The Relationship between personality traits and intellectual achievement
العلاقة بين صفات الشخصية والإنجاز الفكري

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Abstract

Intellectual abilities of learners have been a matter of interest among researchers for more than a century. The question of why do some learners achieve better than others has remained in constant debate. In fact, most researchers in the field relate learners' achievement to the notion of intelligence. However, recent studies have proved that non-cognitive traits do have a significant role in the development of a person's intellectual competence and achievement. Personality is a good example. Indeed, the personality traits can influence the performance and achievement of learners. Hence, the present study aims to unveil to what extent the characteristics of personality determine the intellectual abilities of learners. After submitting learners to "The Big Five Personality Traits" test, they were divided into five groups according to the personality model types. In the end, learners who took part in the first test have passed two other tests of competence. Results obtained indicate that personality traits do, in fact, contribute to determining learners' achievement.

Keywords: Personality traits, achievement, Intellectual abilities, intelligence, performance, personality

الملخص:

كانت القدرات الذهنية للمتعلمين مركز للاهتمام من طرف الباحثين لأكثر من قرن. ظلت مسألة مدى تعلم بعض الطلبة أفضل من غيرهم في نقاش مستمر. في الواقع، معظم الباحثين في المجال يربطون إنجازات الطلبة مع مفهوم الذكاء. ومع ذلك، فقد أثبتت الدراسات الحديثة أن القدرات الادراكية لها دور كبير في تطوير الكفاءات الفكرية للفرد. الشخصية، على هذا النحو، تعتبر مثال جيد. بالطبع، يمكن للصفات الشخصية ان تؤثر على الأداء والإنجاز لدى المتعلمين. وبالتالي، تهدف هذه الدراسة لإيجاد مدى ارتباط صفات الشخصية بتحديد القدرات الذهنية للطلبة. بعد عرض المتعلمين لإنجاز اختبار للشخصية، والذي يدعى "الصفات الخمس الكبرى للشخصية"، تم تقسيمهم إلى خمس مجموعات وفقا للأنواع الموجودة في هذا الاختبار. في النهاية، خضع نفس الطلبة لاختبار آخر، يدعى باختبار الكفاءة. تشير النتائج المتحصل عليها الى أن صفات الشخصية لها علاقة مباشرة في تحديد الإنجاز الفكري للمتعلمين.

الكلمات المفتاحية: صفات الشخصية، الإنجازات، القدرات الفكرية، الذكاء، الأداء، الشخصية

Introduction

In their attempt to understand why some learners achieve better than others, researchers have used various factors to explain these differences in achievement (Felder, 2005). First, it is thought that intelligence is the pioneering factor that stimulates intellectual achievement. However, recent studies reveal that intelligence alone is not enough to elucidate learners' intellectual achievement. Einstein, for instance, is one good example. For, although he did not highly achieve at school, he is believed to possess quite an outstanding intelligence.

Ultimately, learners' intellectual achievement can be influenced by many factors besides intelligence (Turner, 1977). Some of these factors consist of motivation, determination, position in the family, anxiety and cognitive style. Personality traits are no exception. Indeed, the learning process entails differences in how people learn and what they learn (McCaulley & Natter, 1974; Myres & Myres, 1980). Personality traits are considered as the salient reason that makes these differences in learning. Actually, they play an important role in stimulating learners' intellectual performance.

The aim of this study is to uncover how personality traits impact learners' intellectual achievement. Hence, to set up an overview of the study, literature on personality traits and intellectual achievement is outlined briefly in the present article. Further, a descriptive and

analytical study was conducted to empirically examine the interference of personality traits in learners' achievements.

Literature review

Although the subject of personality has been largely investigated in numerous domains, studies on the correlation between personality traits and intellectual achievement are quite limited. Fundamentally, experts like Oishi (2004) and Tesdimir, Asghar and Saeed (2014) consider Allport as the pioneer of the study of personality traits in the field of psychology. Allport (1937) emphasised the uniqueness, rationality and discontinuity of each individual personality and rejected universal laws that could be attributed to everyone. He implies traits to be considered as a neuropsychic structure which may cause many stimuli that are functionally equivalent. In fact, these traits have the capacity to initiate and guide the persons' behaviour (Farooqi, 2014). Evidently, Allport's theory makes a significant departure from Sigmund Freud's approach. In this vein, Allport's approach is the first non-Freudian model of personality. As a result of this approach, personality increasingly became one of the concepts used to depict individual differences.

Inevitably, personality manifests characteristics of an individual that "account for consistent patterns of feeling, thinking, and behaving" (Pervin and John's, 2001, p.4). These characteristics reflect the inborn temperament and features which differentiate individuals from each other (Phares, 1991). In other words, personality traits are unique characteristics that influence an individual's thought, feeling and behaviour which discriminate the way people behave when compared with one another. Additionally, Alloport (1937) presented three essential parts to the traits theory which entails that:
- Traits are real, internal and exist inside,
- an individual personality can be elucidated in terms of traits, and
- actions, as well, can be understood depending on traits.

Allport's work in traits and individual differences led McCrae and Costa (1996) to develop an approach to explore the expression of traits by putting forward a model of personality theory named "The Big Five Personality Traits". This model is nowadays the most widely used approach in research and studies that deal with personality (Farooqi, 2014). It comprises openness, conscientiousness, extraversion, agreeableness and neuroticism/ emotional stability types known under the acronym OCEAN. These five dimensions are rather broad and include several important facets. Openness to experience involves imagination, scientific and artistic creativity, divergent thinking, newness, a high sense of wonder and sophistication (Erdheim, Wang & Zickar, 2006; Barrick & Mount, 2001). Conscientiousness is related to hard work, success-orientation, responsibility, tenacity, mindfulness and success orientation (Erdheim, Wang & Zickar, 2006; Barrick & Mount, 2001). Extraversion includes assertiveness, sociability, aggressiveness and ambitiousness (Barrick & Mount 2001). Concerning agreeableness, its typical personality traits are emotional support, self-sacrifice and compassion. Indifference, jealousy, hostility and self-centeredness are as well present (Erdheim, Wang & Zickar, 2006; Barrick & Mount, 2001). Finally, emotional stability dimension is a notion of calm, patience, relaxation, comfort, unemotionality, hardness, confidence and self-satisfaction (Costa & McCrae, 1995).

Ultimately, McCrae and Costa (1996) argue that to be significant, theories on personality need to recognise the notion of trait as something not universal and unchanging. Yet, it is necessary to consider the interaction of traits with the social environment. It is commonly believed that personality is determined by heredity which refers to nurture, and by the environment which refers to nature (Pervin, 1996). Heredity refers to biological factors like physical structure, gender, temperament and energy level. On the other hand, environmental factors like culture, early conditioning and social belonging are found to exert pressure on personality development (McCrae et al., 2000).

In an attempt to understand the secrets of intellectual performance, Gibbs (1995) refers to a longitudinal experiment through which four-year-old children are invited, one by one, into a plain room. Then, they are told that they can have a marshmallow right now, but if they wait while the researcher runs an errand, then they can have two marshmallows when he is back. Some children took the marshmallow, left in front of them, the minute the researcher left the room. Some children resisted a few minutes while others showed a strong will to hold out. Those who resisted used different techniques to occupy themselves, such as covering their eyes, singing to themselves and even sleeping, till he came back. The longitudinal study waited for the same children to grow up. As they reached high school, a survey with children's parents and teachers revealed that those who had the determination to wait for the second marshmallow were better adjusted, more popular, confident, adventurous and independent teenagers. Unlike those who gave up earlier, they were lonely, stubborn and easily frustrated.

From above, one can easily understand that "the ability to delay gratification is a master skill, a triumph of the reasoning brain over the impulsive one" (Gibbs, 1995, p.100). In short, this finding suggests that intellectual achievement is a sign of emotional intelligence and internal quality. Henceforth, the notion of intelligence alone cannot explain intellectual achievement (Gibbs, 1995).

Importantly, personality has a direct effect on learning. Its traits serve as preparation in achieving specific objectives (Caligiuri, 2000). Likewise, personality traits help in maintaining learning behaviour and enhancing the person's motivation. Also, these traits are decisive variables which could encourage the learner to insist or to give up (Blickle, 1998). Accordingly, personality traits have some effects on, and a significant relationship with, intellectual achievement. Therefore, it is important to consider the intimate relationship between intellectual achievement and personality traits.

Questions of the study

An inquiry to explore the learners' differences in intellectual achievement by correlating it with personality traits raises the following questions:

- Is there any relationship between personality traits and intellectual performance?
- To what extent do these traits influence the learners' intellectual achievement?
- Which personality traits are likely to help one individual perform better than others?

Methodology

A descriptive analytical approach was conducted to analyse students' performance. Participants were first submitted to The Big Five Personality Traits test (see Appendix A) to categorise them according to their personality types. After determining the personality type of each student, two tests of competence were conducted. The grades obtained in these tests were compared according to the five types of students' personalities.

Participants of the study

The targeted participants are first-year LMD students at the Department of English (Mostéfa Benboulaïd Batna-2 University, Algeria). A random number was first chosen to submit the Big Five Personality test. After getting the results, the 50 participants were classified according to their types of personality. Each category included 10 students.

Data analysis and Discussion

The Big Five Personality Traits test. This model is one of the most commonly used tests of personality. It includes fifty items which are analysed using a statistical study technique called factor analysis. Moreover, the model uses the Big-Five Factor Markers from the International Personality Item Pool, developed by Goldberg (1992). Basically, five types stand out to summarise numerous personality variables. These types are extraversion, emotional stability, agreeableness, conscientiousness and openness to experience.

Actually, the test consists of fifty items that the participants rate depending on a five-point scale ranging from strongly disagree till strongly agree.

Findings and results. Being ourselves a teacher of a module under study enabled us to submit two tests of competence to our participants. We have thought the necessity to involve the same students to two tests to ensure the reliability of the results. Actually, both tests comprise four direct questions about the module of culture and civilisation of language (CCL) that we are teaching them. After correcting the tests, responses were classified according to the type of participants' personality. The purpose for doing so is to check which type performs better than the others. Results obtained are depicted in the following tables and figured in the bellow charts.

Item 1. Extroversion personality's results in both tests

Table 1

Extroversion personality

	Extroversion personality			
	First test		**Second test**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
[0-5]	**2**	**20%**	**2**	**20%**
[6-10]	**3**	**30%**	**1**	**10%**
[11-15]	**5**	**50%**	**5**	**50%**
[16-20]	**0**	**0%**	**2**	**20%**
Results	**10**	**100%**	**10**	**100%**

Results obtained in both tests concerning the extroversion personality prove that the majority of students who hold this type of personality are good achievers. However, none of them belongs to the elite class. This result clearly indicates that extrovert students have medium intellectual abilities.
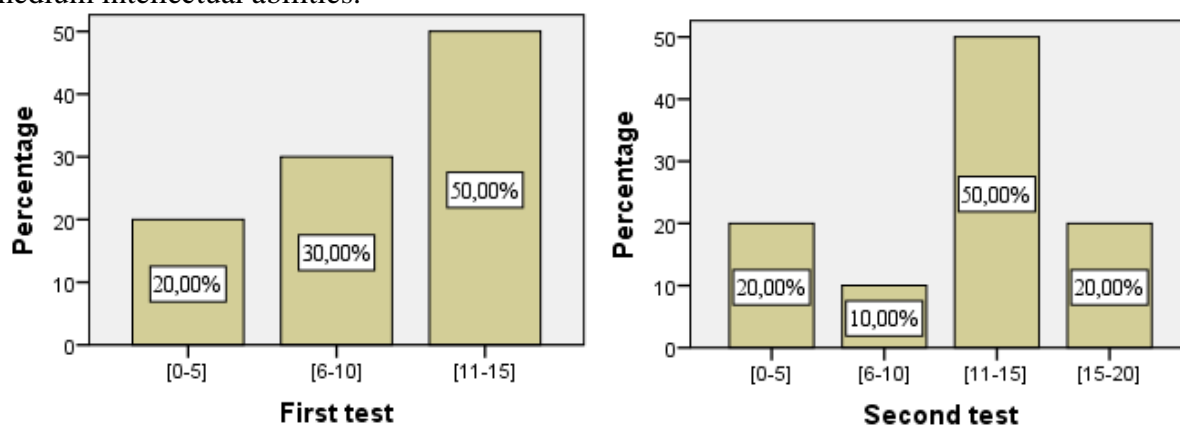
Figure 1. Extroversion personality

Item 2. Emotional stability personality's results in both tests

Table 1

Emotional stability personality

	Emotional stability personality			
	First test		**Second test**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
[0-5]	**2**	**20%**	**3**	**30%**
[6-10]	**5**	**50%**	**2**	**20%**
[11-15]	**0**	**0%**	**4**	**40%**
[16-20]	**3**	**30%**	**1**	**10%**
Total	**10**	**100%**	**10%**	**100%**

The second type of personality traits, emotional stability, proves our assumption concerning the direct effect of personality on the intellectual achievement. Statistically, the majority of students belonging to this type manifest a medium level. However, a considerable number of our participants belonged to the excellent class. This means that they obtained marks ranging from sixteen to twenty. In addition, we have obtained 50% students who obtained scores ranged from six to ten in the first test and 20% in the second test.
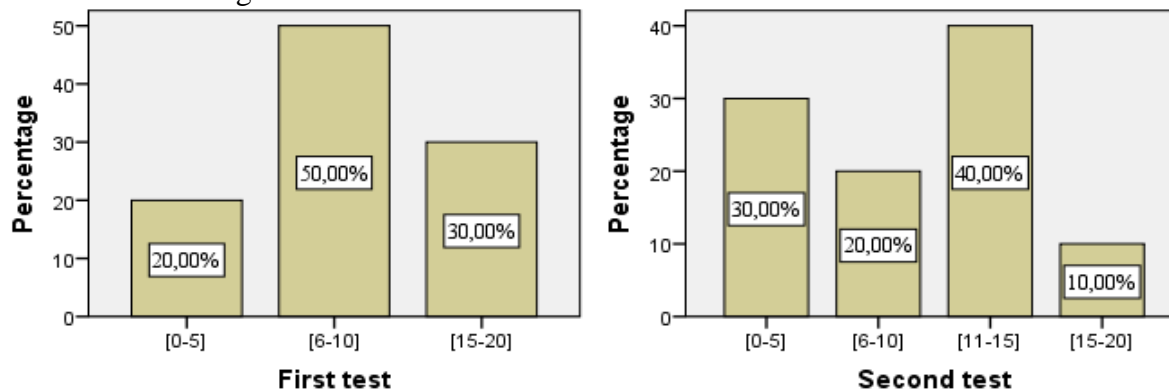

Figure 2. Emotional stability personality

Item 3. Agreeableness personality's results in both tests

Table 3

Agreeableness personality

	Agreeableness personality			
	First test		**Second test**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
[0-5]	**1**	**10%**	**2**	**20%**
[6-10]	**6**	**60%**	**4**	**40%**
[11-15]	**2**	**20%**	**4**	**40%**
[16-20]	**1**	**10%**	**0**	**00%**
Total	**10**	**100%**	**10**	**100%**

Agreeableness personality got the lowest score regarding the other personality types. In this respect, only one student belonged to the elite class in the first test and none in the second test. The majority of students got marks under ten. Thus, the results clearly indicate that students holding agreeableness personality are not good achievers.

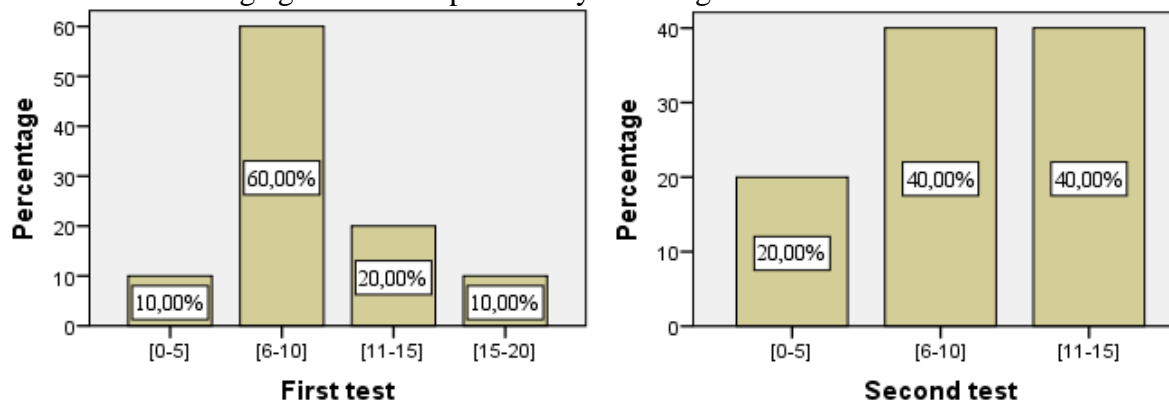
Figure 3. Agreeableness personality

Item 4. Conscientiousness personality's results in both tests

Table 4

Conscientiousness personality

	Conscientiousness personality	
	First test	**Second test**

	Frequency	Percentage	Frequency	Percentage
[0-5]	**0**	**00%**	**0**	**00%**
[6-10]	**3**	**30%**	**4**	**40%**
[11-15]	**5**	**50%**	**4**	**40%**
[16-20]	**2**	**20%**	**2**	**20%**
Total	**10**	**100%**	**10**	**100%**

The highest achievers are found to belong to conscientiousness personality type. Actually, 20% of our participants belonged to the elite class in both tests. 50% obtained marks classed from eleven to fifteen in the first test and 40% in the second test. These results clearly indicate that high intellectual achievement can be evidently attributed to the conscientiousness personality type.
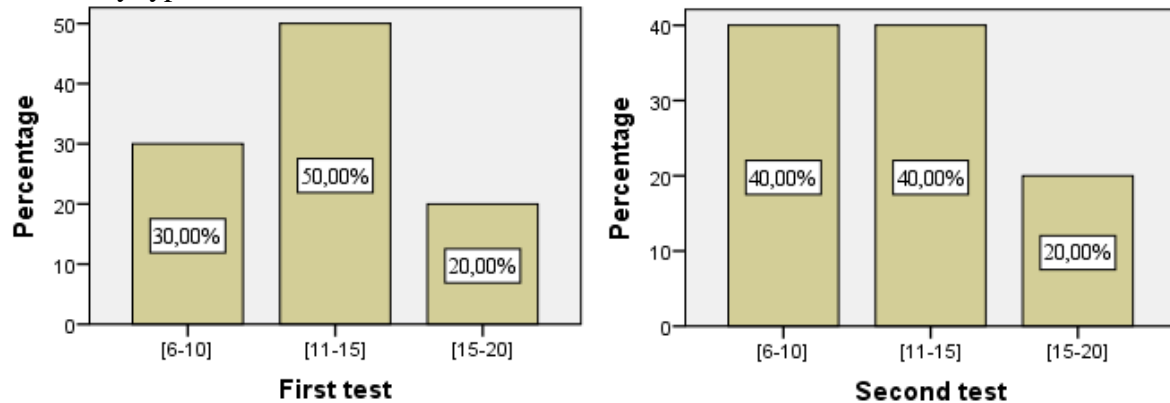

Figure 4. Conscientiousness personality

Item 5. Openness to experience personality's results in both tests
Table 5
Openness to experience personality

	Openness to experience personality			
	First test		**Second test**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
[0-5]	**0**	**00%**	**0**	**00%**
[6-10]	**6**	**60%**	**4**	**40%**
[11-15]	**4**	**40%**	**6**	**60%**
[16-20]	**0**	**00%**	**0**	**00%**
Total	**10**	**100%**	**10**	**100%**

Data obtained concerning the openness to experience personality reports that both tests contain neither elite nor lower classes. Hence, the participants who affiliated with☐this type of personality obtain marks ranged from six to fifteen. This result can be interpreted in the sense that openness to experience personality demonstrates medium achievement.
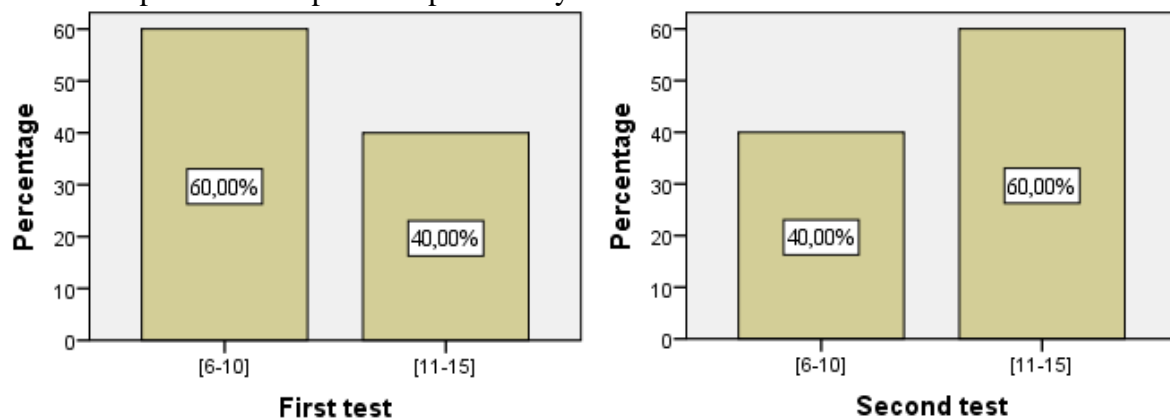

Figure 5. Openness to experience personality

Conclusion

The fact that the personality traits impact on learners' intellectual achievement suggests that both notions are ultimately inseparable. This verdict is corroborated through this paper with an empirical study. Actually, interpreting the students' scores obtained from two tests of competence clearly indicates that students' achievements are related to their traits. This holds true as comparing the results collected from the five types.

Accordingly, the elite level was attributed to the conscientiousness personality type. The lower level, however, was manifested among participants with agreeableness personality type. The openness to experience type indicated an average level. Concerning the extroversion and emotional stability types, they both demonstrated a good level of performance. In fact, the majority of participants in these two types obtained marks ranging from ten to fifteen.

Therefore, it is difficult, after all, to ignore such impressive correlation between personality traits and the intellectual achievement. So, the majority of higher achievers do belong to a conscientiousness type of personality.

References

Allport, G. W. (1937). *Personality: A psychological interpretation*. New York: Holt.

Barrick, M. R. & Mount, M. K. (2001). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*(1), 1–26.

Blickle, G. (1998). Personality traits, learning stratigies, and performance. *European Journal of Personality,* 10 (5), 337–352.

Caligiuri, P. M. (2000). The big five personalıty characteristics as predictors of expatriate's desire to terminate the assignment and supervisor-rated performance. *Personnel Psychology,* 53 (1), 67–88.

Costa, P. T. & McCrae, R. R. (1995). Solid ground in the wetlands of personality: A reply to Block. *Psychological Bulletin,* 117(2), 216–220.

Erdheim, J., Wang, M. & Zickar, M. J. (2006). Linking the Big Five personality constructs toorganizational commitment. *Personality and Individual Differences,* 41(5), 959–970.

Farooqi, S. (2014). Gordon allport and sigmund freud: the unlikely connection of psychoanalysis with the trait approach to personality. *Life and Psychology*. Retrieved from: http://www.lifeandpsychology.com/2014/10/gordon-allport-and-sigmund-freud.html

Felder, R.M. (2005). Understanding Student Differences. *Journal of Engineering Education, 94* (1), 57-72. Retrieved from: http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Papers/Understanding_Differences.pdf

Gibbs, N. (1995). The EQ factor: new brain research suggests that emotions, not IQ, may be the true measure of human intelligence. In K. G. Duffy (Ed.), *Annual editions: psychology (29th ed.)*. Guilford: Dushkin/ McGraw-Hill, pp. 100-104.

Goldberg, L.R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4, 26-42.

McCrae, R. R., & Costa, P. T., Jr. (1996). Toward a new generation of personality theories: Theoretical contexts for the five-factor model. In J. S. Wiggins (Ed.), *The five factor model of personality*. New York: Guilford Press.

McCrae, R.R., Costa, P.T., Ostendorf, F., Angleitner, A., Hrebickova, M., et al. (2000). Nature over nurture: temperament, personality, and lifespan development. *J. Pers. Soc. Psycho.,* 78, 173–86.

Oishi, S. (2004). Personality in culture: A neo-Allportian view. *Journal of Research in Personality,* 38, 68–74.

Pervin, L. (1996). *The science of personality.* New York: Wiley.

Pervin, L. A. and John, O. P. (2001). *Personality: Theory and research* (8th ed.).New York: John Wiley & Sons.

Phares, E. J. (1991). *Introduction to psychology*. (3rd. ed.) New York: Harper Collins Publishers.

Tesdimir, M.Z., Asghar, M.Z. and Saeed, S. (2014). Study Of The Relationship Of Personality Traits And Job Satisfaction Among Professional Sales Representatives In The Pharmaceutical Industry In Turkey. *Personality traits and job satisfaction*, Proceedings of 2nd International Conference on Business Management

Turner, J. (1977). *Psychology for the classroom*. London: Methuen.

Appendix A

The Big Five Personality Model

Source: The model was developed by Benet-Martinez and John (1998)

		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
1	I am the life of the party.					
2	I feel little concern for others.					
3	I am always prepared.					
4	I get stressed out easily.					
5	I have a rich vocabulary.					
6	I don't talk a lot.					
7	I am interested in people.					
8	I leave my belongings around.					
9	I am relaxed most of the time.					
10	I have difficulty understanding abstract ideas.					
11	I feel comfortable around people.					
12	I insult people.					
13	I pay attention to details.					
14	I worry about things.					
15	I have a vivid imagination.					
16	I keep in the background.					
17	I sympathize with others' feelings.					
18	I make a mess of things.					
19	I seldom feel blue.					
20	I am not interested in abstract ideas.					
21	I start conversations.					
22	I am not interested in other people's problems.					
23	I get chores done right away.					
24	I am easily disturbed.					
25	I have excellent ideas.					
26	I have little to say.					
27	I have a soft heart.					
28	I often forget to put things back in their proper place.					
29	I get upset easily.					
30	I do not have a good imagination.					
31	I talk to a lot of different people at parties.					
32	I am not really interested in others.					
33	I like order.					
34	I change my mood a lot.					
35	I am quick to understand things.					

36   I don't like to draw attention to myself.
37   I take time out for others.
38   I shirk my duties.
39   I have frequent mood swings.
40   I use difficult words.
41   I don't mind being the center of attention.
42   I feel others' emotions.
43   I follow a schedule.
44   I get irritated easily.
45   I spend time reflecting on things.
46   I am quiet around strangers.
47   I make people feel at ease.
48   I am exacting in my work.
49   I often feel blue.
50   I am full of ideas.