

The Impact Of Personality Factors On Creativity – A Case Of Management Professionals In National Capital Region, Delhi, India

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ABSTRACT

In the present competitive scenario innovation is vital for any organizations success. And organizations are also in to create different products and services to make themselves stand apart in this global competitive environment. And the budding factor for organizational innovation is the creativity of the employees. And if the personality characteristics of these creative employees is known before they enter the workforce, then steps can be taken , firstly to select those employees with creative personality traits and secondly to work on the employees who lack the creative traits in their personality . This will lead to take proactive actions which will help to perform better in the organizational settings.

The present study takes care of the creativity of these personality types of budding managers beforehand only. In the present study the personality of prospective managers are assessed and then a division is made of these personality types into highly creative and less creative . This research is only an attempt towards enriching the existing literature of personality and creativity from a different and detailed perspective. Its different since its not going for the not commonly used Big Five Model to measure personality and also detailed since it going to go ahead with all the 16 Personality Factors rather than emphasizing on few.

To assess the personality type, 16PF was applied and TTCT was used to know the creativity of the Management students . data was collected from the students resident of Delhi region from both Graduate and Post graduate. Descriptive statistics was used along with correlations. The results showed that there is an impact of Personality on the creativity of an individual.

Keywords

Innovation, Creativity, Personality, professionals, etc.

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Introduction

“When learning is purposeful, creativity blossoms. When creativity blossoms, thinking emanates. When thinking emanates, knowledge is fully lit. When knowledge is lit, economy flourishes.”

A.P.J. Abdul Kalam, Indomitable Spirit

As per the above definition it means that when ever and where ever there is learning takes place as a result creativity will happen by default that can be found in the any course of action and that leads to achieving the goals. Its identified that when there is lot of creativity takes place in any industry that will lead to the growth in the economy and that will lead to the growth of the society and that will even have change in the personality of an individuals.

Creativity lays the foundation for Innovation in an organization. And innovation has been linked to sustained long lasting economic success of organizations (Ayag and Ozdemir, 2009). In this article, India has been ranked at 57th position among 130 creative countries surveyed. The Global Innovation Index is derived out of Innovation efficiency ratio, that will lead to higher number of innovations as a output.

Another, Creative Productivity Index (CPI), which takes into consideration around 22 Asian economies along with

US and Finland, is a study on Asia’s knowledge economy . The survey emphasizes that creative productivity is an important attribute to strength the knowledge economy. This survey is conducted by The Economist Intelligence Unit (The EIU) along with Asian Development Bank (ADB). In 2018, India ranked 14th on Creative Productivity Index, which is measured by creative inputs (innovation capacity, innovation incentive and conducive environment for innovation) to creative outputs (measured by conventional indicators as well as knowledge creation).

Despite the fact that creativity leads to innovation (Baer, 2012), it has not been given its due place since a long time (Brenton and Levin, 2012). Also, creativity does not operate in isolation, and is the result of combined functionalities like cognition, environment and personality (Eysenck, 1995; Muñoz-Doyague, Gonzalez-Alvarez, & Nieto, 2008) which needs to be emphasized further. Looking at the various studies, we see that Personality has more powerful and direct effect in comparison to other demographics (Moynihan & Peterson, 2001).

All the facets of Big Five have not been dealt in detail. In fact, many facets have been neglected in majority of the studies, which can give new insights into different perspectives of individuals creative dimensions.

Literature Review

Jeou Shyan Horng et al in 2016 has done the exploratory research to find out the effect of proactive personality on creativity in the hospitality and tourism industry. With the help of a questionnaire survey, data was collected from 283 participants. SEM was conducted to analyse background variables and moderating effects and a causal path relationship was established. The results showed a positive moderating effect of creativity is fostered by proactive personality. Thereby, it was suggested that in the tourism and hospitality industry recruitment should be done of individuals who support new ideas and are passionate towards their work, also creativity – supporting physical environment needs to be provided to the employees.

Huynh Thao Tai and Nguyen Quynh Mai in 2016 with the help of their research tried to develop a conceptual framework to establishing the relationship between the many variables like Proactive kind of personality, context of organization and the creativity of an employee. The study included both the MNCs and domestic corporations. The findings revealed that the dimensions that impacted employee creativity are risk taking orientation, communication, atmosphere and proactive personality. Also, it was found that regardless of type of organization proactive personality was critical antecedent for innovative capabilities, whereas for domestic corporations risk-taking capability was dominant.

Hiroya Hirakimoto University of Hyogo, Kobe, Japan and Rie Watada HRD Institute, LLP, Osaka, Japan in 2012 conducted a research to bring out the factors that affect creativity in business organizations. Based on the previous literature it was hypothesized that factors which affect creativity can be classified broadly into four categories i.e. motivation, ability, personality and environment. This paper also wanted to verify whether CF (Creativity Factor) is a better predictor of business performance in comparison to IQ (Intelligence Quotient). The data was collected from 303 respondents, belonging to the Sales division of Japanese Venture Business with the help of a web-based questionnaire which consisted of 565 questions. The results showed that personality factors namely excitement, activeness and independence were 5% statistically significant in accelerating creativity of employees.

Christine A. Toh and Scarlett R. Miller in 2014 conducted research on engineering students to investigate about the creativity process where as it starts from the idea generation (it can also be termed as selection of concept) and that leads to the designing process.

Earlier researches have proved that most of the ideas are conventional in nature because creative ideas have a lot of risk associated with it. Keeping the earlier literature in mind, the present study was designed to explore personality traits, idea generation abilities and risk attitudes which impacted the filtering or promotion of creative ideas. The results showed that teams which are more prone to selecting novel ideas had higher levels of tolerance for ambiguity, agreeableness and conscientiousness.

Christian Kandler, et. al in 2015 explored the role of factors related to genetic, traits of the personality, abilities related to cognitive and sources from the environment to determine creativity. Based on previous research two aspects of

individual differences were brought to light, one was based on Creative test performance and the other Perceived Creativity. For this research it was hypothesized that Cognitive abilities will be associated with Creative test performance and few specific personality factors will be associated with Perceived creativity. The data was collected through various methods (like test scores) and multiple – rater data via two German twin studies - German Observational Study of Adult Twins (GOSAT) and Bielefeld Longitudinal Study of Adult Twins (BiLSAT).

Coelho, Lages and Sousa (2016) in their study investigated the relationship between the traits carried by the employees in the terms of personality and the creativity carried by each to find out a cure for lack of attention which is an important aspect for innovation..

Naylor along with his team studied in 2013 the effect of personality type and mood on creativity in problem solving. A sample of undergraduate college students, consisting of 16 males and 57 females were selected for the study. Positive and Negative moods were manipulated and extraversion and introversion personality types were measured. The results showed that introverts in a negative mood were high on creativity ($p = .01$) in contrast to extroverts in a positive mood who showed higher creativity ($p = .02$).

Lubart and Colleagues in 2016 explored to create a model for personality and creativity. The hypothesis of the model was twofold. The process factors included were Selection (formalization and idea evaluation) and Generation (idea originality and idea production). They found that a) Generation was positively predicted by Plasticity and Divergence b) Achievement and intensity of everyday creative activities was predicted positively by Selection, Generation and their interaction c) Selection was predicted positively by Convergence.

Tae-Yeol Kim, et. al in 2010 has done the research to find out a relationship between the creativity level of the employee and personality by considering the proactive part after considering the moderating effect of supervisory level creativity and the requirement of creativity in the job. A field study was conducted and data was collected from 157 supervisory – employee pairs in South Korea. The results showed a positive relation between proactive personality and employee creativity. Also, when supervisory support and creativity requirements were high proactive employees displayed highest employee creativity.

Moreover, Feist in 1998 through his research concluded that creative people are dominating, self – accepting, open to new experience, more autonomous, self – confident, introverted, norm doubting, driven, hostile, ambitious and impulsive.

Gerard Puccio and Chris Grivas in 2009 explored the relationship between the traits of the personality and style followed for creativity. For the purpose of this research the researcher has collected the data from 137 respondents. They were asked to complete two paper pencil tests in a Leadership Development Program. DiSC Personal Profile System was used to measure personality traits and a measure called Four Sight was used to assess the creative process preferences. Based on the results it was identified that problem clarification is associated with tactfulness, analytical ability, tendencies to be cautious, accurate and careful. On the contrary respondents who had strong idea

generation preference showed traits such as need for change, willingness to challenge the prevailing thought and attraction to variety.

Yun-Hwa Chiang, et. al in 2015 tried to establish a relationship between one of the dimensions of personality i.e. extraversion and creativity. Based on literature of the HPWS, they proposed that experienced HPWS will initiate the sharing of job related information with peers. After that drawing from the trait activation theory they proposed that extroversion personality reinforces the effect of experienced HPWS on information exchange. It will ultimately lead to improved creativity of workers. And in their study which was conducted on Research and Development Engineers of Taiwan, the positive relationship was found. It was also concluded that different HRM practices enhanced creativity of workers in an organization.

Scott David Williams in 2004 conducted a study with the aim of establishing a relationship between openness to experience (which is a personality trait) and creative performance in organization. The characteristics of openness to experiences is somewhat influenced by an individual's attitude towards divergent thinking (ATDT). Researchers have emphasized time and again that negative ATDT is a barrier to divergent thinking. Apart from this contextual factors like supervisor's attitude, initiating structures can also impede divergent thinking of employees which will in-turn affect creative attitudes and behaviors of the employees of the organization. The author concluded from the study that ATDT and Openness to experience are positively associated with employees' creative performance.

Sherman A. Lee & Gayle T. Dow in 2011 conducted research to find the relation of personality and malevolent creativity. Its main traits they focused on was sympathy, antagonism and aggression. A total number of 265 individuals participated and filled a series of tests constituting two divergent thinking tasks and a number of personality measures. Coding of responses were done for malevolent creativity and fluency. Through Hierarchical multiple regression analysis it was found that trait, physical aggression, conscientiousness and gender are the major contributing variables towards the malevolent creativity scores had high amount of variability. These results confirmed the relationship between malevolent creativity and personality and opened a new subfield for further research in creativity.

Gregory J. Feist in 1988 had put forward his view that creativity and personality psychology both suppress upon the distinctiveness of individuals and both disciplines have a history of more than 50 years but still no quantitative literature review on creative personality was done. He wrote this article with the intention of establishing a relationship between creativity and personality. The data for personality was collected with the help of Five – Factor Model dimensions, which takes into consideration agreeableness, extraversion, neuroticism, openness and conscientiousness. Personality traits of 3 sets of samples were taken into consideration for study, which included nonscientist versus scientist, less creative scientist versus more creative scientist and non-artists versus artist. It was concluded from the results that creative individuals were more – self confident, ambitious, driven, less conscientious, hostile, more self – accepting, dominant, impulsive, open to experiences and

less conventional. From these conscientiousness, hostility, impulsivity, self- acceptance, ambition and self – confidence were dominating one. He also said that creativity apart from personality is also affected by cognitive, motivational, social and affective dimension which needs a detailed study.

Research Gap

The relationship between Creativity and Personality have received some attention in the past, but when we go through the literature we can see that past researches have mainly focused on the relationship between Big Five Personality traits and Creativity (Batey & Furnham, 2006; Feist, 1998). Various remarks were made in past, regarding Big Five personality model of personality that it provided a limited account of an individual's personality (Paunonen and Jackson 2000 and Block 1995, Furnham, Batey, Anand, & Manfield, 2008; King, Walker, & Broyles, 1996; McCrae, 1987; Silvia, Nusbaum, Berg, Martin, & O'Connor, 2009, Soldz and Vaillant (1999); Furnham, Crump, Batey, & Chamorro-Premuzic, 2009; Furnham & Bachtiar, 2008; King et al., 1996). This study tries to address the criticism made in regard to the choice of Personality Model and further going into a detailed profiling of the individuals, also the Creativity aspect has been dealt in detail in this study.

Rationale Of The Study

The research is conducted to find out what all personality factors are associated with high creative students and what different personality factors get associated with low creative students. Since, Creativity is the building base for innovation which is considered to be an important factor to steer an organization in this competitive world, it needs to be studied in detail. This study is conducted on students at undergraduate and postgraduate and in this study we have gone a step further wherein we are seeing the relationship of components of creativity i.e. CR, NR etc on 16 Personality Factors i.e. Reserved - Outgoing (A), Concrete – thinking - Abstract-thinking (B), Lower ego strength - Higher ego strength (C), Submissive – Dominant (E), Sober – Carefree (F), Lower superego - strength - Higher superego strength (G), Shy - Uninhibited (H), Self-reliant – Dependent (I), Trusting - Suspicious (L), Conventional – Imaginative (M), Forthright – Shrewd (N), Placid – Apprehensive (O), Conservative - Experimenting (Q1), Group dependent - Self-sufficient (Q2), Undisciplined - Self-disciplined (Q3), Tranquil – Driven (Q4). This study will help in giving a detailed profile of highly creative students unlike other researches which has just touched upon the superficial relationship of Creativity and Personality.

Objective Of The Study

The main objective of the study is to see how high creative and low creative students differ on 16 Personality factors. Further, we will try to explore how various creativity factors are related to each and every personality trait. So, with the help of this research we will have an elaborative relation of creativity factors and personality traits.

Research Methodology

Sample

Purposive sampling had been used for the purpose of collecting the data for this research. A sample of 400 students were selected from Undergraduate and Postgraduate level from University of Delhi for data collection. Out of 400, a total of 244 were able to response obtained with return rate approximate to 60%.

Hypothesis

H0 – There is no relationship between the highly creative and less creative students on various personality factors.

H1 – There is a relationship between highly creative and less creative students on various Personality factors.

Survey Instruments

ATTAs

Calculation of Creativity Index

Normalized scores were obtained by converting raw score as per the table (TABLE 1), which were added to 15 criteria referenced indicator, as per table (TABLE 2). A detailed scoring of all the parameters was done as per the Manual to obtain Creativity Index (CI), which is the measure of individual creativity (CI).

The 16PF

Cattell in 1954 developed Sixteen Personality Factor Questionnaire. It covers 16 source traits of Personality along with 4 broad traits. It's an objectively scored test and a comprehensive coverage of personality is done in less time. It is a highly popular test across the globe. The author has done an extensive research for around 20 years on clinical and normal groups to arrive at these parameters, which brings to light its reliability and validity as well.

16PF is a pencil and paper instrument and it takes around 30 to 45 minutes to complete the test. It comprises 187 items, as each factor consists of 10-13 items. The sixteen dimensions are independent of each other, which is proved by small correlation between them. Since, all the 16 scales are very different from each other so in all we can get extensive and new information about the personalities of individuals. The sixteen dimensions are arranged on two poles from left to right and are based on a 10 point rating scale. Factors are based on a rating scale, ranging from one to ten. Lower end is placed on the left hand side and the higher end is placed on the right hand side of the pole. The raw scores are then converted to sten scores with the help of Standardization table given in the manual.

Description Of Sixteen Personality Factors

Low Score Direction	Alphabetic Designation Factors	High Score Direction
RESERVED Detached, Critical Cool	A	OUTGOING Warmhearted, Easy-going, Participating
LESS INTELLIGENT Concrete-thinking	B	MORE INTELLIGENT Abstract-thinking, Bright
AFFECTED BY FEELINGS Emotionally Less Stable, Easily Upset	C	EMOTIONALLY STABLE Faces Reality, Calm, Mature
HUMBLE Mild, Accommodating Conforming	E	ASSERTIVE Independent, Aggressive
SOBER Prudent, Serious, Taciturn	F	HAPPY-GO-LUCKY Impulsively Lively, Gay, Enthusiastic
EXPEDIENT Evades Rules, Feels Few Obligations	G	CONSCIENTIOUS Preserving, Staid, Rule bound
SHY Restrained, Diffident, Timid	H	VENTURESOME Socially-bold, Uninhibited, Spontaneous
TOUGH-MINDED Self-reliant, Realistic, No-nonsense	I	TENDER-MINDED Dependent, Overprotected Sensitive
TRUSTING Ad3ptable, Free of Jealousy, Easy to Get on With	L	SUSPICIOUS Self-opinionated, Hard to Fool

PRACTICAL Careful, Conventional Regulate by External Realities, Proper	M	IMAGINATIVE Wrapped Up in Inner Urgencies, Careless of Practical Matters, Bohemian
FORTHRIGHT Natural, Artless, Sentimental	N	SHREWD Calculating, Worldly, Penetrating
PLACID Self-assured, Confident, Serene	O	APPREHENSIVE Worrying, Depressive, Troubled
CONSERVATIVE Respecting Established Ideas, Tolerant of Traditional Difficulties	Q1	EXPERIMENTING Critical, Liberal, Analytical, Free- thinking
GROUP-DEPENDENT A "Joiner" and Sound Follower	Q2	SELF-SUFFICIENT Prefers Own Decisions, Resourceful
CONFLICT Careless of Protocol, Follows Own Urges	Q3	CONTROLLED Socially precise, Following Self-image
RELAXED Tranquil, Torpid, Unfrustrated	Q4	TENSE Frustrated, Driven, Over-wrought.

Data Analysis And Discussion

Table 1: Table Shows The Respondents Profile

S.NO	PARTICULARS	FREQUENCY	PERCENTAGE
1	DEPARTMENT		
	CENTRE FOR WOMEN'S STUDIES	44	18.03
	DEPARTMENT OF STUDIES IN MATHEMATICS	56	22.95
	DEPARTMENT OF FOOD AND NUTRITION	64	26.23
	DEPARTMENT OF GEOGRAPHY	80	32.79
2	GENDER		
	MALE	112	45.90

	FEMALE	132	54.098
3	AGE GROUP		
	18-20	122	50
	21-23	111	45.49
	24-26	9	3.69
	ABOVE 26	2	0.82
4	FAMILY TYPE		
	NUCLEAR FAMILY	163	66.8
	JOINT FAMILY	81	33.2
5	GRADUATION		
	1 ST YEAR	49	20.08
	2 ND YEAR	178	72.95
	3 RD YEAR	15	6.15
	4 TH YEAR	1	0.82

Table 2 : Converting Ability Raw Scores to Normalized Standard Scores (Scaled Scores)

Creative Ability	Total Score	Scaled Scores								
		11	12	13	14	15	16	17	18	19
		Corresponding Raw Scores								
Fluency		1-6	7	8-9	10	11-12	13-14	15-16	17	18+
Originality		1	2	3	4	5	6	7-8	9-10	11
Elaboration		1-3	4-5	6-8	9-11	12-14	15-18	19-23	24-27	28+
Flexibility		-	1	-	2	3	-	4	5	6+

Table 3: Table Shows Results

CORRELATION									
Criteria for Creativity→	NRF	NRO	NRE	NRFI ex	CRV R	CRF C	NRC T	CRC T	TC
PERSON ↓									
PFA	-.258	-.422	-.308	-.356	-.219	-.175	-.425	-.237	-.413
PFB	.346	.384	.312	.343	.119	.143	.440	.183	.408
PFC	.107	.219	.132	.176	.064	.087	.215	.082	.207
PFE	-.172	-.287	-.276	-.203	-.056	-.152	-.303	-.123	-.282
PFF	-.258	-.422	-.308	-.356	-.219	-.175	-.425	-.237	-.413
PFG	-.137	-.287	-.179	-.204	-.090	-.118	-.254	-.131	-.244
PFH	.248	.255	.141	.298	.039	.088	.300	.081	.266

PFI	.032	.076	.016	.166	-.041	.003	.092	-.054	.062
PFL	-.143	-.194	-.211	-.209	.371	-.158	-.253	-.150	-.250
PFM	.264	.342	.209	.299	.167	.068	.363	.114	.326
PFN	-.201	-.354	-.335	-.342	-.118	-.191	-.405	-.220	-.396
PFO	-.222	-.354	-.335	-.342	-.118	-.191	-.405	-.220	-.396
PFQ1	.292	.378	.162	.343	.250	.226	.367	.284	.386
PFQ2	.407	.450	.307	.344	.116	.200	.464	.213	.438
PFQ3	.328	.352	.238	.289	.164	.154	.368	.162	.346
PFQ4	-.177	-.238	-.188	-.195	-.057	-.177	-.247	-.143	-.244

TABLE Shows Aggregate Value Of Creativity: Total, Average And Percentage Value (Aggregate)

		CREATIVITY			
		TOTAL	AVERAGE	PERCENTAGE	RANK
PERSONALITY	PFA	-3	-0.31256	-31.2556	
	PFB	3	0.297556	29.75556	3
	PFC	1	0.143222	14.32222	7
	PFE	-2	-0.206	-20.6	
	PFF	-3	-0.31256	-31.2556	
	PFG	-2	-0.18267	-18.2667	
	PFH	2	0.190667	19.06667	6
	PFI	0	0.039111	3.911111	8
	PFL	-1	-0.133	-13.3	
	PFM	2	0.239111	23.91111	5
	PFN	-3	-0.28467	-28.4667	
	PFO	-3	-0.287	-28.7	
	PFQ1	3	0.298667	29.86667	2
	PFQ2	3	0.326556	32.65556	1
	PFQ3	2	0.266778	26.67778	4
	PFQ4	-2	-0.18511	-18.5111	

As per the above analysis it is very much clear that out of 16 personality factors there are only 8 personality factors have the positive correlation whereas there are 8 factors which have negative correlation. The negative correlation is not more than 33% that means the relation is negligible and not having much impact. As per the Ranking order based on percentage its PFQ2, PFQ1, PFB, PFQ3, PFM, PFH, PFC and PFI are in rank of 1 to 8 respectively. As per the hypothesis results it's found that there is positive correlation that means there is a relationship exist between the Personality and creativity by considering the p value as 0.05.

Conclusion

This study is unique in its own perspective since it studies the personality traits of management students and its relation to degrees of creativity. And in this study it is done before hand , so it has got important implications for corporate as far as their process of hiring is concerned.

Apart from hiring, the results of this study can help in classifying these recruits and training them in their respective areas of concern.

This study has important results from the perspective of employees/prospective managers as well, once they know their personality type and creativity levels , they can themselves work on the gap areas to make improvements on their own end for better performance and prospective. As per the research result it's found that there is a relationship exist between the Personality and the creativity factors by considering the different variables under each. It's found that PFQ2 is having a major impact on Creativity and followed by PFQ1 and many more. Generally creativity goes based on the personality of an individual which each and every person carries and for forming the personality of any individual is purely depending on the thinking level of an individual, feeling or emotional stability of an individual and the behavior of an individual. Therefore it will be true to say that there is a impact of personality on creativity.

Scope For Further Research

- 1) The sample size could be increased
- 2) The data collected was confined to Delhi NCR, other geographical area would give even better picture.

References

- [1] Ayağ, Z., & Özdemir, R. G. (2009). A hybrid approach to concept selection through fuzzy analytic network process. *Computers & Industrial Engineering*, 56(1), 368-379.
- [2] Baer, M. (2012). Putting creativity to work: The implementation of creative ideas in organizations. *Academy of Management Journal*, 55(5), 1102-1119.
- [3] Barrick, M. R., Mount, M. K., & Strauss, J. P. (1993). Conscientiousness and performance of sales representatives: Test of the mediating effects of goal setting. *Journal of Applied Psychology*, 78, 715-722.
- [4] Brenton, B., & Levin, D. (2012). The softer side of innovation: The people. *Journal of Product Innovation Management*, 29(3), 364-366.
- [5] Chiang, Y. H., Hsu, C. C., & Shih, H. A. (2015). Experienced high performance work system, extroversion personality, and creativity performance. *Asia Pacific Journal of Management*, 32(2), 531-549.

- [6] Cornell University, INSEAD, and WIPO (2019); *The Global Innovation Index 2019: Creating Healthy Lives—The Future of Medical Innovation*, Ithaca, Fontainebleau, and Geneva. ISSN 2263-3693 ISBN 979-10-95870-14-2.
- [7] Eysenck, H. J. (1995). *Genius: The natural history of creativity* (Vol. 12). Cambridge University Press.
- [8] Feist, G. J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and social psychology review*, 2(4), 290-309.
- [9] Füst, G., Ghisletta, P., & Lubart, T. (2016). Toward an integrative model of creativity and personality: Theoretical suggestions and preliminary empirical testing. *The Journal of Creative Behavior*, 50(2), 87-108.
- [10] George, J. M., & Zhou, J. (2001). When openness to experience and conscientiousness are related to creative behavior: An interactional approach. *Journal of Applied Psychology*, 86, 513-524.
- [11] González-Gómez, H. V., & Richter, A. W. (2015). Turning shame into creativity: The importance of exposure to creative team environments. *Organizational Behavior and Human Decision Processes*, 126, 142-161.
- [12] Gough, H. G. (1979). A creative personality scale for the adjective check list. *Journal of personality and social psychology*, 37(8), 1398.
- [13] Hirakimoto, H., & Watada, R. (2012). Analysis of the Personality, Motivation, Ability, and Environment Affecting Creativity in Japanese Business. *Psychology Research*, 2(7), 396.
- [14] Horng, J. S., Tsai, C. Y., Yang, T. C., & Liu, C. H. (2016). Exploring the relationship between proactive personality, work environment and employee creativity among tourism and hospitality employees. *International Journal of Hospitality Management*, 54, 25-34.
- [15] James, L. R., & Mazerolle, M. D. (2002). *Personality in work organizations*. Thousand Oaks, CA: Sage.
- [16] Kandler, C., Riemann, R., Angleitner, A., Spinath, F. M., Borkenau, P., & Penke, L. (2016). The nature of creativity: The roles of genetic factors, personality traits, cognitive abilities, and environmental sources. *Journal of Personality and Social Psychology*, 111(2), 230.
- [17] Kim, T. Y., Hon, A. H., & Lee, D. R. (2010). Proactive personality and employee creativity: The effects of job creativity requirement and supervisor support for creativity. *Creativity research journal*, 22(1), 37-45.
- [18] Lee, S. A., & Dow, G. T. (2011). Malevolent creativity: Does personality influence malicious divergent thinking?. *Creativity Research Journal*, 23(2), 73-82.
- [19] McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, 52, 1258-1265.
- [20] McCrae, R. R., Jr., & Costa, P. T. (1997). Conceptions and correlates of openness to experience. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 825-847). San Diego, CA: Academic Press.
- [21] Montiel, C. H., Alenjandro, M. R., Haces, A. G., & Marcela, P. C. Y. (2015). Relationship between creativity, personality and entrepreneurship: An exploratory study. *Int. Bus. Res.*, 8, 59-71.
- [22] Moynihan, L. M., & Peterson, R. S. (2001). 7. A contingent configuration approach to understanding the role of personality in organizational groups. *Research in organizational behavior*, 23, 327-378.
- [23] Muñoz-Doyague, M. F., González-Álvarez, N., & Nieto, M. (2008). An examination of individual factors and employees' creativity: The case of Spain. *Creativity Research Journal*, 20(1), 21-33.
- [24] Naylor, P. D., Kim, J., & Pettijohn III, T. F. (2013). The Role of Mood and

Personality Type on Creativity. *Psi Chi Journal of Psychological Research*, 18(4).

- [25] Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39, 607-634.
- [26] Puccio, G., & Grivas, C. (2009). Examining the relationship between personality traits and creativity styles. *Creativity and Innovation Management*, 18(4), 247-255.
- [27] Sousa, C. M., Coelho, F., & Lages, C. (2016). Personality and the creativity of frontline service employees: Exploring quadratic and moderating effects. In *Looking Forward, Looking Back: Drawing on the Past to Shape the Future of Marketing* (pp. 407-407). Springer, Cham.
- [28] Tai, H. T., & Mai, N. Q. (2016). Proactive personality, organizational context, employee creativity and innovative capability. *International Journal of Organizational Analysis*.
- [29] Toh, C. A., & Miller, S. R. (2014). The impact of example modality and physical interactions on design creativity. *Journal of Mechanical Design*, 136(9).
- [30] Williams, S. D. (2004). Personality, attitude, and leader influences on divergent thinking and creativity in organizations. *European Journal of Innovation Management*.