2) I believe in trusting my hunches*  
   (*Hunch = is a feeling or guess based on intuition rather than known facts).

3) I don’t like to have to do a lot of thinking.

4) I trust my initial feelings about people.

5) I try to avoid situations that require thinking in depth about something.

6) My initial impressions about people are almost always right.

7) I prefer to do something that challenges my thinking abilities rather than something that requires little thought.

8) When it comes to trusting people, I can usually rely on my “gut feelings.”

9) Thinking hard and for a long time about something does not give me a lot of satisfaction.

10) I can usually feel when a person is right or wrong, even if I cannot explain how I know it.

Part 2 – Risk-taking Willingness

As the manager of a major project, you face a decision that affects your organization’s financial future. Given this circumstance, how would you, in relation to others, rate your tendency:

11) To choose risky alternatives based on the assessment of others on whom you must rely on?

12) To choose risky alternatives which rely upon analyses that are high in technical complexity?

13) To choose risky alternatives which could have a major impact on the strategic direction of your organization?

14) To initiate a strategic corporate action which has the potential to backfire?

15) To support a decision, when you are aware that relevant analyses were done while you are missing several pieces of information?
Appendix 2 – Logistic Regression Analysis Output

Omnibus Tests of Model Coefficients Table

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Model Summary Table

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a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test Table

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Classification Table

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Overall Percentage

a. The cut value is .500