

SUPERVISOR'S SUPPORT AND ACADEMIC CREATIVITY: UNRAVELING THE CONDITIONAL ROLE OF OPENNESS TO EXPERIENCE

¹**Sehrish Khan**

*PhD Scholar, Department of Psychology, Hazara University Mansehra,
Pakistan*

Email ID: sehrishkhanyousafzai5@gmail.com

²**Tehreem Rizwan**

*M.Phil Scholar, Department of Psychology, Hazara University Mansehra,
Pakistan*

Email ID: tehreem.rizwan26@gmail.com

³**Sadia Irshad**

*M.Phil Scholar, Department of Psychology, Bahauddin Zakariya University,
Multan, Pakistan*

Email ID: sadiairshad554@gmail.com

Abstract

This study looks at how university faculty members' perceptions of their supervisors' support, their openness to new experiences, and their own creativity interact. The organizational behavior and the psyche of their personalities can establish that, the perception of the employees towards the support of their supervisors plays a large role in their participation in creativity. Moreover, people who are distinguished by high openness, which is defined by intellectual curiosity, aesthetic experience, and openness to new ideas, are just predisposed to creative activities. Supervisory influences of the helpful nature are assumed to further increase this tendency, creating the kind of the environment in which the creativity is allowed to express itself. The findings were obtained through purposive convenience sample of 250 faculty members (113 females; 137 males) at Bahauddin Zakariya University, Multan. Three standardized questionnaires the Big Five Personality Inventory, the Gough Creative Personality Scale, and the Work Environment Scale were included in the survey booklet. Statistical studies showed that supervisor support significantly reduced the effects of openness on creativity, with open persons exhibiting higher levels of creativity when they believe they are receiving high levels of supervisor support. The results demonstrate how important effective leadership is in fostering faculty members' creativity, particularly those who have a creative tendency.

Key words: Supervisor support, Openness, Personality, Creativity, Academics.

Introduction

Creativity is an essential factor in different branches of work spheres. It is an organizational need to outcompete other organizations with that in mind that they require the employees to be involved in their work in a creative manner as compared to old-fashioned manner, as well as, attempting to come up with new or appropriate forms of yield and procedures and methods. To what length one can be creative depends on the type of job though there is room in all of them. Creativity involves an invention of new concepts of changing the status quo ways of producing beneficial products. Creative employee responses may be used to execute organizational innovation. It is acknowledged that there are various forces which promote or inhibit organizational creativity. Creativity and its impacts in cultural life take human civilization forward (Ford, 1996; Oldham and Cummings, 1996; Woodman et al., 1993; Amabile, 1988, etc.).

Since creativity is now a crucial component of human ingenuity, the creative person is also more significant. Cognitive, differential, and social psychology have all been used to

investigate creativity, and each one provides us with unique insights about creativity (Sternberg & Lubart, 1999). A creative person differs from an average person in a number of ways, such as having a broad perspective on any issue, having particular personality qualities, and being unmotivated by external factors. The fact that they are experts in their disciplines is the most significant factor among them (Simonton, 2007; Weisberg, 2006).

Creativity is affected by personality. The recent theory of trait has revealed that personality and life in common day expressions are interrelated. For example, extraverts are more assertive, brave, and talkative and are attracted by rewards in their lives unlike individuals who are not extraverted. This indicates that personality influences our everyday lifestyle. Then, the question is how personality is related to creativity those who are persistent and possess the strength to develop new ideas fall under the creative personality aspect, whereas trait of openness to experience is universal; hence, it is associated with creativity (DeYoung, 2014).

Openness to experience explains depth and complexity of the mental life of an individual (John & Srivastava, 1999). They are experimental, uninhibited, and believe in new possibilities as they are connected with intelligence and imagination. An open person is a lover of arts, learning, and possesses creative interests (entertains new ideas, occupations and is outspoken to other people). They are inclined to discover new concepts and novelties. They possess the leadership traits (Lebowitz, 2016a). Persons low in this trait does not entertain innovation and prefer routine with less artistic qualities and entertainment. Individuals belonging to this trait support maximum utilitarianism, like respecting the difference in opinion that leads to peace and supporting equal justice to all. The sharpening of intellectual ability and emotional knowledge in a person with this characteristic rises as they grow older (Schretlen, et al., 2010). This characteristic makes the person develop. They are capable of learning about the world and themselves. Such individuals tend to adapt to everything in other dimensions (Costa & McCrae, 1988; McCrae, 1996). They are all black and white thinkers; they only have good and bad feelings, no middle ground (DeNeve and Cooper, 1998). It can also result in subjective well-being, which weakly relates to satisfaction (Judge et al., 2002). Individuals who have openness to experience are empowered with indulgence in educative, creative, and rational matters. They are curious and activist (Kaufman, 2013). They perform best when undertaking creative thought measuring tasks (Silvia, et al., 2009), have all sorts of creative hobbies (Wolfradt & Pretz, 2001), and their academic majors are also in creative fields (Silvia & Nusbaum, 2012); therefore, they achieve more in fields of creativity (Feist & Barron, 2003).

In addition to character traits, the intellectual and non-intellectual capabilities of the persons influence job output. Creativity is responsive to the extent that there would be a demand for new approaches and products. Frank Barron embarked on a process to achieve something new in the form of a product (1988, p. 80). He added that this is done through a creative person. In this way, it implies three things in which this definition revolves around: process, product, and person. There would be an interaction between the individual and the environment in the case of a creative output. One can measure creativity in terms of various methods divergent thinking, word association tests, remote assembly, and tests of cognition can be seen as parameters of measuring creativity along with personality. Culture (Leung & Chiu, 2005), motivation (Eisenberger & Selbst, 1994), affect (Isen, et al., 1987), and beliefs that individuals hold about their creativity (J. C. Kaufman & Baer, 2004) also play a role. Creativity is a topic that can be examined in multiple ways its characteristics, procedures, or how it is exhibited in people which can be resolved through literature review. Creativity can be observed almost everywhere, but mostly in arts and science, such as the miracle year of Einstein and the originality in the works of Picasso. A semi-structured interview process can reveal such creativity unconsciously (Richards, et al., 1988).

Creativity and supervisor support obviously have an impact on each other. The leader influences the environment, and the environment influences the leader (Mumford, et al., 2002). Componential theory pays attention to leader behavior in the workplace environment that influences creativity. This affects the creativity of employees by either the immediate supervisor or high-level managers. The attitude concerning support of the leader by the subordinate is affected by the behavior of supervisors, further affecting creativity. The action of a leader influences through direct assistance in skill development, increasing autonomous motivation, serving as a role model, coordinating intentions, and supporting ideas that disrupt traditional thinking. That is why, as with job involvement, supervisor support is both task-oriented and relationship-oriented (Amabile, 1997). At the team creativity level, the group's perspective on the supervisor's support is important (Amabile & Conti, 1999; Amabile et al., 1996), whereas at the individual level, there is a direct correlation between supervisor support and employee creativity (Andrews, 1967; Tierney et al., 1999).

A study demonstrates qualities of support in a leader such as the capacity of the supervisor to provide direction and strategies while enabling freedom in a supportive—not controlling approach (Pelz & Andrews, 1976; Oldham & Cummings, 1996). Therefore, supervisor support can be used to make employees more creative. It helps to develop creativity and a proactive personality through encouragement. Creative ideas are effective when endorsed by a supervisor, as this reduces risk vulnerability. The benefit of this creativity is that proactive individuals and organizations tend to hire others who promote creative ideas. Employees who receive feedback about recognition, support, and creativity become more innovative when supervisors acknowledge and support those (Madjar et al., 2002). Individuals with a proactive psyche are more content when their innovation is matched with the right job and environment (Erdogan & Bauer, 2005). Creativity is less effective if supervisors do not support it, and many organizations are risk-averse due to fear of career repercussions for failure (Seibert et al., 2001).

Innovation relies on social organization since it is a political and social exercise that requires resources. Two primary triggers of creativity are time and social support (Axtell et al., 2000). While coworker support is significant in idea application, supervisors who have authority play a more crucial role (Chiaburu & Harrison, 2008; Rank, et al., 2009). Employees assess how their organization supports and values innovation, especially through their supervisors (Kottke & Sharafinski, 1988; Eisenberger et al., 2002). Just like in the Job Demand model, support must be applied practically and interpersonally. Supervisors who bond well with employees grant them the platform and resources to overcome resistance (Demerouti et al., 2001; Rhoades & Eisenberger, 2002). They influence workplace culture and support idea implementation (Daniels, et al., 2011; Ceserne, et al., 2013).

Creativity can be encouraged by supportive supervisors who enable employees to implement new ideas and provide challenging missions (Mumford, et al., 2002). Nurturing bosses offer both verbal and practical support, which is essential to creativity (West & Anderson, 1996). Organizations can also consider opposing views to evaluate threats to creativity and allocate controlled resources. Support cushions new ideas against risks by convincing stakeholders of feasibility. Perceived supervisor support provides direction, problem-solving, and motivation for creative challenges (Daniels et al., 2011; Rosing et al., 2011). Conversely, less supportive supervisors lacking resources diminish creativity and negatively impact job performance (Bakker, et al., 2003).

Operational definition

Openness to experience

Individuals who may have the tendency to be high in openness are more eager to have novel things in their hands, brand new ideas, and new experiences. They are liable to follow new adventures, experiences, and creative activity.

Creativity

The introduction of new and even potentially helpful ideas and recommendations regarding practices, products, services or procedures in any institute/ organization

Supervisor Support

Supervisor support refers to the degree to which the supervisor demonstrates the amount of care and importance given to the input of an employee in his organization.

Rationale

In this research, the association between openness to experience with individual creativity aside, the moderating effects of contextual factors between the two are examined. The aim of the research is to define how the work environment contextual factor influences the level of the creativity of the employees. Through this, an in-depth knowledge will be gained pertaining to creative work environment. There were only a few studies available, which focus on the study of contextual factor on academics and therefore this study contributes more in the literature. The research helps to increase the population of Multan. This paper is clear to evaluate the work of contextual factor on personal trait in the attempt to promote creativity, which is not examined by earlier studies.

Significance

The practical implications of this research finding have significant implications on the conditions under which teachers demonstrate the most suitable level of creativity. This research indicates the relevance of Head of department (supervisor role) in creating creativity among teachers. Teachers also ensure they make the educational working better by portraying their creativity hence intensifying the educational quality level up to mark. Teacher can give the best stimulus to be allowed enjoying the studies by becoming more innovative and creative in class room. He/she are compassionate and knew very well about their weakness and strengths. Many organizations are already assessing the extent to which there is a level of personality traits before it decides to recruit a new worker. In this research, it is demonstrated that it is not sufficient to measure traits of personality only. Another point to consider by organizations with regards to setting a condition of applicability is the degree at which the contextual factors can be created by the (new) employee in such a manner so that the degree of creativity will be elevated. In case it fails to do so, this employee may be unable to express his or her qualities to the full extent.

Objectives

1. To find the relationship between openness of experience and creativity.
2. To find relationship between openness of experience and supervisor support.
3. To find relationship between supervisor support and creativity.
4. To find the moderating role of supervisor support in linking personality trait (openness to experience) to creativity

Hypotheses

H1: Supervisor support moderates the relationship between openness to experience and creativity in such a way that creativity will be stronger.

H2: There is significant relationship between openness to experience and creativity.

H3: There is significant relationship between supervisor support and creativity.

Methodology

Research setting and Participants

The primary aim of this study is to gather information about particular associations between personality characteristics and creativity, as well as the moderating impact of contextual variables among scholars. All of the university's instructors who work in different departments have received the survey. Three university instructors participated in a pilot study to evaluate a limited number of the survey's questions prior to its distribution. The study's final

representative sample did not include these three educators. As a result of their suggestions, one word on the creativity scale was swapped out for one that has gradually been assimilated in our culture the adjective "sexy" was changed to "attractive." In order to have a thorough knowledge of the instructors, the head of department was included as a supervisor in the scale of the work environment. Academics from all departments of Bahauddin Zakariya University in Multan make up the analytical sample.

Using a suitable sampling approach, 250 teachers were examined, 113 of whom were female and 137 of whom were male. Respected teachers were given a survey booklet with three scales (the Big Five Personality Inventory, the Gough Creative Personality Scale, and the Work Environment Scale). They were also given instructions on how to complete the form in two different ways and were asked to sign an informed consent form indicating their willingness to participate in the survey. In the first, they were asked via the website to visit the survey questionnaire link and fill it out; in the second, they were given paper surveys to complete and returned to us after they had done so. Additionally, they guaranteed that all of their information would be kept private and that no information would be shared with anybody other than for research purposes. I met approximately 450 instructors in order to collect enough data to proceed with generalization, but only 250 of them agreed to assist me in my research.

Research Study Instruments

During this based on three features precious scales were considered which have proved to be in preceding publications. All the three scales are described in this section.

Creativity

Gough creative personality scale was used as a questionnaire to measure creativity of teachers; the scale has 30 items. It has the list of adjective in which 18 items indicate the existence of creativity and 12 items indicate the absence of the creative element (Gough, et al., 1965).

Personality Traits

This study employed Big Five Inventory (BFI) to perform analysis of personality dimensions of Openness to Experience of an individual, and teachers in the study. It has ten items of openness to experience in which 16 items were reverse directed (John & Srivastava, 1999).

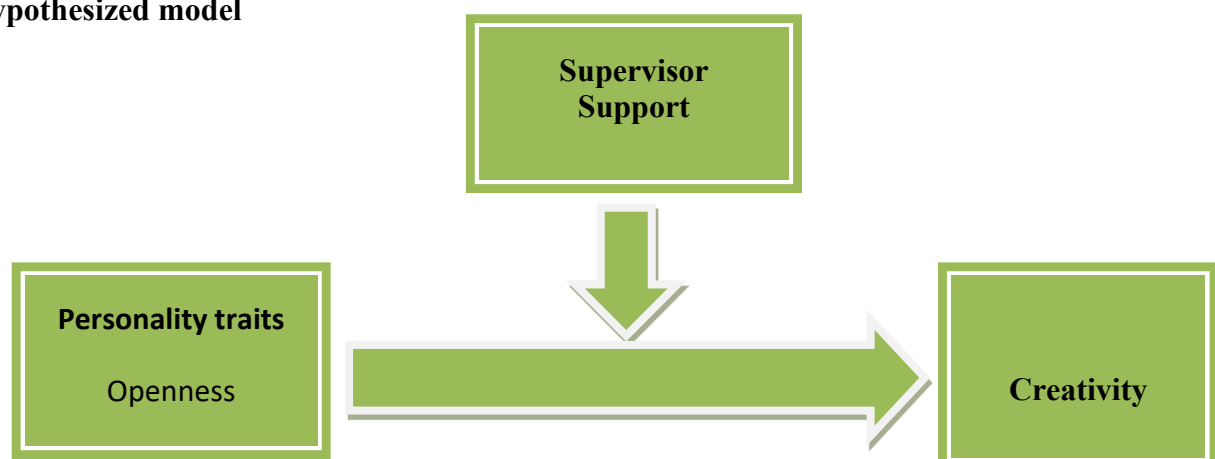
Moderating variables – Contextual factors

Supervisor support perceptions were measured by Work Environment Scale, nine items of measuring supervisor support (Moos, 1994)

Procedure of Data Analysis

The analysis of data will be conducted based on SPSS-21 Tests used which will be factor analysis, regression analysis and correlation and confirmation of moderating variable.

Hypothesized model



Results

Table 1

Demographic data

Demographics		Frequency	Percentage
Gender	Male	113	45.2
	Female	137	54.8
Nature of job	Permanent	66	26.4
	Non permanent	184	73.6
Work experience (years)	5-15	114	45.6
	15-30	63	25.2
	30-45	73	29.2

In Table 1, the demographic features of the respondents of the research study are shown. The sample was composed of 250 members of faculty in universities. Among them, 113 (45.2%) were males and 137 (54.8%) females showing a little more representation of the female respondents. In terms of the type of work the participants did, most of them were taking non-permanent jobs (n = 184, 73.6%) whereas 66 participants (26.4%) were employed permanently. Concerning work experience, 114 (45.6) participants had accumulated 5 to 15 years of work experience. Smaller percent of the participants 63 (25.2%) possessed 15 to 30 years of experiences, whereas 73 (29.2%) participants had 30 to 45 years of experiences. This distribution implies that the sample of rather experienced people was considered, a majority of which possess more than five years of academic professions.

Table 2

Reliability of Research Instruments

Reliability Statistics	Cronbach's Alpha	No of Items
Creativity	.856	30
Openness	.501	10
Supervisor support	.731	9

Table above indicates the reliability of one of the items of scales of all three variables considered. The value of Cronbachs Alpha demonstrates that all the variables are items of scales, which are reliable and can be continued further to the research purpose

Table 3

Descriptive Statistics and Correlation among Study Variables

	M	SD	1	2	3
Creativity	4.46	2.87	1		
Openness to experience	27.54	9.96	.655**	1	

Supervisor Support	4.40	2.32	.723**	.445**	1
--------------------	------	------	--------	--------	---

*P<0.05, **p<0.01

The mean, standard deviations, and correlation between each of the study's variables are shown in Table 3. Three personality traits extraversion, openness to new experiences, and conscientiousness have a favorable link with creativity. Additionally, there is a favorable correlation between creativity and all surrounding factors. Innovation has a strong correlation with creativity ($r = .80$, $p = .001$).

Table 4

Moderating effect of Supervisor support in predicting the creativity with openness

Predictor	β	SE	90%CI	
			LL	UL
Constant	.5783	.5215	1.4393	.2827
Openness	.0528	.0220	.0164	.0892
Supervisor support	1.2113	.1533	.9582	1.4645
Interaction	.0134	.0056	.0225	.0042

($R = .7313$, $R^2 = .5348$, $\Delta R = .0110$, $F = 93.89$), $P < .001$

The table above indicates that supervisor support has a moderating effect in the association that exists between openness and creativity. The high level of support by the supervisor will contribute to enhancement of the impact of the personality trait of openness on creativity. In this way coworker will enhance the relationship with supervisor support and creativity. The link between personality trait Openness to experience and creativity is positive as maximum studies state; my study also seconds all these studies. The connection between the attributes of openness to experience and creativity is guided by the support provided by supervisors such that the creativity would be more solid. It is more significant that workers are open to experience and receive positive support of supervisors to influence creativity.

Discussion

This study was aimed at the investigation of how personality trait openness to experience relates to creativity in faculty members of a university, and what role supervisor support may play as a moderating variable. The results in the study support the hypothesized study of the Componential Theory of Creativity (Amabile, 1997) and concur with a broad range of literatures that assert about the presence of both individual traits and contextual factors that lead to high levels of creativity within an organization (Mumford, et al., 2002; Tierney, et al., 1999).

In Hypothesis 1, there is a significant difference in the correlation between openness to experience and creativity when supervisor support is not considered ($\beta = .0134$, $p < .001$). This result concurs with the recent researches (Daniels et al., 2011; Rosing et al., 2011), which indicates that people of high levels of openness tend to demonstrate their creativity in case they feel encouraged and supported by their supervisors. Strong support of supervisors is a shield against social and organizational hazards of creative articulations (Amabile et al., 1996; Rank, et al., 2009). Furthermore, the positive and significant effect on the interaction provides the conclusion that when individuals feel that the supervisor is supportive, then the creative potential based on the concept of openness to experience is increased. These results are congruent with the Job Demand Resources theory that envisages that friendly contextual conditions (e.g. supervisor support) should be regarded as significant resources that augment

employee engagement and creative performance (Demerouti et al., 2001; Bakker & Demerouti, 2007).

In Hypothesis 2, it is demonstrated that “*There is a significant relationship between openness to experience and creativity*”. It is confirmed that 2 ($r = .655$, $p < .01$) there is a positive correlation between the level of openness to experience and the level of creativity. This is consistent with there being strong empirical evidence on the fact that openness a tendency linked to imagination, intellectual curiosity and aesthetic sensitivity is a potent predictor of both creative thought behaviors (McCrae, 1987; Silvia et al., 2009; DeYoung, 2014). Those scoring high in openness had the propensity of considering new ideas, challenging the status-quo as well as consider new options consecutively, which are the precursors of creative ideation. It is in line with earlier models that have emphasized that the openness to experience is the most stable personality correlate of creativity (Feist, 1998; Kaufman, 2013).

In Hypothesis 3, it is stated that “*There is a significant relationship between supervisor support and creativity*”. It is also supported by the findings and there is positive correlation between creativity and the supervisor support positively ($r = .723$, $p < .01$). This is consistent with prior research which has found that the supervisor behaviors which include giving feedbacks, autonomy and encouragement play a significant role in facilitating the employee’s power of creative expression (Oldham & Cummings, 1996; Madjar et al., 2002). Besides being in aid of idea generation, supervisor support is also useful in the implementation process by authorizing creative initiatives, minimizing perceived risks and gaining organizational acceptance (West & Anderson, 1996; Eisenberger et al., 2002.). In the academic contexts, i.e., the context used in the present study, the support of the Head of Department is paramount because it conditions the departmental culture and determines the sphere of permissible innovation.

Theoretical and Practical Implications

Important evidence on the findings provides a solid support to the Componential Theory of Creativity, which argues that creativity is because of the interaction between individual events and contextually relevant occasions (Amabile, 1997). In this research, researcher points out that opening is not the topic that is required to achieve creativity; the contextual support is necessary, especially when the organizers are responsive to the creative processes of supervisors. In the pragmatic sense, college administrators and professors need to understand that the main issue to encourage teacher creativity is to go beyond hiring people with creative potential to create a university environment that will support a creative person. The management of the schools including Heads of Departments is central in fostering creativity by way of allowing freedom, motivation and rewarding creative practice.

Limitations and Future Research

Nevertheless, this study has its limitations. To begin with, self-report measures could have generated social desirability bias. Second, researchers included only teachers of one particular university in the sample, which possibly limits the universality of the results. Longitudinal investigations should be taken into consideration in future study to understand how the interaction effect of supervisor support and personality as time goes by shapes creativity. In addition, cross-cultural research would give us an idea on the extent that the findings are applicable to other educational and organizational cultures.

Conclusion

The current study therefore offers an empirical validation of the moderating role of supervisor support in the relationship between the openness to experience trait and creativity. The outcomes emphasize the nature of the unity of personality and environment where even people with high level of creative potential can fail in a hostile environment. There exists a

solution through proper supervisory patterns to an organization especially institutions of higher learning; this solution is to harness and supplement the creative strengths of the employees because they work in an environment that encourages them.

References

- Amabile, T. M. (1988). A model of creativity and innovation in organizations. In B. M. Staw, & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 10, pp. 123–167).
- Amabile, T. M. (1997). Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review*, 40(1), 39–58.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39(5), 1154–1184.
- Andrews, F. M., & Farris, G. F. (1967). Supervisory practices and innovation in scientific teams. *Personnel Psychology*.
- Baer, M., & Frese, M. (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovations, and firm performance. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 24(1), 45-68.
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands–Resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309–328.
- Bakker, A. B., Demerouti, E., De Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of vocational behavior*, 62(2), 341-356.
- Chiaburu, D. S., & Harrison, D. A. (2008). Do coworkers make the place? Conceptual synthesis and meta-analysis of lateral social influences in organizations. *Journal of Applied Psychology*, 93(5), 1082-1103.
- Costa Jr, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and individual differences*, 13(6), 653-665.
- Costa, P. T., & McCrae, R. R. (1998). Trait theories of personality. In *Advanced personality* (pp. 103-121). Springer, Boston, MA.
- Cox, A. J., & Leon, J. L. (1999). Negative schizotypal traits in the relation of creativity to psychopathology. *Creativity Research Journal*, 12(1), 25-36.
- Daniels, K., Gregoire, D. A., & Shepherd, D. A. (2011). Cognitive appraisals, stress, and coping in entrepreneurship: An investigation of entrepreneurs' decision making. *Journal of Applied Psychology*, 96(3), 605–620.
- Daniels, K., Wimalasiri, V., Cheyne, A., & Story, V. (2011). Linking the demands–control–support model to innovation: The moderating role of personal initiative on the generation and implementation of ideas. *Journal of Occupational and Organizational Psychology*, 84(3), 581-598.
- Davis, B. G. (2009). *Tools for teaching*. John Wiley & Sons.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512.
- 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.
- DeYoung, C. G. (2014). Openness/intellect: A dimension of personality reflecting cognitive exploration. In M. L. Cooper & R. J. Larsen (Eds.), *APA handbook of personality and social psychology: Personality processes and individual differences* (Vol. 4, pp. 369–399). American Psychological Association.
- DeYoung, C. G., Quilty, L. C., Peterson, J. B., & Gray, J. R. (2014). Openness to experience, intellect, and cognitive ability. *Journal of personality assessment*, 96(1), 46-52.

- Eisenberger, R., & Selbst, M. (1994). Does reward increase or decrease creativity? *Journal of Personality and Social Psychology*, 66(6), 1116–1127.
- Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of Applied Psychology*, 87(3), 565–573.
- Erdogan, B., & Bauer, T. N. (2005). Enhancing career benefits of employee proactive personality: The role of fit with jobs and organizations. *Personnel psychology*, 58(4), 859-891.
- Feist, G. J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Review*, 2(4), 290–309.
- Gough, H. G., & Heilbrun, A. B. (1983). *The Adjective Check List manual*. Consulting Psychologists Press.
- Isen, A. M., Daubman, K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of personality and social psychology*, 52(6), 1122.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). Guilford Press.
- John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of Personality: Theory and Research* (Vol. 2, pp. 102-138). New York: Guilford Press.
- Judge, T. A., & Bono, J. E. (2000). Five-factor model of personality and transformational leadership. *Journal of applied psychology*, 85(5), 751.
- Kaufman, J. C., & Baer, J. (2004). Sure, I'm creative—but not in mathematics!: Self-reported creativity in diverse domains. *Empirical studies of the Arts*, 22(2), 143-155.
- Kaufman, S. B. (2013). Opening up openness to experience: A four-factor model and relations to creative achievement in the arts and sciences. *The Journal of Creative Behavior*, 47(4), 233–255.
- Kottke, J. L., & Sharafinski, C. E. (1988). Measuring perceived supervisory and organizational support. *Educational and psychological Measurement*, 48(4), 1075-1079.
- Lebowitz, S. (2016a). The 'Big 5' personality traits could predict who will and won't become a leader. *Business Insider*. Retrieved from <http://www.businessinsider.com/big-five-personality-traits-predict-leadership-2016-12>
- Leung, C. C., Yew, W. W., Chan, T. Y. K., Tam, C. M., Chan, C. Y., Chan, C. K., ... & Law, W. S. (2005). Seasonal pattern of tuberculosis in Hong Kong. *International journal of epidemiology*, 34(4), 924-930.
- Madjar, N., Oldham, G. R., & Pratt, M. G. (2002). There's no place like home? The contributions of work and non work creativity support to employees' creative performance. *Academy of Management Journal*, 45(4), 757–767.
- Madjar, N., Oldham, G. R., & Pratt, M. G. (2002). *There's No Place like Home? The Contributions of Work and Nonwork Creativity Support to Employees' Creative Performance*. *Academy of Management Journal*, 45(4), 757–767.
- McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of personality and social psychology*, 52(6), 1258.
- McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, 52(6), 1258–1265.
- Moos, R. H. (1994). *Work environment scale manual*. Consulting Psychologists Press.
- Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *The leadership quarterly*, 13(6), 705-750.

- Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39(3), 607–634.
- Pelz, D. C., & Andrews, F. M. (1976). Scientists in organizations (rev. ed.). Ann Arbor, Mich.: Institute for Social Research.
- Rank, J., Nelson, N. E., Allen, T. D., & Xu, X. (2009). Leadership predictors of innovation and task performance: Subordinates' self-esteem and self-presentation as moderators. *Journal of Occupational and Organizational Psychology*, 82(3), 465–489.
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: a review of the literature. *Journal of applied psychology*, 87(4), 698.
- Richards, R., Kinney, D. K., Lunde, I., Benet, M., & Merzel, A. P. (1988). Creativity in manic-depressives, cyclothymes, their normal relatives, and control subjects. *Journal of abnormal psychology*, 97(3), 281.
- Rosing, K., Frese, M., & Bausch, A. (2011). Explaining the heterogeneity of the leadership-innovation relationship: Ambidextrous leadership. *The Leadership Quarterly*, 22(5), 956–974.
- Schretlen, D. J., van der Hulst, E., Pearlson, G. D., & Gordon, B. (2010). A neuropsychological study of personality: Trait openness in relation to intelligence, fluency, and executive functioning. *Journal of Clinical and Experimental Neuropsychology*, 32, 1068-1073.
- Seibert, S. E., Kraimer, M. L., & Crant, J. M. (2001). What do proactive people do? A longitudinal model linking proactive personality and career success. *Personnel psychology*, 54(4), 845-874.
- Silvia, P. J., Kaufman, J. C., Reiter-Palmon, R., & Wigert, B. (2011). *Cantankerous creativity: Honesty–Humility, Agreeableness, and the HEXACO structure of creative achievement. Personality and Individual Differences*, 51(5), 687–689.
- Silvia, P. J., Nusbaum, E. C., Berg, C., Martin, C., & O'Connor, A. (2009). Openness to experience, plasticity, and creativity: Exploring lower-order, high-order, and interactive effects. *Journal of Research in Personality*, 43(6), 1087-1090.
- Simonton, D. K. (2007). Review of Creativity: Theories and themes: Research, development, and practice.
- Sternberg, R. J., & Lubart, T. I. (1999). The concept of creativity: Prospects and paradigms. *Handbook of creativity*, 1, 3-15.
- Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology*, 52(3), 591–620.
- West, M. A., & Anderson, N. R. (1996). Innovation in top management teams. *Journal of Applied Psychology*, 81(6), 680–693.