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Managing to be "free": Personality, personal projects and well-being in entrepreneurs

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Abstract

Despite the great deal of applied and academic interest in entrepreneurship, very little research has been conducted from a psychological perspective. Recent reviews highlight the need for stronger theoretical models and more appropriate measurement tools. In particular, a call has been made for methods that can examine the impacts of the most important contributors to entrepreneurial activity, namely the individual (e.g., traits), the project, and their surrounding environments. To address these shortcomings I used a modification of Personal Projects Analysis (PPA) in concert with its underlying social ecological model to explore 102 local entrepreneurs to identify the strongest predictors of their well-being. Trait and environmental measures were also collected.

Overall, the results indicated the combination of trait and project variables were significantly related to personal well-being ($R^2=.44$). When the focus shifted to the prediction of work well-being, although the regression equation was still significant ($R^2=.44$), traits were no longer predictive. Personal projects accounted for the most variance in both cases. The only factor that yielded significant independent relationships with both outcomes was emotional support in one's entrepreneurial project pursuits, highlighting its importance in any future model of entrepreneurship. This critical role of emotional support in the lives of entrepreneurs has not been previously reported. The dissertation concludes with a series of recommendations that reiterate the expanded use of the personal projects methodology for exploring the lives of entrepreneurs. Theoretically, it is notable that managing to be free and flourishing as an entrepreneurial agent may require the emotional support of those whose lives are intertwined with them.

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CHAPTER ONE

Entrepreneurs: Who are they and what do we know about their core projects?

Entrepreneurs have long been recognized as playing an integral role in the creation of wealth in modern industrialized society (Baron, 1998; DeCarlo & Lyons, 1979; Hatten, 1997; Hisrich, 1990; Lumpkin & Dess, 1996; Shane & Venkataraman, 2000) as well as ascribed considerable social and cultural status (Morrison, 1998). Not surprisingly, these individuals, as well as the process of entrepreneurship, have been the focus of intensive study (Baron, 1998; Stewart, 1996; Stewart, Watson, Carland, & Carland, 1998), a trend that has been increasing in recent years (Katz, 2003; Stewart, 1996). For example, Sexton (1987) observed that more had been learned about entrepreneurship between 1982 to 1987 than the previous 25 years combined and many scholars have argued that the field of entrepreneurship research has now been recognized as a legitimate line of academic inquiry (Block & Stumpf, 1992; Bruyat & Julien, 2000; Vesper, 1988).

Although interest in the area of entrepreneurship has always been evident, there has been a substantial increase in the past several years by both students and academicians. In terms of the former, Fiet (2000) reported that although only 16 colleges and universities offered courses relating to entrepreneurship in 1971, today over 800 college and university programs offer such work. In addition, he cited a 1994 Gallup poll conducted in the United States that reported 70% of high school students were interested in starting their own company at some point during their careers. Finally, he noted 45% of the incoming students to the Kellogg School of Business of Northwestern University cited an interest in pursuing a major in entrepreneurship as compared to 30% in 1995 and 12% in 1994.

In terms of its attention in academia, as of May 2001, 44 refereed journals were

currently accepting papers in the area of entrepreneurship, with a new journal coming on-line approximately every 4 months (i.e., three new journals a year) since 1987 (Katz, 2003). To further validate this explosion of academic interest, Katz (2003) indicated that there was a 1200% increase in the number of scholarly pages available for entrepreneurship research. However, despite the inherent interest and voluminous amount of research conducted on this topic from many different scientific approaches, many researchers have lamented the lack of knowledge that has accumulated (Begley & Boyd, 1987; Cromie & Hayes, 1988; Fiet, 2000; Stewart et al., 1998).

Although entrepreneurship has received coverage within many academic disciplines such as economics, management, strategy, finance, and sociology (Rogoff & Heck, 2003), it has been relatively neglected in the field of psychology (Baron, Markman, & Hirs, 2001; Bonnett & Furnham, 1991; Brandstatter, 1997; Eden, 1973). For example, despite the fact that several typologies have been developed for both male and female entrepreneurs over the years, none have been constructed from a psychological perspective (Langan-Fox & Roth, 1995). Furthermore, a recent key word search of the PSYCINFO database conducted by the author using the terms “entrepreneur” and “self-employed” resulted in only 116 and 72 hits respectively. These numbers are somewhat misleading as approximately 20% of the entrepreneur and 12.5% of the self-employed entries were doctoral dissertations. Finally, in a study conducted by Fried (2003) that asked scholars to rate the quality of various entrepreneurship journals in the field, none mentioned psychology as their primary affiliation and only one out of 30 listed it as their secondary option.

The indifference shown to this line of research by psychologists is particularly surprising given the considerable amount of previous research that has focused on distinguishing the traits of entrepreneurs from those of managers or the general population. However, several reasons have been forwarded to explain why “the self-employed are the invisible men of the psychology of work” (Eden, 1973, p. 186). Although some of the explanations initially offered by Eden (1973) no longer apply (e.g., at that time the self-employed were seen as a decreasing component of the workforce), many are still relevant today and have been asserted by other scholars more recently.

One possible reason is that self-employed individuals are much more difficult to track and sample than salaried employees who work in traditional organizations (Eden, 1973). Stated from a more practical perspective, organizations allow “more bang for the buck” in terms of data collection. Another potential reason is that many of the problems that are of interest to industrial/organizational psychologists (e.g., team dynamics, leadership, etc.) could only be studied within the richer confines of the organizational context (Eden, 1973). A final and more practical explanation for this state of affairs is due to the availability of funding. More specifically, as noted by Brandstatter (1997), although larger organizations often looked toward psychologists to study several work-related issues, there has never been a need to sponsor research on entrepreneurship, which removed fiscal resources necessary to study such questions in detail. On the other hand, self-employed workers would not wish to expend their valuable and relatively limited resources in this regard. Thus, psychological researchers dependent on such support would not engage in this line of research.

The present study attempts to fill the present void in this field by exploring entrepreneurship from a psychological perspective while simultaneously addressing the concerns raised in the broader academic literature. The place of the entrepreneur in Canadian society will first be discussed and the underlying framework adopted for this dissertation will be reviewed and the reasons for its use presented. Finally, the research methodology proposed for this study will conclude the introduction.

Entrepreneurship in Canada

According to the Census in Canada, self-employed workers are defined as follows:

- 1) operate farms, businesses or professional practices, either alone or in partnership
- 2) work on a freelance or contract basis
- 3) operate direct distributors, selling and delivering such things as cosmetics and newspapers; or
- 4) fish with their own or rented equipment

Clearly, this definition of self-employment is based on a rather outdated and historical view of the entrepreneur. A review of the statistics regarding self-employment in Canada reflects this assertion. More specifically, although 16% of the Canadian workforce was self-employed in agriculture in 1931, less than 2% made up this category in 1991 (Gardner, 1991).

Within Canada and abroad, non-agricultural self-employment has received increased attention given its importance to the economy (Lin, Picot, & Yates, 1999). As summarized by Lin et al. (1999), this attention is well deserved when examining the impact of this career choice on the economy. For example, in 1997, nearly two and a half million Canadians owned their own business, which was double the rate of two decades earlier. In

addition, self-employed workers comprised 16.2% of the labour force in 1997, a notable 27% increase when compared to 12.8% in 1989, and 12.2% in 1979. Despite these impressive figures, the implications are even more persuasive when job creation is introduced into the equation. More specifically, of the 775,000 jobs created in the Canadian economy between 1990-1998, over three-quarters emerged from the self-employment sector. Clearly, research into the phenomenon of entrepreneurship is valuable for Canadians, given its extreme importance to our continued economic development.

Problems in past entrepreneurial research

Unfortunately, the considerable amount of previous research devoted to this topic has not been accompanied by the development of solid theoretical frameworks or conceptual models within which to study this phenomenon (Stewart, 1996). Perhaps the most critical stumbling block in the realization of this goal has occurred at the definitional stage (Shane & Venkataraman, 2000) where a universally accepted definition of the construct does not currently exist (Bowen & Hisrich, 1986; Bruyat, & Julien, 2000; Carland, Hoy, Boulton, & Carland, 1984; Gartner, 1990; Hisrich, 1990; Lumpkin & Dess, 1996; Metcalfe, 2004; Stewart et al., 1998). Unfortunately, the search for such a definition may be exacerbated by the diversity of disciplines within which entrepreneurship has been studied (Rogoff & Heck, 2003).

This state of affairs has led Hornaday (1992) to argue for the elimination of the term entrepreneur. As succinctly stated by Gartner (1990) "Is entrepreneurship just a buzzword, or does it have particular characteristics that can be identified and studied?" (p. 16). An additional problem with this plethora of definitions is that each tends to be biased by the scholar conducting the research (Shapero & Sokol, 1982). However, despite the

controversy surrounding the specific details of the definition, the vast majority of the research has defined the entrepreneur exclusively in terms of the individual (Shane & Venkataraman, 2000).

Given the preoccupation of the field with focusing on the individual entrepreneur, it is therefore not surprising that the vast majority of the research has attempted to distinguish entrepreneurs from non-entrepreneurs, particularly traditional organizational managers (see Brockhaus, 1980; Chen, Greene, & Crick, 1998; McClelland, 1965; Stewart et al., 1998; Tan, 2001; Wooten, Timmerman, & Folger, 1999 for examples). The field has also recently expanded its boundaries to include women entrepreneurs, a previously overlooked study sample (Brodsky, 1993). An additional line of research has attempted to distinguish entrepreneurs from one another since, as stated by Gartner (1988) “the differences among entrepreneurs and among their ventures may be greater than one might expect; in fact, the diversity may be larger than the differences between entrepreneurs and non-entrepreneurs” (p. 696). This has led to research that has focused on separating successful from unsuccessful entrepreneurs (McClelland, 1987) as well as spawned the development of several typologies (Gibb & Ritchie, 1982; Smith, 1967; Vesper, 1980), with some developed specifically for women entrepreneurs (Cromie & Hayes, 1988; Goffee & Sease, 1985). Despite the impressive breadth of this research, the point of genesis for most of the work has been the role of personality in new venture creation.

This focus on traits that distinguish entrepreneurs from other groups is not overly surprising as many scholars insist these variables must be of paramount importance in any model of entrepreneurship since entrepreneurs are the primary actors both in the start-up

and maintenance of this type of venture (Carland et al., 1984; Herron & Robinson, 1993; Wooten et al., 1999). Although nowhere near exhaustive, examples of motives and traits that have assumed to be more prevalent in entrepreneurs include need for achievement (Hornaday & Bunker, 1970; Langan-Fox & Roth, 1995; McClelland, 1965; Stewart et al., 1998), internal locus of control (Brockhaus, 1980; Brodsky, 1993; Kets de Vries, 1985; Mescon & Montanari, 1981), risk taking (Brockhaus, 1980; Stewart et al., 1998), innovation (Stewart et al., 1998; Tan, 2001), trust (Brodsky, 1993; Kets de Vries, 1985), extraversion and openness to experience (Wooten et al., 1999). Furthermore, Ginsburg and Bucholtz (1989) noted a high level of contradiction in the attributes ascribed to entrepreneurs in their review of 10 studies focusing on entrepreneurship. More specifically, the authors noted that over 40 attributes were noted, with risk and achievement motivation being the most frequently mentioned. Stewart et al. (1998) reinforced this conclusion by stating that the three “classic themes in the literature” were “achievement motivation, risk-taking propensity, and preference for innovation” (p. 189).

Despite this intense focus on the personality characteristics of the entrepreneur, there has been considerable debate regarding whether this approach is appropriate (Carland, Hoy, & Carland, 1988; Gartner, 1988; Stewart, 1996). For example, several external environmental variables such as displacement, market changes, and governmental deregulation of industries have also been postulated to be intricately involved in this process (Bird, 1988). As stated by Shane and Venkataraman (2000, p. 222), “since a large and diverse group of people engage in the transitory process of entrepreneurship, it is improbable that entrepreneurship can be explained solely by reference to a characteristic of certain people independent of the situations in which they find themselves.” However, still

other researchers counter this line of argument by highlighting that traits must play some role in entrepreneurship (Wooten et al., 1999) as individuals exposed to similar external situational cues will not embark on such a venture (Cromie & Johns, 1983).

This debate is not surprising, as it has had a rich history in the broader field of psychology as well. Initially, the trait model was the classic approach used to explain human behaviour and postulated that traits existed within the individual that would lead him or her to behave consistently across similar situations. Although this perspective dominated in the earlier periods, Mischel (1968) seriously questioned the veracity of this approach by persuasively arguing that behaviour is in fact not consistent across similar situations. To support this contention, he stated that with very few exceptions, the correlations between traits and cross-situationally consistent behaviour rarely exceeded 0.30. Little (1987a) remarked that Mischel's critique was massively influential in "setting the stage for the next decade of disputation at the interface of personality and environmental psychology" (p. 211).

As summarized by Little (2001), the Mischel (1968) critique impacted the field of personality psychology in three major ways. The first was that it seriously questioned the utility of personality assessment based solely on traits. Furthermore, it sparked interest in closer collaboration with social psychologists who argued human behaviour was heavily influenced by external environmental circumstances. Finally, it forced personological psychologists to provide a more systematic and structured defense of their perspective, a response that stimulated the "Great Trait Debate."

Although there is considerable intuitive appeal wrapped in the assertion that traits must contribute in some capacity to the phenomenon of entrepreneurship, as noted by

several scholars in the field, previous research has had relatively little success in differentiating the traits of entrepreneurs from non-entrepreneurs, and many studies have documented conflicting results (Baron, 1998; Chen et al., 1998; Gartner, 1985; Keh, Foo, & Lim, 2002; Low & MacMillan, 1988; McClelland, 1987; Mitchell et al., 2003; Shaver & Scott, 1991). This state of affairs led Hatten (1997) to argue that “the conclusions of 30 years of research indicate that there are no personality characteristics that predict who will be a successful entrepreneur” (p. 40) while Sarasvathy (2004) stated more contemptuously that “one of the most persistent and largely fruitless endeavors we have engaged in as entrepreneurship researchers consists in our efforts to understand differences between entrepreneurs and non-entrepreneurs” (p. 707).

The inability of this field of research to reveal substantive personality differences between entrepreneurial and non-entrepreneurial populations may have been due to two primary reasons. First, the methodological approaches employed by the field were not sufficiently sophisticated to yield the appropriate answers (Gartner, 1990; Low & MacMillan, 1988). In addition, as highlighted previously, the multiple and contradictory definitions of entrepreneur currently found in the literature may have had a direct impact on this research question (Gartner, 1988; Low & MacMillan, 1988). More specifically, aggregating every entrepreneur under one category may be inappropriate.

Low and MacMillan (1988) summarized the various methodological and definitional problems facing this line of inquiry: “Definitional and methodological problems associated with these past psychological studies, such as noncomparable samples, bias toward successful entrepreneurs, and the possibility that observed entrepreneurial traits are the *product* of entrepreneurial experience, make it difficult to interpret the results.

Furthermore, at a more fundamental level, it can be argued that the wide variations among entrepreneurs make any attempt to develop a standard psychological profile futile” (p. 148). An interesting hypothesis was raised by one of the reviewers of a recent article on entrepreneurship by Wooten et al. (1999) who suggested that perhaps the traits that are able to differentiate entrepreneurs from non-entrepreneurs may have not yet been studied.

In light of the above controversy, many researchers have expanded the scope of their studies to include other potential explanatory variables such as cognitive factors and processes (Baron, 1998; Busenitz & Barney, 1997; Kaish & Gilad, 1991; Shane & Venkataraman, 2000), while a cursory review of the literature by Wooten and his colleagues (1999) recognized the introduction of additional models such as population ecology, emergent group formation, and chaos theory to this field. Calls have also been made to examine the utility of conducting multidisciplinary research when exploring entrepreneur-based research questions (Fiet, 2000; Shane & Venkataraman, 2000).

A final point related to the above recommendation and most relevant for the present study has been to integrate previous approaches under one methodological umbrella. As highlighted by Bruyat and Julien (2000), “we will not understand the phenomenon of entrepreneurship if we do not consider the individual (the entrepreneur), the *project*, the environment and also the links between them over time” (emphasis added) (p. 165). Several other researchers have discussed the importance of some combination of these variables in their assessment of the proper methodological approach for the academic study of entrepreneurship (Bruyat & Julien, 2000; Gartner, 1985; Lumpkin & Dess, 1996; Shane & Venkataraman, 2000) while Bird (1988) highlighted the importance of social, political, and economic contexts, in concert with personality, personal history,

and abilities to the development of entrepreneurial intentionality, the precursor to action. Personal Project Analysis (PPA) (Little, 1983) provides an ideal methodological approach for addressing these concerns and as it is of central importance to this study, it is discussed below.

What is Personal Projects Analysis (PPA)?

The original conception of the personal project as a unit of analysis was to provide the most representative and sophisticated exploration of the personality of an individual while attending to the influences of the surrounding environment (Little, 1983, 1987a). Little (1983, p. 276) defines a personal project as “a set of interrelated acts extending over time, which is intended to maintain or attain a state of affairs foreseen by the individual” with the end goal of studying “personality in its social, physical and temporal contexts” (p. 273). The approach was labeled the social ecological approach to personality assessment because it provides for the integration and relative weighting of these diverse systems of influence (Little, 1972, 1976; Little & Ryan, 1979)¹.

From the outset, it should be noted that personal projects are conceptually related to various other idiographic units of analysis such as Klinger’s (1977) “current concerns”, Cantor’s “life tasks” (Cantor, Norem, Niedenthal, Langston, & Brower, 1987), and Emmons’ (1986) “personal strivings.” In fact, as mentioned by Krahé (1992), personal projects strongly influenced the development of life tasks and personal strivings. These personal action constructs, or PAC units (Little, 1989), have generated considerable research within the broader field of personality psychology (Krahé, 1992; Little, 1999b)

¹ Readers who are interested in a more thorough examination of the PPA methodology including a description of the various modules and types of analytic strategies employed are directed to Appendix A.

because it is widely assumed that intentional action provides an ideal opportunity to simultaneously study the cognitive, affective, and behavioural components of human personality. It should be noted that the importance of intentional action has been also championed in the broader entrepreneurship literature (Bird, 1988). Despite the inherent overlap of PPA with other PAC units, Chambers (1997) argues that PPA “holds a preeminent place among the PAC units by virtue of its early development, methodological sophistication, and its flexibility of application to any target population.” This assessment effectively highlights why PPA was selected as the method of choice for this study.

Given the relative failings of the broader empirical entrepreneurship literature to find reliable features that distinguish entrepreneurial from non-entrepreneurial individuals, it was believed that PPA would provide an ideal opportunity to advance the methodological sophistication of this field. More specifically, this could be achieved because PPA not only studies the personality of the individual but also its inherent relationships (both direct and indirect) with the external environment. Given the suggestions made by various scholars in the field of entrepreneurship for the utilization of multidisciplinary approaches and integration of the project and process into the equation, the advantages to employing the PPA methodology are both obvious and theoretically meaningful.

Therefore, one of the major purposes of this study was to advance the field of entrepreneurship research by contributing a unique and more comprehensive examination of entrepreneurs in their social, physical, and temporal contexts. Thus, in line with the comments of the reviewer of the Wooten et al. (1999) article mentioned earlier, by

exploring new variables in the entrepreneurial equation through the use of an innovative and multidisciplinary methodology, more direct answers may be obtained.

Finally, it should be noted that personal project appraisal may be seen as providing a more complete expression of the recent shift in the entrepreneurship literature toward determining the cognitive processes and structures that differentiate entrepreneurs from non-entrepreneurs (Baron, 1998, 2004a, 2004b). More specifically, since PPA allows for the simultaneous incorporation of individual and contextual features, which have been argued to be important components of entrepreneurship, this methodology provides an advancement over purely cognitive models of entrepreneurship.

Entrepreneurship and Project Pursuit: A Five Factor Perspective

The Role of PPA in Entrepreneurship Research

Exploratory factor analysis of earlier PPA data resulted in five factors underlying the original 17 standard personal project dimensions. These initial factors included project meaning, structure, community, efficacy, and stress (Little, 1987b, Little, 1988). However, more recently, based on extensive ongoing research, this model has been refined to include three cognitive and two affective factors (Little & Chambers, 2001, 2004). A brief overview of the theoretical underpinnings for each of these factors and hypotheses regarding how they fit dimensions of entrepreneurship is provided below².

Project Meaning: Having Worthwhile Pursuits

The first project factor, project meaning, examines the extent to which people see their projects as worthwhile, rewarding, and valuable pursuits. Although the importance of

² It should be noted that these dimensions were initially developed in the context of predicting well-being and comprised a set of theoretically relevant and practically important dimensions that were not really conceived of as facets for higher order factors.

meaning to optimal human functioning has been consistently documented in the humanities (e.g., Maslow, 1968; Rogers, 1961), empirical exploration of this area had been widely ignored by most research-oriented psychologists until recently (Little, 1998; McGregor & Little, 1998; Ryff & Singer, 1998; Wong & Fry, 1998). Based on the more recent model mentioned earlier and invoking the modular nature of the PPA methodology, the dimensions to be used in the present study to capture this factor include core to self (measured by the extent to which this project is viewed as critical to their well-being in that they could not live without it), self-identity (measured by the extent to which this project is reflective of their own identity), passionate engagement and commitment.

There have been several studies that provide some insight into why dimensions of meaning may be highly relevant to entrepreneurs. For example, Bonnett and Furnham (1991) found that the primary reasons provided by entrepreneurs when asked why they wanted to run their own business was to attain the freedom inherent in being their own boss, a finding that was found in a previous study mentioned in their review of the extant literature (Litvak & Maule, 1974). These motivations can be seen to have indirect linkages to self-identity because the individuals feel more constrained in an organizational environment (e.g., they do not have the freedom to pursue a work project the way in which they think it should be approached). A more direct link to self-identity is found in research describing the relationship between the entrepreneurs and their business, in which a parental notion is often evoked (Dodd, 2002) whereby the entrepreneurial venture is seen as akin to a child for the individual.

The links between the meaning factor as indicated by the dimensions of passionate engagement and core to self are vividly expressed in the above noted research by Dodd

(2002) that explored the life narratives of entrepreneurs. More specifically, Dodd (2002) examined historical narratives of these founders to examine which metaphors were utilized to describe their entrepreneurial ventures. Particularly relevant to the present dissertation was that one of the most frequently mentioned themes that emerged was passion. Furthermore, Dodd (2002, p. 525) concluded that the results of the analyses on metaphorical usage in entrepreneurs demonstrated “the importance of entrepreneurship in creating meaning, faith, and purpose within the life of the entrepreneur.” The impetus behind the introduction of the dimension Core to Self is amply evident within this statement.

Support for including the commitment dimension can also be found in the above research in that the passion metaphor was linked to descriptions related to images of “fierce attachment and commitment” (p. 528). Further support for the use of this dimension relates to the fact that it is widely recognized that, on average, entrepreneurs work longer hours each week than non-entrepreneurs (Blanchflower & Oswald, 1998; Brodsky, 1993; Carr, 1996; Eden, 1973) and this provides an objective, yet not perfect operationalization of the commitment dimension. Clearly, the various dimensions used to operationalize Meaning in this dissertation have direct implications for the entrepreneurial population of interest.

Project Manageability: Structure and Efficacy

The second factor of PPA is project manageability. Although structure and efficacy initially constituted two separate factors, they have been more recently combined (Little & Chambers, 2001) as more recent research that has found that these dimensions tend to load more frequently on a single factor. This factor represents the subjective judgements

made by the individual in terms of whether their projects are under their control and are organized in a manageable fashion as well as whether the individual believes that their projects can be completed successfully. Once again, drawing on the modular nature of PPA and the recent findings of Little and Chambers (2001), the dimensions of initiation (how responsible does the individual feel for having initiated each project), control (how much control does the individual perceive that they have over each project), progress (how much progress has the individual made in this project based on their expectations), outcome (the perceived likelihood of the successful completion of this project), and competence (the extent to which the individual feels competent when carrying out this project) were used to define this factor.

Several researchers have commented on the importance of initiation in the process of launching a new business venture (Bird, 1988). In addition, many researchers have suggested that entrepreneurs desire a greater degree of control over their destinies and long for the freedom to make their own decisions, and this is a contributing factor to their pursuit of self-employment (Shaver & Scott, 1991). This desire for control is also evident in recent research that has found that independence is one of the most important factors in the decision making processes of entrepreneurs to pursue such a venture (Amit, MacCrimmon, Zietsma, & Oesch, 2001).

As mentioned by Baron (1998, p. 285) "it has frequently been noted that entrepreneurs tend to perceive their own abilities, dedication, and effort as crucial to success: this is one reason why, when asked to estimate the likelihood that their business will succeed, entrepreneurs vastly overestimate the odds." The linkages of this statement to the dimensions of competence and outcome are readily apparent. In addition, it has

been found that there are even differences in anticipated success within entrepreneurial groups. For example, Brandstatter (1997) reported that individuals who founded their own business expected more success over the next five years than individuals who had inherited their business from someone else. Thus, specific attention must be paid when examining the data to ensure differences within the entrepreneurial categories are also considered when focusing on these questions. Consequently, the type of entrepreneurial venture pursued was a variable coded for in this study.

Project Community: Having Supported Pursuits

Project community involves the awareness of a social support component to one's personal projects. The influence of the external social support network on the pursuit of personal projects is a necessity in any social ecological examination of well-being (Little, 1993; 1996). For the purposes of this study, the dimensions of emotional support and hindrance were used.

As noted in previous meta-analytic reviews of the PPA literature (Dowden, 2000; Wilson, 1990), several new dimensions were recently added to the PPA methodology to operationalize project community. Arguably the strongest dimension added was 'support', which asks the respondents how much support is available for the particular project of interest. Recent research has determined that this dimension loads higher on the community factor than either of the two initial dimensions of others' view of importance and visibility (Little, personal communication).

An additional dimension, project hindrance, has also been found to be useful in representing the community factor. Although at first glance it may seem that project hindrance and support are opposites, closer examination of their definitions as well as

limited empirical research (Brunstein, 1993; Phillips, Little, & Goodine, 1997; Quesnel, 1998; Ruehlman & Wolchik, 1988) demonstrates that they are, indeed, orthogonal. For example, although a project may be well-supported, the individual may also face a great deal of project hindrance. On the other hand, a project may not be supported or hindered. These discrepancies highlight the importance of using both dimensions in the present study.

Previous research provides substantial evidence documenting why support (and in particular, emotional support) and project hindrance are relevant dimensions for entrepreneurs. First, the integral role of social/business networks in the creation and sustainability of an entrepreneurial venture has received considerable attention in the research literature (Aldrich & Zimmer, 1986; Baum & Calabrese, 2000; Birley, 1985; Coviello & Munro, 1995; Greve & Saloff, 2003; Hansen, 1995; Hoang & Antoncic, 2003; Larson, 1992). Second, researchers have recently begun to investigate the importance of family in the entrepreneurial process. More specifically, research has explored how family dynamics may impact entrepreneurial success (Aldrich & Cliff, 2003; Olson et al., 2003; Rogoff & Heck, 2003) as well as the dynamics of family-run businesses (Aldrich & Cliff, 2003; Astrachan, 2003; Cole, 1997; Heck & Trent, 1999).

Positive and Negative Affect

The purpose of the affective dimensions is that they allow respondents the opportunity not only to consider what they think about what they are doing, but also how they are feeling about it. The advantage of this distinction is that variance that may be missed at the more cognitive level of evaluation may be captured at the affective level and vice versa (Little & Chambers, 2001). For the purposes of this study, positive affect will

be defined by enjoyment, a steadily strong predictor of well-being (Dowden, 2000; Wilson, 1990), and pride. The latter variable was selected due to its clear overlap with the pursuit of entrepreneurship.

Again, previous research provides solid support for the relevance of the dimensions underlying this factor to entrepreneurial populations. For example, entrepreneurs have been found to experience greater levels of job satisfaction than non-entrepreneurial individuals (Blanchflower, 2000; Blanchflower & Oswald, 1998; Eden, 1973; Katz, 1992). It should be noted that there have been differences found within entrepreneur categories as well, where founders report higher levels of job satisfaction than heirs (Brandstatter, 1997; Robinson & Kelly, 1979).

For the purposes of this study, three affective dimensions will be used to explore negative affect and these include anger/frustration, anxiety/fear, and stress. Anxiety/fear was included as it was felt to be another way of operationalizing the risk tolerance construct discussed throughout much of the past entrepreneurial research literature. In addition, and surprisingly, very few studies have explored the stress levels of entrepreneurs and thus it was felt that this study could attempt to fill this knowledge gap.

As mentioned previously, Eden (1973) reported that previous work in the United States had revealed that entrepreneurs tended to report higher levels of work-related tension than non-entrepreneurs. This finding was also reported in an Israeli sample of entrepreneurs (Lewin-Epstein & Yuchtman-Yaar, 1991). Finally, although anger/frustration has not been examined in previous research to the author's knowledge, it was felt to be an operationalization of the affective counterpart to project hindrance.

Well-being and the entrepreneur: A relatively unexplored research question

Although the above literature review and analytic framework makes a persuasive argument for the scholarly contribution of using the PPA methodology to examine entrepreneurs, an additional interesting question relates to their well-being. More specifically, although the vast majority of past research has attempted to differentiate entrepreneurs from non-entrepreneurs, arguably, an equally important research question is whether the pursuit of entrepreneurship increases subjective well-being and, more importantly, which factors contribute the most to this desirable outcome. As stated previously, many entrepreneurs report embarking on such a career path for various personal reasons related to well-being enhancement (see below), but an actual empirical confirmation of this relationship has not been conducted.

According to the social ecological model of well-being, the most critical factor in determining human well-being is the sustainable pursuit of core projects (Little, 2000a; Little & Chambers, 2001, 2004). Given the inherently personal and core nature of entrepreneurship (see Dodd, 2002), based on this perspective, the sustainable pursuit of such an endeavour would undoubtedly be hypothesized to be associated with comparatively higher subjective well-being for entrepreneurs. Therefore, a second major component of this dissertation was to conduct the first theoretically based and empirically constructed examination of entrepreneurial well-being.

Once again, the PPA methodology, and the social ecological model on which it is based, provides a unique opportunity to explore this research question in detail. Given the joint goals of this research project and the calls for more sophisticated and

multidisciplinary methodologies in the broader entrepreneurship literature, the decision to utilize the PPA approach is readily apparent.

Personal Projects Analysis: Personality in Action

Social ecological model of human well-being

The social ecological model of human well-being (Little, 1972, 1983, 2000a; Little & Ryan, 1979) contributed to the broader person-environment interaction literature that has developed over the past 30 years (Little, 2000a). As explained by Little (2000a), this overarching approach assumes that human well-being is a function of several different factors emanating from the individual, environment and the various direct and indirect relationships between these variables. Figure 1 on the following page presents a schematic representation of the most recent model³.

An examination of this model immediately demonstrates its applicability to entrepreneurship research. More specifically, it provides a theoretically relevant and empirically based conceptualization of the determinants of enhanced well-being in entrepreneurs that have been derived from the extant literature, but as yet, have been integrated into a systematic analytic framework. Given the importance of entrepreneurship to economic prosperity, and the previously established positive empirical relationship between satisfaction with work and job performance (Judge, Thoreson, Bono, & Patton, 2001), the present model provides an ideal opportunity to explore which factors relate most strongly to entrepreneurial subjective well-being.

³ Although the social ecological model of SWB has recently been updated to include free traits and personal contexts (see Appendix B for the latest diagram), currently, methodologies for the assessment of these dimensions are not yet available, although it should be noted that recent research has started exploring this issue (Joseph, 2002). Accordingly, the standard social ecological model was used for the basis for this dissertation.

As personal projects are core “carrier” units in this model, it should be noted that the same five-factor model discussed previously, and their underlying assumptions, apply here. Readers who are interested in previous theoretical and empirical works that support the influence of these factors on subjective well-being (as well as the directionality of these influences) are referred to Appendix C and Little (in press).

Figure 1: A social ecological framework for the study of Person -Environment interaction

Utilization of the PPA methodology

The most frequently explored topic in personal projects research has been the prediction of measures of quality of life and subjective well-being (e.g. Brunstein, 1992; Little, 1988, 1989; Omodei & Wearing, 1990; Palys & Little, 1983; Pychyl & Little, 1998; Ruehlman & Wolchik, 1988; Yetim, 1993) from personal projects variables (Little, 1999a, 1999b). The typical research strategy has been to use a set of outcome measures generically referred to as measures of well-being. Several measures of well-being exist, the majority of which are self-rated, and include personal meaning, life satisfaction, positive and negative affect, emotional and physical health and depression to name a few (Little, 1988).

In this regard, ratings of personal project systems have been shown to relate to measures of well-being and depression, consistently accounting for between 20-25% of the variance in these criterion measures (Little, 1988). Personal projects were also shown to have incremental validity after trait and well-being relationships have been controlled for in hierarchical regression analysis (Little, 1988). Therefore, although trait variables account for substantial variance in indicators of emotional well-being, an additional 20% or more of the variance can be accounted for by the addition of personal project dimensions (Little, 1988). Given the robustness of these findings across various university and community samples, it would be expected that project variables would also play an important role in predicting the well-being of entrepreneurs.

Impetus for the Present Study

Therefore, the purpose of the present study is to address the various methodological and theoretical problems that have plagued past research in

entrepreneurship. The social ecological model and its corresponding PPA methodology provide a unique lens within which to view the individual, the project, and the environment, previously seen as integral for a true appreciation of the phenomenon of entrepreneurship. This research will shed more light on this already burgeoning area of research, while adding a psychological perspective that, as mentioned previously, has been surprisingly rare in this line of scientific inquiry. To quote Baron et al. (2001), “given the major contribution of entrepreneurs to modern economies, however, it seems important – and potentially very useful – to bring the tools, findings, and principles of modern psychology to bear on this topic” (p. 929). Finally, it will be the first time that the PPA methodology has been used to study entrepreneurs since this methodology emerged almost 30 years ago.

To summarize, there are several major research questions that will be addressed within the present dissertation. These questions, along with some of the hypotheses of interest, are discussed briefly below:

- 1) Entrepreneurs will have the same predictors of well-being as non-entrepreneurs
- 2) Project level variables will contribute the most variance to entrepreneurial well-being as compared to trait and environmental variables since they are ‘carrier’ units of the former.
- 3) Successful entrepreneurs will experience higher levels of subjective well-being than non-entrepreneurs and unsuccessful entrepreneurs given that it is assumed that they are successfully pursuing core projects.

Organization of the dissertation

This dissertation has been divided into five chapters. The current chapter (Chapter 1) has provided an introduction to the theoretical and applied underpinnings of conducting research on entrepreneurship. Chapter 2 discusses the pilot phase of this project, where the interview package was tested for its utility and a proposed change to the administration of the PPA methodology was evaluated. Chapter 3 summarizes the methodology and results of the in-person interviews where the majority of the hypotheses were tested. Chapter 4 examines whether entrepreneurs differ from non-entrepreneurs in terms of subjective well-being by utilizing archival PPA data. Finally, Chapter 5 synthesizes the findings from the three phases and presents an integrated conclusion that discusses the implications of these results and places them in context within the broader academic literature on entrepreneurship. This discussion is supplemented by suggestions for future research.

CHAPTER TWO

Preliminary exploration of the research methodology and examination of proposed changes to the administration of PPA

Since the inception of the PPA methodology, one of its primary tenets has been to ensure that the various dimensions selected for inclusion in the study are indeed personally and ecologically representative for participants. As stated previously, ad hoc dimensions (including those used in the present study such as core to self, emotional support) have been adopted depending on the population and research population of interest. In this regard, several approaches including rep grid (Little, 2000a, b) and grounded theory (Pychyl, 1995) have sometimes been used to increase the likelihood of using relevant dimensions. Similar recommendations have been made for a related topic (e.g., semi-structured interviews) by Bartholomew, Henderson, and Marcia (2000). Since the present study involves the use of semi-structured interviews, a review of these suggestions will be conducted to identify how the present study meets their recommendations⁴.

Bartholomew et al. (2000) argue that researchers utilizing semi-structured interviews should dedicate as much time and resources as possible to pilot test their instruments before embarking on their study. Thus, the first phase of this dissertation involved an extensive pre-test⁵ whereby various activities were engaged in to prepare for

⁴ Readers interested in more information on these guidelines are referred to their original chapter

⁵ It should be noted that the some of the activities reported on in this chapter (notably the testing of the six category system for PPA) do not quite fit the label of pre-test since respondents were indeed asked for their input and pre-tests normally involve just ensuring that entire "completed" package makes sense to the respondent. Furthermore, the PPA methodology changes do not quite meet the requirements of grounded theory, since respondents were provided with the categories whereas in a normal grounded theory approach respondents help generate and form these categories. However, for sake of simplicity, the term pre-test will be used here with recognized caveat noted above.

the formal stage of data collection (see Chapter 3). These activities, as well as their role in the broader goals of this project, are reviewed below.

At a minimum, Bartholomew et al. (2000) suggest a two-phase approach to conducting interview-based research be used, the advantages of which are two-fold. First, the pilot-testing phase will provide an opportunity to refine the skills of the interviewer. Second, this practice run will allow for a preliminary examination of the utility/validity of the coding system in practice. These *in vivo* trials enable changes to be made to the coding scheme without resulting in data loss that would occur if there were no pre-tests of the coding scheme/interview format and certain sections were deemed problematic in the actual testing phase.

A four-phase approach was used in the present study to accomplish these goals. In the first phase, the present author sat in on two interviews that were being conducted by experienced PPA interviewers for another project sponsored by the Social Ecology Laboratory (SEL) at Carleton University (e.g., volunteerism). This experience was deemed important as several of the measures used for the present study (e.g., Personal Projects Matrix and various indices of subjective well-being) were being used in the volunteerism study. By observing these interviews, it provided an opportunity to see these tools “in action” and gave some insight into the formal interview process that has been utilized in previous PPA research projects.

The second phase of the pilot test involved conducting two interviews with two previous Ph.D. students⁶ of the SEL lab, and who had extensively utilized these

⁶ I would like to extend my sincerest gratitude to Drs. Neil Chambers and Laura Goodine for agreeing to participate in these interviews.

assessment measures in their own dissertations as well as in several other projects in the lab and would be considered experts in the area. Within these interviews, each of the proposed questions to be asked to the entrepreneurs was reviewed as well as its rationale explored. The volunteers gave feedback regarding any confusing items, provided additional questions of interest and yielded a trial run of what the actual interview process would feel like in practice. These experiences provided an ideal opportunity to become familiarized with the nuances of conducting this type of research project. The third phase of the study involved testing the proposed methodological change to PPA (described below) whereas the fourth phase was the actual collection of the data used to test the main hypotheses of the thesis (see Chapter 3).

Thus, there were two primary goals to the pilot phase of the project. First, the entire assessment battery (including paper-and-pencil measures, semi-structured interview questions, and interview format) was pre-tested to ensure clarity, ease of completion, etc. for respondents. Second, this phase was used to explore whether the proposed change to the PPA methodology would resonate with respondents and if it was seen as possessing adequate face validity.

Methodology

Background

As noted in Chapter 1, scholars have lamented the lack of theoretically based research that utilizes multidisciplinary approaches to the study of entrepreneurs within their contexts. More specifically, researchers have felt that future research must capture the individual, the project and the contextual features of the entrepreneurial experience. As mentioned Personal Projects Analysis (PPA) provides a unique opportunity to incorporate

such a methodology as it resides at the interaction of the Person-Environment milieu.

One of the core methodological features inherent in its historical development is that it has been used in a modular fashion, which has been regarded as one of its key advantages compared to other measures (Little, 1999, 2000a; Little & Chambers, 2001). In other words, the methodology can be adapted to specific research questions and populations of interest. As the goal of any dissertation is to ideally provide valuable theoretical and/or empirical contributions to a field, a modification to the PPA methodology was proposed.

Briefly, when the PPA “kit” is normally administered, the first step is the Personal Projects Elicitation List (popularly referred to as the project “dump”). During this stage, a personal project is defined and several examples are given to clarify the construct, which culminates in the participant writing down a list of projects in which they are currently engaged (Little, 1983, 1988). Following this stage, the respondents are requested to select a subset of their self-generated projects (generally ten) and rate each one on a number of dimensions (e.g., project commitment, enjoyment, stress, self-identity, etc.) that have been identified as theoretically or pragmatically relevant to the study of personality and/or human well-being (Little, 1987b, 1989; Palys & Little, 1983). The respondent typically rates each project on a scale ranging from 0-10 for each of these dimensions. Then, these project ratings are generally linked to various indices of SWB (e.g., life satisfaction, depressive affect, etc.).

For the present study, however, a fairly major change was proposed to the PPA administration procedures in that the present researcher was interested in exploring the impact of providing pre-determined business-related projects. This was viewed as an

interesting and meaningful extension of standard PPA practice since it was an open empirical and theoretical question as to whether asking participants to rate project categories that were already provided would impact the magnitude of their linkage with outcome (e.g., SWB⁷). Given the wide range of businesses to be considered within the interview, streamlining and standardizing the administration of the PPA matrix as much as possible to increase the homogeneity of data made this idea worth exploring.

Procedure

To create these categories, an intuitive approach, in combination with the review of the literature cited earlier, was used whereby the present author generated six specific project categories (see below) and these were hypothetically applied to various types of businesses to determine their utility. More specifically, entrepreneurial ventures in various types of industry (e.g., bioengineering, hotels, consulting, manufacturing) were used to apply these project categories to see if they were indeed relevant. At the end of this exercise, six project categories were created:

- 1) Learning - These types of projects are those that are undertaken in order to expand a pre-existing skill set or to add a new skill to your repertoire.
- 2) Administrative - These projects relate to the “daily running of the business” such as paying bills, invoicing clients, etc.
- 3) Networking/Marketing - This category refers to projects that are designed to increase or expand your business.
- 4) Core Business - This refers to those projects directly related to your business. If you are a tennis coach, content projects would be instructing the clients on court.

⁷ As mentioned previously, PPA variables generally account for between 20-25% of the variance in SWB.

5) Research and Development - This refers to any projects in which your company is engaged in order to realize a future profit or potential line of business. This may involve product development, product sampling, etc.

6) Managing Employees – This involves any aspect of managing your staff

However, before utilizing these projects for the in-person phase of this project, it was felt that this categorization system should be tested to explore its face validity for respondents. To conduct this test, the standard PPA methodology was employed in which respondents were asked to generate a series of entrepreneurial projects that they were currently pursuing. No guidance was given in terms of the types of projects to generate, only that they were relevant to the business and that the entrepreneur was currently engaged in these projects.

Once the participants generated their list of projects, they were asked to classify them into one or more of the project categories mentioned above. It should be noted that the participants were not restricted to only applying one project category to each project. For example, if respondents felt that their project fit into more than one project category (e.g., networking and learning), then this was allowed to occur, albeit it would be scored a 'failure' from the project categorization perspective. A respondent was also allowed to indicate that none of the categories fit their project, although it should be noted that this did not occur during the pilot test.

If these project categories had adequate face validity for participants, the vast majority of the respondents' projects (greater than 75%) should be able to be classified into a single project category using this scheme (e.g., an individual project would only be placed into one of the six project categories). If there were very little overlap between the

categories (e.g., majority of projects were placed in mutually exclusive categories), this would demonstrate that respondents felt that they were sufficiently distinct to represent different aspects of the business. In addition, as participants were aware that this was pilot research, they would raise questions concerning the utility of these categories if the face validity was not readily apparent.

Results

Description of sample

Demographics

Thirteen local entrepreneurs recruited through various sources including the Ottawa Citizen Business Section, the Ottawa Home Business Association and an Internet-based site listing local high-technology companies took part in this phase of the project. In terms of demographic information, nine (69.2%) were male and four (30.8%) female. English was the language used in the current home by all of the participants with one exception who noted it was Chinese. The age range of interviewees was 25-48 years ($M=35.69$), with a fair degree of variability present ($S.D.=7.64$) in the sample. Almost two-thirds of the entrepreneurs were either married or living with a common law partner ($n = 8$; 61.5%), while three indicated that they were single/never married (23.1%). One of the participants was divorced while another was widowed. Although less than half the sample reported that they had children, in each case the children lived at home with the parent(s).

In terms of educational background, the vast majority of the sample had finished a college or university degree. More specifically, over two-thirds reported completing a university degree, with three of these reporting graduate level training (15.4%). One

participant rated college as her (or his) highest level of educational attainment; while three others noted that they had some college/university experience.

Characteristics of business

Interestingly, the entrepreneurial ventures surveyed in this project came equally from various types of business (see Table 1). However, of particular note to Ottawa where the dissolution of the high-tech industry had a major impact on the local economy, eight of the entrepreneurs (61.5%) reported they were involved in a technology-related business.

Not surprisingly, the vast majority of the interviewees reported that they had previous work experience. When asked whether their current entrepreneurial venture was connected to their previous work area, slightly over half (n=7) stated that it was at least somewhat related. In terms of location and status of business, a little over one-third (38.5%) worked at home, while the remainder rented or owned office space of some kind. Slightly over three-quarters of the businesses (n=10) were incorporated at the time of the interview (76.9%), while five (38.5%) reported having partners in the venture.

Table 1: Characteristics of entrepreneurs who participated in the pilot study

Characteristic	Number (%)
Type of business (n=13)	
Service	6 (46.2%)
Sales	4 (30.8%)
Consulting	3 (23.1%)
More than one business (n=13)	
Yes	4 (30.8%)
No	9 (69.2%)
Staff (n=13)	
Yes	8 (61.5%)
No	5 (38.5%)
Previously self-employed (n=13)	
Yes	6 (46.2%)
No	7 (53.8%)
Previous work experience (n=13)	
Yes	12 (92.3%)
No	1 (7.7%)
Market scan (n=13) ⁸	
Yes	8 (61.5%)
No	5 (38.5%)

Validity of the project categorization system

As stated at the outset of this chapter, the primary purpose of this phase of the project was to test the utility of a project categorization system for the administration of the PPA methodology. This section reports on the results of this pilot test. If acceptable classification rates were not achieved (e.g., greater than 75% of the projects could be classified), then this approach would be abandoned in the formal stages of data collection

⁸ Participants were asked if they conducted any type of market scan to determine whether it was the right time for embarking on their business venture

and the standard administrative PPA approach would be utilized.

Two types of analyses were incorporated. First, an unweighted approach was used where the average classification rating was calculated (irrespective of the number of projects generated during the project dump). Second, a weighted system was employed whereby the total number of projects generated was divided by the total number of correct categorizations (e.g., they were able to successfully classify each project into one of the six pre-determined categories). This latter procedure was adopted since it was possible that the former analytic strategy did not take into account the number of projects generated by individual participants, which could be seen as misrepresenting the conclusions⁹. For example, if one individual generated 40 projects, of which 90% were able to be classified while the remaining 10 participants could only generate 40 projects collectively (and only 25% were appropriately classified), one can see the potential conflicts that this would cause. More specifically, using the first technique, the agreement rates would be 31.5% whereas for the second technique, it would be 56.2%.

The results of these analyses were quite supportive of the alterations made to the PPA methodology. More specifically, on average, respondents were able to classify 83.2% of their projects according to the available classification system. Although there was a slight decrease when the entire set of generated projects was used (e.g., weighted approach), the difference was negligible (80.8%).

⁹ Although researchers commonly argue that more sophisticated measures of reliability should be used (e.g., Kappa, see Bartholomew, et al., 2000), in this case, only the participant could appropriately assign their project to the category (e.g., another 'rater' could not agree or disagree with their decision). Furthermore, and more important, there was no way to determine the expected number of projects assigned to each category per individual since this was very much dependent on the project system generated by the individual participant. Thus, percent agreement was the only appropriate statistic in this case.

However, previous PPA research has found that there are some difficulties in application when non-English speaking individuals complete the methodology. Since one of the participants identified her official language as Chinese, her responses were excluded from the analyses. Interestingly, the omission of this participant only yielded a slight increment in the success of the classification system for both the unweighted (e.g., from 83.2% to 84.5%) and weighted approaches (from 80.8% to 83.6%). These analyses clearly demonstrate that the adoption of this revised administrative procedure is a valid extension of the previous standard administrative procedure.

This conclusion is further reinforced when one considers that another widely used PAC unit (e.g., life tasks, Cantor, Norem, Langston, Zirkel, Elleson, Cook-Flannagan, 1991) that used a similar methodology to the present study only yielded percent agreement rates of 81% between individually generated projects and their categorization system. Therefore, this revised administrative methodology was used for the in-person interview phase of this dissertation, with the recognized caveat that the ability of these categories to predict SWB was still very much in need of an answer.

Conclusion

As noted by Bartholomew et al. (2000), in interview studies the most common way to test the validity of the procedure is through face validity. Clearly, the results of the above pilot test demonstrate the face validity of the interview protocol to be used within the main data collection phase. More specifically, there was considerable agreement achieved when assigning individual entrepreneurial projects to categories and none of the

respondents raised concerns about any of the assessment tools selected to measure SWB¹⁰. Finally, changes were in fact made to the PPA methodology on the basis of participant feedback in that the dimensions of autonomy and risk-taking were not deemed to be relevant to entrepreneurs given their employment situation¹¹. Overall, these results confirm the recommendations of Bartholomew et al. (2000) that embarking on as extensive a pilot test as possible in the early stages of the research project may yield considerable benefits in the long run.

¹⁰ This was not overly surprising as each of these measures had been used extensively in past PPA research (and other personality research for that matter) and had received adequate reliability and validity).

¹¹ This further reinforces the face validation exercise for altering the PPA methodology, as respondents clearly felt comfortable enough with expressing their concerns in this regard within this context.

CHAPTER 3

Predicting entrepreneurial well-being: What works?

Explorations of the well-being of entrepreneurs, and more importantly, the prediction of this important outcome, has been a forgotten topic in this field of research. Therefore, the present chapter discusses the first empirical attempt to systematically assess the strongest predictors of entrepreneurial well-being from both a work- and non-work perspective. Before the results are presented, details of the interview protocol will be reviewed to highlight how it fits within the recommendations that have been put forward as being of paramount importance for research conducted within the fields of personality and social psychology (Reis & Judd, 2000).

Cannell and Kahn (1968) advise that interview studies should follow an hourglass pattern whereby the interview begins with very broad questions that become progressively more specific, and then retreat back to an overall perspective by the end of the interview. The interview format adopted for this project followed this guideline in that initially, respondents were asked to describe their businesses in general (e.g., what is it that they do), who were their target clients, and the most effective strategies for marketing. These preliminary questions were felt to establish rapport by demonstrating that the researcher was interested in all aspects of their business as well as their associated opinions (Bartholomew et al., 2000). Following these general questions, respondents were asked to fill out the PPA matrix and the structured paper-pencil questionnaires. The interview ended with respondents answering a series of open-ended questions regarding what they felt was the definition of an entrepreneur and what was required for an entrepreneur to be successful. Finally, interviewees were given the opportunity to talk about any issues they

felt were relevant to their entrepreneurial experience that were not captured by the interview protocol and suggest any areas for future research.

Bartholomew et al. (2000) also provided a series of recommendations regarding how to actually conduct the interviews in practice. Similar to Chapter 2, a brief review of how the present project incorporated these into the study methodology is reviewed below, although readers interested in a more detailed treatment of these issues are referred to their original chapter.

Bartholomew et al. (2000) outlined four general points to consider when conducting interviews to enhance the reliability and validity of the responses received. First, in terms of the physical setting, they recommend that the goal of the researcher should be to strike an appropriate balance between comfort and professionalism and, most importantly, “accommodating the participant’s needs and reducing variability where possible” (p. 304). To accomplish this, interviewees were given the choice of the time, day, and location of the interview. To further reduce variability, the first choice of location provided by the researcher was a local coffee shop, with the caveat that the interview could take place anywhere in the city (in fact, one of the pre-test interviews was conducted in Montreal).

The second point stressed by Bartholomew et al. (2000) involved issues surrounding what they call the “psychological setting” of the interview. More specifically, they recommend that interviewees should be told before the start of the interview the format of the interview, including the types of questions and the approximate length. The anonymity of participant responses and the voluntary nature of their participation should also be made explicit. This information was provided to participants by nature of the

introductory email (which also ensured consistency in approach) as well as was reviewed at the start of the interview, during which time the interviewee signed the informed consent form.

The third aspect of the interview process discussed by Bartholomew et al. (2000) involves the types of questions employed. Although they admit that there are currently no guidelines in place to direct the utilization of certain questions, they do mention that almost every type and form of question can have a place in an interview study. To increase the engagement of participants in the present study, multiple formats were used, ranging from multiple choice, quantitative ratings, and open-ended questions traversing various aspects of their business.

The final area involves note-taking, which is viewed as a highly valuable part of the interview process because, as noted by Bartholomew et al. (2000, p. 305), “note-taking, if not excessive, can be rapport-enhancing by indicating to the participant that the interviewer is interested and can offer the participant a break from the intensity of face-to-face contact” (p. 305). In this regard, note-taking was employed in the present study, but, given the multiplicity of measures used (e.g., paper-pencil measures), it did not dominate the interview. Furthermore, for the vast majority of questions where note taking was required, it only involved the interviewer checking the appropriate box (e.g., marital status) and captures any additional contextual information that could augment coding at a later date (e.g., recently divorced).

As mentioned previously, one of the major purposes of the present study was to explore the strongest predictors of entrepreneurial well-being from both work and non-work perspective. As such, this section outlines the results of these analyses.

Methodology

"The field of entrepreneurship, and in particular the study of its archetype (the entrepreneurial venture), is undoubtedly one of the most complex in the social sciences. It therefore offers a considerable challenge to researchers in the 21st century. If we are to take up this challenge, we will have to borrow methods and tools from other disciplines and fields, and we will have to undoubtedly have to invent new ones" (Bruyat & Julien, 2000, p. 177).

Definitional issues

Given the current disagreement regarding the definition of entrepreneur, for the purposes of this dissertation, an entrepreneur was defined as follows:

An individual who owns a business, regardless of size or industry, who is solely responsible for the final decisions made in the company and whose primary source of occupation rests there. These individuals are liable for any and all losses associated with the company in event of bankruptcy or termination of the company.

This definition adheres to the standard practice of examining entrepreneurship from an actor-oriented perspective. However, the inclusion of the Personal Projects Analysis (PPA) methodology ensures that both the process and project are also included, as recommended by Bruyat and Julien (2000). It should also be noted that managers or intrapreneurs (e.g., entrepreneurial individuals within existing organizations, see Hisrich, 1990 for a description) are not included. Finally, a distinction is made between entrepreneurs who started their own business and those who achieved ownership through other means (e.g., inheritance, franchisee, etc.) as some researchers have found differences when exploring these groups (e.g., Begley & Boyd, 1987). The latter group was included in order to maximize the sample size as well as use them as a comparison group for entrepreneurs who founded their business.

Procedure

Once the pre-test phase was completed (see Chapter 2), an emphasis was placed on broadening the sample to include as many entrepreneurs as possible from the greater Ottawa area. The Saturday section of the Ottawa Citizen was reviewed for the past three years to identify newly created business ventures and the information provided was used to contact individual entrepreneurs. Once contacted, these potential participants were asked for any other individuals who might be suitable for inclusion in this study. The Ottawa Home Business Association was also contacted for a list of potential recruits.

Email was selected as the preferred method of initial contact for various reasons. First, this approach guaranteed that each potential participant received the same method of invitation. Furthermore, and arguably more important, this method of communication allowed the participant the option to politely decline or delete the email, without feeling the pressure incurred from having someone immediately “on-the-line” (e.g., on the phone or in-person). Finally, it allowed the participant the opportunity to reflect on whether they had the time and/or interest to participate and also whether there were any additional questions that could be emailed or phoned directly to the present investigator.

Careful tracking of the date of initial correspondence and participant response was initiated to ensure contradictory or repetitive information was not sent. If respondents had not sent a reply within two months, a follow-up email was sent to remind participants about the study.

Overall, 654 emails were sent to potential participants. Seventy-one of the businesses were deemed to be inactive due to a non-operational email address or correspondence with the owner, thereby limiting the potential participant pool to 583. Of

these, 102 (17.5%) of those contacted agreed to be interviewed, while only 28 (4.3%) participants declined. Finally, 18 (2.8%) of the businesses were part-time (e.g., the owner indicated that this was a side project that may or may not turn into their primary source of employment).

Once participants agreed to take part in the study, the principal investigator contacted these individuals (via phone or email) to set up a time, date, and place of meeting that was best suited to the needs of the individual entrepreneur. These interviews took place in local coffee shops, at the office, as well as their place of residence¹². This demonstrates the diverse landscapes within which entrepreneurs operate and has been found in other in depth examinations of this population (Pink, 2001).

Respondents were asked to fill out the final assessment battery (see Appendix D for interview measures used). In addition to these quantitative assessment measures, participants took part in a semi-structured interview, which gathered information relating to their background, demographic information, details of their business venture, and their thoughts/feelings on a variety of entrepreneurial-related issues (see Appendix D). To end the interview, interviewees were asked several open-ended questions that were deemed to be very important for resolving some key issues in the broader academic field of entrepreneurial research as well as provide key pieces of advice/information to future potential entrepreneurs. More specifically, entrepreneurs were asked to provide their definition of an entrepreneur as well as to describe the characteristics of a successful

¹² To provide some additional context to these interview settings, multiple interviews were conducted at Starbucks, Second Cup, and Bridgehead coffee houses. Furthermore, a lunchtime interview was arranged for Mexicali Rosa's, an afternoon drink (non-alcoholic) was organized for the Lord Elgin hotel, and breakfast at a restaurant in Russell also occurred. Interviews took place in furniture and jewelry stores, as well as flower and craft shops.

entrepreneur (e.g., what do you need to be a successful entrepreneur?). These qualitative measures provided greater depth to the empirical data and an increased richness of the research design for the respondents, thereby enhancing its face validity.

Description of Measures

The following measures were utilized in the present study. Where appropriate, the relevant theoretical or empirical rationale for the inclusion of these instruments is reviewed. Given the relative exploratory nature of the study, several indices were incorporated. As mentioned previously, the complete version of each of the measures used in this study can be found in Appendix D.

General Background Information. Several questions were raised in the background information section of the questionnaire. These included:

- a) Age – A widely reported finding in the entrepreneurial literature is that the relationship between age and entrepreneurship is generally linear in nature, with older/retirement individuals more likely to become entrepreneurs (Bowen & Hisrich, 1986; Brodsky, 1993; Carr, 1996; Eden, 1973; Gardner, 1991; Lewin-Epstein & Yuchtman-Yaar, 1991; Leveson, 1968).
- b) Ethnicity – Previous entrepreneurship research has focused on exploring potential differences between Caucasian and minority entrepreneurs (DeCarlo & Lyons, 1979; Rhodes & Butler, 2004).
- c) Gender – Until recently, female self-employment has been relatively ignored in the broader entrepreneurial research literature, perhaps in part due to the relative infrequency of this behaviour in females when compared to males. Although previous studies have documented gender differences in the selection process when deciding upon an

entrepreneurial career path (Boden, 1999; Carr, 1996), several studies have found that there are many areas of overlap between the characteristics and motivations of male and female entrepreneurs (Cromie & Hayes, 1988; Hisrich, 1990).

- d) Education – A recent study examining the data provided from the 1980 U.S. Census based on over 22,000 cases found that males and females with more education (measured by more than four years of college/university) were almost three times more likely to report self-employment as their current occupation than high school graduates (Carr, 1996). A similar trend has also been found in Canada with self-employed individuals having higher levels of educational attainment (as represented by university degrees) than non-entrepreneurs (Gardner, 1991).
- e) Family history - Following the recommendations of Bowen and Hisrich (1986), several variables were coded under this variable including parents' occupations, parents' socioeconomic status, and birth order as these have been proposed to potentially influence the pursuit of entrepreneurship.
- f) Past entrepreneurial experience – identified by McClelland (1961) and others as a variable that predisposes an individual to engage in entrepreneurial behaviour. In addition, as noted by Bowen and Hisrich (1986), although the vast majority of previous research has been based on first-time entrepreneurs, attention should also be paid to “repeat” or “serial” entrepreneurs. Finally, previous entrepreneurial experience has been explored as a possible contributing variable to the successful formation of an entrepreneurial venture (Delmar & Shane, 2004).
- g) Type of entrepreneurial venture – new business creation, franchisee, inheritance, purchased pre-existing business. In one study (Brandstatter, 1997), the data revealed that

there were personality differences between those individuals who founded their own business when compared to those who inherited their businesses. As mentioned previously, Begley and Boyd (1987) also reported several important differences between founders and those who obtained small businesses ownership through other means.

- h) Displacements (Korunka, Frank, Luger, & Mugler, 2003; Shapero & Sorbel, 1982) – whether the individual was displaced from a previous job or left their previous job due to low job satisfaction. This could be contrasted with those who started a new enterprise at the outset of their careers.
- i) Past work experience – Many previous studies have found that entrepreneurs have past work experience in the field of their new business venture (Bowen & Hisrich, 1986).
- j) Other demographic information (e.g., number of children, marital status, spouse occupation, children at home, support of spouse for their career now, marital status at time he/she became an entrepreneur, children at time she/he became an entrepreneur, was spouse initially supportive). A review of the 1980 U.S. Census data revealed that being married and having preschool aged children were positively associated with pursuing entrepreneurial opportunities for women, while the same effect was not found for men (Carr, 1996). In Canada, there are strong familial influences with individuals who are married being more likely to pursue self-employment. Also, there is a noticeable prevalence of dual self-employed couples, with many of these couples working in the same field (Gardner, 1991).
- k) Current work environment – (e.g., work hours per week, home- vs. office-based). In terms of home- versus office-based, several researchers have suggested that home-based businesses provide women (and increasingly men) a way to simultaneously fulfill

both work and family responsibilities (Connelly, 1992; Cromie & Hayes, 1988; Kraut & Grambsch, 1987). Also, past research has found that on average, entrepreneurs work more hours per week than non-entrepreneurs, a finding that is consistent across several studies (Blanchflower, 2000).

l) Defining business success - Although financial performance would be an objective and intuitive measure of entrepreneurial success, as scholars have argued, this represents an overly simplistic view of entrepreneurial motivation (Amit et al., 2002; Dodd, 2002; Sternberg, 2004) As stated by Lumpkin and Dess (1996), “a small privately owned firm may regard its continued existence as a satisfactory indicator of high performance, even though it cannot claim to have a strong return on assets or growth in market share...

Thus, factors such as overall satisfaction and nonfinancial goals of the owners may need to be weighted more heavily in evaluating performance” (p. 154). Therefore, consistent with this perspective, both financial (e.g., annual profits, market share, etc.) and nonfinancial (e.g., freedom, sense of personal achievement, control, etc.) indicators of success were examined in this study.

m) Incorporation – As mentioned by Carr (1996), although this measure is not a perfect proxy for “skilled” labour, the fact that incorporated companies tend to generate higher earnings and are founded by more professional occupations, makes it a worthwhile indicator.

n) Number of employees – A commonly used metric to provide an indication of firm size (Coviello & Jones, 2004).

Well-being Measures

Although the extant literature presents several ways of conceptualizing well-being,

there seems to be general agreement that the most critical components of this construct are personal meaning, positive affect, negative affect, and life satisfaction, the latter of which includes both general and domain-specific measures. It should be noted that Lucas, Diener, and Suh (1996) reported that each of these components has satisfactory discriminant validity, further reinforcing their inclusion in any comprehensive measure of well-being. The measures used to capture SWB are reviewed below.

Center for Epidemiological Studies Depression Scale (CESD; Radloff, 1977).

This 20-item measure was designed to explore the depressive symptomatology present in members of the general population and approaches depression from an affective state rather than a trait dispositional perspective (Gotlib & Cane, 1990; Radloff, 1977). Participants rate each item using a four-point scale to reflect the degree to which the individual experienced each symptom in the previous week. The CES-D correlates significantly with several PPA dimensions (Dowden, 2000; Little, 1989) and its inclusion in the current study was further enhanced by strong reliability (e.g., high split-half and internal consistency, see Corcoran & Fisher, 1987) and validity (e.g., convergent validity and sensitivity, see Gotlib & Cane, 1990) data.

Although both positive and negative affect were both measured in this study, Chambers (2000) argued that depression should be considered a higher order construct than negative affect. His statement was supported by his data showing that the CES-D correlates with NA at a level of .61 to .63 “suggesting high convergence but not isomorphism” (p. 30).

Diener-Emmons Affect Scale (1985). This 9-item scale was selected to measure both positive and negative affect due to its simplicity of administration and, arguably more

important, its demonstration of acceptable convergent validity with other well-known measures that take longer to complete (e.g. Positive and Negative Affect Schedule; Watson, Clark, & Tellegan, 1988). The administration of the scale is straight forward as respondents are asked how they been feeling lately on an 11-point scale (0-10, where 0 = not at all and 10 = extremely) for nine emotionally based adjectives, four of which are positive and five negative. The authors initially reported that the scale demonstrated suitable reliability and validity (Diener & Emmons, 1985).

Domain-Specific and Global Life Satisfaction Scales. These scales were developed over two decades ago in some of the initial studies of the Social Ecology Laboratory at Carleton University (see Palys, 1979 for reliability and validity data of the scales). Global Life Satisfaction (Lecci, 1988; Little, 1987a) is a single-item scale that taps into the cognitive component of life satisfaction by asking: "In general, how satisfied are you with your life now?" There are five domain-specific measures (i.e., work, social, physical, recreational, and emotional) that tap into these components using a similar question format to the one used for global life satisfaction. Each of these scales asks respondents to rate their satisfaction with the area of life under investigation on an 11-point scale ranging from 0 (completely dissatisfied) to 10 (completely satisfied), with a score of five representing a neutral rating. These scales have been commonly used in studies conducted within the Social Ecology Laboratory and demonstrate strong convergent validity with other scales of life satisfaction, as well as correlate strongly with trait/NEO-PI-R dimensions and PPA variables (Lecci, 1990).

Satisfaction with entrepreneurial venture. Four measures were included to represent satisfaction with the financial aspects of their entrepreneurial venture (e.g.,

satisfaction with sales growth, market share, profitability, and potential for longevity).

To reduce the invasiveness of the research protocol, participants were asked to rate their satisfaction with each of these items rather than providing 'hard' economic data. Although these measures are clearly subjective, it can be argued that they provide a far more sensitive measure of this construct as it takes into consideration both individual (e.g., expectations) as well as environmental influences (e.g., overhead, recession, etc.) into the equation.

Ten Item Personality Measure (TIPI; Gosling, Rentfrow, & Swann, 2003).

This 10-item self-report scale was designed to measure the Big Five traits through the use of short descriptors (one positive and one negative) on various trait adjectives representative of the various factors. The rationale behind the development of this inventory was to reduce the time and energy required of participants in terms of filling out these types of questionnaires (such as the NEO-PI-R) (Gosling et al., 2003) without sacrificing critical psychometric properties (see Burisch, 1984a, 1984b, 1997). Although it is the smallest scale exploring the Five Factor trait model of personality, this has not led to any problems in terms of reliability/validity as the average alpha reliability score for a large sample of respondents from the United States was .72, which is acceptable when compared with the much longer BFI, which yields a test-retest reliability of .80. Finally, TIPI was deemed to have demonstrated adequate levels in each of the following core psychometric properties: convergent and discriminant validity, test-retest reliability, and patterns of external correlates. As concluded by Gosling et al. (2003), "overall our findings suggest that these very brief instruments can stand as reasonable proxies for longer Big-Five instruments..." (p. 523).

Personal Projects Analysis (PPA). This methodology was used to capture the critical intersection of personality and environmental factors, and their subsequent role in influencing the well-being of entrepreneurs. Although the standard PPA assessment kit (Little, 1983) was used, the administrative procedure was significantly altered (see Chapter 2) in that participants were initially asked to rate a series of project categories on the set of chosen PPA dimensions. Traditionally, respondents would generate their own project list and rate those selected by them to be most important or relevant to their near future.

With these project categories in hand, participants proceeded to rate them on each of the PPA dimensions included in the Project Dimension Rating Matrix. More specifically, each project was rated on an 11 point Likert-type scale ranging from 0-10 for each of the dimensions. The theoretical factor structure and the subsequent dimensions selected to represent these factors are listed in Table 2 below. It should be noted, however, as mentioned previously, that this five-factor model was extracted from PPA research that used the classic method of assessment, thus the applicability of these factors to the present sample of entrepreneurs (keeping the previously mentioned methodological alteration in mind) is an open empirical question.

Table 2: Personal Project Factors and Standard Dimensions Used in this Study

FACTORS	Meaning	Manageability	Community	Positive Affect	Negative Affect
D I M E N S I O N S	Self-identity	Initiation	Support	Enjoyment	Stress
	Commitment	Control	Hindrance	Pride	Anger
	Passionate engagement	Outcome			Anxiety
		Progress			
		Competence			

It should be noted that there were also ad hoc dimensions added to the study (e.g., creativity, core to self, and competitiveness) to address some additional areas of interest. As stated previously, the modular nature of the PPA methodology allows for new dimensions to be added that are specific or more personally relevant to the population or topic under study. Several past studies using PPA have created new dimensions to provide greater specificity for the topic and population of interest. For example, in terms of the former dimensions of emotional intelligence (Zomer, 2001) and creativity (Melia-Gordon, 1994) have been used. In terms of the latter, Pychyl (1995) specifically adopted the PPA methodology for use with doctoral students (Pychyl & Little, 1998) through a grounded theory approach.

The normative approach to analyzing PPA data was the option selected to analyze the project-level data given the interest of the present study in predicting the SWB of

entrepreneurs¹³. Not surprisingly, the normative approach to analyzing PPA data has also been the one most commonly used in past research. The calculation of mean column scores (e.g. on stress level, control, enjoyment) allows investigators to examine the characteristics of the entire project systems of individuals (Little, 1983). In other words, researchers can use the project dimension scores in a similar fashion to the scores derived from traditional personality assessment instruments. Consistent with past studies involving PPA data, the aggregate dimension scores were used as predictors of SWB and other outcome variables of interest.

Entrepreneurial Orientation (EO; Lumpkin & Dess, 1996).

The theoretically based entrepreneurial orientation (EO) construct introduced by Lumpkin and Dess (1996) in order to move the field of entrepreneurial research forward in its theoretical sophistication was also included in this study. This was seen as critical as no previous study had explicitly tested its validity¹⁴. Although it was initially hoped to incorporate these into new dimensions within PPA, pre-testing with a small sample of entrepreneurs (see Chapter 2) highlighted some serious shortcomings of this approach as autonomy and risk-taking created difficulty in terms of scoring for the respondents.

More specifically, since each of the project categories under investigation was work-related, the entrepreneurs felt that, for the most part, that they were entirely

¹³ The other measurement approach is idiographic in nature, and focuses exclusively on the individually generated project system (Little, 1983) and explores the interrelationships that exist between dimension scores within that system. Using this form of analysis, the correlation between dimensions like stress, challenge, and enjoyment within a single project system would be examined to answer several research questions. This type of individual-specific result was deemed to be beyond the scope of the present study.

¹⁴ Although Wooten et al. (1999) attempted to explore the utility of these variables in differentiating entrepreneurs from nonentrepreneurs, they were only able to test this proposition indirectly as they used the 16 PF scale. Furthermore, and more importantly, their sample included outplaced executives who were clients of a professional outplacement firm, a characteristic of which even the authors acknowledged may make them a special case in the entrepreneurial literature given their backgrounds.

autonomous for their execution so there was very little variability left for project ratings. Furthermore, the risk-taking dimension caused confusion, especially under the administrative projects category (e.g., one interviewee queried somewhat sarcastically “are you asking me how comfortable I am fudging my numbers to avoid paying more taxes?”). Thus, these dimensions were excluded from the PPA toolkit as it was felt that their inclusion would seriously reduce the face validity of this facet of the study.

To avoid these concerns, each EO dimension was operationalized with one item (see Burisch, 1984a, 1984b, 1997), by asking respondents to rate themselves on a scale of 0-10 indicating how much each of the five dimensions typified them. Adopting a single-item for each EO dimension was considered appropriate as single-item measures of critical social- and personality-relevant outcomes have been used quite successfully in past research (Gosling et al., 2003), including, but not limited to, self-esteem (Robins, Hendin, & Trzesniewski, 2001), life satisfaction (Campbell, Converse, & Rodgers, 1976) and subjective well-being (Diener, 1984; Sandvik, Diener, & Seidlitz, 1993).

Job Needs and Aspirations

As noted by Phillips et al. (1997), meaningful work that satisfies the goals and desires of employees is highly influential in increasing job satisfaction of employees. Consequently, the job needs and aspirations of entrepreneurs were examined using the Job Needs and Aspirations scale developed by Phillips et al. (1997). To accomplish this goal, respondents are instructed to rate the importance of each of these needs in their “ideal job” and then rate the extent to each is present in their current job. Clearly, the extent to which the ideal job need is met in the present job would be expected to augment work SWB. Differences between the ideal and actual scores may be a strong predictor of

organizational and personal well-being. Additional job needs ($n=7$) were incorporated into this measure from the Organizational Culture Checklist to expand possible influences on well-being.

However, for the purposes of the present study, it was decided to expand the scope of this instrument somewhat by exploring the extent to which each need was present in the previous job before their entrepreneurial venture. In other words, respondents would be asked to indicate the extent to which these needs were available in both their current entrepreneurial venture as well as in the position they held immediately before embarking on self-employment. Thus, it would be assumed that if participants were pursuing core projects (as mentioned at the outset), the present job needs would be close to the ideal job needs but would be significantly higher than the extent to which these were considered present in their previous positions.

To explore this hypothesis in more detail, each of the job needs was subjected to a within-subjects analysis of variance using their ideal, present, and previous scores as the dependent measure. The present job (e.g., entrepreneur) was used as the basis of comparison for the follow-up contrasts given its central focus to this thesis. The Bonferroni correction was employed to minimize the possibility of committing a Type I error. Also, given the large number of within-subjects ANOVAs, only those differences that were less than $p<.001$ are reported to ensure only the most robust findings are commented upon in this section.

Results

Description of sample

Demographics

Of the 102 entrepreneurs interviewed for this study, 55 (53.9%) were female and 47 (46.1%) male¹⁵. English was the native tongue of 85 participants (83.3%), five (4.9%) stated it was French, while the remaining noted a bilingual upbringing (2.9%) or another language¹⁶. Interviewees were between 24-62 years of age ($M=41.31$), with a fair degree of variability present ($S.D.=8.63$) in the sample.

Most of the entrepreneurs were either married or living with a common law partner ($n = 80$; 78.4%). Eleven respondents reported that they were single/never married (10.8%), with an equal number mentioning that they were either divorced (8.8%; $n=9$) or separated (2.0%; $n=2$). Two-thirds of the sample ($n=68$) reported that they had at least one child, and of those, the vast majority (75%; $n=51$) reported that the children were still living at home. Furthermore, 10.3% of the interviewees noted that they were single parents at the time of the interview.

In terms of educational background, the vast majority of the sample had finished a college or university degree. More specifically, 27.5% had finished college, 58.9% reported completing a university degree, of which 16.7% received a graduate degree. A very small proportion of the sample reported that they had a high school diploma (3.9%;

¹⁵ It should be noted that women are slightly over-represented in the present study sample as a recent study outlining trends in self-employment in Canada documented that women accounted for slightly over one-third of the total population (Hughes, 1999).

¹⁶ Participants were asked before the interview if they considered themselves to have near native fluency in English, given the evidence from previous data collections using PPA that those with poor language skills have difficulty following the instructions.

n=4) or less (2.0%; n=2).

Characteristics of business

Clearly, as the focus of this thesis was on entrepreneurs, several characteristics of their ventures were collected (see Table 3¹⁷).

Table 3: Characteristics of entrepreneurs who participated in this study

Characteristic	Percentage
Type of business (n=102)	
Service	36.3%
Sales	33.3%
Consulting	30.4%
More than one business (n=102)	
Yes	22.8%
No	77.2%
Staff (n=101)	
Yes	24.5%
No	74.5%
Previously self-employed (n=100)	
Yes	42%
No	58%
Previous work experience (n=101)	
Yes	96%
No	4%
Market scan (n=100)	
Yes	34%
No	66%

Interestingly, the entrepreneurial ventures surveyed in this project came equally from the service, sales, and consulting sectors. However, of particular note to Ottawa

¹⁷ A complete list of the types of businesses interviewed for this project is listed in Appendix E.

where the dissolution of the high-tech industry has had a considerable impact on the local economy, 27.5% (n=28) of the entrepreneurs were involved in a technology-related business.

Not surprisingly, the vast majority of the interviewees reported that they had previous work experience. When asked whether their current entrepreneurial venture was connected to their previous work area, almost three-quarters (71.1%; n=97) stated that it was at least somewhat related.

In terms of location and status of business, most (78.2%) worked at home, while the remainder rented or owned office space of some kind. Slightly over one-third of the businesses were incorporated at the time of the interview (38.6%), while less than 20% (n=24) reporting that they had partners in the business.

Factor analyses

Subjective well-being.

Several of the measures of subjective well-being (SWB) used in the present investigation (e.g., CES-D; Diener-Emmons Affect Scale) had already established solid psychometric properties. The total scores for these scales were entered into the factor analysis to determine the underlying factor structure of SWB. Additional measures that have also been used in previous research (e.g., the Meaning and Stress sub-scales of the PPSRS and the global-domain life satisfaction scales) were also included. Finally, as mentioned previously, the author developed a scale designed to measure various aspects of the entrepreneurial venture (e.g., satisfaction with sales growth, market share, profitability and potential longevity) as well as asked participants to rate their overall

satisfaction with their company during the interview¹⁸.

The 16 contributing measures of subjective well-being were subjected to a principal components analysis (PCA) to determine their underlying factor structure¹⁹. It should be noted that factor analysis is appropriate in this case as there are slightly more than five cases per measure (84 subjects had complete data available in the database), a common cut-off criteria for factor analysis (Comrey & Lee, 1992; Russell, 2002). Moreover, as noted by Russell (2002) in his recent review of published articles in *Personality and Social Psychology Bulletin*, this is the most commonly used data reduction technique.

Although the initial unrotated PCA yielded a three-factor solution (eigenvalues of 5.37, 2.68, and 1.08), examination of the scree plot (Cattell, 1966; see Figure 1) and consideration of the interpretability of the factors made the selection of the two-factor solution most appropriate. Using a cut-off score of .35 for minimal factor loadings, rotation employing the varimax procedure revealed that all 16 items could be retained. The items underlying each Factor, their individual loadings, the variance accounted for, as well as their internal consistency reliability scores are listed in Table 4.

The first factor was labelled *Personal Well-Being* (PWB) as reflected in items

¹⁸ The mean scores for each of the scales contributing to the SWB factor analysis are presented in Appendix F.

¹⁹ It should be noted that there is ongoing debate regarding whether principal components analysis (PCA) or principal axis rotation (PAR) is the most appropriate procedure for exploratory factor analyses (Russell, 2002). The advantage of using PCA is that it ensures the resultant factors are statistically orthogonal in that overlapping variance is removed, which augments interpretability. However, recent Monte Carlo studies (Widaman, 1993) raised concerns about different results that may emerge when employing these two procedures. Keeping this in mind, both types of factors analyses were employed with our indices of SWB. The results were virtually identical in that a two-factor solution emerged in both sets of analyses. Given that both procedures yielded an identical two-factor solution (with the same dimensions loading on both) combined with the fact that PCA was more interpretable due to its orthogonal underpinnings, the PCA was selected as the preferred method of choice.

dealing with satisfaction with life as a whole, home life, emotional state, etc. With an eigenvalue of 5.37, it accounted for 28.47% of the variance (in the rotated matrix). The remaining factor, labelled *Work Well-Being* (WWB)²⁰, included all of the items from the author-generated scales, thereby demonstrating their incremental utility in the study. The only previously used item that was incorporated into this factor was the satisfaction with work life, although it should be noted that this variable loaded fairly highly on both factors. With an eigenvalue of 2.68, it accounted for 21.8% of the variance in the rotated factor solution. WWB was composed of six items dealing with satisfaction derived from various aspects of the business, as well as with work life in general²¹.

²⁰ It should be noted that I labeled this factor “work well-being” (WWB) in order to maintain labeling consistency. However, unlike the Personal Well-Being factor, affective and meaning components failed to load significantly on the WWB factor and it is comprised exclusively of satisfaction measures. Whether this is due primarily to the forced orthogonality of the rotational procedure or represents a more substantively important difference between the personal and work domains is an important topic for continuing research.

²¹ It should be noted that the “save factor scores” option was used in SPSS and these scores were used as the predictor/outcome variables in the subsequent analyses. This procedure was used for all of the factor analyses reported here.

Figure 2: Scree plot for SWB factor scores

Table 4: Rotated factor loadings for PCA of PWB measures

Well-being scale	<u>PWB</u>	<u>WWB</u>
Satisfaction with emotional state	.82	.06
Satisfaction with life as a whole	.72	.24
Satisfaction with home life	.72	.09
CESD Total score	-.71	-.00
Diener-Emmons Positive Affect	.70	.21
Satisfaction with recreational life	.66	-.11
Diener-Emmons Negative Affect	-.66	-.03
PPSRS – Stress	-.52	-.14
PPSRS – Meaning	.50	.28
Satisfaction with social life	.44	.26
Satisfaction with sales growth	.01	.86
Satisfaction with market share	.09	.82
Satisfaction with profitability	.07	.82
Satisfaction with company	.06	.72
Satisfaction with work life	.47	.59
Satisfaction with potential longevity	.15	.52
Variance accounted for (%) - Rotated	28.47	21.88
Variance accounted for (%) - Unrotated	33.57	16.78
Internal consistency (α)	.70	.83

Personal Projects Analysis (PPA).

The primary interest of the present study was to use the aggregate dimension scores of the PPA dimensions to predict PWB²². Table 5 presents the mean aggregate dimension scores for this sample of respondents. It should be noted that in cases where respondents only left one item blank in the PPA matrix, the missing data were replaced by the mean of the remaining dimension scores. Although this was not an ideal strategy, given the somewhat limited data available, it was felt that the advantages of maximizing variability would offset the slight inconvenience of replacing scores. It should be noted that this happened in only a limited number of cases (n=6) and was only an issue within R&D project scores.

As discussed previously, rather than using the standard PPA format of having respondents generating individual projects, categories were developed and each one was rated on a set of PPA dimensions developed specifically for this thesis. To assist in data reduction²³, factor analyses were also conducted on the various aggregate dimension scores to determine the most efficient factor solution²⁴.

²² Readers interested in the complete list of means and SDs for each of the dimensions for each of the individual project categories explored in this study are referred to Appendix G.

²³ Again, returning to the debate regarding the appropriateness of PCA or PAR for exploratory factor analytic procedures, given the importance of PPA for predicting SWB in entrepreneurs, both types of factors analyses were employed to explore potential differences in outcome. Again, as found with SWB, the results were virtually identical with a three-factor solution in both cases. Interestingly, emotional support and pride would also be removed in this process since they loaded equally on two factors. Hindrance stayed in the equation and loaded on Factor 2 (labeled Efficacy below). Given that both procedures yielded essentially identical three-factor solution (with the same dimensions loading on both) combined with the fact that PCA was more interpretable due to its orthogonal nature, PCA was selected.

²⁴ The aggregate dimension score for core to business was not included as the variability in this measure was small (as respondents indicated that all attributes were core to business) and it was felt to be sufficiently dissimilar from the others to warrant its exclusion.

Table 5: Mean PPA dimension scores for entrepreneurs (N=96)

Dimension	Mean (SD)
Commitment	7.95 (1.13)
Initiation	7.79 (1.31)
Control	7.86 (1.07)
Outcome	8.31 (0.90)
Progress	7.49 (1.18)
Competent	8.10 (0.97)
Emotional support	7.16 (2.34)
Hindrance	3.09 (2.21)
Creative	6.96 (1.78)
Self-identity	6.83 (1.72)
Competitiveness	4.91 (2.21)
Passionate engagement	6.88 (1.38)
Core to self	6.72 (1.80)
Enjoyment	6.90 (1.28)
Pride	7.31 (1.75)
Stress	4.42 (1.89)
Frustration	3.38 (1.74)
Anxiety	2.62 (1.96)

Although the initial unrotated PCA yielded a five-factor solution (eigenvalues of

5.92, 3.05, 1.38, 1.13, and 1.04), this was not deemed appropriate due to the instability of factors (e.g., factors having only two items) as well as difficulties in interpretability.

Examination of the scree plot (see Figure 3) also reinforced this decision, where the slope even out following the third factor. Keeping these analytic concerns in mind, the selection of the three-factor solution was deemed most appropriate²⁵ for the purposes of the varimax rotation²⁶.

Figure 3: Scree plot for PPA factor scores

²⁵ It should be noted that more recently researchers have questioned the reliance on using an eigenvalue of 1.00 as a cut-off criterion (Wegener & Fabrigar, 2000) and given that two of the lowest eigenvalues barely exceed this cut-off, the three-factor solution seems even more appropriate.

²⁶ Although some researchers using factor analysis also employ oblique rotation due to possible overlap of extracted factors, employing this strategy resulted in essentially the same factor breakdown, with the exception that some items loaded on multiple factors, which made interpretation/analysis far more difficult. Therefore, for the sake of simplicity, the results reported are based on the varimax rotation.

Although three items were subsumed under the third factor, many factor analytic studies use this point as a reasonable cut-off for the development of factors (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Russell, 2002). Furthermore, the high loadings of each of the items and their weak loadings on the other remaining factors gave additional support for its usage.

The first factor was labelled *Personal Engagement* as reflected in items dealing with passionate engagement, self-identity and enjoyment. With an eigenvalue of 5.92, it accounted for 25.7% of the variance (in the rotated matrix). The second factor, *Efficacy*, has been found in previous PPA research, and includes the project dimensions Commitment, Competence, Control, Progress, Initiation, and Outcome. It accounted for 17.4% of the variance in the rotated factor solution and, in total, seven dimension scores were subsumed under this factor. The final PPA factor, *Negative Affect*, has also been extracted from previous PPA research. This factor was the easiest to label and was composed of the affective dimensions with negative emotional valence: Stress, Frustration and Anxiety. This factor accounted for 14.4% of the variance in the rotated factor solution, with an eigenvalue of 1.38.

Analyses were also conducted to explore the internal consistency reliability of the three factors to ensure that they were indeed stable for further analyses. Although the Efficacy and Negative Affect scales demonstrated acceptable reliability ($\alpha=.84$), the internal consistency reliability of the Personal Engagement scale ($\alpha=.52$) was lower than acceptable levels (Nunnally, 1978; Wegener & Fabrigar, 2000). Thus, steps were taken to increase the stability of this factor.

More specifically, analyses were conducted to determine the impact of the removal

of each of the factor items and the subsequent internal consistency of the factor. This proved fruitful, as it demonstrated that excluding Hindrance yielded a major increase in scale reliability (e.g., from .52 to .80), while removal of each of the other items yielded undesirable decreases in scale reliability (reduced from .52 to between .37-.46).

Examination of the initial factor loadings table provided insight into why this might have occurred. More specifically, although hindrance loaded negatively on the Efficacy factor, it also loaded positively (and above .35) on the Personal Engagement factor. Therefore, the factor analysis was performed again, excluding Hindrance to examine its impact on the final results²⁷.

Once again, exploring the eigenvalues and the interpretability of the factors demonstrated that a three-factor solution was most appropriate. However, both pride and emotional support loaded significantly (above .35) and approximately equally (e.g., less than .10 difference between factor loading scores) on two of the factors, and thus were excluded from the factor analysis as well. Interestingly, using varimax rotation and a forced three-factor solution, the same three factors that emerged within the initial analysis (e.g., Personal Engagement, Efficacy, and Negative Affect) were still present after the removal of these items. The dimensions underlying each factor, their factor loadings, the variance accounted for, as well as their internal consistency reliability scores are listed in Table 6. It should be noted that removing the three problematic dimensions from the factor analyses increased the total variance explained by the factors from 57.5% to 62.4%. However, it should be noted that the excluded dimensions were retained for the regression

²⁷ Readers interested in the original factor loadings table including all PPA dimensions are referred to Appendix H

analyses as they were felt to represent potentially meaningful sources of variability.

Table 6: Rotated factor loadings for PCA of PPA dimensions

	<u>PE</u>	<u>Efficacy</u>	<u>NA</u>
Passionate engagement	.84	.31	.02
Self-identity	.84	.25	.01
Core to self	.83	.13	.16
Enjoyment	.83	.18	-.13
Creativity	.69	.12	-.03
Competitive	.42	.04	.30
Progress	-.04	.74	.04
Competent	.32	.70	-.20
Control	.10	.67	-.22
Committed	.29	.66	-.01
Outcome	.28	.61	-.27
Initiate	.46	.58	.01
Frustration	.08	-.02	.89
Stress	.01	-.14	.85
Anxiety	.01	-.23	.81
Variance accounted for (%) – Rotated	26.30	19.52	16.54
Variance accounted for (%) – Unrotated	35.16	18.58	8.62
Internal consistency (α)	.84	.80	.84

Indicators of success.

Interviewees were asked to rate the importance of several indicators in terms of how they defined success as an entrepreneur. The results of these findings are presented in Table 7.

Table 7: Mean importance scores for indicators of success for entrepreneurs (N=96)

Dimension	Mean (SD)
Reputation of company	9.15 (1.51)
Sense of personal achievement	8.88 (1.44)
Freedom	8.80 (1.47)
Be your own boss	8.33 (1.94)
Commitment of employees	8.28 (2.54)
Public image	8.23 (2.28)
Control	8.20 (1.64)
Growth of business	8.12 (1.72)
Feeling of responsibility	7.85 (1.71)
Annual profits	7.61 (2.07)
Visibility of company	6.85 (2.60)
Social networking	6.30 (2.61)
Market share	5.37 (2.92)

Once again, to assist in data reduction, factor analyses were conducted on the importance scores for each of these indicators of success to see if there were any underlying factors within the set. Twelve of the 13 indicators of entrepreneurial success were subjected to a principal components analysis (PCA) to determine their underlying factor structure²⁸.

Although the initial unrotated PCA yielded a three-factor solution (eigenvalues of 3.88, 2.38, and 1.19), examination of the scree plot (Cattell, 1966; see Figure 2), as well as an examination of the interpretability of the factors, made the selection of the two-factor solution most appropriate for the purposes of the varimax rotation²⁹.

Figure 4: Scree plot for indicators of success factor scores

²⁸ Commitment of employees was excluded from the factor analyses as many respondents left this item blank because they did not have employees and/or did not feel they would hire staff in the future and was thus irrelevant to defining business success.

²⁹ Although examining the scree plot seemed to suggest three factors was the preferred method of extraction, once rotated, one of the items (social networking) loaded on two of the factors equally (both one and three with loadings of .474 and .488 respectively), which left only two items on factor three rendering it an inappropriate factor, following Russell (2002).

The dimensions underlying each factor, their factor loadings, the variance accounted for, as well as their internal consistency reliability scores are listed in Table 8.

Table 8: Rotated factor loadings for PCA of indicators of success

	<u>Business</u> <u>Success</u>	<u>Personal</u> <u>Success</u>
Visibility of company	.87	-.04
Public image	.80	.15
Growth of business	.76	.12
Reputation of company	.64	.23
Market share	.63	.06
Social networking	.62	-.04
Annual profits	.57	-.06
Be your own boss	-.05	.88
Freedom	-.06	.77
Control	-.04	.67
Feeling of responsibility	.38	.59
Sense of personal achievement	.16	.54
Variance accounted for (%) - Rotated	30.70	21.42
Variance accounted for (%) - Unrotated	32.31	19.82
Internal consistency (α)	.83	.75

The first factor was labelled *Business Success Factors* as reflected in items dealing with visibility of the company, growth of business, reputation and market share to name a few. With an eigenvalue of 3.88, it accounted for 30.70% of the variance (in the rotated matrix).

The second factor, *Personal Success Factors*, related to indicators of success that were more personal in orientation such as being your own boss, sense of personal achievement, and freedom. This factor accounted for 21.42% of the variance in the rotated factor solution with an eigenvalue of 2.38. In total, five items were subsumed under this factor.

Predicting SWB³⁰

As mentioned previously, since scholars in the entrepreneurial literature have argued that future research should explore individual, project and contextual features in the emergence of new business, a decision was made to structure the results for the prediction of SWB according to the social ecological model (see Figure 1), which maps perfectly on to this type of analytic framework. Analyses explored each of these potential predictors in isolation, with the culmination of a final series of hierarchical regression analyses designed to determine the strongest predictors of entrepreneurial well-being with regards to both work and non-work areas.

³⁰ As noted by several statistical scholars, researchers should ensure that data are checked for the presence of outliers and to ensure assumptions of normality are met. In this regard, many of the variables in this dataset were negatively skewed, including PWB. Although the results for the entire uncorrected sample are presented here, it should be noted that corrections made for normality concerns were conducted (through transformations and/or removal of outliers) and the results were virtually identical in each case (e.g., for the individual, project, and environmental levels of analysis). In fact, the overall R^2 for the models generally increased when outliers were excluded. Also, one could argue that since entrepreneurs are outliers in a sense, any non-normality in terms of distribution might be expected.

Individual level.

There were three major sets of variables that represented the individual level of entrepreneurship research. More specifically, the Big Five factors of personality (as measured by the TIPI), the EO construct of Lumpkin and Dess (1996) and the Personal and Business success factors (e.g., how entrepreneurs defined success) were explored separately. As each of these analyses was theoretically based, they were explored separately for this section of the results.

First, for the prediction of Personal Well-Being (PWB) ($n=81$), the Big Five traits³¹ explained 18.2% of the variance ($p<.01$), with emotional stability (partial $r=.31$) being the only trait that contributed uniquely to the final regression equation ($p<.01$). Interestingly, when the outcome was changed to Work Well-Being (WWB), traits only explained 8% of the variances and this relationship was not statistically significant³².

The second set of analyses focused on the EO construct ($n=79$) forwarded by Lumpkin and Dess (1996). Interestingly, the EO construct³³ did not provide a significant relationship with either PWB or WWB ($R^2=.05$ and $.08$ respectively)³⁴.

The final set of analyses conducted at the individual level used the Personal and Business Success factors ($n=77$) that emerged when respondents were asked the importance of a list of items in terms of how they define success as an entrepreneur. Interestingly, although neither of these factors were significantly related to WWB

³¹ Respondents interested in the means and standard deviations for each of the Big Five traits are referred to Appendix I.

³² Readers interested in the cross-correlation matrix for the variables included in this analysis are referred to Appendix J.

³³ Respondents interested in the means and standard deviations for each aspect of the EO construct are referred to Appendix K.

($R^2=.03$), results demonstrated that a significant relationship was present for PWB ($R^2=.14$). More specifically, entrepreneurs who were more likely to define their success by Personal factors such as being their own boss, desire for sense of achievement, freedom, etc. reported significantly higher levels of PWB (partial $r=.38$, $p<.05$).

Project level³⁵

A decision was made to use the excluded dimension scores that resulted from the factor analyses mentioned earlier as predictors of PWB along with the remaining three-factor solution. This was deemed acceptable because in the initial five-factor solution, after varimax rotation, both emotional support and pride had the highest loadings on the third factor (.88 and .53 respectively, and these were the only items that loaded uniquely on this factor³⁶) while hindrance loaded the highest on the fifth factor (.733), out of three items.

When using these six variables for predicting PWB (see Table 8), these variables were able to explain a significant proportion of the variance (34%) ($n=76$)³⁷. Interestingly, both negative affect and emotional support emerged as significant independent predictors of PWB (partial correlations of $-.37$ and $.37$ respectively). Project level variables were equally strong predictors of WWB explaining 30% of the variance ($p<.001$). In this case, both emotional support and efficacy were significant independent predictors (partial correlations of $.25$ and $.40$ respectively) (see Table 9).

³⁴ Readers interested in the cross-correlation matrix for the variables included in this analysis are referred to Appendix L.

³⁵ Readers interested in the simple correlations between each project dimension and SWB/WWB are referred to Appendix M.

³⁶ Recall that Russell (2002) in his review of the factor analytic practices of the personality and social psychology literatures argued that factors should be composed of at least three items to be considered a valid factor score.

Table 9: Regression coefficients predicting PWB and WWB

PPA factor	Personal Well-Being			Work Well-Being		
	r	Partial	SBW	r	Partial	SBW
Personal engagement	.02	-.09	-.08	.00	-.11	-.09
Efficacy	.09	-.10	-.08	.48	.40***	.36**
Negative affect	-.43**	-.37**	-.33**	-.14	-.14	-.12
Emotional support	.40**	.37***	.33**	.31	.25 ^a	.20
Hindrance	-.27	-.19	-.15	-.07	-.02	-.02
Pride	.07	.08	.07	.24	.07	.06
R ²	.34***			.30***		
Adjusted R ²	.28			.24		

*** p<.001; ** p<.01; * p<.05; ^a p=.052

SBW = Standardized beta weights

Environment level

As mentioned previously, the Job Needs Inventory was used as a measure of psychological climate (e.g., environmental conditions underlying the job) for these entrepreneurs. Respondents were asked the extent to which each of the indicators were present in their ideal job, their present job, and their previous job. If their present entrepreneurial job was in fact their ideal job, the differences between the ratings on the present and ideal job would be expected to be equivalent. In this regard, the means and standard deviations, as well as the significant between-group differences found within the Job Needs Inventory analyses are highlighted in Table 10.

Overall, although there were 40 job needs measured in the survey, for almost 70% (n=27), there were no significant differences between the ideal job needs and their presence in the current job. When the analyses shifted to comparing the current and

³⁷ Readers interested in the cross-correlation matrices for the variables included in these analyses are referred to Appendices N and O.

previous job, significant differences were found in 36 of the 40 job needs. More specifically, the present and previous jobs were indistinguishable on four job needs (e.g., compensated well financially, having job security, having co-workers/colleagues who are friendly, and having a supervisor who ensures your career development). Finally, the previous job scored significantly higher on two job needs (e.g., having a highly structured work environment and having a hierarchical control structure) while the present job scored significantly higher on the remaining items.

Table 10: Means and SDs for job needs for present, ideal and previous jobs

Job Need	Present	Ideal	Previous
A feeling of achievement?	8.38 (1.52)	9.58 (0.79)	6.26 (2.40)
Making use of your abilities?	8.46 (1.55)	9.42 (0.98)	6.24 (2.63)
Doing things that are interesting and challenging?	8.76 (1.72)	9.46 (0.88)	6.16 (2.62)
Feeling a sense of self-worth?	8.86 (1.45)	9.36 (0.97)	6.41 (2.30)
Being involved in decision making?	9.48 (1.16)	9.27 (1.03)	5.23 (2.83)
Having a sense of personal integrity?	8.87 (1.71)	9.24 (1.29)	7.12 (2.84)
Having a sense of purpose and meaning?	8.61 (1.70)	9.11 (1.29)	5.72 (2.67)
Being in a fair work environment?	8.82 (1.59)	9.05 (1.32)	5.99 (2.47)
Being efficient?	8.17 (1.81)	8.95 (1.25)	6.56 (2.60)
Having fun?	8.16 (1.68)	8.95 (1.40)	5.98 (2.75)
Making decisions on your own?	9.08 (1.42)	8.90 (1.20)	5.37 (2.63)
Having an opportunity to be innovative and creative?	8.74 (1.91)	8.90 (1.53)	5.35 (3.09)
Being in control of how things are done?	8.99 (1.44)	8.90 (1.21)	5.01 (2.78)
Being held accountable for your work?	9.11 (1.36)	8.83 (1.38)	8.10 (1.90)
Having organizational policies administered fairly?	8.39 (2.46)	8.74 (1.55)	5.59 (2.85)
Being compensated well financially?	6.08 (2.68)	8.60 (1.64)	6.95 (2.35)
Having new and varied experience?	8.17 (1.75)	8.54 (1.42)	5.91 (2.52)
Being flexible and accommodating to home responsibilities?	8.26 (2.21)	8.54 (2.04)	6.00 (2.63)
Being nurturing/caring toward employees or co-workers	7.68 (3.02)	8.46 (1.80)	6.60 (2.67)
Being rewarded for good performance?	7.32 (2.45)	8.35 (1.93)	5.55 (2.63)
Having pleasant physical working conditions?	8.02 (1.96)	8.32 (1.83)	7.00 (2.05)
Having co-workers/colleagues who are friendly?	7.41 (2.91)	8.31 (2.23)	6.99 (2.30)
Working independently?	8.87 (1.42)	8.25 (1.67)	5.98 (2.54)
Being able to exercise leadership?	8.32 (2.39)	8.22 (2.01)	5.60 (2.84)
Having recognition for the work you do?	7.78 (2.08)	8.14 (2.04)	5.73 (2.57)
Having clear objectives?	7.82 (2.06)	8.12 (2.00)	6.25 (2.38)
Doing things that "make a difference" for the benefit of society?	6.79 (2.87)	8.08 (2.18)	5.15 (2.96)
Being around interesting people?	7.34 (2.30)	7.94 (2.06)	6.28 (2.64)
Having job security?	5.49 (3.19)	7.61 (2.62)	5.87 (2.96)
Having an opportunity for advancement?	5.54 (3.38)	7.36 (2.77)	5.16 (2.50)
Support and encouragement from your supervisors?	5.30 (3.98)	7.25 (3.28)	5.87 (2.78)
Having power?	7.32 (2.76)	6.98 (2.80)	4.65 (2.81)
Being able to work as part of a team?	6.47 (2.80)	6.88 (2.74)	6.79 (2.45)
Having a supervisor who ensures your career development?	4.60 (3.96)	6.63 (3.46)	4.65 (3.06)
Being very busy all the time?	7.65 (2.21)	6.54 (2.23)	7.12 (2.58)
Having a job that promotes your social status in the community?	5.11 (3.25)	5.39 (3.12)	3.74 (3.14)
Being around powerful people?	5.08 (3.05)	5.19 (3.16)	4.31 (2.71)
Being in a competitive "game"?	5.28 (3.28)	4.74 (3.25)	5.00 (3.04)
Having a highly structured work environment?	4.84 (3.16)	4.40 (3.37)	6.89 (2.34)
Having a hierarchical control structure?	4.21 (3.70)	4.24 (3.35)	7.22 (2.63)

Another question of interest was the relationship between the above job needs and PWB and WWB. It was initially hoped to use the discrepancy scores between the ideal and job need categories for each dimension to explore whether larger discrepancies in job needs would yield significantly lower WWB (or SWB for that matter), as testing this discrepancy hypothesis would fall in line with the work of previous scholars in organizational behaviour (Locke & Latham, 1990). However, as the above analyses clearly demonstrate, entrepreneurs felt that their present 'job' very closely approximates their ideal job in many respects. Thus, attempts to use these discrepancy scores proved problematic, as there was very little variability in the scores, resulting in a markedly skewed distribution. Thus, analyses focused on the extent to which each need was present in their entrepreneurial 'job.' Although this is a weaker test of the impacts of these variables on outcome³⁸, it was necessarily imposed by restrictions in the initial dataset.

To explore the utility of these variables in predicting PWB and WWB, only those needs that established significant zero-order correlations with either outcome were entered into a multiple regression analysis. The job needs that established a significant relationship with PWB and WWB are listed in Tables 11 and 12 below³⁹.

³⁸ This is due to the fact that in the present case, the only information available is the extent to which each indicator is present in their entrepreneurial job, irrespective of its underlying importance (e.g., which is reflected in the corresponding "Ideal Job" rating). More specifically, just because an indicator is rated as widely evident in their entrepreneurial position, this may not be an important job need for their ideal job. Thus, the sensitivity of the test is invariably limited by this coding procedure, which was necessary due to the extreme skewed nature of the data.

³⁹ Readers interested in the cross-correlation matrices for the variables included in these analyses are referred to Appendices P and Q.

Table 11: Significant JNI predictors of PWB

Job Need	Correlation
A feeling of achievement?	.36**
Doing things that are interesting and challenging?	.34**
Feeling a sense of self-worth?	.31**
Being in a fair work environment?	.40**
Being efficient?	.27*
Having fun?	.35**
Being flexible and accommodating to home responsibilities?	.26*
Being rewarded for good performance?	.44***
Having pleasant physical working conditions?	.30**
Doing things that "make a difference" for the benefit of society?	.29*
Being around powerful people?	.31**

Table 12: Significant JNI predictors of WWB

Job Need	Correlation
A feeling of achievement?	.35**
Being in control of how things are done?	.24*
Being compensated well financially	.44***
Being around interesting people?	.31**
Having job security?	.40***
Being able to work as part of a team?	.26*

Although both sets of predictors explained 30% of the variance in their respective outcomes, which was deemed statistically significant, only WWB yielded a significant independent contributor to outcome, undoubtedly due to the smaller number of degrees of freedom in the equation. More specifically, for WWB, the more individuals reported that they were being well compensated financially reported significantly higher levels of work satisfaction (partial $r = .48$).

Testing the social ecological model of SWB

As stated previously, the social ecological model has been forwarded as a theoretically based and empirically defensible approach to predicting SWB. Therefore, it

was decided that a hierarchical regression analysis would be conducted where each level (e.g., individual, project, environmental) of the model would be added to explore its impact on PWB and WWB for this sample of entrepreneurs. To reduce the number of variables in the model, only the significant independent predictors of outcome within the JNI (as evidenced by the partial correlations) were included in this final analysis (thereby limiting its contribution to the prediction of WWB). It should be noted that the order of entry of these variables was changed to explore whether this would have any impact on the final regression results⁴⁰. More specifically, since variables entered first into the equation maximizes its opportunities to explain variance in the final model, differing orders of entry would undoubtedly impact the magnitude of these findings.

In terms of predicting PWB in entrepreneurs, collectively, the individual⁴¹, project, and environmental variables accounted for 44% (Adjusted $R^2 = .34$) of the variance in outcome, with trait variables accounting for 17% of the variance (Block 1) and projects accounting for an additional 27% of the variance when entered in Block 2. Since none of the job needs linked significantly with PWB (in terms of independent predictors) as reported previously, these were excluded from this analysis.

Furthermore, there were significant predictors found within each block when controls were introduced for the other variables. More specifically, significant independent predictors of PWB included extraversion, emotional stability at the trait level while

⁴⁰ Although concerns may be raised about the number of predictors relative to the number of subjects in the equation, Green (1991) demonstrated that utilizing smaller sample sizes in regression is more a matter of statistical power. In addition, the subject-to-variable ratio in this equation follows the minimum 5:1 recommended by Tabachnick and Fidell (1989).

⁴¹ It should be noted that only trait measures were included in the hierarchical regression analyses to be consistent with previous research

negative affect, emotional support, and hindrance were the significant predictors at the project level (Table 13).

Table 13: Regression coefficients predicting PWB from social ecological model (N=73)

BLOCK 1: TRAIT

	r	partial	SBW
Agreeableness	.13		
Extraversion	.18	.25*	.19*
Conscientiousness	.20		
Openness	-.06		
Emotional stability	.35	.35**	.28*
R^{2CHA}	.17*		

BLOCK 2: PPA

Engagement	-.02		
Efficacy	.09		
Negative affect	-.381	-.28*	-.22*
Emotional support	.40	.39**	.32**
Hindrance	-.28	-.25*	-.20*
Pride	.06		
R^{2CHA}	.27**	---	

SBW = Standardized beta weights

It should be noted that regardless of the order of entry, each of the blocks of variables contributed significantly to the equation. More specifically, at a minimum, traits explained 13% of the variance (when entered last) and a maximum of 17% (when entered first). Similarly, the variance accounted for by project variables ranged between 27% and 32% depending on order of entry.

When the outcome shifted to predicting WWB, the job need “being compensated well financially” was added to the hierarchical regression analysis. The overall R^2 remained the same (.44), which was significant ($p < .001$; Adjusted $R^2 = .35$). Unlike the analyses for PWB, however, trait variables failed to provide a significant relationship with outcome

regardless of the order of entry into the model. Project and environmental variables, on the other hand, accounted for significant variance in the model, regardless of order of entry.

Once again, it should be noted that at a minimum, traits explained between 8% of the variance (when entered last) and a maximum of 13% (when entered first). Project variables, on the other hand, accounted for between 18% (when entered last) and 34% (when entered second), while the sole environmental variable contributed between 5% (when entered second or last) and 13% (when entered first), again depending on order of entry (each of which was significant). Table 14 on the following page demonstrates the results of the regression equation with projects entered first, environment added second and traits added last⁴².

⁴² Given that the relationship was not significant with outcome it was felt that the environmental variables should have first access to available variance in the model after PPA, which was deemed to be the super-ordinate construct based on previous research since it represents the carrier units of trait and environmental influences.

Table 14: Regression coefficients predicting WWB from social ecological model (n=63)

	r	partial	SBW
BLOCK 1: PPA			
Engagement	.06		
Efficacy	.49	.40**	.32**
Negative affect	-.08		
Emotional support	.32	.25 ^b	.20 ^b
Hindrance	-.10		
Pride	.24		
R ² CHA	.31**	---	
^b p=.07			
BLOCK 2: ENVIRONMENT			
Being compensated well	.36	.38**	.30**
R ² CHA	.05*	---	
BLOCK 3: TRAIT			
Agreeableness	.19		
Extraversion	-.11		
Conscientiousness	.24		
Openness	.03		
Emotional stability	.00		
R ² CHA	.08ns		

SBW = Standardized beta weights

Entrepreneurial-related variables

Given that this was an exploratory study with entrepreneurs, several additional characteristics were tested on the various outcomes of interest to determine whether they would yield potentially valuable areas for future research. More specifically, given that individuals were involved in diverse businesses that were in various stages of development, location, success, and market, it was felt that additional analyses exploring the impact of these variables on outcome (specifically PWB) would be a useful exercise.

The entrepreneurial variables, as well as the outcome variables, used in these analyses are provided in Table 15.

Table 15: Various entrepreneurial characteristics and the outcomes of interest

Entrepreneurial characteristic	Outcome of interest
Technology Business (1=yes; 0=no)	Non-work SWB
Type of business (1=service; 2=sales; 3=consulting)	Work SWB
Education level (1=less than college/univ.; 2=college; 3=university/graduate degree)	Desire for business-oriented Success
Married (1=yes; 0=no)	Desire for personal Success
Parent self-employed (1=yes; 0=no)	
More than one business (1=yes; 0=no)	
Business has staff (1=yes; 0=no)	
Self-employed before (1=yes; 0=no)	
Similar skill set	
Market scan (1=yes; 0=no)	
Business location (1=yes; 0=no)	
Business is incorporated (1=yes; 0=no)	

Differences in SWB

As these analyses were exploratory in nature, caution should be raised in terms of the extent of the generalizability of these findings. At the very least, they provide some indication of things to consider in future research. Interestingly, of the two differences that emerged within the data, they were found within the WWB outcome measure. More specifically, entrepreneurs in IT-related businesses ($\text{Eta}^2=.14$, $p<.01$) as well as those who

did not have home-based businesses ($\text{Eta}^2=.05$, $p<.05$) reported significantly lower WWB than their counterparts⁴³.

Conclusion

Overall, the results strongly replicate those found in previous PPA research despite the fact that the present sample involved entrepreneurs and the methodology was altered somewhat in its administration. More specifically, PPA accounted for 30-34% of the variance in outcome (past research showed 20-25%), efficacy and stress were two of the strongest predictors in the model, and project level data explained unique variance in PWB (and WWB).

⁴³ Readers interested in the direct comparisons between each of the items underlying this factor and the entrepreneurial characteristic are referred to Appendix R. Note: only those items that yielded significant relationships with the factor are reported to reduce possibility of chance findings.

CHAPTER FOUR

Entrepreneurs and non-entrepreneurs⁴⁴: Do they differ on measures of SWB?

As stated previously, despite the considerable amount of research attention focusing on entrepreneurs, very little has explored its impact on their PWB. Although the previous chapter demonstrated that entrepreneurs have the same predictors of PWB than non-entrepreneurs (as accounted for by past PPA research), it was an open empirical question as to whether entrepreneurs would experience higher levels of PWB than non-entrepreneurs. Recalling that under the social ecological model of SWB, it has been argued that the sustainable pursuit of core projects is the key to achieving enhanced SWB (Little & Chambers, 2001, 2004), a reasonable hypothesis based on this perspective would be that entrepreneurs would exhibit higher levels of SWB than non-entrepreneurs. As a preliminary step in this regard, archival data that included various measures of SWB were used to explore this question.

Methodology

Archival databases

Overall, four different databases maintained by the Social Ecology Laboratory at Carleton University contributed to these analyses.⁴⁵ Two of these databases were based on honour's theses while one was for a Ph.D. and the other was a Masters. Collectively, these studies involved over 500 participants. Table 16 summarizes the characteristics for each contributing study.

⁴⁴ It should be noted that for greater ease of interpretation of the results the comparison sample will be labeled "non-entrepreneurs"; however, a sizable proportion of this group are indeed students, with a smaller proportion of community members. Unfortunately, given the archival nature of the sample, information was not available on the work habits/commitments of the non-entrepreneurial sample. This limitation should be kept in mind when interpreting the results.

Table 16: Demographic characteristics of the archival databases (n)

Demographic characteristic	Archival 1 (n=210)	Archival 2 (n=146)	Archival 3 (n=62)	Archival 4 (n=59)
Mean age (SD)	23.36 (6.88)	22.80 (6.27)	21.21 (3.35)	N/A
Gender				N/A
Male	52 (24.5%)	66 (45.2%)	26 (41.9%)	
Female	160 (75.5%)	80 (54.8%)	36 (58.1%)	
SWB Measure				
Satisfaction with life as a whole	X	X	X	X
Satisfaction with work life		X		
Satisfaction with social life		X	X	
Satisfaction with emotional state		X	X	
Satisfaction with physical health		X	X	
PPSRs	X		X	
CESD - Total score	X	X	X	
Diener-Emmons Affect Scale	X			

Statistical analyses

To conduct these analyses, the entrepreneurial sample from the present study was compared with the total combined non-entrepreneurial sample to determine whether there were any significant between-group differences⁴⁵.

⁴⁵ (Chambers, 2000; McGregor, 1994; Quesnel, 1998; Young, 1989).

⁴⁶ Given that there were multiple comparisons involved in this section of the analysis, the Bonferroni correction was used to reduce the probability of a Type I error.

Results

Satisfaction with life as a whole

Given that all of the studies included the global life satisfaction measure, this was the first set of analyses conducted. The results revealed that the entrepreneurial sample ($n=100$) reported significantly higher levels of life satisfaction ($M=7.93$; $SD=1.62$) than non-entrepreneurs ($M=6.82$; $SD=1.88$), ($F(1, 573) = 30.04$, $p<.001$).

CES-D

Once again, the results revealed that the entrepreneurial sample ($n=92$) reported significantly lower levels of depressive affect ($M=8.66$; $SD=7.01$) than non-entrepreneurs ($M=18.21$; $SD=10.08$), ($F(1, 509) = 75.35$, $p<.001$).

Domain satisfaction scores

Data were available on three of the subscales of the domain-specific satisfaction scales (satisfaction with social life, emotional state, and physical health). Interestingly, when comparing entrepreneurs to non-entrepreneurs as a whole, only one sub-scale yielded a significant result. More specifically, entrepreneurs ($n=100$) reported significantly higher satisfaction with their emotional state ($M=7.89$; $SD=1.89$) than non-entrepreneurs ($M=6.71$; $SD=2.40$), ($F(1, 305) = 18.28$, $p<.001$).

PPSRS

Five subscales are subsumed under the Personal Projects Systems Rating Scale (PPSRS). Once again, the results revealed that the entrepreneurial sample reported

significantly better outcomes on each of these dimensions than the non-entrepreneurial sample (see Table 17).

Table 17: Mean scores on the PPSRS dimensions for the non-entrepreneur sample

Thesis	Dowden	Non-entrepreneur
Meaning $F(1,369)=7.98, p<.01$	8.60 (1.16)	8.12 (1.54)
Organized $F(1,368)=7.04, p<.01$	6.47 (2.45)	5.77 (2.16)
Supported $F(1,369)=23.42, p<.001$	7.71 (2.07)	6.40 (2.40)
Unstressful $F(1,369)=30.15, p<.001$	5.69 (2.37)	4.17 (2.36)
Progressing well $F(1,369)=33.68, p<.001$	7.87 (1.47)	6.70 (1.81)

Diener-Emmons Affect Scale

Only one study (Archival 1) utilized this measure. Therefore, comparisons were made on each of the dimensions to facilitate interpretation of the results. Interestingly, for each case, the entrepreneurs reported significantly higher evidence of positive affect while reporting significantly less negative affect than their non-entrepreneurial counterparts (see Table 21).

Table 18: Mean scores on the Diener-Emmons Affect Scale for the archival samples

Thesis	Dowden	Archival 1
Happy $F(1,302)=263.54, p<.0011$	7.69 (1.54)	4.86 (1.34)
Frustrated $F(1,302)=5.50, p<.03$	3.87 (2.82)	4.47 (1.58)
Worried $F(1,303)=8.89, p<.01$	3.76 (2.56)	4.49 (1.69)
Joyful $F(1,303)=133.81, p<.001$	6.74 (2.16)	4.37 (1.37)
Pleased $F(1,303)=223.95, p<.001$	7.32 (1.67)	4.49 (1.46)
Angry $F(1,303)=84.62, p<.001$	1.12 (1.70)	3.34 (1.59)
Unhappy $F(1,303)=84.62, p<.001$	1.62 (2.00)	3.60 (1.60)
Depressed $F(1,303)=83.43, p<.001$	1.20 (1.95)	3.32 (1.83)
Full of fun $F(1,303)=78.22, p<.001$	6.52 (2.28)	4.60 (1.46)

Satisfaction with work life

Given the relevance of the satisfaction with work life scale to the present study, it was unfortunate that only one study (Archival 2) utilized this measure. Interestingly, entrepreneurs ($n=100$) reported significantly higher satisfaction levels with their work life ($M=7.73$; $SD=1.64$) than non-entrepreneurs ($M=5.76$; $SD=2.28$), ($F(1, 244) = 55.07$, $p < .001$).

Matching analysis on satisfaction with life overall

One of the potential criticisms that could be lodged against this set of analyses was that the groups were quite different based on their demographic profiles. More specifically, the non-entrepreneurial sample was composed of younger respondents who were predominantly university students. Thus, to control for this potential confound, the entrepreneurial sample was matched with members of the non-entrepreneurial sample on three variables. The most critical matching factor was age, followed by gender and work hours or marital status, depending on what information was available. The characteristics of this matched sample (as well as their study of origin) are presented in Appendix T. Fifty-nine cases ($N=108$) were able to be successfully matched⁴⁷.

However, as mentioned previously, the only subjective well-being item that was present in each of the databases was global life satisfaction. Therefore, this was used to conduct this micro-level analysis given the large number of missing cases that would result if other measures of SWB (e.g., Diener-Emmons Affect scale, domain satisfaction scales, etc.) were utilized. With this improved matching procedure, the entrepreneurial sample

⁴⁷ Given the older average age of the entrepreneurial sample, the majority of the matched sample involved the younger entrepreneurs

still reported significantly higher levels of global life satisfaction ($M=8.03$, $SD=1.39$) than their non-entrepreneurial counterparts ($M=7.17$, $SD=1.64$) ($F(1,114)=9.30$, $p<.01$). More interestingly, it should be noted that the effect size for this analysis actually increased within this more rigorous analytic framework (e.g., it increased from .22 to .28). Thus, it appears that the differences in SWB are more a function of meaningful sample characteristics (e.g., entrepreneurs versus non-entrepreneurs) as opposed to potentially confounding demographic variables (e.g., age, gender, etc.).

CHAPTER FIVE

Entrepreneurial scholarship – Contributions of the present study and implications for the future

The present study marked one of the first systematic attempts to explore the determinants of both personal (PWB) and work well-being (WWB) for entrepreneurs and was the first to utilize the PPA methodology introduced by Little (1983). Individual (e.g., trait), project, and environmental variables were used to answer this question. Overall, the results revealed that project dimensions were integral to the prediction of both personal well-being and work well-being, while one environmental level variable (being compensated well financially) was linked with work well-being. Trait variables, on the other hand, were only important for the prediction of personal well-being, and then only modestly.

To facilitate the summarization of these results, the discussion will be broken into three main sections. First, given that the thesis was primarily concerned with trait, project, and environmental variables, a discussion of how the present findings relate to the corresponding literatures will be addressed. Second, since this study figuratively “broke new ground,” a series of illustrations will demonstrate why PPA would be an excellent methodological framework within which to explore several questions that have been deemed to be critical to future entrepreneurial scholarship. To conclude, some of the limitations of the present study will be reviewed and directions for future research identified.

What role does individual characteristics play in determining entrepreneurial well-being?

The present study utilized three different sets of individual characteristics to explore their role in the prediction of their well-being and these included traits (as measured by the Big Five), entrepreneurial orientation, and entrepreneurial perceptions of success. In terms of measuring traits, an assessment tool (TIPI; Gosling et al., 2003), was used that is designed to tap into the Five Factor model (OCEAN; Costa & McCrae, 1992) that argues that personality can be broken into five distinct, yet moderately correlated traits: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. It was essential to include a Five Factor measure since it has been called the “grand unified theory” for personality (Digman, 1990). However, despite this claim, it should be noted that only one other study (Wooten et al., 1999) utilized the Five-Factor model with entrepreneurs.

Overall, the present study found that these five factors were moderately important for the prediction of personal well-being (as they explained 18% of the variance in outcome). More importantly, these results replicate those found in a recent meta-analytic review of the personality literature linking traits to subjective well-being conducted by DeNeve and Cooper (1998). More specifically, these authors reported that when the results were organized based on these five factors, neuroticism and openness to experience were the strongest and weakest predictors of subjective well-being respectively, a trend that was replicated in the present study.

The replication of these findings with the present sample demonstrates the stability of these findings across specific populations. However, this may not be seen to be

particularly surprising considering that the Big Five traits have been shown to generalize across cultures (McCrae & Costa, 1997; Pulver, Allik, Pulkkinen, & Hamalainen, 1995) and are quite stable over time (Costa & McCrae, 1992; Rothbart, Ahadi, & Evans, 2000). Thus, the present findings complement quite nicely the strong body of empirical research currently available in the trait literature.

When the outcome shifted to work well-being, the results changed in that trait variables as measured by the Big Five were no longer predictive of outcome. Although these results add credence to the claims of several researchers who seriously question the necessity of the preponderance of entrepreneurial research focusing on identifying trait differences between entrepreneurs and non-entrepreneurs, it should be acknowledged in the present study that work well-being was operationalized exclusively based on satisfaction with work (e.g., a cognitive perspective), while excluding other well-recognized contributors to well-being (namely affective and meaning components). Thus, this study does not comment on the affective and meaning components of work well-being.

Nonetheless, the fact traits do not link with a key outcome variable of the entrepreneurship literature (e.g., job/work satisfaction) sheds light on why it may not be a priority issues for future scientific inquiry. At the very least, the present study suggests that if researchers choose to incorporate trait measures into their studies (those specifically exploring organizational/work-related outcomes as opposed to well-being), they should be augmented by the inclusion of other variables (e.g., project and environmental).

The inability of the Big Five to link with outcome has also been reported in the only other study utilizing this assessment method (Wooten et al., 1999). More specifically,

in a study designed to explore whether the Five Factor Model (as measured by factor analysis of the 16PF, Cattell, 1989) would be useful in predicting who would start their own venture from a sample of outplaced executives, the addition of these variables to the predictive equation was quite minimal (e.g., increased the predictive accuracy by 6%). More importantly, only one of the factors (openness to experience) was related to entrepreneurship, and this was in the opposite direction (e.g., those who were less open to new experiences were more likely to start their own business). Thus, both the present and Wooten et al. (1999) study have found negligible support for the importance of traits in the prediction of business-related outcomes (such as satisfaction with business or start-up).

Concomitantly, these studies give additional support to the comments of one of the reviewers of the Wooten et al. (1999) article that perhaps the 'true' defining traits of entrepreneurs have, as yet, to be studied. For example, in the Wooten et al. (1999) study, when the 16PF was entered in its entirety (without being subjected to factor analysis), two of the scales (tough-tender minded and trusting-suspecting) yielded significant independent relationships with outcome (e.g., starting a business). Specifically, outplaced executives who started their own business were much more tough-minded and suspecting than those who found other employment.

More recently, project management and self-regulatory traits have been gaining more attention in the mainstream entrepreneurship literature. In this regard, key individual difference variables that are presently being explored include self-efficacy, opportunity recognition, perseverance and social skills (Markman & Baron, 2003). Thus, the possibility that these (or other traits) could link with business outcomes could be matters

of future study. As additional research is conducted in these areas, perhaps individual difference variables may become more prominent in future models of entrepreneurship.

Another individual characteristic explored in this study was the entrepreneurial orientation (EO) construct developed by Lumpkin and Dess (1996) in an attempt to provide some theoretical structure to this arena. They viewed entrepreneurs as being generally more autonomous, innovative, risk-taking, competitive aggressive, and proactive than non-entrepreneurial individuals. As noted by Wooten et al. (1999) the five aspects subsumed under the EO construct could be readily seen as personality characteristics of individuals by nature of their definition.

Attempts to link these EO aspects to outcome were not successful, as no significant relationships emerged for either personal well-being or work well-being. Furthermore, and arguably more discouraging was that these variables accounted for less variance in work well-being than personal well-being. One possible explanation as to why the EO construct was not particularly useful for the prediction of either measure of well-being was that it was initially created to explain the entrepreneurial actions of individuals. In other words, entrepreneurs would be more likely to possess these characteristics than non-entrepreneurs. Thus, their ability to link to well-being is not their primary intention.

Despite this caveat, it should be noted that the study by Wooten et al. (1999) also utilized this measure to predict business start-up. In their view, outplaced executives who possessed these characteristics to a greater degree would be more likely to start their own company. However, this hypothesis was not supported in that only competitive aggressiveness yielded a significant relationship with business start-up with and without controlling for other variables in the analyses.

The final individual measure explored in this study was how entrepreneurs define success for their business venture and the results contribute to the ongoing debate regarding the primary motivators for pursuing an entrepreneurial venture. More specifically, although researchers have previously used firm growth (Carland et al., 1984; Gundry & Welsch, 2003) and the drive for profits or financial success as a precondition of entrepreneurship, there is considerable debate as to whether this perspective is appropriate (Metcalf, 2004; Sternberg, 2004). For example, Brush (1992) found that female entrepreneurs were more likely to start their businesses due to job frustration while Dodd (2002) in her study of the metaphorical expressions used to describe entrepreneurship by successful individuals concluded that "here, the concept of success seems stripped of its crude financial meaning" (p. 526).

Our results support this line of reasoning in that, growth and annual profits were two of the lowest rated aspects of how this sample of entrepreneurs defined their success. Interestingly, a recently published Canadian study replicates essentially replicates this findings, in that wealth ranked last out of eleven indicators in importance for entrepreneurs (Amit et al., 2002). Although wealth is an important factor in the equation in terms of sustainability of the venture (Metcalf, 2004), clearly there are other (more important) variables as well. As provocatively summarized by Astrachan (2003) "For example, what is it worth to an entrepreneur to be in control? What is it worth to the family to have employment opportunities? What does it cost to have an added source of family conflict?" (p. 569).

What role do project variables play in determining entrepreneurial well-being?

From the outset, it should be noted this was one of the first PPA studies to

substantially alter the actual administration of this methodology in terms of its delivery to participants (see Phillips, 1990 and Pychyl, 1995 for other examples). More specifically, although previous studies instructed participants to generate their own list of projects and rate these on a series of dimensions to ensure their personal salience to the individual (Little, 1987, 1993, 1999b, 2000; Little & Chambers, 2001, 2004), in the present case, participants were given categories generated by the researcher to rate on various dimensions. Some of these dimensions had been utilized in previous PPA research (e.g., control, outcome, stress, enjoyment, etc.) while others were unique to this thesis (e.g., core to self). Thus, the impacts of this alteration on the ultimate outcomes of this study were very much unknown at the very beginning.

Clearly, the pilot test phase of this project demonstrated that it is possible to achieve agreement on project categories that have adequate face validity to participants. More specifically, entrepreneurs in this study were able to fit their individually generated entrepreneurial projects into the six project categories provided by the present researcher (e.g., learning, administrative, networking/marketing, core to business, research and development and managing employees). The final rate of agreement (ranging between 80-84%) should be seen as demonstrating adequate face validity, especially when one considers that another widely utilized PAC unit that utilizes a categorical approach has yielded 'correct' classification ratings of 81% (see Cantor et al., 1991).

The utilization of pre-determined categories may be seen as a violation of the constructivist assumption of PPA that states that information elicited from individuals must be personally salient and evocative in nature since, in this study, participants were "forced" to use pre-determined categories rather than generating their own projects.

However, it can be strongly argued that using pre-determined categories was a logical and reasonable extension of this principle. Evidence in support of this contention can be found in the high agreement ratings between the individually generated projects and the pre-determined ones. Clearly the categories were personally salient and relevant to the individual, as they quite readily summarized their various business activities and pursuits. Finally, the fact that these projects were able to explain substantial variance in outcome for both PWB and WWB provides additional support for their utility to this study.

There is additional support for this type of modification, as previous PPA research has categorized individually generated projects into six project areas (e.g., interpersonal, health-body, recreational, intrapersonal, academic, etc.) (Little, 1999b; Little, Lecci, & Watkinson, 1992). Furthermore, past research has also restricted respondents' generation of projects when focusing on specific questions of interest. For example, within the organizational psychology realm, Phillips et al. (1997) requested work related projects in their study of burnout in organizations while others (Goodine, 1986; Barris, 1987) streamlined project generation to health-related issues.

One final piece of evidence supporting this methodological change is that previous PPA research has determined that, on average, PPA dimensions account for roughly 20-25% of the variance in various indices of SWB (Little, 1988). It should be noted that the present study actually exceeds this level, with PPA dimensions accounting for 30% and 34% of the variance in work well-being and personal well-being respectively. This enhancement in predictive utility further reinforces the benefits of incorporating project categories into the methodology, with the recognized caveat that these categories should be vetted by a pilot sample of respondents. It should be noted that one potential reason for

this improvement in predictive utility may be due to the fact that “noise” that occurs from the generation of idiosyncratic projects in the traditional administration is eliminated when respondents are required to rate a homogeneous set of clearly defined categories.

It should also be noted that this is one of the few studies using the PPA methodology that involves a community sample (see Palys & Little, 1983 and Hotson, 2001 for other examples), a limitation that has been previously identified in a review of this literature. More specifically, the recent meta-analysis of the PPA literature linking various project dimensions to depressive affect (Dowden, 2000) found that 90% of study participants were involved to receive course credit and that 100% were categorized as young adult.

Another area worthy of commentary is in the factor analytic results for the PPA dimensions. More specifically, PPA dimensions have been historically divided into five factors, with the most recent version employing three cognitive (meaning, structure/efficacy, and community) and two emotion-based factors (e.g., positive and negative affect) (Little & Chambers, 2001). Although these factors have commonly been referred to as “theoretical,” in that previous PPA research did not always generate these factors⁴⁸, it should be noted that the present study has closely approximated this framework. More specifically, the Personal Engagement factor readily corresponds to Positive Affect, with the remaining factor labels (e.g., Efficacy, Negative Affect, and Emotional Support which operationalize the Community factor) matching those found in the original theoretical factor structure.

⁴⁸ This clearly makes sense, given the modularity of the PPA methodology whereby various combinations of dimensions would invariably make it difficult to continually result in five consistent factors

Given that previous PPA studies used the traditional administrative framework, the fact that the present research using the pre-determined categories essentially derived similar factor analytic results demonstrates the relative robustness of these project factors. One possible direction for future research would be to utilize a consistent set of project dimensions (including additional dimensions of interest) and explore the consistency of these across various populations.

Recognizing the methodological changes to PPA mentioned earlier, it is intriguing to note that the present results in which various project dimensions/factors were linked to subjective well-being (or PWB in this case) quite closely mirror those found in both primary (Little, 1988, 1999a, 1999b, 2000; Little & Chambers, 2001) and meta-analytic PPA research (Dowden, 2000; Wilson, 1990). For example, in the present meta-analysis, emotional support and negative affect (composed of the dimensions stress, frustration, and anxiety) were the two significant independent contributors to PWB. This latter finding essentially replicates previous meta-analytic summaries of the PPA literature where the dimensions underlying this factor have been found to be some of the strongest predictors of both positive (Wilson, 1990) and negative affect (Dowden, 2000).

In terms of emotional support, the strong findings reported here fit quite well with the findings reported in the extant literature documenting the relationship of community and social support to well-being (Argyle, 1987; Cassell, 1976; Cobb, 1976; Sarason, Sarason, & Pierce, 1990; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). Although past PPA research exploring Project Community and SWB has not demonstrated this kind of strong empirical relationship (Dowden, 2000; Little, 1988; Wilson, 1990), it should be noted that Project Community was previously operationalized by other means (e.g., others' view of

importance and visibility), which could be argued does not adequately represent the construct as defined in the extant literature. Consequently, dimensions that measured social support more directly were incorporated into the methodology, with one of those choices, emotional support, included in the present study. Although recent meta-analytic research has stated that whether or not these changes in the operationalization of Community would yield stronger linkages with outcome was a question open to empirical investigation (Dowden, 2000), if the present study is any indication, these enhancements to the definition of social support will yield strong results in future PPA research.

When the analyses shifted to the prediction of work well-being, both emotional support and efficacy yielded significant independent relationships with outcome. Before discussing these results, although it may seem surprising that Negative Affect was significantly related to lower SWB in general, this relationship did not emerge within work well-being. As mentioned previously, the work well-being construct in this study was comprised of primarily cognitive (satisfaction) measures and thus affective and meaning components were noticeably absent and thus may explain this non-significant relationship. It is suggested that future studies incorporate affective and meaning items when exploring the work well-being of entrepreneurs so a more detailed answer may be provided to this important research question.

In terms of the strong relationship between project efficacy and WWB, this may be explained by consulting research in the broader Industrial-Organizational literature. More specifically, recent meta-analytic research (Judge et al., 2001) documented that the relationship between job performance and job satisfaction was .30 and that the relationship should be viewed as bi-directional. Clearly, the efficacious pursuit of entrepreneurial

projects can be reasonably used as a proxy for performance. Therefore, the presence of this relationship further reinforces the findings of Judge et al. (2001) for entrepreneurs.

Emotional support was the only project dimension that provided significant linkages with both outcome measures (personal well-being and work well-being). As noted previously, considerable theoretical and empirical research has documented the integral role of emotional support in enhancing personal well-being. However, research from the entrepreneurial field may also explain why this dimension also relates to work well-being. More specifically, a relatively recent study that explored the distinguished characteristics of successful from unsuccessful entrepreneurs (Plaschka, 1990) demonstrated that the former were significantly more likely to report assistance from their spouse both before and after the business was set up. Given that support from the spouse was able to successfully differentiate successful from unsuccessful entrepreneurs, its ability to distinguish satisfied from dissatisfied entrepreneurs in the present study further attests to its importance.

The findings for emotional support arguably represent the strongest contribution of the present dissertation to the extant literature. As mentioned previously, this field has been preoccupied with finding differences between entrepreneurs and non-entrepreneurs rather than on what factors yield more successful significant entrepreneurial ventures. If the present study is any indication, the incorporation of psychologically-based variables (e.g., emotional support) and methodologies (e.g., PPA) will provide meaningful contributions to future research. It may be argued that although traits and cognitive processes (e.g., opportunity recognition) may facilitate entrepreneurship, emotional support may be a necessary feature in the development and sustainability of this core

project.

Finally, it should be noted that this study revealed that PPA factors accounted for additional variance in the prediction of both work well-being and personal well-being over and above that which was addressed by trait measures, a finding that has been reported in previous PPA research (Little, 1988). This is even more notable considering past entrepreneurship research has been very focused on finding trait differences between entrepreneurs and non-entrepreneurs and essentially ignored process/project and contextual features in the equation. The present research highlights a major shortcoming of relying on an exclusively trait approach and strongly suggests that project-level variables must also be considered.

The role of contextual/environmental features in determining entrepreneurial well-being?

Perhaps the most impressive finding in this section of the data analyses was that entrepreneurs felt that their current entrepreneurial 'job' was perfectly matched to their ideal job on the vast majority of job needs. Equally as important was that the various job needs were much more prevalent in their current job than in their previous position before pursuing entrepreneurship. This finding may provide some insight into why entrepreneurs scored significantly higher on the work satisfaction scale (see Chapter 4) than non-entrepreneurs.

Further analyses on the present job needs also indicated that many possessed significant utility for predicting both measures of SWB. More specifically, 11 job needs yielded significant relationships with personal well-being while six emerged within work well-being. Although the multiple regression analysis failed to yield any independent

predictors for personal well-being and only one job need (being compensated well financially) predicted work well-being, one of the limitations of this analysis was that it only took into account the extent to which each need was present in the current job, irrespective of its importance. Since several scholars in the organizational psychology literature have persuasively argued that job satisfaction is a composite of the degree to which important elements are met in the present job (see Locke & Latham, 1990), this type of strategy would not be expected to yield as solid findings.

An illustration may conceptualize this argument more clearly. For example, just because a respondent indicated that an item was highly present (e.g., rated a 10), if this item is not very important to the respondent (as reflected in their Ideal Job), it is inappropriate to assume that a linear relationship exists between each of the needs and outcome. Although it was hoped to use the difference scores between the Ideal and Present Jobs as predictors, the considerable positive skew (as mentioned earlier, almost 70% of the ratings did not differ at all) endemic in this type of analysis made further exploration inappropriate. Since this problem could not be fixed through transformation, the analytic framework adopted had to use this admittedly weaker strategy.

Other points of interest

Analyses also revealed that individuals involved in the IT-industry and who had their businesses located outside their home reported significantly lower work well-being. Furthermore, the entrepreneurs in the present sample were also asked to indicate their indicators of success and the results revealed that these could be grouped within two factors (e.g., Business and Personal success). Interestingly, several entrepreneurial characteristics were found to differentiate respondents on these categories. More

specifically, entrepreneurs in consulting-related businesses and those who were previously self-employed were much more likely to endorse personal factors as being more important to how they defined success whereas entrepreneurs whose parents were also entrepreneurs were more likely to endorse aspects related to business success (e.g., profit, growth) as key indicators of how they determined their success. These findings support the claims of previous entrepreneurship scholars who argue that research should track these characteristics within their methodological framework to test their impact on study outcomes. In fact, as stated by Gartner (1988), differences within entrepreneurs may be just as great as those between entrepreneurs and non-entrepreneurs.

The present research also documented that entrepreneurs (e.g., those who start their own businesses) report significantly higher levels of subjective well-being than their non-entrepreneur counterparts. This finding fits nicely within the results reported in the broader self-employment literature (Blanchflower, 2004; Blanchflower & Oswald, 1998) that has been shown to be robust across various countries and cultures⁴⁹. This finding seems to support the spillover hypothesis (Wilensky, 1960), which postulates that there is a positive relationship between job satisfaction and subjective well-being as one domain 'spills over' into the other. This is not especially surprising since previous research has provided strong empirical support for this hypothesis (Bamundo & Kopelman, 1980; Judge & Hulin, 1993; Judge & Watanabe, 1994; Keon & McDonald, 1982; Rain, Lane & Steiner, 1991; Tait, Padgett & Baldwin, 1989).

It could be argued that the reason why entrepreneurs report significantly higher

⁴⁹ It should be noted that the studies by Blanchflower examined self-employed individuals, of which an admittedly important component was entrepreneurs.

personal well-being and work well-being than non-entrepreneurs is that they are pursuing core projects, which is drawn directly from the social ecological model of well-being (Little & Chambers, 2001). In fact, as noted previously, entrepreneurs who were more efficaciously pursuing their entrepreneurial projects in the present study were associated with significantly higher levels of work well-being than those who were not. Thus, this aspect of the social ecological model of subjective well-being received preliminary empirical support from this investigation.

PPA: A promising methodology for the next phase of entrepreneurship research!

The present investigation provided very strong empirical and theoretical evidence for the utilization of PPA for the exploration of predicting SWB in entrepreneurs from both a work and non-work perspective. Clearly, based on these results, one could explore the ability of PPA to predict more objective indices of venture performance such as survival, growth, and return on investment. Although these are matters of extension based on the current study, an exploration of the extant literature provides several solid examples where PPA could shed considerable light on topics that are of paramount importance to entrepreneurship scholars.

From the outset, it should be noted that there is great potential for the marriage of the PPA methodology to the entrepreneurship literature on the basis of the underlying terminologies used by scholars in these respective areas. More specifically, one of the fundamental tenets of the PPA approach is that projects are key carrier units of personality because they represent intentional and volitional action of the individual (Little, 1987; 1999a, 1999b, Little & Chambers, 2001). In the field of entrepreneurship, one of the key areas of concern rests on the fact that an entrepreneurial venture forms as a result of

volitional action on the part of an individual (Baron, 2004a, b; Bird, 1988; Kisfalvi, 2002). Thus, the conceptual partnership between the utilization of the PPA methodology and entrepreneurship is immediately intriguing.

Related to the above, it should be noted that other constructs that are gaining increasing interest and acceptance by scholars in the entrepreneurship arena have considerable parallels and applicability/compatibility with PPA. For example, Chen et al. (1998) summarize that the reason self-efficacy has been viewed in such a promising light is “because it refers to cognitive evaluations of personal capabilities in reference to the specific tasks of entrepreneurship, (it) achieves the entrepreneurial distinctiveness that is both individual and contextual” (p. 312). Given the previous classification of PPA as representing the ‘carrier units’ of Person-Environment interaction, the applicability of this statement is obvious. As an extended point, the above quote further validates the inclusion of competence as a PPA dimension for entrepreneurs, as it directly taps into the self-efficacy construct.

Given that personal projects fall under the rubric of personal action constructs (PAC units), this also has linkages with the terminology and focus of the entrepreneurship field. More specifically, as stated by Korunka et al. (2003), “instead of searching for the ‘mono-causal’ effects of personality on the success of new small business, it would be more rewarding to gain a deeper understanding of the common *action patterns* underlying the different nascent entrepreneurs configurations” (p. 38, emphasis added). Again, the potential for the PPA methodology to provide a theoretically based and empirically defensible answer to this and similar questions is readily apparent.

It should also be noted that PPA has meaningful applied advantages from an

organizational psychology perspective that are not possible within the trait approach (Little, 1988; Little & Chambers, 2001). More specifically, PPA identifies daily life circumstances of an entrepreneur (e.g., aspects of their entrepreneurial projects) that are directly influencing their well-being (and, as seen in this thesis, these projects can be strong predictors of SWB). Thus, depending upon what dimensions of PPA relate closely to these criterion measures, it would be possible to develop counseling or training modules to enhance the effectiveness of these areas of functioning. For example, time management exercises could be provided for problems relating to time adequacy, relaxation exercises could be taught to high stress individuals (Little, 1988) or procrastination counseling intervention may be made accessible to those who need it (Pychyl & Binder, 2004).

The application of PPA to the entrepreneurship literature is not only limited to its terminology. More generally, the methodology has extreme potential to significantly contribute to several two of the three main perspectives (as summarized by Aldrich & Cliff, 2003) from which entrepreneurship has been studied. The first approach has been labeled the cognitive perspective whereby scholars attempt to isolate cognitive differences between entrepreneurs and non-entrepreneurs and how various thought processes and patterns may lead to successful venture formation and performance (Baron, 1998, 2000, 2004a, b; Baron et al., 2001; Keh et al., 2002; Mitchell et al., 2002; Shaver & Scott, 1991; Ward, 2004). The embeddedness perspective, on the other hand, focuses on the fact that entrepreneurs do not embark on their ventures in isolation as they are directly and indirectly influenced by other individuals in their social environment (Aldrich & Zimmerman, 1986; Larson & Starr, 1993).

In terms of the implications of the present study for the cognitive perspective on

entrepreneurship, PPA should be seen as highly compatible because, as summarized by Little (2000), “personal projects are clearly cognitive phenomena in the sense that they represent plans or goals that can be examined through the lens of classical cognitive theory” (p. 86). Furthermore, the fact that these projects are personally salient to the respondent ensures that they will be meaningful methods of assessment of the entrepreneurial process. Finally, one of the core advantages of the cognitive perspective that has been outlined is that it provides “a theoretically rigorous and empirically testable approach that does systematically explain the role of the individual in the entrepreneurial process” (Mitchell et al., 2002, p. 95), a statement that also quite readily applies to PPA and its corresponding social ecological model of well-being. It could be argued that PPA marks an important enhancement in this regard in that environmental/contextual features are also more readily measured and included in this perspective.

PPA also has considerable applicability to the social embeddedness perspective that is concerned with measuring the environmental (and more specifically, the interpersonal) influences on the formation (and continuation) of entrepreneurial ventures. In this case, PPA can ask respondents “to describe where and with whom each project is taking place, and these open columns allow access to the social ecological context within which the individual’s projects are embedded” (Little, 1987b, p. 230). Clearly, given the modular nature of PPA, this type of methodological characteristic would be invaluable as the “who” and “where” of project involvement could be identified (as well as their subsequent relationship to the business such as friend, family member or venture capitalist).

Finally, the PPA methodology has great potential to address some of the specific

questions that entrepreneurial scholars have recently raised as important directions for future research. For example, the identification and exploitation of opportunities is of paramount importance to the formation of an entrepreneurial venture (Choi & Shepherd, 2004; Shane & Venkataraman, 2000; Ucbasaran, Westhead, & Wright, 2001; Ucbasaran, Westhead, Wright, & Binks, 2003). However, as noted by several scholars, despite its importance to the process of entrepreneurship, very little research and theoretical development have occurred. More specifically, Venkataraman (1997) has lamented that this is one of the most neglected questions in the field while Choi and Shepherd (2004) concluded that although “opportunity exploitation is a necessary step in creating a successful business in the entrepreneurial process, yet there has been little conceptual and empirical development of this issue in the literature” (p. 385).

In this regard, Venkataraman (1997) asserted that there may be three major discriminating factors that lead certain individuals to identify entrepreneurial opportunities: knowledge (and information) differences, cognitive differences, and behavioral differences. Low and MacMillan (1988) suggested that networks were an integral component to this equation and subsequent research has supported this position (Hills, Lumpkin, & Singh, 1997; Sapienza, Manigart, & Vermeir, 1996). Regardless of the perspective taken, PPA clearly can provide additional insight into this process.

In terms of knowledge and information searching, using the standard PPA administration framework discussed earlier, entrepreneurs can be asked to list the projects associated with the identification of their current business opportunity. After the initial project dump, participants could select the ten “core” projects/activities that were associated with the formation of their business. The discernment of these projects would

be invaluable, as they would provide insight into the types of information obtained, potential cognitive processes underlying these projects, as well as different behaviors pursued to recognize this opportunity. Thus, entrepreneurial projects undertaken in the incubatory stages of their business may shed light on successful founding from a qualitative perspective.

To take this point further, researchers have lamented that we are unsure about the various stages of entrepreneurship and how the process changes over time (Gartner, 1988; Jack & Anderson, 2002; Low & MacMillan, 1988; Shane & Venkataraman, 2000). Again, PPA would be quite useful in this regard as participants could be asked to list their entrepreneurial projects during each stage of their business development.

Limitations of the study

One of the potential limitations of the present study was sample size, particularly when testing the social ecological model of well-being, where the number of participants dropped from 102 to 63 due to missing data. However, it should be noted that this number falls in line with several recent publications found in the *Journal of Business Venturing* (e.g., Choi & Shepherd, 2004; Keh et al., 2002), which has been recognized by entrepreneurship scholars as one of the top-tier journals in the field (Fried, 2003). Furthermore, as noted by Green (1991), small sample size is more of an issue with statistical power. It should also be mentioned that since this is the first systematic study of this research question, clearly replication of these results with future samples of entrepreneurs will be necessary to assess the generalizability of these findings. This caveat would have been present regardless of the size of the sample for the present study.

Another possible concern may be raised about the somewhat low response rate

garnered by potential participants. However, the result reported earlier is an underestimate of the 'true' response rate as many businesses that were advertised in the Business section of the Ottawa Citizen clearly used 'personal' email accounts. Therefore, even if the business was 'closed', the email would still have gone through (e.g., recall that the criterion used to classify a failed business was discontinued email link or feedback from the owner). Since this study was looking for current entrepreneurs, the motivation for a respondent to send an email informing the project coordinator of the closure of their business would be quite low. Furthermore, many of the respondents may have only embarked on their entrepreneurial venture on a part-time basis (to explore it as a future career option), thereby eliminating them from the inclusion criteria (since they had another full-time job). Finally, and arguably most important, this response rate falls in line with several studies that have been published in top-tier journals in the field (e.g., Bucar, Glas, & Hisrich, 2003; Fischer, Reuber, & Dyke, 1993; Keh et al., 2002; Korunka et al., 2003), thus should not be seen as a problem that is unique to this study.

Another potential shortcoming of the present investigation was the lack of 'hard' financial performance data, which would provide an objective outcome measure⁵⁰.

However, having an aggregate measure of firm financial performance is not necessarily a better indication of 'success' as certain businesses (e.g., manufacturing) clearly may possess higher overhead costs than others (e.g., home-based cake-making business). In addition, depending on the number of employees, profitability would not be a better option, as there may be various confounding variables affecting the take-home pay of the

⁵⁰ It should be noted that this decision was made to reduce the intrusiveness of this study, as mentioned previously.

entrepreneur. Thus, unless personal financial data were requested, which would be fairly intrusive, proxy measures of success are required. As noted by Brandstatter (1997), a subjective measure of entrepreneurial satisfaction is not necessarily a bad thing as “a global subjective evaluation of the success of the venture may better take into account the external conditions facilitating or hindering success, thus making the success ratings a more valid criterion” (p. 173).

Another point regarding the above, and arguably more important, is that previous research has demonstrated that personal wealth is one of the least important factors in motivating entrepreneurs (Amit et al., 2002), a finding which was also replicated in this study (recalling that annual profits, growth of business and market share were some of the lowest rated items in terms of their importance in defining entrepreneurial success). In this vein, several researchers have argued that exclusively focusing on the creation of wealth is an oversimplification for representing the *raison d'être* for entrepreneurs (Dodd, 2002; Sternberg, 2004). Finally, a ‘hard’ measure of financial success does not take into account the fact that some entrepreneurs may be happy to scale back their venture in order to achieve their desired level of work-life balance (Sternberg, 2004).

Directions for future research

In terms of directions for future research, several avenues arise from this line of inquiry. First, since it has been well established that there are various types of entrepreneurs (e.g., nascent, serial, parallel, see Westhead, Ucbasaran, & Wright, 2003), differences in motivations across these categories may be a meaningful scientific endeavor. This point could be extended further to explore whether the same trait, project, and environmental variables predicting SWB and WWB for these groups replicate those found

in the current study. Also, as pointed out by Bhawe (1994) and Kuratko, Hornsby, & Naffziger (1997), very little research has examined the motivational factors that sustain an entrepreneurial venture beyond in its initial stages (Gundry & Welsch, 2001). As such, qualitative research approaches that ask respondents to identify their primary motivating factors across each stage of entrepreneurship would add greatly to the extant literature.

Clearly, a line for future research involves the utilization of longitudinal designs in the entrepreneurship field as this type of methodological framework is sorely lacking. More specifically, Chandler and Lyon (2001) conducted a review of the entrepreneurship literature from 1989-1999 and found that only 20% of studies utilized this type of design. Based on their review of the literature, these authors contend that this type of experimental framework is seen essential to a more complete understanding of the entrepreneurial process. This concern is not unique to the entrepreneurship field, as its sister discipline, international entrepreneurship, has experienced a similar problem (Coviello & Jones, 2004). However, as noted by Coviello & Jones (2004), perhaps one of the major reasons contributing to the lack of longitudinal research relates to the major financial and human resources required to invest in this type of study.

As noted previously, the role of social support in determining subjective well-being is one of the most firmly established findings in the clinical, social, and personality literatures. In the present study, this linkage was extended in that emotional support was seen to be an important predictor of personal and business-related SWB. However, it may be useful to explore in more detail the source of the social support for entrepreneurs (e.g., family, friends, clients, other entrepreneurs, etc.) to more clearly identify the underpinnings of this relationship. Furthermore, although the dimension of emotional support is clearly

an improved representation of the PPA Community factor than previously utilized dimensions (e.g., others' view of importance and visibility) as evidenced by strong linkages with outcome, the construct of support may be divided even further to help aid in understanding this relation even further. For example, given the importance of financial aspects to the survival and initiation of entrepreneurial activities, perhaps including this as a dimension would be quite valuable.

To take the above point one step further, initially the rationale behind the development of the Community factors was a bi-directional one (e.g., the individual takes from the community as well as contributes back to it), thus the introduction of the dimensions others' view of importance and positive and negative impact. Future studies could explore this in more detail by including these previously used dimensions. This extension of the present dimension set fits nicely with recent movements in the entrepreneurship literature where there has been an extensive focus on social entrepreneurs (Billitteri, 2000; Boschee, 2001; Dees, Emerson, & Economy, 2001).

Another direction for future research that flows directly from the above point is the role of family in the entrepreneurial process. More specifically, previous research has documented that family members 'support' entrepreneurs through the provision of financial and human resources (Aldrich & Cliff, 2003; Chrisman, Chua, & Steier, 2002; Rogoff & Heck, 2003), as well as providing an understanding familial environment (Olson et al., 2003). Thus, more clearly articulating the role of the family in the entrepreneurial process is an issue of paramount importance for the field. As recommended by Aldrich & Cliff (2003), "researchers need to include family dimensions in their conceptualizing and modeling, their sampling and analyzing, and their interpretations and implications" (p.

574). Given the strong linkages between emotional support and SWB/WWB in the present research study, the strength of this recommendation is even further enhanced.

Another area that should be explored is in the area of failed business or to follow individuals who are thinking of starting an entrepreneurial venture but who fail to follow through. More specifically, perhaps project management strategies and behaviours (which, as we have seen, can be tapped into exceptionally well by use of the PPA methodology) may differentiate those entrepreneurs who ultimately embark upon a business venture and those who do not (or do not even try). Again, this knowledge would be invaluable to venture capitalist investors who could identify key project and/or strategic steps that lead to successful business formation.

One area that will be rich for entrepreneurship research in the future is in the exploration of the transition of early retirees into entrepreneurial activities (Singh & DeNoble, 2003), as very few studies have examined this topic thus far. Although the present study included too few retirees to conduct any meaningful analyses, previous research suggests that there are differences between these individuals and entrepreneurs who become involved in entrepreneurship earlier in the game (Galbraith & Latham, 1996; Katz, 1994). Thus, it seems prudent to devote increasingly more resources to this avenue of research, as it is a phenomenon that has been growing and that is also expected to continue (Singh & DeNoble, 2003).

Although the alteration of PPA certainly resulted in strong empirical findings for the present study, a direction for future research would be to include both work and non-work projects in the methodology. In this way, potential conflicts in work-life balance (Duxbury, Higgins, & Lee, 1994; Loscocco, 1997) may arise as critical issues. In this

regard, previously used PPA dimensions such as positive and negative impact, as well as the Cross-Impact Matrix, could be utilized to considerable advantage. This type of work-family interaction is even more important considering previous research that has shown that reduced family tension/conflict may be an important buffer to the success of entrepreneurial ventures (Olson et al., 2003).

Finally, it would be remiss not to mention how the present study fits quite nicely within a new movement in organizational behaviour termed positive organizational scholarship (POS; Cameron & Caza, 2004; Cameron, Dutton, & Quinn, 2003). POS, a direct outgrowth of the positive psychology movement more generally, focuses on “the dynamics leading to exceptional individual and organizational performance such as developing human strength, producing resilience and restoration, and fostering vitality” (Cameron & Caza, 2004). Clear linkages between this field and the present study may be found in terms of the high levels of both personal and work well-being reported by entrepreneurs (as compared to the general population) as well as findings in previous entrepreneurial research that links meaning, passion, and commitment to such ventures (see Dodd, 2002 for an example). Future POS studies could utilize entrepreneurs as a baseline sample from which to learn the mechanisms underlying their high level of work and personal well-being, two key foci for this group of scholars.

Concomitantly, the results from the present study provide strong empirical support for the social ecological model of well-being and its applicability to entrepreneurs. In particular, it appears that efficacy, emotional support and stress are key influencing factors for entrepreneurs. Future research exploring the types of support available to entrepreneurs is of paramount importance to the field. Clearly, a focus on determining the

predictors of personal and work well-being for entrepreneurs is critical given the importance of entrepreneurs to wealth generation in our society. As documented in the present study, however, this research should be based on sound theoretical models and proven integrative methodologies.

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Appendix A – Overview of PPA methodology

The PPA “kit” consists of several interlocking and flexible assessment modules, although there are generally two core components, which can be combined with other optional modules, depending on the focus of the investigation. The Personal Projects Elicitation List (popularly referred to as the project “dump”) is one of the core components and is the introductory portion of the PPA methodology. Within this section, the definition of a personal project is provided and several examples are given to clarify the relevance of the construct to daily life. Once the participant feels comfortable with what constitutes a personal project, he or she is asked write down a list of projects in which they are currently engaged (Little, 1983; 1988). Respondents are encouraged to make these projects as idiosyncratic as possible, therefore, it is not surprising that there is a wide range of personal projects reported ranging from “taking out the garbage” to “finding spiritual meaning in my life.” Although there are no explicit instructions provided regarding the number of projects that should be listed, the expectation is that respondents list at least ten projects. Respondents who have not listed this minimum number are prompted to generate the additional number required. Typically, in a ten-minute elicitation period, respondents list an average of fifteen personal projects within open-ended lists (Little, 1983, 1989; Little, Lecci, & Watkinson, 1992) and this number increases to twenty projects when longer elicitation periods are used.

The Rating Matrix is the second core module and occurs immediately after the project dump. The respondents are requested to select a subset of their self-generated projects (generally ten) and rate each one on a number of dimensions that have been identified as theoretically or pragmatically relevant to the study of personality and/or

human well-being (Little, 1987b, 1989; Palys & Little, 1983). Although the respondent is given relatively free reign throughout the administration of the PPA kit, at this point they are constrained by the type and number of dimensions used by the researcher in the Project Rating Matrix (e.g., they are evaluating their projects on a set of dimensions that have been pre-selected by the principal investigator). Therefore, researchers must ensure that they carefully consider the potential implications of each and every dimension used, as well as the impact that additional or ad hoc dimensions may have on the ratings of the respondents (Chambers, 1997).

The respondent typically rates each project on a scale ranging from 0-10 for each of these dimensions. During the course of the development of the PPA methodology, a core or standard set of seventeen dimensions has emerged. Therefore, in the standard PPA format, 170 individual project ratings are generated, although Chambers (1997) duly notes “it may be somewhat of a misnomer to consider any dimension standard, given the variety that have been used over the years.”

Despite the presence of seventeen “core” or standard PPA dimensions, the number of dimensions used within single studies has varied considerably, with earlier studies (late 1970s and 1980s) generally including 10, later studies 17, and the most recent studies over 30. This increase of project dimensions has been facilitated by the flexibility of the PPA approach (Little, 2000). For example, several ad hoc dimensions based on specific theories relevant to the research topic of interest have often been included to explore their potential contribution to personality assessment. This methodological flexibility was also one of the underlying factors in its selection for the present study as there are several entrepreneurial-related questions which PPA provides a relatively unique opportunity to answer.

PPA researchers have also introduced other dimensions, not necessarily grounded in any specific theoretical or empirical framework, to explore their potential utility. These dimensions are primarily based on the experience of the investigator or are particularly meaningful for the study sample under investigation. A recent review of the PPA literature by Chambers (1997) revealed that over two hundred “special” or ad hoc dimensions have been created over the past two decades.

Appendix B

Figure 1: A social ecological framework for the study of Person -Environment interaction

Appendix C – Theoretical and empirical support for the PPA five-factor model and its role in enhancing subjective well-being

Project Meaning

Personal projects are often viewed as “sources of value or, in Bruner’s (1990) terms, ‘acts of meaning’ for individuals (Little, 1998, p. 198).” Little (1998) supported this claim by citing data based on 1,500 individuals derived from the Social Ecology Assessment data bank (SEAbank). He used a rating of five or greater as an indication of a meaningful project for the respondent and found that for each of the dimensions contributing to the meaning factor (e.g., importance, value congruency, self-identity, absorption, and enjoyment) that each mean rating score fell in the meaningful range. More specifically, the personal projects of these individuals were viewed to be particularly important, value-congruent, self-expressive, absorbing, and enjoyable.

Another equally important consideration is that meaning may more strongly interact with other project dimensions. For example, past research has demonstrated that having efficacious pursuits was not an automatic determinant of enhanced well-being, rather, it was the efficacious pursuit of meaningful projects (Little, 1998; Sheldon & Elliott, 1998). This proposition can be examined in more detail within the present study.

The importance of meaning to optimal human development has also been presented in research outside the personal project realm. For example, McGregor and Little (1998) stated that an interest in meaning has consistently pervaded much of the early clinical and existential literature (Frankl, 1969; Jung, 1933; Maslow, 1968; Rogers, 1961) and has recently been the subject of increased research attention (Davis, Nolen-Hoeksma, & Larson, 1998; Klinger, 1977; Little, 1989, 1999; Ryff, 1989; Ryff & Keyes, 1995;

Wong & Fry, 1998). However, despite the renewed interest in this construct, links between meaning and other outcomes such as health and well-being have been largely overlooked (Ryff & Singer, 1998).

Project Manageability

Previous PPA research has documented the strong relationship between these dimensions and well-being. Comprehensive meta-analytic reviews of both the PPA life satisfaction (Wilson, 1990) and depressive affect (Dowden, 2000) literatures revealed that these dimensions have moderate to strong predictive relationships with well-being.

Indirect empirical evidence is also available for the importance of the role of initiation in influencing positive affect. Emmons and Diener (Diener, Larsen, & Emmons, 1984; Emmons, Diener, & Larsen, 1986; Emmons & Diener, 1986) conducted a series of studies to test the congruence hypothesis (i.e. whether congruence between personality and situation would lead to greater subjective well-being). They found that this hypothesis was only true when the individuals had chosen personality-congruent situations.

Personality-congruent situations that are imposed on people do not have the same effect. This finding demonstrates the importance of initiation, even in “optimal” person-environment situations. It is anticipated that entrepreneurs will have more personality-congruent situations given their enhanced control over their immediate environment.

There is also considerable theoretical support available for the efficacy component of this factor, with the most well known research being that of Bandura's (1977) on the essential role of self-efficacy in enhancing adaptation. The evidence clearly supports the role of both perceived outcome and progress as important determinants of well-being. For example, several current theories suggest that the process of moving toward one's goals

(i.e. progress) may be more important than actual goal attainment (e.g. Carver, Lawrence, & Scheier, 1996; Csikszentmihalyi, 1990; cf. Diener et al., 1999). Single empirical studies have also revealed the vital role of the efficacy factor in well-being. Hsee and Abelson (1991) documented that the rate of progress toward goals was a stronger predictor of affect than actual goal attainment. Commensurately, these findings illustrate the importance of efficacy in influencing well-being.

Finally, research conducted by Brunstein (1993) provides support for the role of progress in determining well-being and, more importantly the possible interactive effects it may have on subjective well-being. First, Brunstein (1993) suggested that his findings “lent preliminary support to the assumption that perceived progress in goal achievement acts as a cause of change in subjective well-being rather than vice versa” (p.1068). In addition, Brunstein (1993) found that once the contributions of progress in goal achievement were controlled, the goal commitment X goal attainment interaction was substantially reduced. These findings demonstrate the important role of progress in enhancing well-being.

Project Community

An extensive literature is currently available that documents the strong relationship of community and social support to well-being. Diener, Suh, Lucas, and Smith (1999) commented that the “specific literatures on the role of social support (Argyle, 1987; Sarason, Sarason, & Pierce, 1990) underlying subjective well-being are each extensive enough to warrant their own literature reviews” (p. 276). Notwithstanding this, considerable evidence has accumulated regarding the important role of social support for optimal health. Since the seminal reviews of Cassell (1976) and Cobb (1976), several

researchers have highlighted the role of social support in enhancing human health. Cohen (1988) asserted that social support was potentially linked to health through social (e.g. stress buffering), psychological (e.g. affective states), and behavioral (e.g. health-promoting) mechanisms (cf. Uchino, Cacioppo, & Kiecolt-Glaser, 1996). In fact, Uchino et al. (1996) provide consider evidence demonstrating the important role of social support in positive physiological health through cardiovascular, endocrine, and immune systems.

It should be noted that gender may be an important moderating variable for the relationship between project community and depressive affect. For example, Hegelson (1994) argued that women are generally characterized as more community or relationship-oriented whereas men are more agentic. Therefore, it may be possible that the predictive utility of the dimensions composing this factor may be moderated by gender. Earlier research using the PPA methodology also supported the potential moderating role of gender within the community factor. More specifically, Little (1984) found that although "others' view of importance" promoted mental health problems for men, it was the absence of others' concern that was associated with increased problems for women.

Positive and Negative Affect

A brief overview of the literature expounding the role of positive and negative affect in enhancing subjective well-being is not required as these two constructs are explicit components of well-being (Diener et al., 1999; Lucas et al., 1996).

Appendix D – Assessment Battery

The following is a list of the scales that were used in the present dissertation in alphabetical order along with the corresponding page numbers. The original source for each scale is noted and details regarding any modifications made to the scale provided. Finally, for those scales developed by the author (Craig Dowden) for the present study, the rationale underlying their construction is given.

i) CES-D	152
ii) Defining entrepreneurial success	153
ii) Diener-Emmons Affect Scale	154
iii) Domain-specific and global life satisfaction	155
iv) Entrepreneurial Orientation	157
v) General background information	158
vi) Job Needs and Aspirations	165
vii) Personal Projects Analysis	169
ix) Satisfaction with entrepreneurial venture	177
viii) Ten-Item Personality Inventory	179

Center for Epidemiologic Studies on Depression (CES-D) Scale

Source: Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.

Adapted: No

Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the past week by rating each item on the following scale:

- 0 = rarely or none of the time (less than 1 day)
 1 = some or little of the time (1 – 2 days)
 2 = occasionally or a moderate amount of time (3 – 4 days)
 3 = most or all of the time (5-7 days)

During the past week:

- _____ 1. I was bothered by things that usually don't bother me.
- _____ 2. I did not feel like eating; my appetite was poor.
- _____ 3. I felt that I could not shake off the blues even with the help from my family or friends.
- _____ 4. I felt that I was just as good as other people.
- _____ 5. I had trouble keeping my mind on what I was doing.
- _____ 6. I felt depressed.
- _____ 7. I felt that everything I did was an effort.
- _____ 8. I felt hopeful about the future.
- _____ 9. I thought my life had been a failure.
- _____ 10. I felt fearful.
- _____ 11. My sleep was restless.
- _____ 12. I was happy.
- _____ 13. I talked less than usual.
- _____ 14. I felt lonely.
- _____ 15. People were unfriendly.
- _____ 16. I enjoyed life.
- _____ 17. I had crying spells.
- _____ 18. I felt sad.
- _____ 19. I felt that people dislike me.
- _____ 20. I could not get "going".

The following items were reverse scored in the calculation of total score: 4, 8, 12, 16

Defining entrepreneurial success

Source: Developed by the author for this dissertation.

Adapted: N/A

1a). How important is each of the following reasons to you in terms of how you view success for your entrepreneurial venture (Please indicate on a scale of 0-10 with 0= not at all and 10=most important)

Feeling of personal achievement	0	1	2	3	4	5	6	7	8	9	10
Being own boss	0	1	2	3	4	5	6	7	8	9	10
Freedom	0	1	2	3	4	5	6	7	8	9	10
Feeling of responsibility	0	1	2	3	4	5	6	7	8	9	10
Social networking opportunities	0	1	2	3	4	5	6	7	8	9	10
Increased sense of control	0	1	2	3	4	5	6	7	8	9	10
Growth of business	0	1	2	3	4	5	6	7	8	9	10
Annual profits	0	1	2	3	4	5	6	7	8	9	10
Market share	0	1	2	3	4	5	6	7	8	9	10
Visibility	0	1	2	3	4	5	6	7	8	9	10
Reputation of company	0	1	2	3	4	5	6	7	8	9	10
Public image	0	1	2	3	4	5	6	7	8	9	10
Commitment and satisfaction of employees	0	1	2	3	4	5	6	7	8	9	10

1b). Please list and rate in importance any other reasons you think are important that were not mentioned in the above list

0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10
0	1	2	3	4	5	6	7	8	9	10

Diener-Emmons Affect Scale

Source: Diener, E., & Emmons, R.A. (1985). The independence of positive and negative affect. Journal of Personality and Social Psychology, 47, 1105-1117.

Adapted: No

This questionnaire consists of nine adjectives which may describe the way you feel. Using the scale below each item, please indicate how much each adjective describes how you feel right now. Indicate your choice by circling the appropriate number:

Now, please rate your current feelings:

Happy	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely
Frustrated	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely
Worried or Anxious	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely
Joyful	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely
Pleased	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely
Angry or Hostile	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely
Unhappy	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely
Depressed	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely
Full of Fun	Not at all	0	1	2	3	4	5	6	7	8	9	10	Extremely

The positive affect items (e.g., Happy, Joyful, Pleased, Full of Fun) were reverse scored to calculate the total score for this scale. This is why this scale loaded negatively on the Personal Well-Being (PWB) factor

Domain-Specific and Global Life Satisfaction Scales

Source: Palys, T.S. (1979). Personal project systems and perceived life satisfaction. Unpublished doctoral dissertation, Carleton University, Ottawa.

Adapted: No

Below are several scales that we would like you to use to tell us how satisfied you are with your life right now. In the first one, if you are completely satisfied with your life as a whole as it is now, you would circle the number ten (10). If you are completely dissatisfied with your life as a whole as it is now, you would circle zero (0). If you are neither completely satisfied nor completely dissatisfied, you would use one of the numbers from 1 to 9 to indicate your current level of satisfaction. Remember, the higher the number, the more satisfied you feel with your life as it is right now. The other scales work the same way.

A. In general, how satisfied or dissatisfied are you with your **life as a whole** right now? Circle the number on the scale below that comes closest to how you feel:

0	1	2	3	4	5	6	7	8	9	10
Completely Dissatisfied					Neutral					Completely Satisfied

B. In general, how satisfied or dissatisfied are you with your **work life** as it is right now?

0	1	2	3	4	5	6	7	8	9	10
Completely Dissatisfied					Neutral					Completely Satisfied

C. In general, how satisfied or dissatisfied are you with your **social life** as it is right now?

0	1	2	3	4	5	6	7	8	9	10
Completely Dissatisfied					Neutral					Completely Satisfied

D. In general, how satisfied or dissatisfied are you with your **home life** as it is right now?

 0 1 2 3 4 5 6 7 8 9 10
 Completely Neutral Completely
 Dissatisfied Satisfied

E. In general, how satisfied or dissatisfied are you with your **emotional state** as it is right now?

 0 1 2 3 4 5 6 7 8 9 10
 Completely Neutral Completely
 Dissatisfied Satisfied

F. In general, how satisfied or dissatisfied are you with your **recreational life** as it is right now?

 0 1 2 3 4 5 6 7 8 9 10
 Completely Neutral Completely
 Dissatisfied Satisfied

G. In general, how satisfied or dissatisfied are you with your **physical health** as it is right now?

 0 1 2 3 4 5 6 7 8 9 10
 Completely Neutral Completely
 Dissatisfied Satisfied

Entrepreneurial Orientation (EO) Scale

Source: Lumpkin, G.T., & Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21, 135-172.

Adapted: In this article, Lumpkin and Dess (1996) outlined the five "dimensions" of EO and outlined how they related to firm performance. To assess their impact on entrepreneurial well-being, this scale was adapted by the present author (Craig Dowden) using the Burisch (1984a, b) method whereby each dimension was operationalized in a single item and respondents were asked to indicate the extent to which each of these dimensions described them.

Please rate on a scale of 0-10 how much each of these terms describe you as an individual (0= not at all and 10=most important)

Autonomous	0	1	2	3	4	5	6	7	8	9	10
Innovative	0	1	2	3	4	5	6	7	8	9	10
Risk-taker	0	1	2	3	4	5	6	7	8	9	10
Proactive	0	1	2	3	4	5	6	7	8	9	10
Competitive aggressiveness	0	1	2	3	4	5	6	7	8	9	10

Competitive aggressiveness is defined as a propensity to directly and intensely challenge your competitors with the hopes of outperforming them

General Background Information

Source: Developed by the author for this dissertation.

Adapted: These questions constituted the semi-structured interview, including both closed- and open-ended questions. Please refer to pages 42-45 for a review of the literature that led to the development of these various questions and their relative importance to the study of entrepreneurship.

Demographics

1. What is your gender?

_____ Male
_____ Female

2. What is your age? _____

3. Where were you born? _____

4. Where were you raised? _____

5. Please indicate your highest level of education (check one)

_____ Less than high school
_____ High school graduate or equivalency
_____ Some college/university
_____ College degree
_____ University degree
_____ Graduate degree
_____ Other (please specify) _____

6. What was/is your academic major? _____

7. Please indicate your current marital status (check one):

_____ Married/Common law
_____ Single (never been married)
_____ Divorced
_____ Separated
_____ Widowed

8a. Have you taken a formal retirement from a previous position?

_____ Yes
_____ No

8b. If yes, where did you work before you retired? _____

9. Please indicate the employment status of your spouse/partner if you are involved with an intimate partner (check one)

_____ Unemployed
_____ Self-employed, employed in your company
_____ Self-employed for him/herself
_____ Private sector employee
_____ Public sector employee

11. Are you currently a single mom or dad?

_____ Yes
_____ No

12a. Do you have any children?

_____ Yes
_____ No

12b. If yes, how many live in your household? _____

12c. If you have younger children (e.g., < Kindergarten), do you have childcare?

_____ Yes
_____ No

12d. Please indicate the age(s) of your children _____

13. Please indicate your father's occupation when you were growing up

14. Please indicate your mother's occupation when you were growing up

15. Were either of your parent's or grandparents self-employed? _____

16. How many siblings do you have? _____

17. Were you first-born? _____

18. Language spoken in the current home _____

19. Native language _____

Self-employment questions

20. How long have you been self-employed (years or months)? _____

21. Do you have more than one entrepreneurial venture? (if yes, please take note of the number to be used as a control variable for later)

22. Do you have any staff?

_____ Yes
_____ No

23. How many? _____

24. Were you self-employed before?

_____ Yes
_____ No

25. If you answered yes to the above question, was it in the same industry?

_____ Yes
_____ No

26a. Did you formally work before starting your own business?

_____ Yes
_____ No

26b. If yes to the question above, how is your company and skill set needed to run it related to your previous line of employment?

_____ Same
_____ Somewhat
_____ Not at all

27. Why did you decide to start your business? (check one or more)

_____ Dissatisfied with previous job
_____ Retired
_____ Fired/laid off from previous job
_____ Previous entrepreneurial venture did not succeed
_____ Career goal
_____ Other, please specify _____

28a. Did you scan the market beforehand to determine whether it was the right time to start your venture?

_____ Yes
_____ No

Comments: _____

28b. If yes to the above question, what elements of the environment gave you the confidence to begin your business

- a) _____
- b) _____
- c) _____
- d) _____

29. How long was the start-up time? (e.g., from idea generation to implementation)

30. What type of business do you currently run (e.g., pizzeria, consulting firm, hairdresser, etc.)? _____

31. What type of entrepreneurial venture was this company when it started out? (check one)

- _____ New business creation
- _____ Franchisee
- _____ Inheritance
- _____ Purchased pre-existing business
- _____ Other, please specify

32. If you have a partner, how satisfied are you with his/her support of your decision to pursue self-employment (check one).

- _____ Completely Dissatisfied
- _____ Somewhat dissatisfied
- _____ Neutral
- _____ Somewhat satisfied
- _____ Completely Satisfied

33. How satisfied were you with your partner's support of your decision to pursue self-employment when you *initially* started the business? (check one)

- _____ Completely Dissatisfied
_____ Somewhat dissatisfied
_____ Neutral
_____ Somewhat satisfied
_____ Completely Satisfied

34. Where is your business located? (check one)

- _____ Home
_____ Rent office space
_____ Both
_____ Other, please explain _____
-

35. Is your business incorporated?

- _____ Yes
_____ No

36. On average, how many hours per week do you work? _____

37. Do you have any partners in business with you? _____

38. What was your age when you founded this company? _____

39. Did you have children living with you when you started your business?

- _____ Yes
_____ No

40. Overall, how satisfied are you with your company?

- _____ Completely Dissatisfied
- _____ Somewhat dissatisfied
- _____ Neutral
- _____ Somewhat satisfied
- _____ Completely Satisfied

41. Overall, how satisfied are you with being self-employed?

- _____ Completely Dissatisfied
- _____ Somewhat dissatisfied
- _____ Neutral
- _____ Somewhat satisfied
- _____ Completely Satisfied

Open-ended questions

Adapted from Cromie and Hayes (1988)

1. Would you tell me why you wanted to start this business on your own? What were your motives for wanting your own business?
2. What did you expect to get out of your own business? What rewards did you get?
3. What skills do you regard as essential for the successful running of your business?
4. What kind of picture do you have of the 'job' of running your own business?
(To examine forces driving entrepreneurship)
5. How easy would you find it to obtain employment with another firm in the greater Ottawa region?
6. Has the demand for your skills and knowledge increased or decreased in recent years?

Job Needs and Aspirations

- Source: Phillips, S.D., Little, B.R., & Goodine, L.A. (1995). Gender, culture and management at XXX (name withheld due to confidential considerations with the client). Final report.
- Adapted: The scale used in the present study utilized all of the indicators from the original measure while incorporating seven items from the Organizational Culture Checklist. Those needs that were added to the scale are noted with an (*) below.

Here are some needs or aspects that some people may think are important in a job. In the first column, please indicate from 0 (low) to 10 (high) to what extent each is important to you in your **ideal** job. Initially, please think about how much you desire to find each aspect in your work in general – not how much your present position satisfies these needs. We'll deal with that after. A score of 0 would indicate that the need is not at all important to you and a score of 10 would indicate that it is extremely important that you find this aspect in work.

Then, please think about your present job and indicate in column 2 to what extent you feel that this need is satisfied in your present position. A score of 0 would indicate that you do not have this aspect at all in your present job and a score of 10 would indicate that you have a great deal of this aspect in your present job.

Finally, please think about your previous job, if you had one, and indicate in column 3 to what extent you feel that this need was satisfied in your previous position. A score of 0 would indicate that you did not have this aspect at all in your previous job and a score of 10 would indicate that you have a great deal of this aspect in your previous job.

Ideal job: How important is this aspect to you?

0	1	2	3	4	5	6	7	8	9	10
not at					somewhat					extremely
all imp					important					important

Present job: To what extent do you have this aspect?

0	1	2	3	4	5	6	7	8	9	10
not at					somewhat					extremely
all										

Previous Job: To what extent did you have this aspect?

0	1	2	3	4	5	6	7	8	9	10
not at					somewhat					extremely
all imp					important					important

	Ideal job	Present Job	Previous Job
a feeling of achievement/accomplishment?	_____	_____	_____
making use of your abilities?	_____	_____	_____
being very busy all the time?	_____	_____	_____
working independently?	_____	_____	_____
having new and varied experience?	_____	_____	_____
being involved in decision making?	_____	_____	_____
being compensated well financially?	_____	_____	_____
having job security?	_____	_____	_____

having pleasant physical working conditions?	_____	_____	_____
having an opportunity for advancement?	_____	_____	_____
having recognition for the work you do?	_____	_____	_____
having power?	_____	_____	_____
having a job that promotes your social status in the community?	_____	_____	_____
being around interesting people?	_____	_____	_____
having co-workers/colleagues who are friendly?	_____	_____	_____
doing things that "make a difference" for the benefit of society?	_____	_____	_____
having a sense of personal integrity: knowing that what you are doing is ethically responsible?	_____	_____	_____
support and encouragement from your supervisors?	_____	_____	_____
having a supervisor who ensures your career development?	_____	_____	_____
having an opportunity to be innovative and creative?	_____	_____	_____
making decisions on your own?	_____	_____	_____
being in control of how things are done?	_____	_____	_____
having organization policies administered fairly?	_____	_____	_____
being nurturing/caring toward employees or co-workers?	_____	_____	_____

feeling a sense of self-worth?	_____	_____	_____
doing things that are interesting and challenging?	_____	_____	_____
being able to exercise leadership?	_____	_____	_____
being around powerful people?	_____	_____	_____
having a sense of purpose and meaning?	_____	_____	_____
being able to work as part of a team?	_____	_____	_____
being in a competitive "game"?	_____	_____	_____
being flexible and accommodating to home responsibilities?	_____	_____	_____
having a highly structured work environment?	_____	_____	_____
*having clear objectives?	_____	_____	_____
*being held accountable for your work?	_____	_____	_____
*having a hierarchical control structure?	_____	_____	_____
*having fun?	_____	_____	_____
*being rewarded for good performance?	_____	_____	_____
*being in a fair work environment?	_____	_____	_____
*being efficient?	_____	_____	_____

Personal Projects Analysis ©

- Source:** Little, B.R. (1983). Personal projects: A rationale and method for investigation. Environment and Behavior, 15, 273-309.
- Adapted:** The administration of the methodology was altered as a result of the pre-test (Please see Chapter 2). In addition, several ad hoc dimensions were introduced for this study including core to business, emotional support, and core to self.

Module 1: Introduction to Projects Analysis

Below is a list of six work project categories and expanded descriptions of each. These categories encompass some of the major work activities that you are involved in as an entrepreneur. However, please note that certain categories (e.g., Manage Employees) may not be relevant if you do not have any employees. Please read through the list and familiarize yourself with the categories.

1. **Learning/Training (L)** - These types of projects are those that are undertaken in order to expand a pre-existing skill set or to add a new skill to your repertoire. For example, if you are a sports coach, signing up for a First Aid course would be considered additional training. Another example would be attending a French language course or a communication seminar. If you are in the food industry, attending a conference on the latest trends would also be considered a Learning/Training project.
2. **Administrative (A)** - These projects relate to the “daily running of the business” such as paying bills, invoicing clients, depositing cheques, purchasing supplies, answering phones, filling out GST forms, etc.
3. **Networking/Marketing (N)** - This category refers to projects that are designed to increase or expand your business. It can be developing a marketing strategy or contacting new clients or nurturing existing business contacts.
4. **Core Business (C)** - This refers to those projects directly related to your business. If you are a tennis coach, core business projects would be instructing the children (or adults) on the court. These are projects that fit into what you consider your “job” as an entrepreneur to be.
5. **Research and Development (RD)** This refers to any projects in which your company is engaged in order to realize a future profit or potential line of business. This may involve product development, product sampling, etc. For example, an owner of a pizza restaurant may try different combinations of spices and ingredients to find new pizza sensations. Another example is the web developer who is developing software to increase site activity and management.
6. **Managing Employees (M)** - This involves any aspects of managing your staff.

Module 2

Project Rating

We are interested in finding out what you think and how you feel about these personal projects and activities, how important or stressful they are, and so on.

Please rate each of your projects from 0 - 10 on the series of dimensions listed along the top of the web page. If you feel a dimension is not relevant to a project, you may put an X in the space instead of a numerical rating, but please try to rate each project on all dimensions wherever possible.

Project Dimension Definitions.

1. Core to organization

To what extent is this project critical to the survival of your business? (Use 10 if you consider it to be extremely critical and 0 if it is not at all critical)

2. Commitment

To what extent are you committed to this project? (Use 10 if you are highly committed to this project and 0 if you are not committed to the project at all)

3. Initiation

How much do you feel responsible for having initiated each project? (use 10 if you feel fully responsible for having initiated a project and 0 if you feel you have taken no part whatsoever in initiating a project)

4. Control

How much do you feel you are in control of this project? (Use 10 if you feel completely in control of the project and 0 if you feel you have absolutely no control over the project)

5. Outcome (Likelihood of Success)

How successful do you believe this project will be? (use 10 if you expect the project to be entirely successful and 0 if you think the project will turn out to be not at all successful)

6. Progress

How much progress have you made in this project so far in terms of your expectations? (Use 10 if the progress you have made matches or surpasses your expectations completely and 0 if you have made no progress at all compared to your initial expectations)

7. Competence

To what extent do you feel competent when carrying out this project? (Use 10 if you feel completely competent when carrying out the project and 0 if you do not feel at all competent to carry it out).

8. Emotional Support

To what extent do you feel each project is emotionally supported by other people (e.g., encouragement, approval, etc.)? (Use 10 if you feel other people support the project a lot and 0 if there is no support at all).

9. Hindrance

To what extent do you feel each project is hindered by other people? (Use 10 if you feel other people hinder the project a lot and 0 if there is no hindrance at all).

10. Creativity

To what extent do you feel you engage creatively in each project? Note the project itself could be mundane. (Use 10 if you engage very creatively in the project and 0 if you do not engage at all creatively in the project)

11. Self-Identity

All of us have things we do that we feel are typical or truly expressive of us. These things can be thought of as our "trade marks" . For example, some people prefer to network with clients every chance they get, while others prefer to do the work, while others like to manage the business and not get involved in the day-to-day operations required. Think of what your own personal "trade marks" are, and then rate this project on the extent to which it is typical of you. (Use 10 if a project is very self-expressive of you and 0 if it is not at all self-expressive)

12. Competitiveness

To what extent is it important to you to compete with others when pursuing this project? (Use 10 if competing with others is extremely important to you when engaging in this project and 0 if it is not at all important).

13. Passionate engagement

To what extent do you feel passionately engaged when you are doing this project? (Use 10 if you are passionately engaged with this project and 0 if you are not passionately engaged at all).

14. Core to self

To what extent is this project critical to your well-being? (Use 10 if this project is critical to your sense of well-being and 0 if this project is not at all critical to your sense of well-being).

15-19. Feelings

Rate from 0 to 10 how **frequently** you feel each emotion while engaged in or thinking about each of the categories of projects that were introduced earlier. (Use 10 if you constantly feel the emotion when engaged in the project and 0 if you never feel it)

Enjoyment

Pride

Stress

Anger/frustration

Fear/Anxiety

Projects	Core to organization	Commitment	Initiation	Control	Outcome	Progress	Competence	Emotional support	Hindrance	Creativity
	1 Learning									
	2 Administrative									
	3 Networking/Marketing									
	4 Core to Business									
	5 Research and Development									
	6 Managing employees									

Projects	Self-identity	Competitiveness	Passionate engagement	Core to self	Enjoyment	Pride	Stress	Anger/frustration	Fear/Anxiety
	1 Learning								
	2 Administrative								
	3 Networking/Marketing								
	4 Core to Business								
	5 Research and Development								
	6 Managing employees								

Personal Projects System Rating Scale (PPSRS)

Source: Little, B.R. (1988). Personal Projects Analysis: Theory, method, and research. Ottawa: Final Report to the Social Sciences and Humanities Research Council.

Adapted: No

Consider the different pursuits, activities, commitments and projects in which you are currently involved. We call this your "personal project system." **On the whole**, how would you evaluate your current project system on the following dimensions? Please circle the appropriate number.

On the whole, my current activities, commitments, pursuits and projects are:

meaningful (eg. enjoyable, valuable)	10	9	8	7	6	5	4	3	2	1	0	meaningless (eg. worthless, unenjoyable)
chaotic (eg. out of control, not enough time)	0	1	2	3	4	5	6	7	8	9	10	well-organized (eg. under control adequate time)
supported (eg. lots of help and affection from others)	10	9	8	7	6	5	4	3	2	1	0	totally lacking support (eg. others don't care at all)
very stressful (eg. lots of hassle and conflict)	0	1	2	3	4	5	6	7	8	9	10	unstressful (eg. no hassle)
progressing well (eg. likely to be very successful)	10	9	8	7	6	5	4	3	2	1	0	progressing poorly (eg. very likely to fail)

Satisfaction with entrepreneurial venture

Source: Developed by the author for this dissertation.

Adapted: Several scholars have discussed the importance of various facets of entrepreneurial performance. Sources referenced to develop these items included (Amit, MacCrimmon, Zietsma, & Oesch, 2001; Brandstatter, 1997; Lumpkin & Dess, 1996).

Below are several scales that we would like you to use to tell us how satisfied you are with various aspects of your entrepreneurial venture right now. In the first one, if you are completely satisfied with your company's sales growth right now, you would circle the number ten (10). If you are completely dissatisfied with this aspect of your business, you would circle zero (0). If you are neither completely satisfied nor completely dissatisfied, you would use one of the numbers from 1 to 9 to indicate your current level of satisfaction. Remember, the higher the number, the more satisfied you feel with each measure of performance. The other scales work the same way.

A. In general, how satisfied or dissatisfied are you with the **sales growth** you have achieved in your company in the past year? Circle the number on the scale below that comes closest to how you feel:

0	1	2	3	4	5	6	7	8	9	10
Completely Dissatisfied					Neutral					Completely Satisfied

B. In general, how satisfied or dissatisfied are you with the **market share** that your company currently holds right now?

0	1	2	3	4	5	6	7	8	9	10
Completely Dissatisfied					Neutral					Completely Satisfied

C. In general, how satisfied or dissatisfied are you with your company's **profitability** right now?

0 1 2 3 4 5 6 7 8 9 10
Completely Neutral Completely
Dissatisfied Satisfied

D. In general, how satisfied or dissatisfied are you with the **potential longevity** of your company at present?

0 1 2 3 4 5 6 7 8 9 10
Completely Neutral Completely
Dissatisfied Satisfied

Ten-Item Personality Inventory

Source: Gosling, S.D., Rentfrow, P.J., & Swann, W.B., Jr. (2003). A very brief measure of the Big-Five personality domains. Journal of Research in Personality, 37, 504-528.

Adapted: No.

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Disagree strongly 1	Disagree moderately 2	Disagree a little 3	Neither agree nor disagree 4	Agree a little 5	Agree moderately 6	Agree strongly 7
---------------------------	-----------------------------	---------------------------	------------------------------------	------------------------	--------------------------	------------------------

I see myself as:

1. _____ Extraverted, enthusiastic.
2. _____ Critical, quarrelsome.
3. _____ Dependable, self-disciplined.
4. _____ Anxious, easily upset.
5. _____ Open to new experiences, complex.
6. _____ Reserved, quiet.
7. _____ Sympathetic, warm.
8. _____ Disorganized, careless.
9. _____ Calm, emotionally stable.
10. _____ Conventional, uncreative.

TIPI scale scoring ("R" denotes reverse-scored items):

Extraversion: 1, 6R; Agreeableness: 2R, 7; Conscientiousness: 3, 8R; Emotional Stability: 4R, 9; Openness to Experiences: 5, 10R.

Appendix E: Types of businesses interviewed for this study

Pilates training	Promotional/Marketing
Recreational sports for adults	Communications consulting
Professional services in mgmt	Personal trainer
Bed & Breakfast	Massage therapy
Theme parties for kids	Meeting planners
Paralegal	Training/devt./delivery/design
Personal assistant	Applied Marketing Solutions
Sports specific conditioning/training ct	E-marketing outsource solutions
Construction manager	Services business
Just-in-time technical writing	Sales rep for medical equipment
Residential maintenance technicians	Grief counseling (family/children)
Safe, natural effective healing	High-end corporate computer systems trg
Do-it-yourself instant real estate list	Self-made wine making company
Chair repair/refinishing	Small business coach
Small business technical support special	Ottawa web designer
Ottawa tech support & web devt	Custom window treatments
Educational entertainment on Canada	Quilt making
Roofing	Dog grooming business
All season container gardening	Artist - figurative -portrait & abstract
Writing and editing	Graphic designer
Leadership support	Construction
International student support	Private school - Learning Disabled children
Training, consulting, custom-focus	Geriatric home respite care
Premature infant clothing	Communication design
Home inspection services	Content mgmt. and e-commerce
Internet services	Clothing design, manufacturing, retail
Construction	Word processing
Personalization/engraving/wedding	Upholstery, interior design
Nikken wellness consultant	Digital image processing
IT Education Centre	IT consulting
Marketing consultation	Learning Disability specialist
Engineering reliability consulting servi	Consulting services
Human performance improvement specialist	Environment concerns (e.g., well water)
Mobile fitness	Foot/health care
Professional development consultation	Personal development/self-help
Software devt. in telephony and database	Colour design/faux finishes
Stay-at-home company	Communications trainer and consultant
Sensing systems company	Glass artist
IT consulting firm	Dance studio
On-line video store	Furniture
Photography/Music entertainment	Florist studio
Produce satellite systems and services	Independent wellness consultant
Consignment clothing store	Consignment clothing store

Tech Coach
HMT Computer and Network Solutions
Book publishing company
Tutoring service

Natural Health Product Provider
Entertainment agency
Personalized gifts
Petsitting service

**Appendix F: Mean scores for each of the scales contributing to the SWB Factor
analysis**

Measure	Mean score
Life satisfaction	7.93 (1.62)
Satisfaction with work life	7.73 (1.64)
Satisfaction with social life	6.99 (2.13)
Satisfaction with home life	7.87 (1.90)
Satisfaction with emotional state	7.84 (1.89)
Satisfaction with recreational state	6.66 (2.22)
PPSRS - Meaning	8.58 (1.16)
PPSRS - Unstressful	5.66 (2.37)
CESD Total score	8.81 (7.01)
Satisfaction with sales growth	6.49 (2.47)
Satisfaction with market share	5.80 (2.37)
Satisfaction with profitability	5.82 (2.75)
Satisfaction with potential longevity	8.20 (1.51)
Satisfaction with company	8.21 (1.87)
Diener-Emmons Positive Affect	23.31 (5.08)
Diener-Emmons Negative Affect	10.61 (11.45)

Appendix G: Means and standard deviations (SD) for PPA dimension aggregate

scores for each project category

Dimension	Learning	Administrative	Networking	Core	R&D
Core to business	7.70 (2.66)	8.01 (2.33)	8.96 (1.94)	9.86 (0.42)	7.25 (2.47)
Commitment	8.17 (2.20)	6.90 (2.73)	8.03 (2.12)	9.52 (1.03)	7.14 (2.32)
Initiation	7.73 (2.55)	7.35 (2.62)	7.80 (2.21)	9.14 (1.20)	6.78 (2.79)
Control	8.10 (1.77)	7.79 (2.01)	7.43 (2.26)	8.79 (1.39)	7.23 (2.40)
Outcome	8.62 (1.48)	8.43 (1.57)	7.87 (1.85)	9.11 (1.07)	7.56 (2.10)
Progress	7.65 (2.03)	7.56 (2.05)	7.34 (2.19)	8.16 (1.63)	6.81 (2.30)
Competent	8.64 (1.55)	7.69 (2.18)	7.33 (2.15)	9.07 (1.09)	7.87 (1.80)
Emotional support	7.01 (2.99)	6.47 (3.08)	7.20 (2.79)	8.04 (2.25)	7.11 (2.91)
Hindrance	3.34 (3.02)	3.53 (3.02)	2.66 (2.90)	3.23 (2.94)	3.02 (2.98)
Creative	7.34 (2.94)	4.54 (3.45)	7.31 (2.53)	8.34 (2.21)	7.15 (2.65)
Self-identity	8.56 (2.14)	4.59 (3.34)	6.47 (3.06)	8.76 (1.87)	5.87 (3.23)
Competitiveness	5.19 (3.26)	2.01 (2.59)	5.63 (3.05)	6.79 (3.26)	5.03 (3.43)
Passion	8.21 (2.23)	3.47 (2.92)	6.94 (2.89)	9.27 (1.12)	6.62 (2.74)
Core to self	8.31 (2.21)	4.66 (3.36)	6.52 (3.17)	8.73 (1.74)	5.62 (3.09)
Enjoyment	8.10 (2.04)	4.12 (2.77)	6.86 (2.61)	8.87 (1.27)	6.69 (2.64)
Pride	8.05 (2.19)	5.59 (2.98)	6.97 (2.99)	8.97 (1.77)	7.12 (2.75)
Stress	4.54 (2.95)	5.01 (2.65)	4.66 (2.94)	4.62 (2.82)	3.42 (2.85)
Frustration	2.93 (2.43)	4.41 (2.78)	3.44 (2.78)	3.46 (2.46)	2.77 (2.65)
Anxiety	2.37 (2.63)	3.02 (2.83)	3.22 (2.90)	2.73 (2.49)	2.10 (2.57)

Appendix H: Rotated factor loadings for PCA of original PPA dimensions

	<u>Factor1</u>	<u>Factor 2</u>	<u>Factor 3</u>
Passionate engagement	.86	.27	.01
Self-identity	.85	.19	-.02
Enjoyment	.81	.19	-.12
Core to self	.78	.16	.16
Creativity	.64	.14	-.05
Pride	.55	.43	.18
Competitive	.52	-.17	.21
Emotional Support	.40	.30	-.09
Committed	.32	.70	.01
Control	.11	.70	-.21
Progress	.06	.64	-.00
Initiate	.45	.57	.00
Outcome	.35	.56	-.28
Competent	.41	.54	-.26
Hindrance	.36	-.54	.26
Frustration	.11	-.05	.88
Stress	.00	-.13	.86
Anxiety	-.01	-.15	.82
Variance accounted for (%) - Rotated	25.69	17.43	14.36
Variance accounted for (%) - Unrotated	32.87	16.94	7.65
Internal consistency (α)	.84	.52	.84

Appendix I: Means and standard deviations for the Big Five traits (N=94)

Trait	Mean (SD)
Extraversion	5.07 (1.52)
Agreeableness	5.38 (1.19)
Conscientiousness	5.88 (1.15)
Emotional stability	5.35 (1.37)
Openness to experience	6.03 (0.99)

Appendix J: Cross-correlation matrix for the Big Five traits and PWB/WWB

Correlations

		swbfinl	wrkwbfin	Extraversion	Agreeableness	Conscientiousness	Emotional stability	Open to new experiences
swbfinl	Pearson Correlation Sig. (2-tailed) N	1	-.001 .992 84	.224(*) .043 82	.130 .244 82	.143 .200 82	.391(**) .000 82	-.037 .740 81
wrkwbfin	Pearson Correlation Sig. (2-tailed) N	-.001 .992 84	1 .992 84	-.017 .882 82	.161 .148 82	.172 .122 82	.075 .501 82	.032 .780 81
Extraversion	Pearson Correlation Sig. (2-tailed) N	.224(*) .043 82	-.017 .882 84	1 .94 82	.141 .175 94	.155 .136 94	.118 .255 94	.273(**) .008 93
Agreeableness	Pearson Correlation Sig. (2-tailed) N	.130 .244 82	.161 .148 82	.141 .175 94	1 .94 82	.100 .336 94	.335(**) .001 94	.213(*) .040 93
Conscientiousness	Pearson Correlation Sig. (2-tailed) N	.143 .200 82	.172 .122 82	.155 .136 94	.100 .336 94	1 .94 82	.179 .084 94	.027 .796 93
Emotional stability	Pearson Correlation Sig. (2-tailed) N	.391(**) .000 82	.075 .501 82	.118 .255 94	.335(**) .001 94	.179 .084 94	1 .94 82	.163 .119 93
Open to new experiences	Pearson Correlation Sig. (2-tailed) N	-.037 .740 81	.032 .780 81	.273(**) .008 93	.213(*) .040 93	.027 .796 93	.163 .119 93	1 .93

* Correlation is significant at the 0.05 level (2-tailed).

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

**Appendix K: Means and standard deviations for the Entrepreneurial Orientation
construct (N=89)**

Trait	Mean (SD)
Autonomous	8.25 (1.68)
Innovative	7.86 (1.79)
Risk-taker	7.18 (1.97)
Proactive	8.07 (1.74)
Competitive aggressiveness	5.94 (2.80)

Appendix L: Cross-correlation matrix for the Entrepreneurial Orientation construct and PWB/WWB

Correlations

		swbfinl	wrkwbfin	AUTONOMY	INNOVATIVE	RISK-TAKER	PROACTIVE	COMPAGGR
swbfinl	Pearson Correlation	1	-.001	.200	.068	.055	.118	-.092
	Sig. (2-tailed)		.992	.077	.545	.621	.287	.410
	N	84	84	79	82	83	83	82
wrkwbfin	Pearson Correlation	-.001	1	.192	.200	.190	.227(*)	.096
	Sig. (2-tailed)	.992		.090	.071	.086	.039	.392
	N	84	84	79	82	83	83	82
AUTONOMY	Pearson Correlation	.200	.192	1	.206(*)	.306(**)	.275(**)	-.075
	Sig. (2-tailed)	.077	.090		.050	.003	.008	.481
	N	79	79	91	91	91	91	91
INNOVATIVE	Pearson Correlation	.068	.200	.206(*)	1	.567(**)	.533(**)	.354(**)
	Sig. (2-tailed)	.545	.071	.050		.000	.000	.000
	N	82	82	91	95	95	95	94
RISK-TAKER	Pearson Correlation	.055	.190	.306(**)	.567(**)	1	.610(**)	.416(**)
	Sig. (2-tailed)	.621	.086	.003	.000		.000	.000
	N	83	83	91	95	96	96	95
PROACTIVE	Pearson Correlation	.118	.227(*)	.275(**)	.533(**)	.610(**)	1	.368(**)
	Sig. (2-tailed)	.287	.039	.008	.000	.000		.000
	N	83	83	91	95	96	96	95
COMPAGGR	Pearson Correlation	-.092	.096	-.075	.354(**)	.416(**)	.368(**)	1
	Sig. (2-tailed)	.410	.392	.481	.000	.000	.000	
	N	82	82	91	94	95	95	95

* Correlation is significant at the 0.05 level (2-tailed).

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

**Appendix M: Simple correlations between PPA dimensions and PWB and WWB for
entrepreneurs (N=78)**

Dimension	SWB	WWB
Commitment	.14	.23*
Initiation	.03	.10
Control	.20	.38**
Outcome	-.03	.43**
Progress	.01	.55**
Competent	.15	.37**
Emotional support	.39**	.32**
Hindrance	-.28*	-.08
Creative	-.02	.18
Self-identity	-.00	.15
Competitiveness	-.02	-.04
Passionate engagement	.03	.22
Core to self	.01	.10
Enjoyment	.12	.10
Pride	.08	.25*
Stress	-.49**	-.12
Frustration	-.39**	-.17
Anxiety	-.28*	-.20

Appendix O: Cross-correlation matrix for the PPA variables and Work Well-Being

Correlations

		wkwbfm	PEMOTSUP	HINDRANC	PPAPRIDE	Pos affect	Efficacy	Neg affect
Pearson Correlation	wkwbfm	1.000	.314	-.073	.241	.002	.477	-.128
	PEMOTSUP	.314	1.000	-.083	.292	.327	.230	-.144
	HINDRANC	-.073	-.083	1.000	.001	.201	-.330	.243
	PPAPRIDE	.241	.292	.001	1.000	.452	.380	.130
	Pos affect	.002	.327	.201	.452	1.000	-.040	.018
	Efficacy	.477	.230	-.330	.380	-.040	1.000	-.026
	Neg affect	-.128	-.144	.243	.130	.018	-.026	1.000
	wkwbfm		.003	.267	.018	.494	.000	.135
	PEMOTSUP	.003		.239	.005	.002	.023	.107
	HINDRANC	.267	.239		.496	.041	.002	.017
Sig. (1-tailed)	PPAPRIDE	.018	.005	.496		.000	.000	.132
	Pos affect	.494	.002	.041	.000		.367	.437
	Efficacy	.000	.023	.002	.000	.367		.413
	Neg affect	.135	.107	.017	.132	.437	.413	
	wkwbfm		.76	.76	.76	.76	.76	.76
	PEMOTSUP	.76		.76	.76	.76	.76	.76
	HINDRANC	.76	.76		.76	.76	.76	.76
	PPAPRIDE	.76	.76	.76		.76	.76	.76
	Pos affect	.76	.76	.76	.76		.76	.76
	Efficacy	.76	.76	.76	.76	.76		.76
N	Neg affect	.76	.76	.76	.76	.76	.76	
	wkwbfm		.76	.76	.76	.76	.76	.76
	PEMOTSUP	.76		.76	.76	.76	.76	.76
	HINDRANC	.76	.76		.76	.76	.76	.76
	PPAPRIDE	.76	.76	.76		.76	.76	.76
	Pos affect	.76	.76	.76	.76		.76	.76
	Efficacy	.76	.76	.76	.76	.76		.76
	Neg affect	.76	.76	.76	.76	.76	.76	
	wkwbfm		.76	.76	.76	.76	.76	.76
	PEMOTSUP	.76		.76	.76	.76	.76	.76

Appendix P: Cross-correlation matrix for the JNI variables and Personal Well-Being

		PACHIEVE	PCHALLENGE	PSELFWOR	PFAIR	PEFFIC	PFUN	PFLEXIBL	PREWARD	PPHYSENV	PMAKE DIF	PPOWPPL
PACHIEVE	Pearson Correlation	1	.602(**)	.317(**)	.510(**)	.200	.418(**)	-.141	.227(*)	.271(*)	.089	.169
	Sig. (2-tailed)		.000	.003	.000	.070	.000	.201	.042	.013	.370	.134
	N	84	84	83	79	83	83	84	81	84	84	80
PCHALLENGE	Pearson Correlation	.602(**)	1	.522(**)	.311(**)	.198	.496(**)	.178	.269(*)	.137	.212	.381(**)
	Sig. (2-tailed)	.000		.000	.005	.073	.000	.105	.015	.213	.053	.000
	N	84	84	83	79	83	83	84	81	84	84	80
PSELFWOR	Pearson Correlation	.317(**)	.522(**)	1	.431(**)	.299(**)	.393(**)	.284(**)	.331(**)	.283(**)	.180	.103
	Sig. (2-tailed)	.003	.000		.000	.006	.000	.009	.003	.010	.104	.364
	N	83	83	83	79	82	82	83	81	83	83	79
PFAIR	Pearson Correlation	.510(**)	.311(**)	.431(**)	1	.472(**)	.264(*)	.158	.248(*)	.274(*)	.034	.072
	Sig. (2-tailed)	.000	.005	.000		.000	.020	.166	.028	.014	.767	.534
	N	79	79	79	79	79	78	79	79	79	79	77
PEFFIC	Pearson Correlation	.200	.198	.299(**)	.472(**)	1	.282(*)	.113	.377(**)	.337(**)	-.096	.105
	Sig. (2-tailed)	.070	.073	.006	.000		.010	.309	.001	.002	.389	.353
	N	83	83	82	79	83	82	83	80	83	83	80
PFUN	Pearson Correlation	.418(**)	.496(**)	.393(**)	.264(*)	.282(*)	1	.150	.390(**)	.306(**)	.186	.206
	Sig. (2-tailed)	.000	.000	.000	.020	.010		.175	.000	.005	.092	.067
	N	83	83	82	78	82	83	83	80	83	83	80
PFLEXIBL	Pearson Correlation	-.141	.178	.284(**)	.158	.113	.150	1	.259(*)	.048	.207	.111
	Sig. (2-tailed)	.201	.105	.009	.166	.309	.175		.019	.661	.059	.328
	N	84	84	83	79	83	83	84	81	84	84	80
PREWARD	Pearson Correlation	.227(*)	.269(*)	.331(**)	.248(*)	.377(**)	.390(**)	.259(*)	1	.349(**)	.322(**)	.369(**)
	Sig. (2-tailed)	.042	.015	.003	.028	.001	.000	.019		.001	.003	.001
	N	81	81	81	79	80	80	81	81	81	81	77
PPHYSENV	Pearson Correlation	.271(*)	.137	.283(**)	.274(*)	.337(**)	.306(**)	.048	.349(**)	1	.099	.135
	Sig. (2-tailed)	.013	.213	.010	.014	.002	.005	.661	.001		.368	.233
	N	84	84	83	79	83	83	84	81	84	84	80

		PACHIEVE	PCHALLENGE	PSELFWOR	PFAIR	PEFFIC	PFUN	PFLEXIBL	PREWARD	PPHYSENV	PMAKE DIF	PPOWPPL
PMAKEDIF	Pearson Correlation	.099	.212	.180	.034	-.096	.186	.207	.322(***)	.099	1	.398(***)
	Sig. (2-tailed)	.370	.053	.104	.767	.389	.092	.059	.003	.366	.	.000
	N	84	84	83	79	83	83	84	81	84	84	80
PPOWPPL	Pearson Correlation	.169	.381(***)	.103	.072	.105	.206	.111	.389(***)	.135	.398(***)	1
	Sig. (2-tailed)	.134	.000	.364	.534	.353	.067	.328	.001	.233	.000	.
	N	80	80	79	77	80	80	80	77	80	80	80

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

* Correlation is significant at the 0.05 level (2-tailed).

Appendix Q: Cross-correlation matrix for the JNI variables and Work Well-Being

		PACHIEVE	PCONTROL	PCOMPFIN	PINTERES	PJOBSEC	PTEAM
PACHIEVE	Pearson	1	.288(**)	.208	.412(**)	.202	.285(*)
	Correlation						
	Sig. (2-tailed)	.	.008	.059	.000	.067	.013
	N	84	84	83	83	83	76
PCONTROL	Pearson	.288(**)	1	.095	.091	.174	.104
	Correlation						
	Sig. (2-tailed)	.008	.	.395	.411	.115	.372
	N	84	84	83	83	83	76
PCOMPFIN	Pearson	.208	.095	1	.218(*)	.394(**)	.386(**)
	Correlation						
	Sig. (2-tailed)	.059	.395	.	.049	.000	.001
	N	83	83	83	82	83	75
PINTERES	Pearson	.412(**)	.091	.218(*)	1	.228(*)	.518(**)
	Correlation						
	Sig. (2-tailed)	.000	.411	.049	.	.040	.000
	N	83	83	82	83	82	76
PJOBSEC	Pearson	.202	.174	.394(**)	.228(*)	1	.404(**)
	Correlation						
	Sig. (2-tailed)	.067	.115	.000	.040	.	.000
	N	83	83	83	82	83	75
PTEAM	Pearson	.285(*)	.104	.386(**)	.518(**)	.404(**)	1
	Correlation						
	Sig. (2-tailed)	.013	.372	.001	.000	.000	.
	N	76	76	75	76	75	76

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

* Correlation is significant at the 0.05 level (2-tailed).

Appendix R: Mean satisfaction scores for each of the distinguishing entrepreneurial characteristics that yielded significant relationships with WWB

Work well-being subscale	IT-related business		Home-based business	
	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
Satisfaction with sales growth	5.50 (2.39)	6.84 (2.42)*	6.29 (2.61)	7.40 (1.67)
Satisfaction with market share	4.52 (2.05)	6.29 (2.31)*	5.77 (2.46)	6.06 (2.10)
Satisfaction with profitability	4.96 (2.70)	6.11 (2.72)	5.64 (2.92)	6.79 (1.69)
Satisfaction with longevity	7.39 (1.67)	8.50 (1.35)*	8.16 (1.59)	8.50 (1.19)
Satisfaction with company	7.83 (2.20)	8.37 (1.73)	8.06 (2.02)	8.93 (0.84)
Satisfaction with work life	7.11 (1.83)	7.96 (1.52)*	7.65 (1/70)	8.10 (1.45)

Appendix S: Mean satisfaction scores for each of the distinguishing entrepreneurial characteristics that yielded significant relationships with the indicators of success

Personal success	Type of business			Previously self-employed	
	<i>Service</i>	<i>Sales</i>	<i>Consulting</i>	<i>Yes</i>	<i>No</i>
Own boss	8.45 (1.90)	7.62 (2.22)	8.97 (1.40)*	9.00 (1.49)	8.02 (2.06)*
Freedom	9.09 (1.27)	8.45 (1.80)	8.83 (1.26)	9.22 (1.12)	8.59 (1.58)*
Control	8.26 (1.48)	7.69 (1.94)	8.69 (1.31)	8.64 (1.42)	7.96 (1.71)*
Feeling responsible	8.24 (1.39)	7.22 (1.95)	8.10 (1.61)*	8.37 (1.52)	7.61 (1.76)*
Achievement	8.88 (1.51)	8.59 (1.60)	9.21 (1.08)	9.11 (1.19)	8.75 (1.58)

Appendix T: Characteristics of the matched-pair samples of entrepreneurs and non-entrepreneurs (n=108)

Matching pair	Gender		Age		Marital		Work hours	
	E	NE	E	NE	E	NE	E	NE
1	M	M	24	24	M	S	50	45
2	F	F	26	26	S	S	47.5	37.5
3	M	M	27	27	M	S	90	37.5
4	M	M	27	27	M	N/A	45	37.5
5	F	F	29	30	M	N/A	40	40
6	M	M	29	30	M	M	55	N/A
7	F	F	29	26	M	M	75	40
8	F	F	30	28	M	N/A	50	45
9	M	M	30	29	M	N/A	42.5	12
10	F	F	30	27	S	S	40	37.5
11	M	M	30	27	M	N/A	47.5	30
12	M	M	31	27	M	N/A	60	N/A
13	F	F	31	31	M	N/A	25	37
14	F	F	32	32	S	N/A	50	40
15	F	F	32	33	M	D	55	25
16	F	F	32	27	M	N/A	35	35
17	F	F	32	30	M	N/A	50	30
18	M	M	33	33	M	N/A	60	40
19	F	F	33	29	M	N/A	30	35
20	M	M	34	26	M	S	50	3
21	M	M	34	24	M	N/A	35	40
22	F	F	35	30	M	S	40	35
23	F	F	35	30	S	N/A	50	N/A
24	F	F	35	31	M	N/A	28	16
25	F	F	36	36	M	N/A	55	37.5
26	M	M	36	37	M	D	65	43
27	F	F	36	34	M	N/A	50	40
28	M	M	36	38	S	N/A	62	N/A
29	M	M	36	38	M	S	75	50
30	F	F	36	35	M	N/A	75.5	43
31	F	F	37	37	M	N/A	52.5	40
32	M	M	37	38	M	N/A	35	6
33	F	F	38	36	M	M	21	20
34	M	M	38	38	M	S	55	0
35	F	F	38	38	D	N/A	60	38
36	F	F	38	37	S	N/A	62.5	37.5
37	F	F	39	34	M	M	20	30
38	F	F	39	33	M	S	40	N/A
39	F	F	40	38	M	W	15	10
40	M	M	40	40	M	M	62.5	37.5
41	F	F	40	41	M	N/A	40	40
42	F	F	40	34	S	S	15	12.5
43	F	F	40	39	M	N/A	60	40
44	F	F	41	42	M	N/A	20	N/A
45	F	F	41	40	M	N/A	55	37.5
46	F	F	41	40	M	N/A	45	N/A
47	F	F	42	43	M	M	20	25
48	F	F	42	42	M	M	22.5	N/A
49	F	F	42	40	D	S	25	35
50	F	F	44	40	M	N/A	70	N/A
51	F	F	44	44	M	N/A	60	50
52	F	F	45	46	M	N/A	21	7.5
53	F	F	45	39	D	D	35	0
54	F	F	45	45	S	S	48	N/A
55	F	F	46	45	M	N/A	12.5	8
56	F	F	47	43	M	N/A	55	37.5
57	F	F	48	50	M	N/A	70	37.5
58	F	F	50	51	M	M	32.5	N/A
59	F	F	56	53	D	D	65	25