

Moderating Role of Extraversion Personality Trait in Emotional Intelligence and Cognitive Styles among University Students

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The present study intended to find out the moderating effect of extraversion personality trait between emotional intelligence and cognitive styles among university students. Sample comprised of 3500 university students (Male=1700 and Female=1800) of age ranged between 18-40 years. Results indicated positive relationship of extraversion personality trait with all factors of emotional intelligence (i.e., interpersonal skills, emotional self-regulation and emotional self-awareness) and cognitive styles (object, spatial and verbal cognitive style). It also appeared that extraversion personality trait significantly moderated the association of emotional intelligence and cognitive styles.

Keywords: moderation, extraversion personality trait, emotional intelligence, cognitive styles, university students.

Theories of emotional intelligence have grabbed the attention of scholars in past few years and the construct generated great debate among them. Emotional intelligence and personality traits are very closely related with each other in many ways. Many characteristics of personality traits have effect on the emotional intelligence of an individual in both positive and negative ways. In the same way, Big Five personality traits can also predict incredible information regarding an individual (i.e., relationship patterns and academic success). In the same way, cognitive styles (also called 'thinking styles' or 'intellectual styles') become a strong source to develop a connection of theory related to personality traits with cognitive ability.

Cognitive Styles

Cognitive styles are the psychological dimensions representing constant behavior of a person in his/her way of cognitive functioning; predominantly it deals with their way of information processing (Ausburn & Ausburn, 1978).

Visual cognitive style (focuses on imagery in performing cognitive tasks), and verbal cognitive style (analytical and vocal strategies to perform cognitive tasks) are the most recognized styles (Kozhevnikov & Thornton, 2006; Thierry & Price, 2006; McAvinue & Robertson, 2007). Blazhenkova and Kozhevnikov (2009) coined a new cognitive model named 'The new object-spatial-verbal cognitive style model' which comprised of three cognitive styles: *object*, *spatial* and *verbal* (Blazhenkova & Kozhevnikov, 2009). The present study focuses on these three cognitive styles; *object cognitive style*, which involves the processing of visual appearance of objects like color, shape, and texture. Second is *spatial cognitive style*, it is the processing of spatial relationships, movement, and object location.

Third is *verbal cognitive style*, which is the comprehension, creation of verbal and written speech (Kozhevnikov, Kosslyn, & Shephard, 2005). Researchers report that other than cognitive styles, personality trait of the individual is also a strong predictor of confidence and success (Poore, Forlines, Miller, Regan, & Irvine, 2014). Early literature that examined effects of personality on performance primarily focused on the individual types of personality relating to performance on individual tasks (e.g., Mount and Barrick, 1998; Hough, 2001; Rothstein & Goffin, 2006).

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Personality

Personality is unique and comparatively permanent inner and outer features of a person's disposition which effects and predict any individual's behavior across different conditions and situations (Carole & Carole, 2000; Schultz & Schultz, 2001). Allport (father of personality psychology) defines personality trait as a consistent and unique in nature because these traits were considered as the descriptors of durable and constant disposition for a particular behavior/action. On the basis of this broad definition of the traits it was found that traits perform three major functions: 1) summarize things, 2) explanation of individual's behavior, and 3) behavior prediction (Chishti, 2002).

The Big-Five framework uses hierarchical approach to define five main factors/dimensions of personality. OCEAN model of personality traits comprises on five traits; *Agreeableness* (Individuals are by nature kind, friendly, caring, willing to compromise their interests, and help others), *Conscientiousness* (Individuals direct, regulate, and control their impulsive behavior, *Extraversion* (Individual's frequently experience positive emotions, amplified energy and, enjoy the company of others), *Emotional Stability* (Individuals could not get upset easily, lesser emotionally reactivity, very calm, and free from experiencing negative feelings constantly), and *Openness to Experience* (Individuals are intellectually curious, beauty conscious, appreciative of art, and well aware about their emotional state (Allen, 2000; Friedman & Schustack, 2003; Gosling, et al., 2003; Hartmann, 2006).

Emotional Intelligence

Emotional intelligence is the combinations of all those abilities/capabilities which are required for better emotion management of one's own and others (Goleman, 1998). Many models of emotional intelligence and personality theory have very close association with each other, particularly the models (mix models) given by Bar-On and Goleman. Sub-scales of Bar-On's model, which also have been considered as parts of personality are interpersonal effectiveness, assertiveness, impulse control, reality testing, empathy, and social responsibility. Many competencies of Goleman's model of EI (e.g., self-control, self-confidence and empathy) have been extensively investigated in the field of personality psychology (Mayer et al., 2001).

In short, emotional intelligence can be defined as an individual's capacity to: 1) understand, express oneself and be aware of themselves; 2) understand and be aware of others; 3) Control and deal with impulses and strong emotions; and 4) change adaptation and solution of personal/social problems (Bar-On, 1988). Historically, Thorndike's (1920) work on the social intelligence acts as distal roots, and Gardner (1983) research work on multiple intelligences act as the proximal roots of emotional intelligence.

In previous literature the connection of personality traits and emotional intelligence had already explored but in very narrowed way (Petrides & Furnham, 2003). Results of previous research revealed that emotional intelligence was negatively affected by Neuroticism while positively affected by Extraversion personality trait. Emotional Competence Inventory and Goleman's measure of emotional intelligence (measuring self-confidence, self-control, and empathy) both have significant correlation with three personality factors of the Big Five named; conscientiousness, openness, and

extroversion (Sala, 2002). The researchers work at Johns Hopkins University Center for Talented Youth (CTY; 2013) have investigated the link between 46 personality traits and cognitive styles in the world. They explored the cognitive styles and personality characteristics of gifted and talented students with respect to student's culture, type of academic talent, gender, and time. The findings of these researches explained that innovative cognitive style and openness to experience personality traits were positively associated while, originality dimension and extraversion personality trait also possessed positive association with each other.

Johar (2016) studied the role of extraversion personality trait as moderator in the relationship of self-esteem and emotional intelligence among employees. It appeared that high extraversion moderated the relation between perceiving and assessing of emotions in the presence of strong self-esteem. Low levels of extraversion would cause the relationship to be weaker. So the extraversion assisted employees to have good appraisal and perception of emotions. Moreover, high extraversion enables the employees to recognize own and others' emotions which can further help in boosting self-esteem. According to Bao and Yang (2012), high extraversion is helpful for employees in achieving the capability of understanding self and others' emotions and in acquiring enhanced positive self-esteem. But lower extraversion can cause opposite results.

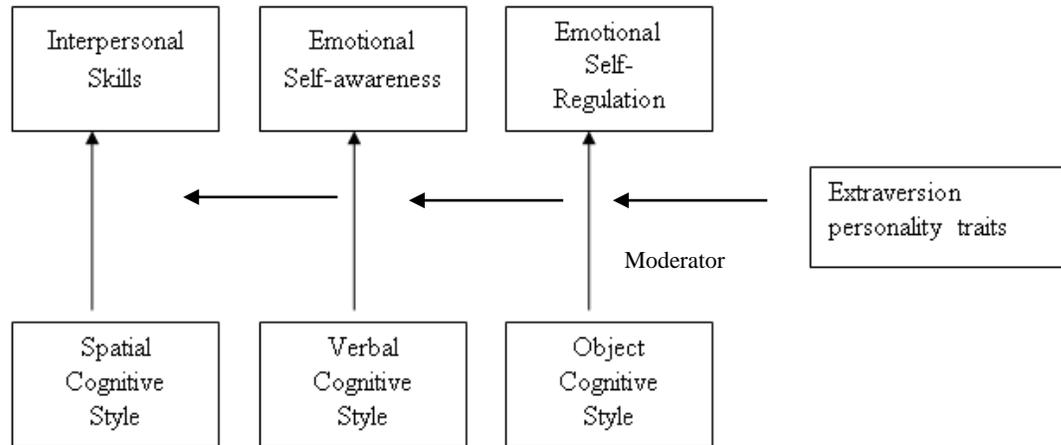
Rationale

Many researchers investigated the relationship of emotional intelligence (e.g., Caruso & Salovey, 2004) with different variables like; cognitive intelligence (e.g., Sahin, Guler, & Basim, 2009), job performance (e.g., O'Boyle et al., 2011), job satisfaction (Rakesh, 2014), academic performance (e.g., Lawrence & Deepa, 2013). Similarly, a large amount of researches have been conducted to assess relationship of personality traits (e.g., Gallo & Smith, 1998) with different constructs like; learning styles (Miller, 1991) emotional regulation (e.g., Kokkonen & Pulkkinen, 1999). Unlike EI and personality traits, scarce research is available on cognitive styles, especially verbal and spatial cognitive styles (Blajenkova, Kozhevnikov, & Motes, 2006; Blazhenkova, Becker, & Kozhevnikov, 2011). Current research takes extraversion personality trait as a moderator in the association of EI and cognitive styles, particularly with reference to Pakistani culture. Pakistan is one of the countries in which collective culture exists. Being a part of collectivistic cultures the individuals' ability of better understanding, managing, and directing negative emotions to positive emotion play an important part in healthy cognitive functioning of the students.

Many research scholars stated that those students who had good awareness of their emotional state were more competitive in both professional and personal lives which results in more happiness and success. The interaction of these three variables may be helpful to explain logically why some people achieve more success than others as leaders, as professionals, and as students.

Conceptual Model of the Study

The hypothesized conceptual framework of the current study based on the objectives and consulted literature (See the following figure).



Note. Extraversion personality trait plays a moderating role in emotional intelligence (Emotional Self-awareness, Emotional Self-Regulation and Interpersonal Skills) and cognitive styles (Object, Verbal and Spatial Cognitive Style).

The above figure indicates that extraversion personality trait acts as a moderator in the relationship of emotional intelligence and cognitive styles.

The objective of the current research was to examine the moderation of the extraversion personality trait in the relationship of emotional intelligence and cognitive styles of university students.

Hypotheses

- Extraversion personality trait moderates the positive relation of emotional self-regulation with object cognitive style of university students.
- Extraversion personality trait moderates the positive relation of emotional self-awareness with verbal cognitive style of university students.
- Extraversion personality trait moderates the positive relationship of interpersonal skills and spatial cognitive style of university students.

Method

The psychometric characteristics of Self-Report Measure of Emotional Intelligence (SRMEI), Ten Item Personality Inventory (TIPI), and Object-Spatial Imagery and Verbal Questionnaire (OSIVQ) were established before using these questionnaires in the study.

Sample

University students ($N=3500$) age ranged between 18-40 years ($M=29.75$, $SD=1.05$), comprising (Male= 1700 and female = 1800) were selected. Convenience sampling technique was applied for the purpose of selecting students from the universities of Islamabad, Rawalpindi, Lahore, Multan, Sargodha, Peshawar, Hazara, and Faisalabad. The sample comprised of five different academic disciplines (social sciences, Natural Sciences, Arts, Management Sciences, and Information Technology). This sample was further divided on the basis of age ranges: younger students with age range 18-28 years ($n= 1783$) and older students with age range 29-40

years ($n= 1717$) and academic education undergraduate students ($n= 1778$ and postgraduate students ($n=1722$).

Instruments

Self-Report Measure of Emotional Intelligence (SRMEI; Khan & Kamal, 2008). This scale comprised of 60 items. Its response category was based on a five-point scale. It consists of three subscales (Interpersonal Skills Scale, Emotional Self Awareness Scale and Emotional Self-Regulation Scale). It has total 60 items out of which 33 are reverse scoring items. The alpha reliability for the SRMEI was .96, while it ranged from .80 to .88 for its subscales.

Ten-Item Personality Inventory (TIPI). There are 10 items in TIPI (Gosling, Rentfrow, & Swann, 2003) scored on seven-point Likert type scale. This scale gives information on five personality traits. This scale assesses all personality trait with the help of two items for each trait. Extroversion can be measured through (1 and 6-R), Item 2 and 7-R are used for Agreeableness, Conscientiousness is measured through item 3 and 8-R, Item 4 and 9-R are used to assess Emotional Stability and Openness to Experience is measured through item 5 and 10-R. The alpha reliability for the TIPI was .78, while it ranged from .68 to .98 for its subscales.

Object-Spatial Imagery and Verbal Questionnaire (OSIVQ). OSIVQ (Blazhenkova & Kozhevnikov, 2009) comprises of 45 items with a five-point Likert type rating scale. This scale assesses three types of cognitive styles; object cognitive styles (2, 4, 7, 10, 15, 16, 17, 20, 26, 29, 33, 34, 38, 40, 44) spatial cognitive style (3, 5, 9, 12, 21, 22, 25, 27, 31, 35, 36, 37, 39, 42, 45) and verbal cognitive style (1, 6, 8, 11, 13, 14, 18, 19, 23, 24, 28, 30, 32, 41, 43). It has 41 positive and four reverse items. The alpha reliability for the OSIVQ was .89, while for its subscales alpha ranged from .76 to .88.

Procedure

A sample of 3850 university students was recruited from the universities of Islamabad, Rawalpindi, Faisalabad, Sargodha, Multan, Peshawar, Hazara, and Lahore and 3500 completed all the questionnaires so the response rate was 91 percent. In the present study, SRMEI, TIPI, and OSIVQ were used, and Informed Consent

Form was taken prior to research and Demographic Sheet was also used.

Results

Table 1
Hierarchical Multiple Regression Analysis Predicting Emotional Self-Regulation from Object Cognitive Style and Extraversion Personality Trait (N = 3500)

Predictor	ΔR^2	B
Step I		
Object	.44*	.67*
Step II		
Object	.03*	.99*
Extraversion		.37*
Step III		
Object	.12*	.95*
Extraversion		-.09*
Object * Extraversion		.48*
Total R^2	.59*	

* $p < .001$

Table 1 indicates that object cognitive style was significantly correlated with emotional self-regulation in positive way, where the former explained about 44% variation in the latter. In the second step, extraversion personality trait also predicted emotional self-regulation and it create additional 3% change in it. In the last step, the collaborating effect of both object cognitive style and extraversion personality trait also predicted emotional self-regulation significantly positively create 12% change in the value of emotional self-regulation (see Figure-1).

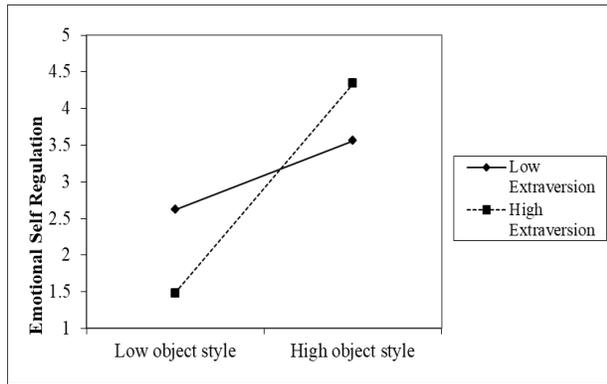


Figure 1. Moderation of extraversion personality trait in the relationship of emotional self-regulation and object cognitive style.

Table 2
Hierarchical Multiple Regression Analysis Predicting Emotional Self-Awareness from Verbal Cognitive Style and Extraversion Personality Trait (N = 3500)

Predictor	ΔR^2	B
Step I		
Verbal	.04*	.20*
Step II		
Verbal	.20*	.16*
Extraversion		.44*
Step III		
Verbal	.04*	.18*
Extraversion		.26*

	Verbal * Extraversion	B
Total R^2		.28*

* $p < .001$

Table 2 shows that both verbal cognitive style and emotional self-awareness are linked with each other significantly positively, where the former explained about 4% variation in the latter. In the second step, extraversion personality trait also predicted emotional self-awareness and create additional change of 20% in it. Finally, in the last step, the combine effect of interaction between verbal cognitive style and extraversion personality trait also predicting emotional self-awareness significantly in the negative direction and create 4% change in the value of emotional self-awareness (see Figure-2).

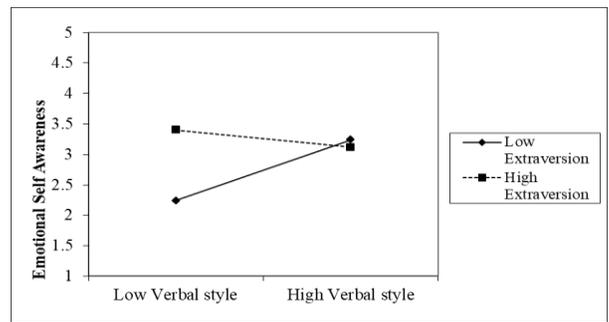


Figure 2. Moderation of extraversion personality trait in the relationship of emotional self-awareness with verbal cognitive style.

Table 3
Hierarchical Multiple Regression Analysis Predicting Interpersonal Skill Scale from Spatial Cognitive Style and Extraversion Personality Trait (N = 3500)

Predictor	ΔR^2	B
Step I		
Spatial	.05*	.23*
Step II		
Spatial	.25*	.04*
Extraversion		.54*
Step III		
Spatial	.01*	.03*
Extraversion		.25*
Spatial * Extraversion		-.31*
Total R^2	.31*	

* $p < .001$

Table 3 illustrates that spatial cognitive style had significant positive relationship with interpersonal skill, where the former created 5% variation in the latter. In the second step, extraversion personality trait also predicted interpersonal skill and being responsible for creating 25% change in it. In the final step of this analysis, both spatial cognitive style and extraversion personality trait interact with each other and consequently their interaction significantly predicted interpersonal skill negatively create an additional change of 1% in the value of interpersonal skill (see Figure-3).

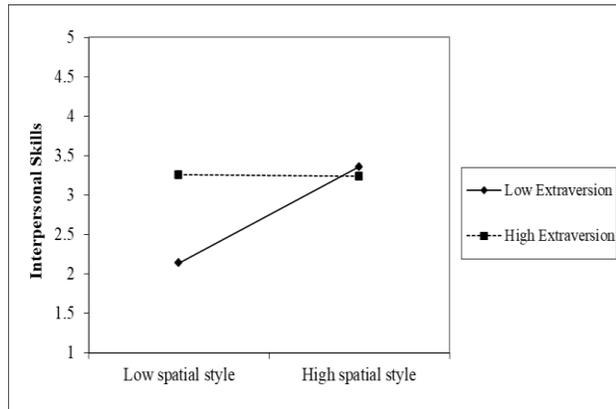


Figure 3. Moderation of extraversion personality trait in the relationship of interpersonal skill and spatial cognitive style.

Discussion

The study was conducted to examine the moderating role of extraversion personality trait in the relationship between emotional intelligence (emotional awareness, interpersonal skills, emotional self-regulation) and cognitive styles (object, verbal, and spatial) among the university students.

The findings indicate that extraversion personality trait is working as a moderator between the object cognitive style and emotional self-regulation (see Table 1). These results illustrated a direct relationship between object cognitive style and emotional self-regulation, and also observed that the extraversion personality trait predicted emotional self-regulation. The results of moderation analysis also showed that Extraversion was a significant moderator and it moderated the relation between emotional self-regulation and object cognitive style if individuals have higher scores on extraversion personality trait. These findings are in line with previous study (Bukšnyte-Marmiene, Kovalcikiene, & Ciunyte, 2012) that found extraversion personality trait as a positive predictor of innovative cognitive style by using binary logistic regression.

Results also examined that extraversion personality trait was a significant moderator in the relationship of emotional self-awareness and verbal cognitive style (see Table 2). Verbal cognitive style had a positive correlation with emotional self-awareness and also showed extraversion personality trait as a significant predictor of emotional self-awareness. The results showed that the positive relation between emotional self-awareness and verbal cognitive style is strong for individuals who are low in extraversion (see Figure-2). 28 percent change was observed in the value of emotional self-awareness as the result of interactions effect of verbal cognitive style and extraversion personality trait.

The results showed that extraversion personality trait significantly moderated the relation between spatial cognitive style and interpersonal skill (see Table 3) that supported the third hypothesis. These results depict a significant direct relation between spatial cognitive style and interpersonal skill. It was also found that extraversion personality trait predicted interpersonal skills. These findings showed that the positive relationship between interpersonal skill and spatial cognitive style held more strongly for those individuals who scored lower on extraversion personality trait. These findings revealed that 31 percent change appeared in the value of interpersonal skills as a result of interaction between spatial cognitive style and extraversion personality trait (see Figure-3).

Implications

There are theoretical and applied implications of this research. From a theoretical perspective, it is providing further insight into personality traits and cognitive styles used by university students and their level of emotional intelligence. From an applied perspective, future studies can be planned to gain an understanding about the strategies and techniques which can be used by the students to improve their cognitive styles and emotional intelligence.

Limitations and Suggestions

In the field of research, this study is considered as a meaningful step that is truly able to determine the role of extraversion personality trait as a moderator between emotional intelligence and cognitive styles. But there are certain limitations which need to be addressed. The sample could be obtained from diverse universities to increase the generalizability. Secondly, random sampling could enhance the representativeness of the sample. Future studies are suggested to take random sample from different cities, private and government education institutions, and of different socioeconomic status with the same measures of personality traits, emotional intelligence and cognitive styles. Thirdly, self-report instruments used in this study can be used in combination with some other assessment techniques (e.g., interviews, case studies) in future research to enhance validity of findings. Different age groups in general population can also bring interesting results.

Conclusion

It is concluded that extroversion personality traits play significant role in building the connection between cognitive styles and emotional intelligence. On the basis of all the statistical analyses and literature review it is concluded that extroversion personality trait significantly predicts all dimensions of both emotional intelligence (emotional self-regulation, emotional self-awareness and interpersonal skills) and cognitive styles (object cognitive style, spatial cognitive style and verbal cognitive style) in positive direction. Similarly, it is also concluded that the moderating effect of extroversion personality trait in the relationship between emotional intelligence and cognitive styles holds more strongly for those individuals who possess higher characteristics of extroversion personality trait.

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