

Northumbria Research Link

Citation: Ali, Imran Personality traits, individual innovativeness and satisfaction with life. Journal of Innovation and Knowledge, 4 (1). pp. 38-46. ISSN 2530-7614

Published by: UNSPECIFIED

URL:

This version was downloaded from Northumbria Research Link: <http://northumbria-test.eprints-hosting.org/id/eprint/55457/>

Northumbria University has developed Northumbria Research Link (NRL) to enable users to access the University's research output. Copyright © and moral rights for items on NRL are retained by the individual author(s) and/or other copyright owners. Single copies of full items can be reproduced, displayed or performed, and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided the authors, title and full bibliographic details are given, as well as a hyperlink and/or URL to the original metadata page. The content must not be changed in any way. Full items must not be sold commercially in any format or medium without formal permission of the copyright holder. The full policy is available online: <http://nrl.northumbria.ac.uk/policies.html>

This document may differ from the final, published version of the research and has been made available online in accordance with publisher policies. To read and/or cite from the published version of the research, please visit the publisher's website (a subscription may be required.)



Northumbria
University
NEWCASTLE



University**Library**

Empirical paper

Personality traits, individual innovativeness and satisfaction with life

Imran Ali

Department of Business Administration, Faculty of Economics & Administration, King Abdulaziz University, Jeddah, Saudi Arabia



ARTICLE INFO

Article history:

Received 20 April 2017

Accepted 25 November 2017

Available online 4 February 2018

Keywords:

Big-Five personality traits

Individual innovativeness

Satisfaction with life

ABSTRACT

There is plenty of research on personality traits that explains its impact on human behaviors in different situations. However, there is sparse research available in the literature that explains how does personality traits affect innovativeness among individuals and satisfaction with life perceptions (subjective wellbeing). The current study proposes and empirically examines a conceptual model that addresses this important gap in the body of knowledge. Famous Big-Five personality traits theory is used to explain this phenomenon in this research. Data is collected from 613 students enrolled in different executive, master and PhD level programs in different universities of Pakistan. The study found positive influence of extraversion, agreeableness, conscientiousness, and openness to experience on individual innovativeness and satisfaction with life perceptions. Neuroticism is found to be negatively related to individual innovativeness and satisfaction with life perceptions. Finally, the study noted a positive association between individual innovativeness and perception with life. The applications and implications of this research are discussed in details.

© 2018 Journal of Innovation & Knowledge. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

The theory of personality traits postulates that people naturally deal with different situations and interact with their environment in different ways. From a management perspective, information about an individual's personality can provide valuable information pertaining to what is the best method of communicating with them and what types of jobs and tasks they are most suitable for. However, personality traits may also be key indicators of other facets of an individual's life, including innovativeness (Ahmed, 1998; Eastman, Eastman, & Tolson, 2001; Hsieh, Hsieh, & Wang, 2011) and satisfaction with life (Judge, Higgins, Thoresen, & Barrick, 1999; Loewe, Bagherzadeh, Araya-Castillo, Thieme, & Batista-Foguet, 2014; Lounsbury et al., 2003; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997).

Existing literature on the influence of personality traits on innovativeness focuses primarily on employees' innovation performance (Buchanan, 1998; Hsieh et al., 2011) or an individual's propensity to accept innovative new products (Yi, Fiedler, & Park, 2006). However, very few studies have studied innovativeness in the context of an individual's willingness develop new ideas and experience new things. Even fewer studies have addressed its influence on satisfaction with life, despite innovativeness being a significant predictor of satisfaction with life (Nimrod, 2008). This study aims to bridge this gap using the Indi-

vidual Innovativeness (II) instrument developed by Hurt, Joseph, and Cook (2013).

Furthermore, very few studies have considered the mechanisms and conditions through which personality traits improve an individual's perceived satisfaction with life. However, various studies indicate that there may be process variables underlying the relationship between personality traits and satisfaction with life (Furler, Gomez, & Grob, 2013; Heller, Watson, & Ilies, 2004; Hsieh et al., 2011), although these have been scarcely studied. To address this, Heller et al. (2004) have called for more complex theoretical models that synthesize these process variables. Similarly, Nimrod and Kleiber (2007) have called for an examination of the role of personality, among other factors, in the relationship between innovativeness and satisfaction with life.

In line with these recommendations, this study posits that individual innovativeness is an antecedent of life satisfaction. That is, individuals with personality traits that are conducive of innovativeness would be more likely to perceive their lives as fulfilling, particularly in terms of perceived quality of family life, career, and health (Loewe et al., 2014). This occurs because innovative individuals enjoy doing something new and seek challenges, which serve to broaden and deepen their sense of meaning in life (Nimrod & Kleiber, 2007). By investigating the role of innovativeness in an individual's perception of satisfaction with life, this research aims to expand existing understanding beyond 'what' personality traits are associated with life satisfaction to 'why' individuals possessing these personality traits perceive their lives as more satisfying. In doing so, it is hoped that this study will stimulate research beyond

E-mail address: imranalinim@gmail.com

the Big Five personality traits and toward the attitudes and behaviors that directly influence an individual's satisfaction with life.

Literature review

The 'Big Five' personality traits

Although a number of popular models of personality traits continue to influence contemporary research (Jung, 1971; Kirton & De Ciantis, 1986), the Five Factor Model (the 'Big Five') proposed by McCrae and Costa Jr (1999) is the most widely used and recognized model today (Rossberger, 2014). It builds upon the 35 bipolar clusters of terms related to personality traits developed by Cattell (1943) and the classic Myers-Briggs Type Indicator (MBTI) by adding an important fifth personality trait, namely neuroticism or emotional stability, which is a core domain predictive of depression and anxiety disorders. A brief description of the Big Five traits is provided below (Rossberger, 2014):

- **Extraversion:** extent to which individuals engage with the external world and experience enthusiasm and other positive emotions.
- **Agreeableness:** extent to which individuals value cooperation and social harmony, honesty, decency, and trustworthiness. Agreeable individuals also tend to have an optimistic view of human nature.
- **Conscientiousness:** extent to which individuals value planning, possess the quality of persistence, and are achievement-oriented.
- **Neuroticism:** extent to which individuals experience negative feelings and their tendency to emotionally overreact.
- **Openness to Experience:** extent to which individuals exhibit intellectual curiosity, self-awareness, and individualism/nonconformance.

Furthermore, a number of 'mini-markers' of each personality trait have been defined and studied, such as 'talkative' for Extraversion, 'sympathetic' for Agreeableness, 'disorganized' (reverse-coded) for Conscientiousness, 'temperamental' for Neuroticism, and 'imaginative' for Openness to Experience (Bozionelos, Bozionelos, Polychroniou, & Kostopoulos, 2014; Weele, 2013). Similarly, McCrae and Terracciano (2005) identified a set of facets or features for each of the Big Five personality traits based on data from 50 cultures. Despite claims about the universality of the Big Five personality traits, some studies have criticized the lack of conceptual validation (Waller & Ben-Porath, 1987) and questionable conceptual and methodological assumptions (Block, 1995) of the model. However, other extensive studies have shown that the model comprehensively subsumes nearly all English trait adjectives (Goldberg, 1990) and is stable across cultures (McCrae & Terracciano, 2005). Accordingly, the Big Five model was used to analyze individual personality traits in this study.

Individual innovativeness

Innovativeness may be defined as "the degree to which an individual is relatively earlier in adopting an innovation than other members of his system" (Rogers & Shoemaker, 1971), where "relatively earlier" refers to actual, rather than perceived, time of adoption. Individual innovativeness is a persistent trait or disposition that determines how an individual perceives and reacts to an innovation (Yi et al., 2006), where a high level of individual innovativeness would yield a more positive reaction. Individual innovativeness is often studied in the context of diffusion of innovation, particularly relating to consumers and their willingness to adopt innovative new products (Midgley & Dowling, 1978) and the

propensity of organizational members to seek external knowledge (Tortoriello, 2006). However, this study adopts a more generalized perspective of individual innovativeness that affects how an individual perceives and reacts to new ideas, inventions, or ways of doing things as well as the individual's propensity to improvise, generate original ideas, and accept challenges (Hurt, Joseph, & Cook, 1977). This would allow for an authentic investigation of the influence of innovativeness on an individual's satisfaction with life.

Satisfaction with life

The conceptualizations of satisfaction with life typically diverge into two streams: the 'bottom-up' and 'top-down' approaches (Loewe et al., 2014). The 'bottom-up' perspective views an individual's overall satisfaction with life as the culmination of satisfaction in various other domains of life, including family, career, and leisure (Pavot & Diener, 2008). The satisfaction within these domains, in turn, is attributed to situation-induced changes (Pavot & Diener, 2008). In contrast, the 'top-down' perspective posits that individuals' personality and other stable traits affect their disposition to be satisfied with their lives (P. Steel, Schmidt, & Shultz, 2008). These dispositional factors interact with situational factors to determine the extent of an individual's satisfaction with life (Heller et al., 2004).

This paper synthesizes both the 'bottom-up' and 'top-down' streams. In line with the 'bottom-up' perspective, satisfaction with life is postulated to be a culmination of satisfaction in seven major domains of life, including family, one's self-worth, health, social relationships, work, financial situation, and leisure-time (Loewe et al., 2014). At the same time, in line with the 'top-down' perspective, it is postulated that personality is central to an individual's perception of a fulfilling life and, therefore, a critical predictor of satisfaction with life. Furthermore, it is postulated that those individuals with personality traits that support innovativeness are more likely to attain positive situational factors in their various domains of life. The number and importance of such domains can vary greatly from one individual and another.

The Big Five personality traits and individual innovativeness

Research ranging from the disciplines of psychology to management has determined that stable personality characteristics can be used to identify creative and innovative individuals (Ahmed, 1998). These traits can typically fall under Extraversion (high energy), Agreeableness (ability to accommodate opposites), Conscientiousness (persistence), low Neuroticism (self-confidence), and Openness to Experience (broad interests, attraction to complexity, independence of judgment, curiosity, and firm sense of self as creative) (Ahmed, 1998). Some studies even suggest that personality traits may be the most significant explanatory factor of innovative and entrepreneurial behavior (Eastman et al., 2001). Other theories suggest that highly creative people tend to be 'situationists' that possess an ethic of caring and a pragmatic moral decision-making style (Bierly, Kolodinsky, & Charette, 2009). This implies that an individual's values and beliefs, and hence their culture, may also be important predictors of innovativeness. While this may be true, there is a large and increasing body of literature that provides evidence for the impact of personality traits on innovativeness (Buchanan, 1998; Hsieh et al., 2011; Kirton & De Ciantis, 1986; Rossberger, 2014; Steel, Rinne, & Fairweather, 2011; Weele, 2013). A discussion on the influence of each of the Big Five personality traits on individual innovativeness follows.

The positive attributed associated with Extraversion, including being sociable, assertive, and active (Weele, 2013). This allows extraverted individuals to successfully create and engage with their social network. In turn, this creates opportunities for knowledge

exploration and exploitation (Judge et al., 1999), which are vital to innovativeness. Furthermore, the qualities of enthusiasm and positive emotions (Rossberger, 2014) enable extraverted individuals to try new things. While some studies did not find Extraversion to have a significant impact on innovativeness (Kirton & De Ciantis, 1986; Steel et al., 2008), a number of studies have reported that individuals with high levels of Extraversion have greater innovation capability (Hsieh et al., 2011; Weele, 2013) and stronger entrepreneurial intentions (Eastman et al., 2001). Also, Buchanan (1998) found that teams with moderate levels of Extraversion tend to perform better in terms of innovative task performance. Accordingly, the first part of the first hypothesis is proposed:

H1a. Extraversion positively affects the level of Individual Innovativeness

The relationship between Agreeableness and individual innovativeness is somewhat complicated. Whilst some characteristics such as being cooperative, good-natured, and flexible (Weele, 2013) appear to support innovativeness, other characteristics such as tolerance and compliance (McCrae & Terracciano, 2005) may instead impede an individual's innovative tendencies. Therefore, it is not surprising that some studies have found Agreeableness to have an insignificant (Hsieh et al., 2011) or even negative (Patterson, 2002) influence on innovativeness. However, Agreeableness has been found to be a significant predictor of innovation-supportive national cultural practices and national-level innovation (Rossberger, 2014; Steel et al., 2011). Although some aspects of Agreeableness may discourage innovative behavior, the implementation of innovations requires effective management of social networks and business partners, for which the positive characteristics of Agreeableness are of great importance (Rossberger, 2014). While Extraversion may determine an individual's propensity to socialize, Agreeableness is an important determinant of whether the individual is accepted by social groups and can effectively maintain social and business relationships, which are vital for the success of innovative initiatives. Accordingly, the second part of the hypothesis is proposed:

H1b. Agreeableness positively affects the level of Individual Innovativeness

Not unlike Agreeableness, the literature pertaining to the influence of conscientiousness on innovativeness is divided. While the propensity of conscientious individuals to plan, be organized, and be achievement-oriented (Weele, 2013) may discourage innovative behaviors, the qualities of competence, persistence, and self-discipline (McCrae & Terracciano, 2005) are vital for creating successful innovations. In line with this, Hsieh et al. (2011) found Conscientiousness to have a significant positive effect on innovation capability. Also, Buchanan (1998) found high levels of conscientiousness to be an important predictor of a team's innovative task performance. However, other studies have found an insignificant relationship between Conscientiousness and innovativeness (Kirton & De Ciantis, 1986; Steel et al., 2011). Ultimately, the positive attributes of conscientiousness are necessary for seeing innovative ideas through to execution. Accordingly, the third part of the hypothesis is proposed:

H1c. Conscientiousness positively affects the level of Individual Innovativeness

The influence of neuroticism on innovativeness is much better understood. The negative characteristics of anxiety, hostility, and self-consciousness (McCrae & Terracciano, 2005) as well as the propensity to experience negative feelings (Rossberger, 2014) indicate that individuals with highly neurotic personalities would find it difficult to exhibit innovative behaviors and pursue innovative ideas (Eastman et al., 2001). Innovative individuals tend

to be self-confident (Kirton & De Ciantis, 1986) and emotionally stable (Hsieh et al., 2011), which are characteristics associated with low levels of neuroticisms. Accordingly, the fourth part of the hypothesis is proposed:

H1d. Neuroticism negatively affects the level of Individual Innovativeness

Of the Big Five personality traits, Openness to Experience has the strongest and most well-documented influence on innovativeness. The characteristics of Openness include intellectual curiosity, broad-mindedness, imaginativeness, and originality (Weele, 2013) along with multiplicity of interests and information-seeking behavior (Bozionelos et al., 2014). All of these empower individuals with a strong Openness trait to engage in new experiences and challenges established views (Rossberger, 2014). Similarly, the characteristic of being creative, another critical antecedent of innovativeness (Probst, Romhardt, & Raub, 2000), is often attributed to Openness (Bozionelos et al., 2014; Prabhu, Sutton, & Sauser, 2008; Saucier, 1994). Similarly, Kirton and De Ciantis (1986) profile an innovator as someone who is tolerant of ambiguity and willing to experiment and take risks. Such an individual requires a strong disposition to be open to new experiences.

The literature provides almost unequivocal evidence of the strong positive influence of Openness on innovativeness, in terms of innovation capability (Hsieh et al., 2011) and innovation performance (Weele, 2013). Similarly, high levels of Openness in teams was found to support innovative task performance (Buchanan, 1998). Openness was also found to be a strong predictor of innovation-supportive national cultural practices in terms of both innovation inputs and outputs (Rossberger, 2014) and national-level innovativeness (Steel et al., 2011). Accordingly, the fifth and final part of the first hypothesis is proposed:

H1e. Openness to Experience positively affects the level of Individual Innovativeness

The Big Five personality traits and satisfaction with life

The concept of satisfaction with life is fundamentally subjective in that every individual has a unique set of criteria of what constitutes a fulfilling life. Although the concept of success in life has comparatively more objective criteria, such as family, good health, and a successful career, satisfaction with life is strongly tied to the individual's unique circumstances in the seven key domains of life, including family, health, social relationships, work, financial situation, one's self-worth, and leisure-time (Loewe et al., 2014). Satisfaction with life is significantly predicted by how these circumstances are perceived by the individual, which is inexplicably tied to the individual's personality traits (Furler et al., 2013; Joshanloo & Afshari, 2011; Tuce & Fako, 2014; Zhai, Willis, O'Shea, Zhai, & Yang, 2013).

In addition to personality traits, an individual's values and beliefs, and therefore culture, are also important determinants of perceptions of general well-being (Giacalone, Jurkiewicz, & Promislo, 2015). Indeed, numerous other factors influence an individual's satisfaction with life and these factors may vary from one person to another. Even personality traits other than the Big Five have been found to have a significant influence on satisfaction with life, especially self-esteem (Joshanloo & Afshari, 2011) and optimism in the domain of job satisfaction (Lounsbury et al., 2003). Furthermore, Furler et al. (2013) found evidence that in addition to one's own personality traits, partner's personality traits also significantly influence satisfaction with life. However, in adherence to the principle of parsimony, the scope of this study is limited to the Big Five personality traits. A discussion on each of the Big Five traits and their influence on satisfaction with life follow.

The positive attributes of Extraversion, particularly gregariousness and the feeling of positive emotions (McCrae & Terracciano, 2005), suggest that extraverted individuals would perceive their life positively and thus be more likely to be satisfied with life. Also, the predisposition of extraverted individuals to be social and actively engage with the external world (Weele, 2013) strongly suggests that they would be more successful, and therefore more satisfied, with the social relationships domain of their lives than introverted individuals. Also, Extraversion has been found to be an important predictor of job satisfaction (Zhai et al., 2013) as well as career satisfaction (Lounsbury et al., 2003), indicating that extraverted individuals would be more satisfied with work and possibly financial situation domains of their lives. With respect to overall satisfaction with life, Extraversion has consistently been found to have a strong positive influence on satisfaction with life perceptions (Furler et al., 2013; Grevenstein & Bluemke, 2015; Joshanloo & Afshari, 2011; Judge, Heller, & Mount, 2002; Suldo, Minch, & Hearon, 2014; Zhai et al., 2013). Accordingly, the first part of the second hypothesis is proposed:

H2a. Extraversion positively affects the level of Satisfaction with Life

Similar to Extraversion, individuals with a high level of Agreeableness are motivated to seek interpersonal intimacy and their positive attributes of honesty, trustworthiness, and altruism (McCrae & Terracciano, 2005) enables them to get along well with others. Therefore, such individuals would be more likely to have satisfying social relationships and possibly even professional relationships (McCrae & Terracciano, 2005). In a similar vein, a high level of Agreeableness was found to be positively associated with family satisfaction (Weber & Huebner, 2015) and health satisfaction (Kesavayuth, Rosenman, & Zikos, 2015). Furthermore, although evidence of the relationship was not as pervasive as that for Extraversion and Neuroticism, a number of studies also found a significant positive influence of Agreeableness on overall satisfaction with life (Furler et al., 2013; Grevenstein & Bluemke, 2015; Weber & Huebner, 2015). Accordingly, the second part of the hypothesis is proposed:

H2b. Agreeableness positively affects the level of Satisfaction with Life

Individuals with a strong Conscientiousness trait are highly competent, persistent, dutiful, organized, self-disciplined, and achievement-oriented (McCrae & Terracciano, 2005; Weele, 2013). These traits enable highly conscientious individuals to achieve success and satisfaction in all domains of their life, particularly work. For example, Furnham, Eracleous, and Chamorro-Premuzic (2009) found Conscientiousness to be significant predictors of job satisfaction. Similarly, using a longitudinal approach, Judge et al. (2002) found that Conscientiousness positively predicts both intrinsic and extrinsic career success. Also, Lounsbury et al. (2003) found a positive correlation between Conscientiousness and career satisfaction. Interestingly, in the domain of health, Kesavayuth et al. (2015) found a negative relationship between Conscientiousness and health satisfaction. However, the majority of evidence indicates a positive relationship between Conscientiousness and overall life satisfaction (Furler et al., 2013; Grevenstein & Bluemke, 2015; Suldo et al., 2014; Weber & Huebner, 2015; Zhai et al., 2013). Accordingly, the third part of the hypothesis is proposed:

H2c. Conscientiousness positively affects the level of Satisfaction with Life

Neuroticism is associated with negative feelings including anxiety, hostility, depression, and impulsiveness (McCrae & Terracciano, 2005). As a result, highly neurotic individuals tend

to experience more negative life experiences (Magnus, Diener, Fujita, & Pavot, 1993). Neuroticism is a strong and consistent negative correlate of job satisfaction (Judge et al., 2002) and is also found to negatively influence extrinsic career success (Judge et al., 1999). Neuroticism has also been consistently found to have a strong, usually the strongest amongst all the Big Five traits, and negative influence on overall satisfaction with life (Grevenstein & Bluemke, 2015; Joshanloo & Afshari, 2011; Suldo et al., 2014; Weber & Huebner, 2015; Zhai et al., 2013). In contrast, emotional stability, the inverse of Neuroticism, has been found to have a positive influence on career satisfaction (Lounsbury et al., 2003) as well as overall satisfaction with life (Furler et al., 2013). Accordingly, the fourth part of the hypothesis is proposed:

H2d. Neuroticism negatively affects the level of Satisfaction with Life

Unlike the other Big Five personality traits, Openness has a somewhat inconsistent relationship with satisfaction with life. Some studies have found a positive relationship (Furler et al., 2013; Suldo et al., 2014) while others have found an insignificant relationship (Grevenstein & Bluemke, 2015; Lounsbury et al., 2003; Zhai et al., 2013). This may be due to the nature of Openness which DeNeve and Cooper (1998) liken to a 'double-edged sword' that causes individuals to be sensitive to both positive and negative experiences. Still, the attributes of intellectual curiosity, imaginativeness, broad-mindedness, and originality (Weele, 2013) are increasingly becoming important to live a fulfilling life as opportunities to gain new knowledge and try new experiences are becoming increasingly available to individuals. Accordingly, the fifth and final part of the second hypothesis is proposed:

H2e. Openness to Experience positively affects the level of Satisfaction with Life

Individual innovativeness and satisfaction with life

The relationship between innovativeness and satisfaction with life is complex and multi-faceted. Huhtala and Parzefall (2007) proposed that innovativeness and well-being have a two-way relationship where they may mutually enhance each other (a 'virtuous cycle') or mutually inhibit each other (a 'vicious cycle'). In the context of the work domain, the authors tap into the Job Demands-Resources theory (Bakker & Demerouti, 2007) to explain the relationship, where innovation activities may be perceived as demands upon the individual and hence reduce well-being. Alternatively, they may be perceived as resources that help individuals achieve their goals and increase well-being (Huhtala & Parzefall, 2007). In line with this, Honkaniemi, Lehtonen, and Hasu (2015) found that high innovativeness has a significant positive relationship with well-being and vice versa.

While a two-way, cyclical relationship may exist in the work domain, the influence of innovativeness on overall satisfaction with life is more linear. Nimrod and Kleiber (2007) postulated that the most significant role of innovativeness may be to create opportunities for individuals to lead a more challenging and meaningful life, which would, in turn, lead to greater well-being and satisfaction with life. This was validated by the findings of Nimrod (2008) that innovative individuals were more likely to agree that they had achieved what they expected from life and indicated significantly higher satisfaction with life than non-innovative individuals. Accordingly, the third hypothesis is proposed:

H3. Individual Innovativeness positively affects Satisfaction with Life

The model proposed by this study is quite unique as it offers a new explanation of personality theory by embedding individual

innovativeness and satisfaction with life derived from different personality traits. The study proposes that innovativeness is driven by the personality traits, as described by Goldsmith and Foxall (2003). The people who have higher levels of 'openness to experience' are more innovative as compared to those having low levels. Openness to experience develops curiosity and willingness to learn and experience new things among individuals that leads to innovation (Goldsmith, 1991; Hurt et al., 1977). Individual innovativeness leads to sense of accomplishment and satisfaction with life (Honkaniemi et al., 2015; Nimrod, 2008; Nimrod & Kleiber, 2007). Similarly, the other personality traits also influence individual's innovativeness one way or another. Number of studies propose association between personality traits and satisfaction with life perceptions. For instance, Furler et al. (2013), Grevenstein and Bluemke (2015), Joshanloo and Afshari (2011), Judge et al. (2002), Suldo et al. (2014), Weber and Huebner (2015), and Zhai et al. (2013) describe strong association between different personality traits and satisfaction with life perceptions.

Method

Sample and data collection

The study explores the influence of personality traits on innovation and satisfaction with life perceptions. A conceptual model is proposed and tested empirically through statistical analysis. The unit of analysis is study is individuals, so data is collected from students studying in different universities of Pakistan. The students enrolled in executive programs, post graduate programs (including MS and M. Phil) and PhD are also considered in data collection so that to incorporate the view points of respondents exposed to practical and professional life. The data is collected through personally administered survey questionnaire. A total of 800 individuals were contacted for data collection and 613 survey questionnaires are received back out of which 18 questionnaires were incomplete leaving 595 usable questionnaires (74% effective response rate).

Some questions related to respondents demographics were also included in the questionnaire including; gender, age, education level in order to ensure participation of respondents with diverse socio-economic background. The sample composition of this study includes; majority of respondents (83.7%) were male as compared to female (16.3%) only. Majority of respondents were younger i.e. less than 20 years of age (45%) and there were very less respondents having more than 40 years of age. The fact remains that the survey was conducted among university students which normally consists of younger people. Respondents with higher years of age belong to some executive programs or some graduate programs.

A large number of respondents were from undergraduate programs (45%) and postgraduate programs (30%) including MBA and Executive MBA whereas a low number of respondents participated from graduate programs. The fact remains that the number of students enrolled in graduate programs is normally very low as compared to undergraduate programs.

Measures and instruments

Individual innovativeness instrument is adopted from Hurt et al. (2013), the instrument contains 20 items measured on 5 point Likert scale (1 = strongly disagree to 5 strongly agree). The sample items include; my peers often ask me for advice or information, I enjoy trying new ideas, I seek new ways to do things, I am generally cautious about accepting new ideas and I consider myself to be creative and original in my thinking and behavior. The instrument to measure big five personality traits including, openness to experience, conscientiousness, extraversion, agreeableness, and

neuroticism is adopted from Costa and McCrae (1992) as used by Lin (2011). The instrument consists of 15 items measured in 5 point Likert scale (1 does not apply to me at all to 5 strongly apply to me). The construct satisfaction with life perceptions (SWLP) is measured through 5 items developed by Diener, Emmons, Larson, and Griffin (1985). The instrument is measured on 5 point Likert scale where 1 for very dissatisfied and 5 for very satisfied. The sample item includes; in most ways my life is close to my ideal, the conditions of my life are excellent and I am satisfied with my life. The instrument of satisfaction with life is also used by number of authors in their studies for instance (Promislo, Giacalone, & Welch, 2012).

Procedure

The data analysis techniques used in this study includes, reliability and validity testing, correlation analysis and regression analysis. The statistical techniques are applied through SPSS and AMOS software. Cronbach alpha is calculated to analyze reliability through SPSS and Confirmatory Factor Analysis (CFA) is applied through AMOS to examine the validity of measurement scales used in this study. Structural equation model (SEM) technique is also performed to analyze data and test hypotheses proposed in this research. SEM is widely used technique in social sciences as it removes observational error from the measurement of latent variables (Hancock, 2003).

Results and discussion

Reliability and validity analysis

Confirmatory Factor Analysis (CFA) has been performed following Karriker and Williams (2009). The value of factor loading should be less than 0.4 as per standard criteria. The factor loading values of all items of our variables namely CSR, pride in membership, job satisfaction and employee engagement are well above standard criteria. Therefore, the all instruments are valid for measuring the construct as reported by the respondents. The values of model fit indices for CFA also meet cutoff parameters. According to Hair, Anderson, Tatham, and Black (2003) and Gerbing and Anderson (1992), the values of CFI, GFI, AGFI and NFI should be closer or higher than 0.90. The values of model fit in this study are close to 0.90 (GFI = 0.88; AGFI = 0.94; CFI = 0.94; NFI = 0.104), which means a good model fit of CFA in this study. According to another parameter of model fit proposed by Wheaton, Muthen, Alwin, and Summers (1977), the value of CMIN/DF should be between 5 and 2 in order to achieve model fit for CFA. The value of CMIN (Chi square) divided by DF (degree of freedom) is 2.57, which meet the standard criteria for model fit in this research. Additionally, Browne and Cudeck (1993) proposed that the value of Root Mean Square Error of Approximation (RMSEA) should be less than 1 to meet good model fitness indices. The value of RMSEA in this study is 0.27, which is well below 1, therefore all the values of model fit indices meets these criteria. The data is therefore; fit to be used for further analysis.

Reliability analysis is performed through Cronbach alpha using SPSS software. The value of Cronbach alpha should be greater than 0.5 as per acceptable standards (Nunnally & Bernstein, 1978). The values of Cronbach alpha for all variables are; extraversion (0.88), agreeableness (0.91), conscientiousness (0.75), neuroticism (0.80), openness to experience (0.74), individual innovativeness (0.92) and satisfaction with life perceptions (0.86) well above 0.50, as reported in Table 1. It shows the reliability and validity of data and measurement instruments to be used for further analysis in this research.

Correlation analysis

Correlation is used to examine the association between two variables. Pearson correlation measures the strength and nature of association between different variables. Table 1 shows the correlation matrix, mean and standard deviation of different variables calculated through SPSS. The highest mean value is scored by satisfaction with life perceptions whereas lowest mean is neuroticism personality trait. The standard deviation values are also in normal range. The co-efficient of correlation matrix are also less than 0.5 which means there is no problem of multi-co linearity. All relationships shows positive association except between neuroticism and individual innovativeness and neuroticism and satisfaction with life perceptions which are already supposed to be negative as discussed in the literature review section. The significance level of different relationship are presented in Table 2 as depicted by * which denotes significance level at 0.01 and ** 0.05 level as explained in the table footnote. The abbreviations of variables are also explained for the convenience of reader.

Table 1
Reliability and validity analysis.

Variables	Factor loading	Cronbach alpha (α)
Extraversion	0.61	0.88
	0.74	
	0.88	
Agreeableness	0.60	0.91
	1.02	
	0.61	
Conscientiousness	0.55	0.75
	0.67	
	0.51	
Neuroticism	0.85	0.80
	0.66	
	0.69	
Openness to experience	1.20	0.74
	0.95	
	0.86	
Individual innovativeness	0.54	0.92
	0.68	
	0.72	
	0.77	
	0.90	
	0.75	
	1.42	
	0.92	
	0.80	
	0.75	
	0.73	
	0.98	
	0.71	
0.84		
0.90		
0.69		
0.71		
0.88		
0.84		
0.93		
Satisfaction with life perceptions	1.12	0.86
	0.90	
	0.89	
	0.83	
	0.95	

Note: GFI=0.88; AGFI=.94; CFI=94; NFI=0.104; CMIN=2118, DF=823, CMIN/DF=2.57, RMSEA=0.27.

Table 2
Correlation matrix.

	EX	AG	CO	NU	OE	II	SWLP
EX	–						
AG	0.25*	–					
CO	0.41**	0.33*	–				
NU	0.38**	0.26*	0.15**	–			
OE	0.48**	0.35**	0.28*	0.19*	–		
II	0.30**	0.19*	0.37**	0.32**	0.18*	–	
SWLP	0.31*	0.28*	0.42**	0.39**	0.40*	0.24*	–
Mean	3.17	3.60	3.09	2.97	3.15	3.20	3.66
S.D	0.90	1.02	0.89	0.74	0.95	1.12	0.53

* Significant at 0.01 level.

** Significant at 0.05 level.

EX, extraversion; AG, agreeableness; CO, conscientiousness; NU, neuroticism; OE, openness to experience; II, individual innovativeness; SWLP, satisfaction with life perceptions.

Regression analysis (hypothesis testing)

Structural equation model (SEM) technique is used in this study to run regression analysis and test the proposed hypotheses. The values of mode fit indices for SEM meet required parameters. As mentioned above, the values of CFI, GFI, AGFI and NFI should be closer or higher than 0.90 (Gerbing & Anderson, 1992; Hair et al., 2003). The values of mode fit for SEM are close to 0.90 (GFI= 1.10; AGFI=.99; CFI=0.92; NFI=0.79), which means a good fit for the model proposed in this research. Browne and Cudeck (1993) proposed that the value of Root Mean Square Error of Approximation (RMSEA) should be less than 1 to meet good model fitness indices. According to another parameter of model fit proposed by Wheaton et al. (1977), the value of CMIN/DF should be between 5 and 2 in order to achieve model fit. The value of CMIN (Chi square) divided by DF (degree of freedom) is 3.36, which fulfills the requirement for model fit.

The results of hypotheses testing through SEM are presented in Table 3. The beta values are reported to examine the strength and direction of association between the, whereas significance level is also reported at 1% and 5%. The results of hypotheses testing show positive and significant influence of extraversion, agreeableness, conscientiousness, and openness to experience on individual innovativeness, resulting acceptance of our hypotheses H1a–H1e. Neuroticism is has negatively significant influence on individual innovativeness as proposed in theoretical discussion. Personality traits also significant influence on satisfaction with life perceptions, we therefore accept our hypotheses H2a–H2e. Finally, the study noted a positive association between individual innovativeness and perception with life, supporting our H3. The findings of empirical analysis confirm the theoretical associations proposed in the conceptual model of this study.

The structural equation model of this study is presented in Fig. 1. The figure shows different paths proposed in this study. The results of regression including the coefficients (beta) values and the significance level as scored by each path. The findings of SEM path analysis provide empirical evidence of the theoretical model proposed by this study.

Discussion

Personality traits and individual innovativeness

The empirically findings of this study as reported in Table 3 and Fig. 1 supports the theoretical model proposed by this research. The findings are consistent with literature. The study found positively significant association between extraversion, agreeableness, conscientiousness, and openness to experience on individual

Table 3
Hypothesis testing results.

H #	Hypnotized path	β	Decision
H1a	Extraversion → Individual innovativeness	0.47**	Supported
H1b	Agreeableness → Individual innovativeness	0.18*	Supported
H1c	Conscientiousness → Individual innovativeness	0.32**	Supported
H1d	Neuroticism → Individual innovativeness	-0.19*	Supported
H1e	Openness to experience → Individual innovativeness	0.65*	Supported
H2a	Extraversion → Satisfaction with life perceptions	0.79*	Supported
H2b	Agreeableness → Satisfaction with life perceptions	0.33**	Supported
H2c	Conscientiousness → Satisfaction with life	0.72*	Supported
H2d	Neuroticism → Satisfaction with life perceptions	-0.24**	Supported
H2e	Openness to experience → Satisfaction with life	0.60*	Supported
H3	Individual innovativeness → Satisfaction with life	0.81*	Supported

Note: GFI=0.110; AGFI=.99; CFI=0.92; NFI=0.79; CMIN=908, DF=270, CMIN/DF=3.36, RMSEA=0.71.

* Significant at 0.01 level.

** Significant at 0.05 level.

innovativeness. These findings are in line with previous studies for instance, Buchanan (1998), Eastman et al. (2001), Hsieh et al. (2011), Kirton and De Ciantis (1986), Steel et al. (2008), and Weele (2013) report that individuals with high levels of extraversion have greater capability of innovative task performance. Rossberger (2014) and Steel et al. (2011) hold that agreeableness is an important determinant innovative initiatives by individuals. Buchanan (1998) and Hsieh et al. (2011) found conscientiousness to have a significant positive effect on innovation capability and an important predictor of innovative task performance. Literature provides ample evidence related to negative influence of neuroticism on individual innovativeness for instance, Eastman et al. (2001), Hsieh et al. (2011), Kirton and De Ciantis (1986), McCrae and Terracciano (2005), and Rossberger (2014) indicate that individuals with highly neurotic personalities would find it difficult to exhibit innovative behaviors and pursue innovative ideas. Finally, Buchanan (1998), Hsieh et al. (2011), Rossberger

(2014), Steel et al. (2011), and Weele (2013) found openness to experience as a strong predictor of innovation at individual level.

Personality traits and satisfaction with life perceptions

Personality traits have also influence on perceptions of satisfaction with life and wellbeing. Literature provides some direct and indirect evidence related to association between personality traits and perceptions of wellbeing for instance, Furler et al. (2013), Grevenstein and Bluemke (2015), Joshanloo and Afshari (2011), Judge et al. (2002), Suldo et al. (2014), and Zhai et al. (2013) hold that extraversion has consistent and strongly positive influence on perceptions of wellbeing. Similarly, agreeableness is positively associated with perceptions of life satisfaction (Furler et al., 2013; Grevenstein & Bluemke, 2015; Kesavayuth et al., 2015; Weber & Huebner, 2015). A positive association is also noted between conscientiousness and satisfaction with life perception (Furler et al., 2013; Grevenstein & Bluemke, 2015; Suldo et al., 2014; Weber & Huebner, 2015; Zhai et al., 2013). Neuroticism has negative influence on overall satisfaction with life (Grevenstein & Bluemke, 2015; Joshanloo & Afshari, 2011; Suldo et al., 2014; Weber & Huebner, 2015; Zhai et al., 2013). Finally, openness to experience is found positively and significantly associated with perceptions of wellbeing which is consistent with the findings of (Furler et al., 2013; Suldo et al., 2014).

Individual innovativeness and satisfaction with life perceptions

Literature provides evidence of two-way association between innovation and perceptions of wellbeing as Honkaniemi et al. (2015) found that high innovativeness has a significant positive relationship with well-being and vice versa. Nimrod and Kleiber (2007) and Nimrod (2008) hold that the influence of innovativeness on overall satisfaction with life is more linear. The current study also noted the positive association between individual innovativeness and satisfaction with life perceptions which is validates the findings of above mentioned researches.

The empirical analysis supports the theoretical model proposed by this study. The study found strong association between personality traits and individual innovativeness, and satisfaction with

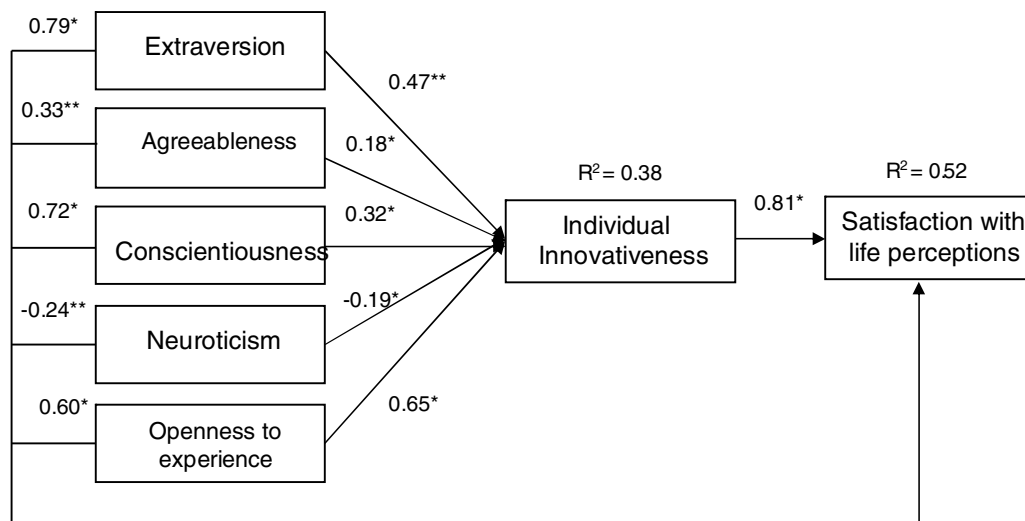


Fig. 1. Structural equation model – path analysis.

life, moreover, innovativeness is also significantly associated with satisfaction with life perceptions.

Conclusion

The study examined the influence of personality traits on individual innovativeness and satisfaction with life perception. Wellbeing and satisfaction of employees is considered to be very important by organizations these days. Organizations are spending generous resources to promote wellbeing among its employees in order to ensure yield more innovation and productivity from employees. Management scholars are also striving to find ways to increase employees wellbeing and satisfaction with life. Understanding employees' personality traits are important in order to increase their innovativeness and wellbeing. Although there is plenty of research available on personality traits, this study extends the theory of personality traits which propose that human beings have different personality traits and that they behave in different environments in dissimilar ways. The study found positive influence of extraversion, agreeableness, conscientiousness, and openness to experience on individual innovativeness and satisfaction with life perceptions. Neuroticism is found to be negatively related to individual innovativeness and satisfaction with life perceptions. Finally, the study noted a positive association between individual innovativeness and perception with life.

The study concludes that all four personality traits including extraversion, agreeableness, conscientiousness, and openness to experience encourages innovativeness among individuals whereas neuroticism discourages innovativeness among individuals. The management and HR practitioners can use the findings of this study to promote individual innovativeness and wellbeing among employees in the organizations. Organizations should introduce training programs that promote personality traits like; extraversion, agreeableness, conscientiousness, and openness among employees to enhance their innovative capabilities and train employees to avoid neuroticism as it discourage innovativeness. Apart from training the existing employees, the managers should also assess the personality of potential employees during recruitment process in order to identify the candidates with high extraversion, agreeableness, conscientiousness, and openness to experience and drop the individuals with higher level of neuroticism personality trait in the selection process.

The study proposed in depth understanding of personality traits of prospective and current employees by the managers in order to exploit their potential in more effective way. The innovativeness and wellbeing of employees can be increased by understanding their personality traits in a better way. Not all individuals are suitable for all jobs, therefore a better understanding of employees' personality traits can help organizations to use their potential in more befitting manners. Research shows that employees are most neglected by organizations among all stakeholders, therefore, paying close attentions to employees and their personality types can result in increase of innovativeness among employees and a strong competitive advantage to the organizations.

The study used data collected from university students; the future researches may consider data collection from other respondents in order to generalize the findings to larger population. The future research can also examine if the negative effects of neuroticism on individual innovativeness and satisfaction with life can be minimized or neuroticism may be shaped to some other personality trait may be openness to experience through training programs or not. A study with longitudinal research design may also provide more authentic findings in future. Moreover, some contextual factors can also be incorporated to better explain this relationship.

Some other mediating or moderating variables can also be introduced in model in order to better explain the associations proposed by this study.

Ethical approval

This article does not contain any studies with animals performed by any of the authors. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants included in the study.

References

- Ahmed, P. K. (1998). Culture and climate for innovation. *European Journal of Innovation Management*, 1(1), 30–43.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309–328.
- Bierly, P. E., III, Kolodinsky, R. W., & Charette, B. J. (2009). Understanding the complex relationship between creativity and ethical ideologies. *Journal of Business Ethics*, 86(1), 101–112.
- Block, J. (1995). A contrarian view of the five-factor approach to personality description. *Psychological Bulletin*, 117(2), 187.
- Bozionelos, N., Bozionelos, G., Polychroniou, P., & Kostopoulos, K. (2014). Mentoring receipt and personality: Evidence for non-linear relationships. *Journal of Business Research*, 67(2), 171–181.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Testing Structural Equation Models*, 154, 136–162.
- Buchanan, L. B. (1998). *The impact of big five personality characteristics on group cohesion and creative task performance*.
- Cattell, R. B. (1943). The description of personality: Basic traits resolved into clusters. *Journal of Abnormal and Social Psychology*, 38(4), 476.
- Costa, P. T., & McCrae, R. R. (1992). *Revised NEO personality inventory and NEO five-factor inventory: Professional manual*. FL: Psychological Assessment Resources.
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, 124(2), 197–229.
- Diener, E., Emmons, R. A., Larson, R. J., & Griffin, S. (1985). The satisfaction with life scale: A measure of life satisfaction. *Journal of Personal Assessment*, 49, 1–5.
- Eastman, J. K., Eastman, K. L., & Tolson, M. A. (2001). The relationship between ethical ideology and ethical behavior intentions: An exploratory look at physicians' responses to managed care dilemmas. *Journal of Business Ethics*, 31(3), 209–224.
- Furler, K., Gomez, V., & Grob, A. (2013). Personality similarity and life satisfaction in couples. *Journal of Research in Personality*, 47(4), 369–375.
- Furnham, A., Eracleous, A., & Chamorro-Premuzic, T. (2009). Personality, motivation and job satisfaction: Hertzberg meets the Big Five. *Journal of Managerial Psychology*, 24(8), 765–779.
- Gerbing, D. W., & Anderson, J. C. (1992). Monte Carlo evaluations of goodness of fit indices for structural equation models. *Sociological Methods & Research*, 21(2), 132.
- Giacalone, R. A., Jurkiewicz, C. L., & Promislo, M. (2015). Ethics and well-being: The paradoxical implications of individual differences in ethical orientation. *Journal of Business Ethics*, 1–16.
- Goldberg, L. R. (1990). An alternative "description of personality": The big-five factor structure. *Journal of Personality and Social Psychology*, 59(6), 1216.
- Goldsmith, R. E. (1991). The validity of a scale to measure global innovativeness. *Journal of Applied Business Research*, 7, 89–97.
- Goldsmith, R. E., & Foxall, G. R. (2003). The measurement of innovativeness. In L. V. Shavinina (Ed.), *The international handbook on innovation*.
- Grevenstein, D., & Bluemke, M. (2015). Can the Big Five explain the criterion validity of Sense of Coherence for mental health, life satisfaction, and personal distress? *Personality and Individual Differences*, 77, 106–111.
- Hair, J. J., Anderson, R., Tatham, R., & Black, W. (2003). *Multivariate data analysis* (5th ed.). India: Pearson Education.
- Hancock, G. R. (2003). Fortune cookies, measurement error, and experimental design. *Journal of Modern Applied Statistical Methods*, 2(2), 293–305.
- Heller, D., Watson, D., & Ilies, R. (2004). The role of person versus situation in life satisfaction: A critical examination. *Psychological Bulletin*, 130(4), 574.
- Honkaniemi, L., Lehtonen, M. H., & Hasu, M. (2015). Well-being and innovativeness: Motivational trigger points for mutual enhancement. *European Journal of Training and Development*, 39(5), 393–408.
- Hsieh, H.-L., Hsieh, J.-R., & Wang, I.-L. (2011). Linking personality and innovation: The role of knowledge management. *World Transactions on Engineering and Technology Education*, 9(1), 38–44.

- Huhtala, H., & Parzefall, M. R. (2007). A review of employee well-being and innovativeness: An opportunity for a mutual benefit. *Creativity and Innovation Management*, 16(3), 299–306.
- Hurt, H. T., Joseph, K., & Cook, C. D. (1977). Scales for the measurement of innovativeness. *Human Communication Research*, 4(1), 58–65.
- Hurt, H. T., Joseph, K., & Cook, C. D. (2013). Individual Innovativeness (II) from Measurement Instrument Database for the Social Science Retrieved from www.midss.ie
- Joshanloo, M., & Afshari, S. (2011). Big five personality traits and self-esteem as predictors of life satisfaction in Iranian Muslim University students. *Journal of Happiness Studies*, 12(1), 105–113.
- Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology*, 87(3), 530.
- Judge, T. A., Higgins, C. A., Thoresen, C. J., & Barrick, M. R. (1999). The big five personality traits, general mental ability, and career success across the life span. *Personnel Psychology*, 52(3), 621–652.
- Jung, C. G. (1971). Psychological types, volume 6 of The collected works of CG Jung. Princeton University Press, vol. 18, 169–170.
- Karriker, J., & Williams, M. (2009). Organizational justice and organizational citizenship behavior: A mediated multifoci model. *Journal of Management*, 35(1), 112.
- Kesavayuth, D., Rosenman, R. E., & Zikos, V. (2015). Personality and health satisfaction. *Journal of Behavioral and Experimental Economics*, 54, 64–73.
- Kirton, M. J., & De Ciantis, S. M. (1986). Cognitive style and personality: The Kirton adaption-innovation and Cattell's sixteen personality factor inventories. *Personality and Individual Differences*, 7(2), 141–146.
- Lin, H. W. (2011). Elucidating the influence of demographics and psychological traits on investment biases. *World Academy of Science, Engineering and Technology*, 77, 145–150.
- Loewe, N., Bagherzadeh, M., Araya-Castillo, L., Thieme, C., & Batista-Foguet, J. M. (2014). Life domain satisfactions as predictors of overall life satisfaction among workers: Evidence from Chile. *Social Indicators Research*, 118(1), 71–86.
- Lounsbury, J. W., Loveland, J. M., Sundstrom, E. D., Gibson, L. W., Drost, A. W., & Hamrick, F. L. (2003). An investigation of personality traits in relation to career satisfaction. *Journal of Career Assessment*, 11(3), 287–307.
- Magnus, K., Diener, E., Fujita, F., & Pavot, W. (1993). Extraversion and neuroticism as predictors of objective life events: A longitudinal analysis. *Journal of Personality and Social Psychology*, 65(5), 1046.
- McCrae, R. R., & Costa, P. T., Jr. (1999). A five-factor theory of personality. *Handbook of Personality: Theory and Research*, 2, 139–153.
- McCrae, R. R., & Terracciano, A. (2005). Universal features of personality traits from the observer's perspective: Data from 50 cultures. *Journal of Personality and Social Psychology*, 88(3), 547.
- Midgley, D. F., & Dowling, G. R. (1978). Innovativeness: The concept and its measurement. *Journal of Consumer Research*, 229–242.
- Nimrod, G. (2008). In support of innovation theory: Innovation in activity patterns and life satisfaction among recently retired individuals. *Ageing and Society*, 28(06), 831–846.
- Nimrod, G., & Kleiber, D. A. (2007). Reconsidering change and continuity in later life: Toward an innovation theory of successful aging. *International Journal of Aging and Human Development*, 65(1), 1–22.
- Nunally, J., & Bernstein, I. (1978). *Psychometric theory*. New York: McGraw-Hill.
- Patterson, F. (2002). Great minds don't think alike? Person-level predictors of innovation at work. *International Review of Industrial and Organizational Psychology*, 17, 115–144.
- Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *Journal of Positive Psychology*, 3(2), 137–152.
- Prabhu, V., Sutton, C., & Sauser, W. (2008). Creativity and certain personality traits: Understanding the mediating effect of intrinsic motivation. *Creativity Research Journal*, 20(1), 53–66.
- Probst, G., Romhardt, K., & Raub, S. (2000). *Managing knowledge: Building blocks for success*. J. Wiley.
- Promislo, M. D., Giacalone, R. A., & Welch, J. (2012). Consequences of concern: Ethics, social responsibility, and well-being. *Business Ethics: A European Review*, 21(2), 209–219.
- Rogers, E. M., & Shoemaker, F. F. (1971). *Communication of innovations: A cross-cultural approach*.
- Rossberger, R. J. (2014). National personality profiles and innovation: The role of cultural practices. *Creativity and Innovation Management*, 23(3), 331–348.
- Saucier, G. (1994). Mini-markers: A brief version of Goldberg's unipolar Big-Five markers. *Journal of Personality Assessment*, 63(3), 506–516.
- Sheldon, K. M., Ryan, R. M., Rawsthorne, L. J., & Ilardi, B. (1997). Trait self and true self: Cross-role variation in the Big-Five personality traits and its relations with psychological authenticity and subjective well-being. *Journal of Personality and Social Psychology*, 73(6), 1380.
- Steel, G. D., Rinne, T., & Fairweather, J. (2011). Personality, nations, and innovation: Relationships between personality traits and national innovation scores. *Cross-Cultural Research*, <http://dx.doi.org/10.1177/1069397111409124>
- Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin*, 134(1), 138.
- Suldo, S. M., Minch, D. R., & Hearon, B. V. (2014). Adolescent life satisfaction and personality characteristics: Investigating relationships using a five factor model. *Journal of Happiness Studies*, 1–19.
- Tortoriello, M. (2006). *The social underpinnings of absorptive capacity: External knowledge, social networks and individual innovativeness*. Paper presented at the Academy of Management Proceedings.
- Tuce, D., & Fako, I. (2014). The determinants of satisfaction with life in adolescents. *Psychological Topics*, 23(3), 407–433.
- Waller, N. G., & Ben-Porath, Y. S. (1987). *Is it time for clinical psychology to embrace the five-factor model of personality?*
- Weber, M., & Huebner, E. S. (2015). Early adolescents' personality and life satisfaction: A closer look at global vs. domain-specific satisfaction. *Personality and Individual Differences*, 83, 31–36.
- Weele, I. (2013). *The effects of CEO's personality traits (Big 5) and a CEO's external network on innovation performance in SMEs*.
- Yi, M. Y., Fiedler, K. D., & Park, J. S. (2006). Understanding the role of individual innovativeness in the acceptance of it-based innovations: Comparative analyses of models and measures*. *Decision Sciences*, 37(3), 393–426.
- Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Assessing reliability and stability in panel models. *Sociological Methodology*, 8, 84–136.
- Zhai, Q., Willis, M., O'Shea, B., Zhai, Y., & Yang, Y. (2013). Big Five personality traits, job satisfaction and subjective wellbeing in China. *International Journal of Psychology*, 48(6), 1099–1108.