IRMM

INTERNATIONAL REVIEW OF MANAGEMENT AND MARKETING

EJ EconJournals

International Review of Management and Marketing

ISSN: 2146-4405

available at http://www.econjournals.com



International Review of Management and Marketing, 2016, 6(1), 177-182.

A Literature Review on Personality, Creativity and Innovative Behavior

Iqra Abdullah^{1*}, Rozeyta Omar², Siti Aisyha Panatik³

¹Faculty of Management, Universiti Teknologi Malaysia, Malaysia, ²Faculty of Management, Universiti Teknologi Malaysia, Malaysia, ³Faculty of Management, Universiti Teknologi Malaysia, Malaysia. *Email: iqra-abdullah@hotmail.com

ABSTRACT

Personality has been conceptualized from a host of theoretical perspectives. The present conceptual paper is an endeavor to enhance and grab the etymology of personality, innovative behavior and creativity. Moreover relationship of personality with creativity and innovative behavior is explored in depth. After reviewing an extensive literature, the researcher came up with the general accepted taxonomy of personality measure i.e., widely accepted framework named as big five inventory. While, innovative behavior was gauged by the yardstick of three phases namely idea generation, gathering support and idea implementation. It was suggested for the future researchers to explore the more innovative measures for this overlooked relationship in study of personality and innovative behavior.

Keywords: Personality, Extraversion, Conscientiousness, Agreeableness, Neuroticism, Openness to Experience, Innovation, Creativity, Innovative Behavior

JEL Classifications: D3, M12, 031

1. INTRODUCTION

Taking about the key success factors of corporations in twenty first century, aspect of innovation is highly important in this era. Competitiveness and survival of organizations depend on their innovation capabilities (Palangkaraya et al., 2010. Therefore organizations are paying special attention on its workforce to behave innovatively and creatively (Patterson et al., 2009). Similarly reviewing the literature on innovation in past 20 years, a special emphasis of scholars is noticed on the innovative behavior. So there is a need to work out on the antecedents, enablers and predictors of innovative behavior (Wu et al., 2011). Innovative behavior is considered to be influenced by numerous personal and external determinants (Jung, 2001).

This study will intend to explore the relationship of personality of an individual and innovative behavior. How personality factors of an individual can influence his innovative outcomes at workplace? To answer this question, previous studies on this topic will be reviewed in detail. It is a general perception among the scholars that this relationship is studied a lot in the past (Yesil and Sozbilir, 2013; Patterson et al., 2009). This review article will test the actuality and accuracy of this claim whether relationship of personality and innovative behavior is sufficiently explored in past? If yes then how accurate and consistent results are? What are the findings of those studies? What are the short comings of those studies focusing on personality and innovative behavior relationship? What aspects of innovative behavior and personality traits need to be discussed further?

So this study will review past studies on concept of personality; concept of innovative behavior and personality and innovative behavior relationship retrieved from famous and credible databases. And after discussing and concluding the results of those studies, this study will give guidelines for future studies on this topic.

2. RESEARCH DESIGN

This study is a qualitative literature review on the concept of personality, creativity, innovative behavior and their relationship

with one another. For this purpose literature and past studies are reviewed from authentic journals, books, conference proceedings, reports, websites and different commentaries. In the following sections, relevant studies are summed up under headings of concept of personality; concept of creativity and innovative behavior; personality and creativity relationship; personality and innovative behavior relationship. Concluding remarks about the reviewed studies are stated in end.

3. DISCUSSION

3.1. Concept of Personality

Personality is so widely studied concept by the psychologists that "personality psychology" is taken as a separate discipline of psychology. Personality psychology is concerned with the analysis of human nature and theories surrounded by the personality must cater the five root ideas that are motivation, unconscious, self, development and maturity (Hogan, 1998).

Suppose there are two persons of the same age but have different interests, activities, feelings and thinking, it means there is something different inside them and that "something inside" is said to be personality (Kasschau, 2000). Earliest psychologists have defined the personality as development of the individuals' whole psychological system (Warren and Carmichael, 1930). Allport presented the same concept of personality in his definition: "The dynamic organization with in the individual of those psychophysical systems that determine his unique adjustments to his environment" (Allport, 1937; Robbins et al., 2009).

In simple words, personality can be defined as the collection of intrinsic and extrinsic traits that may affect the behavior of an individual. So to evaluate the personality of a person; traits or characteristics play the primary role (Allport, 1937; Bowers, 1973; John, 1990). In order to classify and present the personality traits that an individual possesses, numerous authors have presented the different trait theories. Work of Gordon Allport, Raymond Cattell, Hans Eysenck, Katherine Brigg and Isabel Brigg is important in this context. From the last many years, a general agreement can be observed among the psychologists on a comprehensive and robust personality model that is known as big five personality model that consists of five universal personality traits named as extraversion, conscientiousness, agreeableness, neuroticism and emotional stability (Goldberg, 1981; Conley, 1985; Costa and McCrae, 1988; McCrae, 1989; McCrae and Costa, 1985; McCrae and Costa, 1987; McCrae and Costa, 1989; Wortman et al., 2012).

Extraversion trait refers to the level of comfort-ability with relationships to others. It represents personality characteristics as active, assertive, talkative, outgoing, social, gregarious, energetic, surgency, and ambitious. These people are good in active communication and with full of positive energy (Barrick and Mount, 1991; Goldberg, 1990; Watson and Clark, 1997). Agreeableness refers to the degree with which individual differs with others. This Trait represents personality characteristics as cooperative, softhearted, tolerant, forgiving, altruism, emotionally supportive, courteous, good natured, flexible, and self-sacrifice (Barrick and Mount, 1991; Digman, 1990). Conscientiousness

refers to the degree with which an individual is reliable. It represents different sub traits as organize, dependable, responsible, conformity, orderly, diligent, vigilant, attentive, cautious, logical, risk averter, systematize, thorough, comprehensive, reliable, determined and keep focused towards their goal for achieving success (Digman, 1990; Barrick and Mount, 1991). Neuroticism refers to the low level of emotional stability. Costa and McCrae (1992) defined Neuroticism in following words "neuroticism signifies variances of individual tendency to experience suffering and is defined as emotionally insecure and uneven." Openness to experience personality trait refers to the degree or level of one's imagination or fascination. It represents to personality characteristics as curiosity, novelty, cultivated, aesthetic, sensitivity, independent minded, intellectual, creative (Barrick and Mount, 1991; Goldberg, 1990; Digman, 1990).

So considering the wide acceptability of big five personality model this study will consider the above given five traits of personality to define personality in context of this study.

3.2. Concept of Innovative Behavior and Creativity

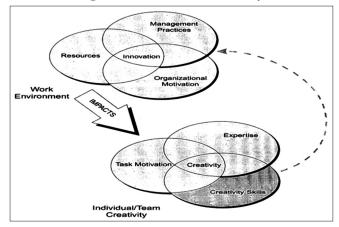
Innovation is not something new or full of complex history. It is as old as mankind. From the very first day of human evolution, man has started innovation, by doing something new and unique with itself and its environment. One of the earliest process and definition of Innovation was given by Schumpeter (1934). According to him innovation refers to creation and implementation of "new combination" of service, work processes, products and markets (Schumpeter, 1934). King and Anderson (2002) defined the innovation as:

- i. Anything newly introduced for the social settings
- ii. Idea based
- iii. Intention based
- iv. Introduced for the purpose to provide benefits
- v. Accidental
- vi. Not an in-routine change
- vii. Affects public.

Word Innovation is often interchangeably used with the word creativity. Amabile (1996), differentiated these two term by defining creativity and innovation. He defined creativity as production of useful and novel ideas in domain while Innovation refers to implementation of creative ideas in organization so creativity is the first stage is innovation. Figure 1 shows the interdependence of creativity and innovation and different components in work environment that boosts the innovation and creativity. Moreover this relationship can be confirmed with another early study that suggests, innovators tend to be more creative as compare to others (Zaltman, 1965).

This study is considering innovative behavior of individual. Scott and Bruce (1994) identified a three layered process, explaining how an individual innovate at work place. At the first stage, an individual identifies a problem and present, adopted or new ideas for resolving the issue. In the second stage the individual strives to find out the support for his idea inside the organization and outside the organization. In the final stage, individual creates a prototype of his idea and exhibits how the idea can be

Figure 1: Innovation versus creativity



Source: Amabile (1996)

beneficial for the organization (Kanter, 1988; Scott and Bruce, 1994). Basing on the above given process Carmeli et al., (2006) defined the Innovative Behavior as "a multiple-stage process in which an individual recognizes a problem for which she or he generates new (novel or adopted) ideas and solutions, works to promote and build support for them, and produces an applicable prototype or model for the use and benefit of the organization or parts within it" (Carmeli et al., 2006). Many of the researchers have more or less the same idea about the innovative behavior. As Shi (2012) defined Innovative behavior as "developing, adopting, and implementing new ideas for products and work methods in organization" (Shi, 2012).

So this study will consider the three phases of innovative behavior presented by Scott and Bruce (1994) that are problem identification and idea generation; gathering support and lastly idea implementation.

3.3. Personality and Creativity Relationship

As explained above creativity is considered as the first step toward innovation. Amabile (1996) stated without creativity, no innovation is possible. So to study the relation of personality and innovative behavior, it is important to review the past literature on relation on personality creativity.

There are number of studies investigating how personality affects the creative individual. In fact it is believed that all popular personality theorists have discussed the creativity in their studies (Feist and Barron, 2003). Feist and Barron (2003) claimed that around 3500-4500 references have been added into the literature each decade from 1970 to 1990. Therefore, it is important to study the effect of personality on creativity in order to explore the personality-innovative behavior relationship.

In past literature, meta-analysis of Feist (1998) is most famous in which he indicated that creative individuals are high in autonomy, more ambitious, hostile, dominant, impulsive, confident, extravert and open to new experiences. Like Feist (1998) there are number of other writers who confirmed that individuals with hight extraversion trait are considered more creative with more intuition and full of divergent ideas (Stavridou and Furnham, 1996; Costa and McCrae, 1985; King et al., 1996; Wolfradt and Pretz, 2001; Furnham and Bachtiar, 2008).

Similarly the next trait of big five personality model i.e., openness to experience, there are number of empirical and theoretical evidences that support the relationship of openness to experience with creativity. McCrae (1987) defined the openness to experience in such a sense that the relationship of openness to experince and personality becomes obvious. According to him, openness can be attributed as willingness of an individual to work on new ideas, curiosity, exploration of the world and others inner ideas. Moreover he confirmed that there is postive correlation in personality and divergent thinkin & creativity. Wolfradt and Pretz (2001) confirmed McCrae (1987) that openness to experience is postively correlated with the creative thinking. Martindale, (1989) stated that opennesss to experince and creativity sounds as synonyms representing the same set of traits. In addition to this there are number of other writers who confirmed this relationship (McCrae, 1993; Rogers, 1961).

Coming towards the next trait of personality that is emotional stability which is an antonym of neuroticism. In an old research of Matthews (1989) it is proved that low neurotics perform less in the creativity test. Another study proved that children with high extroversion and low neuroticism proved more creative as compare to others (Leith, 1972). Similarly Feist (1998) also indicated that artists with low neuroticism trait are less creative as compare to highly neurotic individuals. There few other studies that proved the negative relationship of neuroticism and creativity (Dollinger et al., 2004; Martindale and Dailey, 1996).

Remaining two traits of big five personality model are agreeableness and conscientiousness. In old studies these traits were summed up under single head that is named as psychoticism (Eysenck and Eysenck, 1985; Hewstone et al., 2005; Kasschau, 2000). Rushton (1990) confirmed that psychoticism is positively correlated with the creativity. Similarly Woody and Claridge (1977) confirmed that creativity is highly correlated with the psychoticism scale of Eysenck. Study of Esfahani et al. (2012) confirmed the relationship of conscientiousness with creativity. Relationship of agreeableness and creativity is highly contradictory. There are number of studies who claim that there agreeableness don't have the predictive power of creativity King, (King et al., 1996; Feist, 1998). But study of Batey and Furnham (2006) claimed individuals with high agreeableness are higher in everyday creativity level. Similarly there are several studies that confirmed the positive relationship of agreeableness with divergen and cognitive thinking that is central part of creativity (Nusbaum and Silvia, 2011; Silvia, et al., 2009; Silvia, et al., 2008).

But here it is important to note that there is a general agreement that people with high extraversion and openness to experience tend to be more creative. While the in depth analysis of literature on agreeableness, emotional stability and agreeableness show divergent results. Few studies are agreed on the point that there is no relationship in these factors and creativity. So more empirical studies are required for further exploring the literature regarding controversial relationship of few personality traits with creativity.

3.4. Personality and Innovative Behavior Relationship

Past literature is lacking the authentic studies investigating the impact of big five personality traits on innovative behavior. Among the few studies, majority of research work revolves around entrepreneur, intrapreneur and marketing in which consumer's innovative buying behavior is focused. As a study of Olakitan (2011) shows that there is significant positive relationship between extraversion personality trait and innovative behavior of the entrepreneurs of Nigeria. Similarly Olakitan (2011) indicated positive relationship of openness to experience and innovative behavior.

Amo and Kolvereid, (2005) concluded in their study that employees' intrpreneural personality has significant impact on the innovative behavior. They measured the personality through the Pinchot (1985)'s scale of personality. Hsieh, et al. (2011) used the big five personality model to measure personality. They concluded three traits extraversion, agreeableness and conscientiousness is significantly positively related with technological innovation while conscientiousness, openness to experience, extraversion, emotional stability is positively related with the innovative performance of employees. Another study found three personality traits; agreeableness, extraversion and openness to experience positively correlated with idea generation and idea promotion stages of innovative behavior (Chen et al., 2010).

Few other studies on the relationship of personality and innovative behavior have some major flaws like conceptualization issues, generalization issues, focus on organizational innovation etc., (George and Zhou, 2001; Patterson et al., 2009; Dolgova et al., 2010; Yesil and Sozbilir, 2013).

So considering the diverse findings on the innovative behavior and personality, it would be interesting to find out what are the findings of latest empirical evidences on the relationship of big five personality traits and innovative behavior among employees.

4. CONCLUDING REMARKS

From the in-depth review of past studies on personality, innovative behavior, creativity and their relationship; it can be concluded that most agreed and less controversial personality framework to measure the personality is "big five personality model" that contains five personality traits that are extraversion, agreeableness, conscientiousness, neuroticism and openness to experience. Therefore, prospective researchers should study big five personality model to measure the personality of an individual.

The second under study variable i.e., innovative behavior, comprises of multiple phases. Different writers have named and classified these phases differently. But from the review of past studies, it is found that fundamentally there are three phases of innovative behavior. First phase is problem identification and idea generation. These two activities are considered as one because they incur at one point of time. The second phase is gathering support and last is idea implementation. Idea generation phase of innovative behavior is called creativity. Creativity or creative thinking is an old subject for the researchers. Numerous past studies have investigated the effect of personality factors on creativity i.e., first phase of innovative behavior. From the trend of past researches, it is found that individuals with high extraversion and openness to experience trait of personality are more creative as compare to others. On the other hand, individuals with high degree of agreeableness, conscientiousness and neuroticism are less creative.

From the review of past researches on the relationship of innovative behavior and personality, it is found that past researchers didn't make serious and authentic attempts to address the effect of personality on innovative behavior. The existing past studies on this relationship, have many flaws, like generalization issues, conceptualization issues, emphasis on organizational innovation, emphasis on innovation from marketing point of view, emphasis on innovation from entrepreneurial point of view etc. Therefore, there is a need of authentic empirical studies, investigating the effect of personality traits on innovative behavior through valid measurement frameworks as indicated in this study.

5. REFERENCES

- Allport, G.W. (1937), Personality: A Psychological Interpretation. New York: Holt, Rinehart & Winston.
- Amabile, T.M. (1996), Creativity and Innovation in Organization. Boston: Harvard Business Review.
- Amo, B.W., Kolvereid, L. (2005), Organizational strategy, individual personality and innovation behaviour. Journal of Enterprising Culture, 13(01), 7-19.
- Barrick, M.R., Mount, M.K. (1991), The big five personality dimensions and job performance: A meta-analysis. Personnel Psychology, 44(1), 1-26.
- Batey, M., Furnham, A. (2006), Creativity, intelligence, and personality: A critical review of the scattered literature. Genetic, Social, and General Psychology Monographs, 132(4), 355-429.
- Bowers, K.S. (1973), Situationism in psychology: An analysis and a critique. Psychological Review, 80(5), 307.
- Carmeli, A., Meitar, R., Weisberg, J. (2006), Self-leadership skills and innovative behaviour at work. International Journal of Manpower, 27(1), 75-90.
- Chen, S.C., Wu, M.C., Chen, C.H. (2010), Employee's personality traits, work motivation and innovative behavior in marine tourism industry. Journal of Service Science and Management, 3(02), 198.
- Conley, J.J. (1985), Longitudinal stability of personality traits: A multitrait-multimethod-multioccasion analysis. Journal of Personality and Social Psychology, 49(5), 1266.
- Costa, P.T.Jr., McCrae, R.R. (1988), From catalog to classification: Murray's needs and the five-factor model. Journal of Personality and Social Psychology, 55(2), 258.
- Costa, P., McCrae, R. (1985), The NEO Personality Inventory Manual. Odessa, FL: Psychological Assessment Resources.
- Costa, P., McCrae, R.R. (1992), Four ways five factors are basic. Personality and Individual Differences, 13(6), 653-665.
- Digman, J.M. (1990), Personality structure: Emergence of the five-factor model. Annual Review of Psychology, 41(1), 417-440.
- Dolgova, E., van Olffen, W., van den Bosch, F., Volberda, H. (2010), The Interaction between Personality, Social Network Position and Involvement in Innovation Process.
- Dollinger, S.J., Urban, K.K., James, T.A. (2004), Creativity and openness: Further validation of two creative product measures. Creativity Research Journal, 16(1), 35-47.

Esfahani, A.N., Ghafari, M., Emami, A.R., Baboli, A. (2012), Studying impacts of personality traits on creativity (Case study: University of Isfahan's students). Journal of Basic and Applied Scientific Research, 2(4), 3457-3460.

- Eysenck, H.J., Eysenck, S.G. (1985), Personality and Individual Differences: A Natural Science Approach. New York: Plenum Press.
- Feist, G.J. (1998), A meta-analysis of personality in scientific and artistic creativity. Personality and Social Psychology Review, 2(4), 290-309.
- Feist, G.J., Barron, F.X. (2003), Predicting creativity from early to late adulthood: Intellect, potential, and personality. Journal of Research in Personality, 37, 62-88.
- Furnham, A., Bachtiar, V. (2008), Personality and intelligence as predictors of creativity. Personality and Individual Differences, 45(7), 613-617.
- George, J.M., Zhou, J. (2001), When openness to experience and conscientiousness are related to creative behaviour: An interactional approach. Journal of Applied Psychology, 86(3), 500-513.
- Goldberg, L. (1981), Language and individual differences: The search for universal in personality lexicons. In: Wheeler, L., editor. Review of Personality and Social Psychology. Beverly Hills, CA: Sage. p141-165.
- Goldberg, L.R. (1990), An alternative "description of personality": The big-five factor structure. Journal of Personality and Social Psychology, 59(6), 1216.
- Hewstone, M., Fincham, F., Foster, J. (2005), Psychology. United Kingdom: British Psychological Society; Blackwell Publishing.
- Hogan, R. (1998), What is Personality Psychology? Psychological Inquiry Commentaries. p1-5.
- 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.
- John, O.P. (1990), The "Big Five" factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In: Pervin, L., editor. Handbook of Personality Theory and Research. New York: Guilford. p66-100.
- Jung, D.I. (2001), Transformational and transactional leadership and their effects on creativity in groups. Creativity Research Journal, 13(2), 185-195.
- Kanter, R. (1988), When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organizations. In: Staw, B.M., Cummings, L.L., editors. Research in Organizational Behavior. Greenwich, CT: JAI Press. p169-211.
- Kasschau, R.A. (2000), Glencoe Understanding Psychology. Missouri: Gelncoe Partners.
- King, N., Anderson, N. (2002), Managing Innovation and Change: A Critical Guide for Organizations. United Kingdom: Cengage Learning EMEA.
- King, L.A., Walker, L.M., Broyles, S.J. (1996), Creativity and the fivefactor model. Journal of Research in Personality, 30(2), 189-203.
- Leith, G. (1972), The relationships between intelligence, personality and creativity under two conditions of stress. Journal of Educational Psychology, 42(3), 240-247.
- Matthews, G. (1989), The factor structure of the 16PF: Twelve primary and three secondary factors. Personality and Individual Differences, 10(9), 931-940.
- Martindale, C. (1989), Personality, situation, and creativity. In: Handbook of Creativity. New York: Springer US. p211-232.
- Martindale, C., Dailey, A. (1996), Creativity, primary process cognition and personality. Personality and Individual Differences, 20(4), 409-414.
- McCrae, R., Costa, P.J. (1987), Validity of five factor model of personality across instuments and observers. Journal of Personality and Social Psychology, 52, 81-90.

- McCrae, R.R., Costa, P.T. (1987), Validation of the five-factor model of personality across instruments and observers. Journal of Personality and Social Psychology, 52(1), 81.
- McCrae, R. R. (1987), Creativity, divergent thinking, and openness to experience. Journal of Personality and Social Psychology, 52(6), 1258-1265.
- McCrae, R. R. (1989), Why I advocate the five factor model: Joint factor analysis of NEO-PI with other instruments. In: Buss, D., Cantor, R., editors. Personality Psychology: Recent Trends and Emerging Directions. New York: Springer-Verlag.
- McCrae, R.R. (1993), Openness to experience as a basic dimension of personality. Imagination, Cognition and Personality, 13(1), 39-55.
- McCrae, R.R., Costa, P.T. (1985), Updating Norman's "adequacy taxonomy:" Intelligence and personality dimensions in natural language and in questionnaires. Journal of Personality and Social Psychology, 49(3), 710.
- Nusbaum, E.C., Silvia, P.J. (2011), Are intelligence and creativity really so different?: Fluid intelligence, executive processes, and strategy use in divergent thinking. Intelligence, 39(1), 36-45.
- Olakitan, O.O. (2011), An examination of the impact of selected personality traits on the innovative behaviour of entrepreneurs in Nigeria. International Business and Management, 3(2), 112-121.
- Palangkaraya, A., Stierwald, A., Webster, E., Jensen, P. (2010), Examining the Characteristics of Innovative Firms in Australia. Melbourne: A Report for the Australian Government Department of Innovation, Industry, Science and Research, Intellectual Property Research Institute of Australia, The University of Melbourne.
- Patterson, F., Kerrin, M., Gatto-Roissard, G. (2009), Characteristics and Behaviours of Innovative People in Organisations. London: Literature Review Prepared for the NESTA Policy & Research Unit, NESTA.
- Pinchot, G. (1985), Intrapreneuring: Why You Don't Have to Leave the Organization to Become an Entrepreneur. New York: Harper & Row.
- Robbins, S.P., Judge, T.A., Sanghi, S. (2009), Organizational Behavior. New Delhi: Pearson, Prentice Hall.
- Rogers, C. (1961), On Becoming a Person. Boston: Houghton Mifflin.
- Rushton, J.P. (1990), Creativity, intelligence, and psychoticism. Personality and Individual Differences, 11(12), 1291-1298.
- Schumpeter, J.A. (1934), The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest, and the Business Cycle. Cambridge: Harvard University Press.
- Scott, S.G., Bruce, R.A. (1994), Determinants of innovative behavior: A path model of individual innovation in the workplace. Academy of Management Journal, 37(3), 580-607.
- Shi, J. (2012), Influence of passion on innovative behavior: An empirical examination in peoples Republic of China. African Journal of Business Management, 6(30), 8889-8896.
- Silvia, P.J., Nusbaum, E.C., Berg, C., Martin, C., O'Connor, A. (2009), Openness to experience, plasticity, and creativity: Exploring lowerorder, high-order, and interactive effects. Journal of Research in Personality, 43(6), 1087-1090.
- Silvia, P.J., Winterstein, B.P., Willse, J.T., Barona, C.M., Cram, J.T., Hess, K.I., Richard, C.A. (2008), Assessing creativity with divergent thinking tasks: Exploring the reliability and validity of new subjective scoring methods. Psychology of Aesthetics, Creativity and the Arts, 2(2), 68.
- Stavridou, A., Furnham, A. (1996), The relationship between psychoticism, trait-creativity and the attentional mechanism of cognitive inhibition. Personality and Individual Differences, 21(1), 143-153.
- Warren, H.C., Carmichael, L. (1930), Elements of Human Psychology. Boston: Houghton Mifflin.
- Watson, D., Clark, L.A. (1997), Extraversion and its positive emotional core. San Diego, CA: Academic Press.

- Wolfradt, U., Pretz, J.E. (2001), Individual differences in creativity: Personality, story writing, and hobbies. European Journal of Personality, 15(4), 297-310.
- Wortman, J., Lucas, R.E., Donnellan, M.B. (2012), Stability and change in the big five personality domains: Evidence from a longitudinal study of Australians. Psychology and Aging, 27(4), 867.
- Woody, E., Claridge, G. (1977), Psychoticism and thinking. British Journal of Social and Clinical Psychology, 16(3), 241-248.
- Wu, C.H., Parker, S.K., De Jong, J.P. (2014), Need for cognition as an antecedent of individual innovation behavior. Journal of Management, 40(6), 1511-1534.
- Yesil, S., Sozbilir, F. (2013), An empirical investigation into the impact of personality on individual innovation behaviour in the workplace. Procedia-Social and Behavioral Sciences, 81, 540-551.
- Zaltman, G. (1965), Marketing: Contributions from the Behavioral Sciences. New York: Harcourt, Brace, and World.