

Moderating Role of Agreeableness and Conscientiousness on Emotional Intelligence and Cognitive Styles of University Students

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Abstract:

The present study explored the moderating role of agreeableness and conscientiousness on Emotional Intelligence and Cognitive Styles of university students. Object-Spatial Imagery and Verbal Questionnaire (OSIVQ; Blazhenkova & Kozhevnikov, 2009), Self-Report Measure of Emotional Intelligence (SRMEI; Khan & Kamal, 2008), and Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), were used for data collection on 3500 university students. Results revealed that Conscientiousness act as significant positive moderators, while Agreeableness acts as a significant negative moderator for the relationship of Emotional Intelligence and Cognitive Styles.

Keywords: Agreeableness, Conscientiousness, emotional intelligence, cognitive styles, University students.

I. Introduction

The term cognition is used for the collection of different mental processes such as perception, mindfulness, rationality, and decision power. Cognitive styles define as constant habitual strategies, preferences, or attitudes that in return decide individuals' manners of perception, thinking, recalling, and problem solving (Messick, 1976). Traditionally cognitive styles define in term of an individual's consistent way of cognitive functioning related to acquisition and processing of information (Ausburn & Ausburn, 1978). It has been suggested that cognitive styles can be characterized as heuristics that individuals use to process information about their environments. Goldstein and Blackman define it as a hypothetical construct that was developed to explain the mediation process of cognition between stimuli and responses (as cited in Ridding & Cheema, 1991). Though in final decision the cognitive styles are less involved but they are more involved in the procedure of decision making. Klein (1951) categorizes people on their perceiving abilities into two categories; *sharpeners* (noticed contrasts and maintained stimulus differentiation); and *levelers* (focus on similarities and ignored differences among stimuli). Klein (1951) was the first who called cognitive styles as perceptual attitudes. At that time no specific term or tag was used to identify these individual differences, so consequently these individuals were named as cognitive system

principles, perceptual attitudes, predispositions, or patterns (Holzman & Klein, 1954; Gardner, Holzman, Klein, Linton, & Spence, 1959).

At present the most recognized cognitive styles are Visual (focus on imagery) and Verbal (prefer verbal analytical strategies) cognitive styles (e.g. Paivio, 1971; Richardson, 1977). Most of the previous researches done on both verbal and visual cognitive styles basically assume that these two different information processing systems exist (Blazhenkova & Kozhevnikov, 2009). Kozhevnikov (2007) critically reviewed the existing trends and perspectives of research in the field of cognitive style. So, after the revision of these researches Kozhevnikov (2007) proposed an integrated framework in order to guide future research work on cognitive styles. Blazhenkova and Kozhevnikov (2009) proposed the new model of cognitive style named Object Spatial Verbal theoretical model, which identifies three independent dimensions; *Object* (process visual appearance of objects in terms of their shape, color, and texture), *Spatial* (process object location, movement, and spatial relationships) and *verbal* dimension (process comprehension, production of spoken, and written language).

Some researchers theorize that cognitive styles had a connection between cognition and personality measures (Ridding & Cheema, 1991). Carl Jung published "Psychological Types" at the beginning of the 20th century. In this book Jung discuss three facets which comprised personality of individuals on a continuum descriptor. This theory is a strong evident that Myers-Briggs Type Indicator (MBTI) is a standard personality test which is used in many experiments conducted on cognitive style (as cited in Lucas-Stannard, 2003).

Personality refers to differences exist among individual regarding their emotions, actions and characteristic patterns of thinking. The research work of personality focuses on two wide areas: 1) study individual differences in many personality characteristics, 2) how different parts of a person combine to make whole (APA, 2016). Myers, McCaulley, Quenk, and Hammer (1998) explored that different school of thoughts explains the specific pattern of an individual's actions, thinking, and perception of emotional state, for defining the term personality. Among all of the theories of personality one of the most predominant personality theories is trait theory (Myers, 1998). Personality traits are the stable attribute outline of one's behavior or dispositions regarding the particular way of feeling and action, which differentiate individuals from each other (Costa & McCrea, 1982).

The major goal of the trait psychology was to investigate the individual's status on one or more dimensions of trait personality after comparing the individual with each other in similar (Mischell, 1999). Personality traits perform three major functions: 1) summarize things, 2) explaining individual's behavior, and 3) behavior prediction (Chishti, 2002). Currently, Big Five Factor Model of personality is most discussed model of trait theory (Pervin & John, 2001).

The Big-Five framework use hierarchical approach to define five main factors/dimensions of personality (Ryckman, 2004; Rentfrow & Gosling, 2003). OCEAN model comprised on five traits; *Agreeableness* (kind, friendly, caring, compromise their interests, and helping), *Conscientiousness* (they direct, regulate, and control their impulsive behavior), *Extroversion* (frequently experience positive emotions, have high

level of energy, enjoy the company of others), *Emotional Stability* (have low tendency to upset easily, have low level of emotionally reactivity, and very calm), and *Openness to Experience* (intellectually curious, beauty conscious, appreciative of art, and aware about their emotions (Gosling, et al., 2003; Hartmann, 2006). Emotional Intelligence (EI) and personality traits are inter-related with each other because as EI based on the understanding and controlling of emotions/feelings, which are integral features personality development (Atta, Ather, & Banoo, 2013).

Presently emotional intelligence is the concept which catches the attention of researchers and practitioners among the general public. It is widely believed by the people that in contrast to the conventional dimension of personality and intellectual ability, the level of social competence and emotional intelligence is as or even more important concept (Goleman, 1995, 1998). Salovey and Mayer (1990) were the first researchers who gave formal definition and theoretical model of EI. The most influential book, which strongly influenced EI's most subsequent scientific conceptualizations, was written by Goleman (1995).

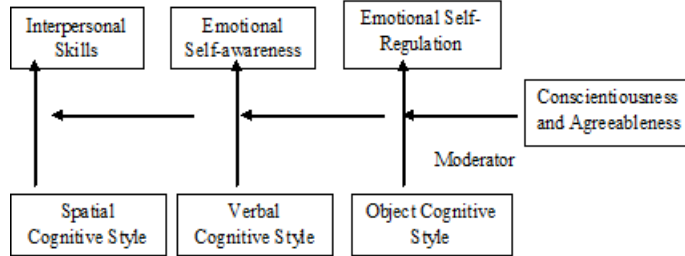
Ability model and mix model are the two schools of thought to define EI. *Ability Model* (focuses on emotions and their interaction with thought processes, Mayer & Salovey, 1997; Salovey & Grewal, 2005). *Mix Model* (mental abilities/capabilities and many other characteristics are single entity). Goleman's Model of EI is based on mix model.

According to Goleman (1995) in individuals' life their emotional intelligence level is the largest single predictor of their success. This model based on four constructs; *Self-awareness* (ability to read one's feelings and their impact), *Self-management* (controlling one's emotions and impulses and adapting to changing circumstances), *Social awareness* (ability to understands, sense, and reacts to one's and others' emotions), and *Relationship management* (ability of using emotions in conflict management; Boyatzis, Goleman, & Rhee, 2000). EI of an individual is dependent on their personality characteristics.

The present research explored the moderating effect of agreeableness and conscientiousness personality traits on emotional intelligence and cognitive styles of university students. In this research it was predicted that Agreeableness and Conscientiousness will moderate the relationship between emotional intelligence and cognitive styles of university students.

Conceptual model of the current study proposes that Personality traits (Agreeableness and Conscientiousness) play a moderating role between the relationship of emotional intelligence (Emotional Self-Regulation, Emotional Self-awareness, and Interpersonal Skills) and cognitive styles (Object Cognitive Style, Verbal Cognitive Style, and Spatial Cognitive Style) as shown in figure 1.

Figure 1: The hypothesized conceptual framework:



II. Material and Methods

Materials and Methods used in the current study are given as follows:

A. Objective

The present study aimed to determine the moderating effect of the agreeableness and conscientiousness personality trait on emotional intelligence and cognitive styles of university students.

B. Hypotheses

1. Agreeableness and conscientiousness personality traits will moderate the relationship between Emotional Self-Regulation and Object Cognitive Style.
2. Agreeableness and conscientiousness personality traits will moderate the relationship between Emotional Self-awareness and Verbal Cognitive Style.
3. Agreeableness and conscientiousness personality traits will moderate the relationship between Interpersonal Skills and Spatial Cognitive Style.

C. Operational Definitions of Variables

Cognitive Styles

Cognitive styles define as constant habitual strategies, preferences, or attitudes that in return decide individuals' manners of perception, thinking, recalling, and problem solving (Messick, 1976). The present research study dimensions: *Object* (processes visual appearance of objects), *Spatial* (processes object location, movement, and spatial relationships), and *Verbal* (process comprehension, production of spoken and written language). It is operationalized on the scores of Object-Spatial Imagery and Verbal Questionnaire (OSIVQ).

Personality Traits

Personality traits are those specific characteristic patterns of behavior or dispositions that determine individual's particular ways of action and feeling which ultimately generate the individual difference (Myers, 1998). The present research use agreeableness and conscientiousness personality trait which were operationalized on the scores of subscales of TIPI.

Emotional Intelligence

Emotional intelligence is defined as the composite set of capabilities that enable a person to manage himself/herself and others (Goleman, 1995, 1998). The present study focus on three aspects of Goleman's Model of EI; *Emotional Self-Regulation* (effective coping with unpleasant event without showing harmful behavior), *Emotional Self-Awareness* (recognition of one's feelings and identification of these feelings affect),

Interpersonal Skills (judgment of other's emotions, especially negative emotions). They are operationalized on the scores of subscale of Self Report Measure of Emotional Intelligence (SRMEI).

D. Phases of Research

The current study was comprised of the following two phases:

- 1) Phase I: Pilot study
- 2). Phase II: Main study

E. Measures

SRMEI

SRMEI (Khan & Kamal, 2008) has 60 items with scoring on a five point scale. It consists of three subscales (Emotional Self-Regulation Scale, Emotional Self Awareness Scale, and Interpersonal Skills Scale). There are 27 positive and 33 reverse items.

TIPI

TIPI (Gosling, Rentfrow, & Swann, 2003), consisting upon 10 items with scoring on 7-point Likert scale. TIPI measures the Big Five personality dimensions (Extroversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience).

OSIVQ

OSIVQ (Blazhenkova & Kozhevnikov, 2009) comprised of 45 items with scoring on a five point Likert scale. This scale assesses three cognitive styles; object, spatial, and verbal cognitive style. It has 41 positive and 4 reverse items.

F. Procedure

500 students for pilot study and 3500 students for main study were approached from the different universities of Islamabad, Rawalpindi, Faisalabad, Sargodha, Multan, Peshawar, Hazara, and Lahore. In the present study three questionnaires (SRMEI, TIPI, and OSIVQ) along with Informed Consent Form and Demographic Sheet were administered on the sample for data collection.

III. Results and Interpretation

A. Results of Pilot Study

In order to compute the psychometric properties of SRMEI, OSIVQ, and TIPI; the reliability coefficients item-total and inter-scale correlation coefficients of instruments were computed. The alpha coefficient values for all instruments and for their subscales are very high as alpha value for SRMEI was .94, while for its subscales the alpha values ranges from .79 to .86; for TIPI it was .75 while for its subscales alpha values ranges from .61 to .97; and for OSIVQ it was .87 while for its subscales alpha values ranges from .63 to .84. In the present study the in order to determine the construct validity of questionnaires both item total correlation analyses and inter-scale correlation analyses were carried out on OSIVQ, SRMEI, and TIPI. The results are significant which revealed that all questionnaires have high level of construct validity.

B . Results of Pilot Study

In the main study the data of 3500 university students have been analyzed. The alpha reliability coefficient for SRMEI is .91, while for its subscales alpha value ranges from .78 to .84; for TIPI is .76; while in its subscales alpha ranges from .63 to .95; for the

OSIVQ scale is .88, while for its subscales alpha values ranges from .73 to .85, which shows that the scales are highly reliable. Significant results of Item total and Inter-scale correlation analysis revealed that SRMEI, OSIVQ and TIPI questionnaires have good construct validity.

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

Predictor	ΔR^2	B
Step I	.44*	
Object		.67*
Step II	.16*	
Object		.51*
Agreeableness		.42*
Step III	.27*	
Object		-.42*
Agreeableness		.68*
Object * Agreeableness		-.81*
Total R^2	.87*	

* $p < .001$

Table 1 depicts a significant positive relationship between object cognitive style and ESR (create 44% change in it latter). Agreeableness personality trait also predicted ESR and explained 16% variance in it. The term of object cognitive style and agreeableness personality trait significantly predicted ESR negatively and explained 27% variance (see Figure-1)

Figure 1: Moderating effect of agreeableness personality trait in the relationship between emotional self-regulation and object cognitive style

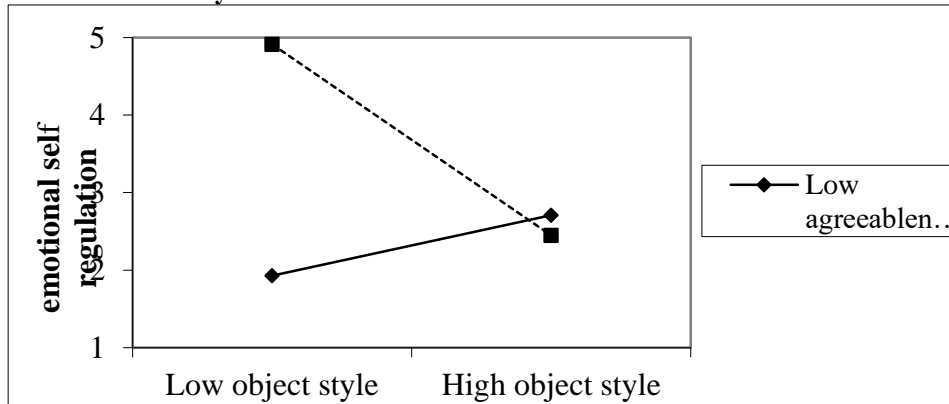


Table 2 depicts a significant positive relationship between object cognitive style and ESR having 44% variation in the latter. Conscientiousness personality trait also predicted emotional self-regulation and explained 5% variance in it. The interaction of object cognitive style and conscientiousness personality trait significantly predicted

emotional self-regulation positively and explained an additional 7% variance in ESR (see Figure-2).

Table 2: Hierarchical Multiple Regression Analysis Predicting Emotional Self-Regulation from Object Cognitive Style and Conscientiousness Personality Trait (N = 3500)

Predictor	ΔR^2	β
Step I	.44*	
Object		.67*
Step II	.05*	
Object		.54*
Conscientiousness		.26*
Step III	.07*	
Object		.74*
Conscientiousness		.10*
Object * Conscientiousness		.32*
Total R^2	.56*	

* $p < .001$

Figure 2: Moderating effect of conscientiousness personality trait in the relationship between emotional self-regulation and object cognitive style

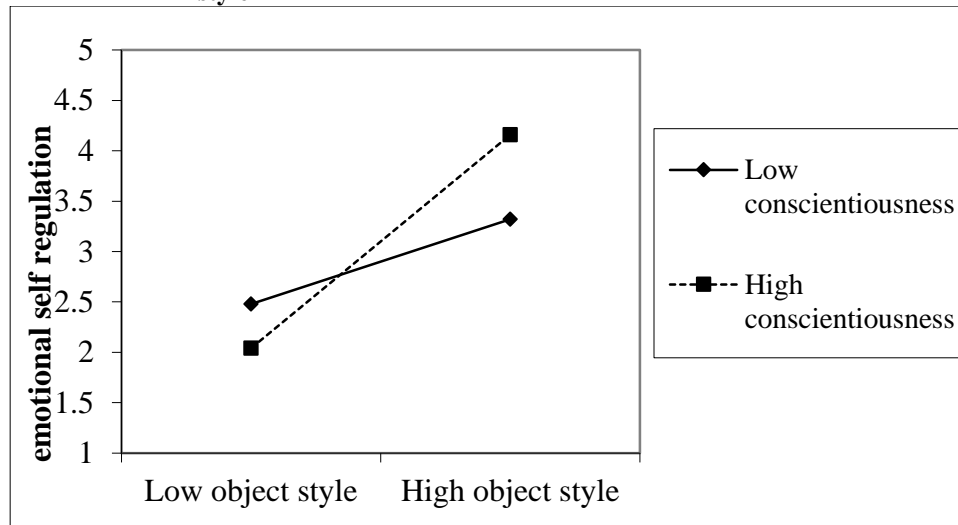


Table 3 depicts a significant positive relationship between verbal cognitive style and ESA and showing 4% variation. Agreeableness personality trait also predicted emotional self-awareness and create 5% variance in it. The interaction of verbal cognitive style and agreeableness personality trait significantly predicted ESA negatively and create 5% variance in ESA (see Figure-3).

Table 4 depicts significant positive relationship between verbal cognitive style and ESA with 4% variation in the latter. Conscientiousness personality trait predicts ESA by creating 9% variance in it. The interaction of verbal cognitive style and conscientiousness

personality trait significantly predicted ESA positively and create 3% change in ESA (see Figure-4).

Table 3: Hierarchical Multiple Regression Analysis Predicting Emotional Self-Awareness from Verbal Cognitive Style and Agreeableness Personality Trait (N = 3500)

Predictor	ΔR^2	β
Step I	.04*	
Verbal		.20*
Step II	.05*	
Verbal		.05*
Agreeableness		.28*
Step III	.05*	
Verbal		-.36*
Agreeableness		.73*
Verbal * Agreeableness		-.75*
Total R^2	.14*	

* $p < .001$

Figure 3: Moderating effect of agreeableness personality trait in the relationship between emotional self-awareness and verbal cognitive style

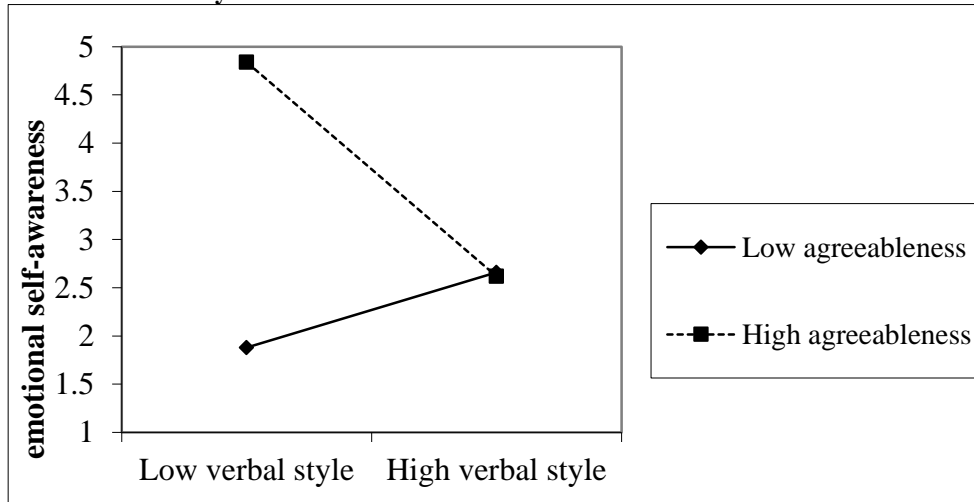


Table 4: Hierarchical Multiple Regression Analysis Predicting Emotional Self-Awareness from Verbal Cognitive Style and Conscientiousness Personality Trait (N = 3500)

Predictor	ΔR^2	β
Step I	.04*	
Verbal		.20*
Step II	.09*	
Verbal		.10*
Conscientiousness		.32*
Step III	.03*	
Verbal		.25*

Conscientiousness	.19*
Verbal * Conscientiousness	.26*
Total R^2	.16*

* $p < .001$

Figure 4: Moderating effect of conscientiousness personality trait in the relationship between emotional self-awareness and verbal cognitive style

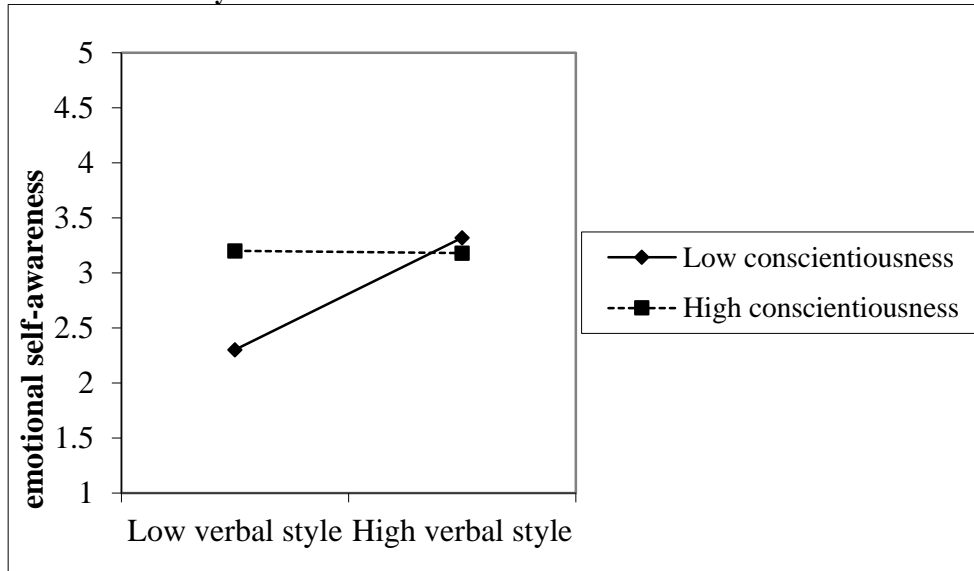


Table 5 depicts a significant positive relationship between spatial cognitive style and interpersonal skill (5% variation in the latter). Agreeableness personality trait predicted interpersonal skill and explained 2% variance in it. The interaction of spatial cognitive style and agreeableness personality trait significantly predicted interpersonal skill negatively and create 55% variance (see Figure-5).

Table 5: Hierarchical Multiple Regression Analysis Predicting Interpersonal Skill Scale from Spatial Cognitive Style and Agreeableness Personality Trait (N = 3500)

Predictor	ΔR^2	β
Step I	.05*	
Spatial		.23*
Step II	.02*	
Spatial		.16*
Agreeableness		.15*
Step III	.55*	
Spatial		-.43*
Agreeableness		.44*
Spatial * Agreeableness		-.68*
Total R^2	.62*	

* $p < .001$

Table 6 depicts a significant positive relationship between spatial cognitive style and interpersonal skill and explained 5% variation in the latter. Conscientiousness

personality trait predicted interpersonal skill by explaining 11% variance in it. The interaction of spatial cognitive style and conscientiousness personality trait significantly predicted interpersonal skill positively and explained an additional 1% variance (see Figure-6)

Figure 5: Moderating effect of agreeableness personality trait in the relationship between interpersonal skill and spatial cognitive style

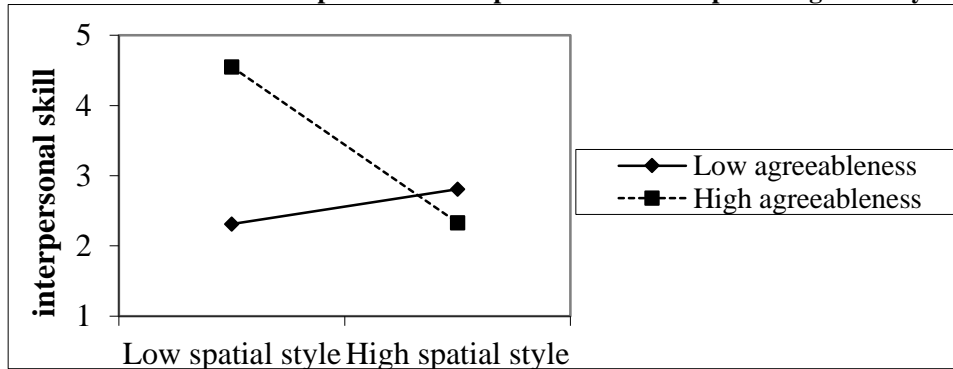
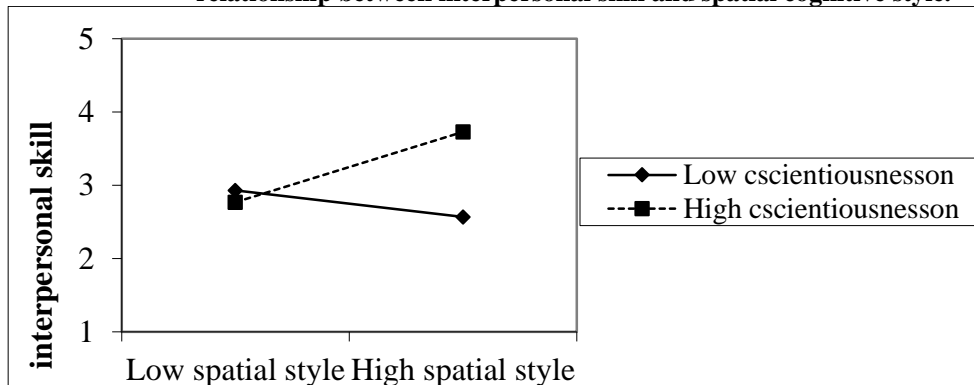


Table 6: Hierarchical Multiple Regression Analysis Predicting Interpersonal Skill Scale from Spatial Cognitive Style and Conscientiousness Personality Trait (N = 3500)

Predictor	ΔR^2	β
Step I	.05*	
Spatial		.23*
Step II	.11*	
Spatial		.09*
Conscientiousness		.35*
Step III	.01*	
Spatial		.15*
Conscientiousness		.25*
Spatial * Conscientiousness		.33*
Total R^2	.17*	

* $p < .001$

Figure 6: Moderating effect of conscientiousness personality trait in the relationship between interpersonal skill and spatial cognitive style.



IV. Discussion and Conclusion

The results of the analyses found agreeableness personality trait as a significant negative moderator in the relationship of object cognitive style and ESR (see Table 1), which ultimately support the first hypothesis of the current study. This analysis revealed that the interaction of object cognitive style and agreeableness personality trait significantly predicted ESR in a negative direction, as the positive relationship between emotional self-regulation and object cognitive style holds more strongly for those individuals who have low scores on the agreeableness personality trait. On the whole this analysis stated 87% change in the value of the Emotional Self Regulation as a result of interaction among object cognitive style and agreeableness personality trait (see Figure-1).

The results of the current study explored that Conscientiousness personality trait is the significant positive moderators in the positive relationship of emotional self-regulation (ESR) and object cognitive style (see Table 2), which support the first hypothesis of the current study. These findings depict that the interaction of object cognitive style with Conscientiousness personality trait significantly predicted ESR in a positive direction. This positive relationship between ESR and object cognitive style holds more strongly for those individuals who are higher scores on Conscientiousness personality trait. The interaction of conscientiousness personality trait and object cognitive style creates a 56% change in the value of ESR (see Figure-2).

The analyses revealed that agreeableness personality trait as a significant negative moderators in the relationship of ESA and verbal cognitive style (see Table 3), that support the second hypothesis of the current study. The results reveal that the positive relationship between emotional self-awareness and verbal cognitive style holds more strongly for those individuals who are lower in agreeableness personality trait. The interaction of verbal cognitive styles and agreeableness personality trait constituted a 14% change in the values of ESA (see Figure-3).

The findings of the current study found conscientiousness personality trait as a positive moderator between emotional self-awareness (ESA) and verbal cognitive style (see Table 4), which support the second hypothesis of the present research. The positive relationship between ESA and verbal cognitive style holds more strongly for those individuals who are higher on conscientiousness personality traits. In general 16% change occurs in the value of ESA as a result of interaction between verbal cognitive style and conscientiousness personality trait (see Figure-4).

The analyses of the current study found that agreeableness personality trait significantly negatively moderate the relationship between spatial cognitive style and IPS (see Table 5), that support the third hypothesis of the current study. It turns out that the positive relationship between IPS and spatial cognitive style holds more strongly for those individuals who are lower in agreeableness personality trait. These findings revealed that 62% changes occur as the result of interaction between spatial cognitive style and agreeableness personality trait (see Figure-5).

The findings of Table 6 revealed that conscientiousness personality trait is the significant positive moderator in the relationship between spatial cognitive style and interpersonal skill (IPS), which support the third hypothesis of the current study. This

provides evidence that the positive relationship between interpersonal skill and spatial cognitive style holds more strongly for specially those individuals who are higher in conscientiousness personality trait. The interaction of spatial cognitive style with conscientiousness personality trait creates 17% change in the value of IPS (see Figure-6). It was concluded that Conscientiousness Personality Trait act as significant positive moderator, while Agreeableness Personality Trait act as a significant negative moderator in the relationship of Emotional Intelligence and Cognitive Styles.

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