RUNNING HEAD: BIG FIVE OF PERSONALITY AND COGNITIVE STYLE BIG FIVE FACTORS OF PERSONALITY AND REFLECTION – IMPULSIVITY COGNITIVE STYLE: A CROSS- CULTURAL STUDY

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Abstract: -

Objective: This study examines the differences between individual culture (American sample) and collective cultures (Egyptian and Saudi Arabian samples) in Reflection- impulsivity (RI) categories and Big Five of personality traits. The relative contribution of Big Five of personality traits and culture are predicted with RI categories.

Method: Computerized MFFT and NEO PI R administrated on 53 male and female Egyptian, 51 female Saudi, and 35 male and females American's students.

Results: Using (Z) ratio, results showed no differences among three cultures in MFFT categories except Saudi who were more slow- inaccurate than Egyptian students. Using ANOVA to know significant differences among three cultures on NEO- PI R facets and dimensions. Egyptian were more (O1), (N2), and (E5) than were the Saudi students; Saudi students were more (A3) (A4), (A6), (C4), and agreeableness than were the Egyptian, and more (C2) than American; American who were more (O1), and (E6) than were the Egyptian students, and more (O1), (E5) and (E6) than were the Saudi students.

Conclusions: The culture variable was not predicted with MFFT' categories, except the Egyptian students who were more inefficient than were the American students as a reference group, and with multinomial regression analysis, only extraversion dimension expected to impulsivity.

Keywords: - Personality, Big five personality, Reflection- impulsivity, Cognitive style, Cross cultural study

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INTRODUCTION

Culture has different definitions. Taylor, 1974 (as cited in Alkailani, Azzam & Athamneh, 2012) defined culture as a complex universe including knowledge, beliefs, arts, morals, laws, customs, and any capabilities and habits a member of society can obtain. Hofstede (as cited in Hofstede & McCrae, 2004) defined culture as “the collective programming of the mind that distinguishes one group or category of people from another” (p.58); and culture, in addition, can be learned and shared (as cited in Alkailani, et al., 2012). This means that culture is: a collective, not individual attribute; apparent in behaviors not directly visible; and common to some but not to all people (Hofstede & McCrae, 2004). As a result of the multitude of culture definitions, many psychologists, anthropologists and socialists constructed different cultural models or patterns. (See Alkailani, et al., 2012; Hofstede, 2011).

The term ‘style’ usually refers to a habitual pattern of doing something (Cools, 2009). It is considered a fixed characteristic of an individual. It is static and is a relatively in-built feature of the individual (Riding & Cheema, 1991).

Sternberg and Grigorenko (1997) suggested three approaches to study the style. Firstly, the cognition centered approach, which is based on Witken, Oltman, Raskin and Karb 1971, who defined cognitive style as “the characteristic, self-consistent modes of functioning which individuals show in their perceptual and intellectual activities”(p. 703). This approach, then, seems to view style almost the same as abilities. Therefore, it is often measured by maximal performance tests with “right” and “wrong” answers. Secondly, the personality-centered approach considers style personality traits. Thirdly, the activity-centered approach focused on the styles as mediators of cognition and personality activities, such as learning and teaching styles.

The present study adopted two approaches; the cognition-centered and the personality- centered by focusing on big five factors of personality and reflection – impulsivity cognitive style in the light of different cultures.

Reflective – Impulsive Cognitive style

The term ‘cognitive style’ refers to a psychological dimension that describes the distinctive and observable ways in which individuals process information (Messick, 1984). Therefore, cognitive styles refer more to “how” (stylistic) rather than “how much” (ability) aspects of a person’s cognitive life are (Berry, Poortinga, Sigall, & Dasen, 2002, p. 137).

Many previous studies (e.g. Bucla-Casal, Carretro- Dios, De los Santos-Roig & Bermúdez, 2003; Bucla-Casal, Carretro-Dios & De los Santos-Roig, 2001; Kenny, 2007, 2009; Smith & Caplan, 1988), showed that the reflective – impulsive (RI) style differs across age, gender and cultural backgrounds.

Some researchers studied the differences between R subjects and I subjects on other cognitive styles, cognitive processes, learning, abilities and activities. Jamieson (1992) found a negative relationship between the field dependence and reflective scores. Peters and Bernfeld (1983) and Boyer and Strachan (1990) studies showed that Rs were more likely to choose the assertive alternatives on the Social Reasoning Inventory than Is. Heckel, Allen, Andrews, Roeder, Ryba and Zook (1989) found significant correlations between the MFFT scores (time, number correct) and IQ, education and reading levels. The last finding agreed with Walczyk and Hall, 1989, (as cited in Waring & Farthing, 1999). Szeschlik (1993) and Kenny (2007) showed that gifted children are more than reflective children. Hinkel (1973) and Gilbert (1977) found significant correlation between latency and creative thinking, but Bierbryer (1973) did not find out the same correlation in his study of Chinese–American children. In addition, the results of Rosenfield, Houtz and Steffero's (1977) study indicated that there were no significant differences between Rs and Is on any of the creativity or problem–solving tasks in children. On the other hand, Shoimah, Lukito & Siswono (2018)’ results showed that reflective students are more creative in solving geometric problems.

Silvestro (1976) did not assert these results on convergent thinking. Karkheck (1984) and Olaseinde (1994) reported that Rs performed better than Is on the test of creativity. Waring and Farthing (1999) found that impulsive adults more quickly and less accurately than the reflective respondents.

Cognitive styles and personality

Sternberg and Grigorenko (1997) described the cognitive styles as representing “a bridge between what might seem to be two fairly distinct areas of psychological investigation: cognition and personality” (p.701). Riding and Wigley (1997) indicated that behavior is a combination of the level of a particular personality source, plus or minus the component due to cognitive styles that may either add to or decrease the effect of personality elements. Some theories of personality linked cognition and personality, such as, Cattell in his 16 personalityfactor model, which added general intelligence factor (Factor B). In addition, in the Big Five theories of personality by Costa and McCrae (1992), and by Peabody and Goldberg (1989) have openness to experience as one of the factors, which is closely linked with intelligence.

Numerous studies have examined the relationship between R/I cognitive style and personality variables. Young (1973, as cited in Messer, 1976) found that R/I did not relate to introversion/extraversion, and risk-taking as a component of extraversion (Kopfstein, 1973). Similarly, Cairns and Habirson, 1975 (as cited in Carretro-Dios, et al. 2009) did not find a relationship between R/I scores on MFFT and EPQ’ dimensions, including impulsivity trait. Block, Block & Harrington 1974 (as cited in Bentler and McClain, 1976) reported that MFFT errors correlated significantly with variables having implications for impulsivity, extraversion, and anxiety, but none of these results was validated in Bentler and McClain study (1976). These results were asserted by Glow, Lange, Glow & Barnett, 1983 (as cited in Carretro-Dios, et al. 2009). Davidson (1984) found that Is did not differ significantly from Rs on impulsivity personality trait. However, Is described themselves as more patient, tolerant and less self-confident than Rs did. Nietfeld and Bosma (2003) did not find relationships between self-report impulsivity scores on EPI and response style on the cognitive tasks. But Herman, Critchley and Duka (2018)’ results indicate that impulsive personality trait is the best predictor of performance on the MFFT task. Carretro-Dios, et al. (2009) revealed negative correlations between errors on MFFT and emotionally stable-

affected by feelings, dominant-submissive and enterprising-inhibited dimensions of personality in Children's Personality Questionnaire (CPQ). Also, they revealed negative correlation between the latency on MFFT and dominant-submissive dimension.

Culture, cognition, and personality.

Many theorists in the second half of the 20th century explored the nature of culture, such as, Barkow, Cosmides & Tooby 1992 (as cited in Triandis & Suh 2002) who distinguished three kinds of culture: meta-culture, evoked culture, and epidemiological culture (p.135). Inglehart (1997, (as cited in Inglehart & Baker, 2000) found two culture factors: post-modernization and modernization respectively (p. 23-).

Triandis and Suh (2002) identified four dimensions of culture, namely, Complexity, Tightness, Collectivism, and Individualism (pp. 139-140). But Hofstede and Hofstede 2001 (as cited in Alkailani, Azzam & Athamneh, 2012; Berry, et al., 2002.; Hofstede & McCrae, 2004; Lee, et al., 2012; Migliore, 2011; Li & Harrison, 2008), which of these studies used the 40 countries data, listed the following cultural values dimensions: Individualism versus collectivism, Power distance, Masculinity versus femininity, Uncertainty avoidance, and Long term versus short term orientation. Hofstede 2010 added a sixth dimension, which he labeled indulgence versus restraint (Hofstede, 2011). There are many studies that aimed to replicate Hofstede's model in other cultures (eg, Alkailani, Azzam and Athamneh, 2012; Ruby, Falk, Heine, Villa and Silberstein, 2012)

Many studies were carried out to find out the cultural effects on the cognitive style, especially, R/I as measured by MFFT. Allinson and Hayes 2000 (as cited in Savvas, et al., 2001) found that UK managers were more analytical than their counterparts in India, Jordan, Nepal, Russia, and Singapore. German male students were more analytical than their UK counterparts were, while female UK students were more analytical than their French and Australian counterparts. Savvas et al., (2001) carried out two studies. In the first study, using samples of business and management undergraduates from Egypt, Greece, and UK, the researchers found no statistically significant differences in analysis- intuitive cognitive style. However, in the second study, they used postgraduate participants from Egypt, Hong Kong and UK, and they found that UK participants, in general, were more intuitive than those from Egypt and Hong Kong.

In addition, many studies investigated the nature of personality traits in different cultures using Neo- PI-R. Cheung, et al. (2001) carried out three studies to investigate the universality and sufficiency of the five-factor model in China. The researchers found six-factor model using Chinese students, Chinese managers, and non-Chinese population. Wu, Lindsted, Tsai and Lee (2008) replicated the five-factor personality structure using Taiwanese adolescent and adult samples. Ortiz, et al (2007) computed the factor congruence coefficients among matched factors in the Mexican sample and the American normative sample, which ranged from .91 to .97. Younis and Khalil (2007) computed the factor congruence coefficients for five factors in the undergraduate Egyptian sample data and the factors that emerged from samples in many cultures (American, German, Estonian and Filipina). The researchers revealed partial replication among five factors. Schmitt, Allik, McCrae and Benet-Martínez (2007) found that the five-factor model was highly replicable among 56 nations. Schmitt, Realo, Voracek, and Allik (2008) replicated these results among 55 cultures. In addition, big five model of personality in American and Filipinas samples were asserted in Church, Katigbak and del Prado (2010) study.

Many researchers carried out studies to investigate the relationships between dimensions of culture and big five personality traits. For example, Hofstede, 2001 (as cited in Hofstede & McCrae, 2004, Migliore, 2011) used data from 33 countries. His finding indicated positive correlations of individualism with extraversion, masculinity with neuroticism and openness, power distance with conscientiousness, and uncertainty avoidance with neuroticism. Hofstede and McCrae (2004) asserted these findings. Hofstede's 2001 findings pointed out to negative correlations among power distance with extraversion and openness, masculinity and uncertainty avoidance with agreeableness. These results agreed with McCrae 2001, 2002 (as cited in Hofstede & McCrae, 2004; Migliore, 2011). Templer (2012) indicated that extraversion, conscientiousness, emotional stability, and agreeableness were related to job satisfaction in a tight and collectivistic Asian society.

The above mentioned studies have indicated that cognitive styles and personality traits differ cross-culturally. Therefore, the present study verifies the following hypotheses: H1, there are differences between individual culture (American sample) and collective cultures (Egyptian and Saudi Arabian samples) in RI categories and big five personality facets. H2, there are relative contribution of big five personality facets and culture in predicting RI categories.

Method

Participants The sample of the present study consists of 139 male and female university students. They are divided into the following three cultural groups: a) 53 (41 female, 12 male) Egyptian undergraduate students in psychology department, aged between 18 to 22 years ($M=18.73$, $SD = 0.89$). b) 51 female Saudi subjects in General Presidency for Girls Education, aged between 19 to 35 years ($M= 23.82$, $SD = 3.79$). And c) 35 (29 females, 6 males) Americans, who were enrolled in educational psychology course, in The University of Georgia (USA). Their age ranged between 18 - 24 years ($M= 20.15$, $SD = 1.35$). **Measures**

The Matching Familiar Figures Test (MFFT-20).

This test is used to assess reflective – impulsive cognitive style. The current study converted a version of Matching Familiar Figures Test (MFFT-20), which was modified by G. Clauss in Germany to a computerized version. Cronbach' Alpha was used to calculate the reliability for error and latency on MFFT. The reliability coefficients are 0.929, 0.821 and 0.643 for Egyptian, Saudi, and American students, respectively. In addition, the reliability for latency time is 0.883, 0.505 and 0.481 for Egyptian, Saudi, and American students, respectively.

The NEO PI-R.

This inventory was devised and developed by Costa and McCrae (1985, 1989, and 1992). It was translated into Arabic and adapted by Younis and Khalil (2007). It is a multi-dimensional self-report scale. The original English inventory consists of 240 items with five dimensions and 30 facets of personality. The reliability and validity of the NEO-PI-R original version is well established. The Arabic version consists only of 224 items (28 facets) because the action and values facets have low validity standards. So, it is not included in statistical analysis.

To estimate the reliability coefficients of the NEO PI-R, it was administrated on 47 Egyptian subjects, and 33 Saudi Arabians coefficients between big five dimensions and its facets were calculated for each of the three cultural samples to reveal the internal consistency (reliability) of NEO PI-R. The correlation coefficients values ranged between .580 and .833 for American subjects, between .344 and .846 for Egyptian subjects, and between .389 and .877 for Saudi Arabian subjects. MFFT was administrated at a computer lab, but the NEO has been administrated collectively as a paper and pencil.

Results

Using mean and the standard deviation for errors (American = 13.91 ± 8.52 ; Egyptian = 109.70 ± 139.99 and Saudi Arabian = 21.71 ± 18.80) and latency time for responses (American = 46.49 ± 6.54 ; Egyptian = 173.89 ± 146.40 and Saudi Arabian = 40.65 ± 15.84) on MFFT. The speed level of the individual (fast - slow) was determined by using ± 1 SD from the overall average response time latency for each culture separately, and likewise for errors (accurate/inaccurate). Participants of each culture were divided into four groups: a) reflective subjects, who are slow-accurate, b) impulsive subjects, who are fast-inaccurate, c) inefficient subjects, who are slow-inaccurate, and d) efficient subjects, who are fast-accurate.

Percentage for each group per sample culture was calculated (Table 1), and used percentage critical ratio (Z) to know the differences among cultures in four groups; Reflective, Impulsivity, Inefficient and Efficient, respectively. Z values between Egyptian and Saudi subjects were 1.55, 0.35, 2.02 and 0.12, and between Egyptian and American subjects were 1.21, 0.13, 0.87 and 0.12. Also, Z values between Saudi and American subjects were 0.23, 0.38, 1.02 and 0.71 for. Generally, there were no significant differences among cultures in categories of MFFT' except between the Egyptian and Saudi Arabian samples in the inefficient variable. This means that Saudi Arabian students were more slow-inaccurate than the Egyptian students.

Table 1: Descriptive analysis and the percentages for four groups per each sample culture.

ive analysis and the percentages for four groups per each sample culture.							
		Categories MFFT				Total	
		Reflective	imp				
		ulsive	inefficient	efficient			
Culture	Egypt	Count	20	17	1	15	53
	% within culture		37.7%	32.1%	1.9%	28.3%	100.0%
	Saudi	Count	12	18	6	15	51
	% within culture		23.5%	35.3%	11.8%	29.4%	100.0%
	America	Count	9	11	2	13	35
	% within culture		25.7%	31.4%	5.7%	37.1%	100.0%
Total		Count	41	46	9	43	139
	% within culture		29.5%	33.1%	6.5%	30.9%	100.0%

Categories: 1= slow- accurate (reflective); 2 = fast – inaccurate (impulsive); 3= slow – inaccurate (inefficient); and 4 = fast – accurate (efficient).

ANOVA was used, with alpha level set at 0.05, to know the differences among the three cultures on NEO-PI-R facets and dimensions. The results were showed significant differences on angry hostility (N2), excitement-seeking (E5), positive emotion (E6), fantasy (O1), and feeling (O3), agreeableness (A), trust (A1), altruism (A3) compliance (A4), mindedness (A6), order (C2), dutifulness (C3), and achievement–striving (C4) among the three cultures.

However, when checking which pairs were significantly different using Bonferroni post-hoc procedure, the researcher did not find significant differences among three cultures on trust (A1), feeling (O3), and dutifulness (C3) (Table 2). The results indicated that:

1. Egyptian students were more fantasy (O1), angry hostility (N2), and excitement - seeking (E5) than were the Saudi Arabian students.
2. Saudi Arabian students were more altruism (A3), compliance (A4), tender- mindedness (A6), achievement–striving (C4) and agreeableness than the Egyptian students, and they were more orderly (C2) than the American students.
3. American students were more fantasy (O1), and positive emotion (E6) than the Egyptian students, and they were more fantasy (O1), excitement-seeking (E5) and positive emotion (E6) than the Saudi Arabian students.

Table 2: Bonferroni post-hoc ANOVA

Dependent Variable	(I) culture	(J) culture	Mean Difference (I-J)	Dependent Variable	(I) culture	(J) culture	Mean Difference (I-J)
O1 fantasy	1.00	2.00 3.00	2.88330(*) - 6.51064(*)	A4 compliance	1.00	2.00 3.00	-3.24371(*) -2.62553
	3.00	2.00	9.39394(*)		3.00	2.00	-.61818
A1 trust	1.00	2.00 3.00	-1.96647 -3.33617	C4 achievement	1.00	2.00 3.00	-2.54674(*) -1.22553
	3.00	2.00	1.36970	- striving	3.00	2.00	-1.32121
N2 angry hostility	1.00	2.00 3.00	3.25274(*) 3.00426	E5 excitement-seeking	1.00	2.00 3.00	4.99871(*) -3.02553
	3.00	2.00	.24848		3.00	2.00	8.02424(*)
C2 order	1.00	2.00 3.00	-.93488 4.48936	E6 positive emotion	1.00	2.00 3.00	-.32366 -5.00851(*)
	3.00	2.00	- 5.42424(*)		3.00	2.00	4.68485(*)
O3 feeling	1.00	2.00 3.00	-.83623 -4.15745	A6 mindedness	1.00	2.00 3.00	-2.43520(*) -2.21702
	3.00	2.00	3.32121		3.00	2.00	-.21818
A3 altruism	1.00	2.00 3.00	- 2.52031(*)	Total a	1.00	2.00	- 10.87105(*)
		3.00				3.00	
	3.00	2.00	-4.50213	agreeableness	3.00	2.00	-9.84681 -1.02424
			1.98182				
C3 dutifulness	1.00	2.00 3.00	-1.95809 -2.57021				
	3.00	2.00	.61212				

* The mean difference is significant at the .05 level.

Multinomial logistic regression was used to know the relative contribution of Big Five personality traits and culture in predicting RI categories (H1). The results showed that the culture variable did not predict the four classifications on MFFT, except the extraversion dimension, which predicts impulsivity.

Discussion

The results showed that there were no significant differences among cultures in reflection-impulsive cognitive style categories. The only exception in this regard was related to the Saudi Arabian students, who were more inefficient than the Egyptian ones. According to Hofstede's 1980, 1997 studies (as cited in Alkailani et al., 2012), the Arab countries (Egypt, Iraq, Kuwait, Libya, UAE, and Lebanon) were classified as having high power distance and high uncertainty avoidance. In addition, their culture is categorized as a collectivist, masculine one. Hofstede argued that these findings apply to all Arab countries because of their common language and religion. However, Arab countries are actually far less similar with regard to the gross domestic product (GDP), i.e., national wealth, disposable income, social life, government intervention, educational institutions, level of literacy, and economic infrastructure. This approach of overgeneralizing the findings related to a particular culture to another one regardless of the major differences between the two has been criticized by Craig and Douglas in their 2005 study (as cited in Alkailani et al., 2012). Therefore, the fact that Saudi Arabia has a higher net worth than Egypt was put into consideration in interpreting the findings of the present study, particularly, the ones related to the uncertainty avoidance dimension. The Saudi students tended to commit more errors when they responded quickly in an attempt to reduce ambiguity tension. Also, compared with their Egyptian counterparts, the Saudi students were inefficient.

Although both the Saudi Arabian and Egyptian cultures are viewed as being collective in Hofstede's studies (as cited in Alkailani et al., 2012), as mentioned above, the Egyptian students scored higher than the Saudi ones on fantasy (O1), angry hostility (N2), and excitement seeking (E5). On the other hand, the former group scored lower than the latter on altruism (A3), compliance (A4), tendermindedness (A6), and agreeableness (A). The Egyptian students tend to experience anger because they have more frustration (high hostility, N2), but they express anger only when necessary (low compliance, A4). This is because it depends on the individual's level of agreeableness. These observed traits cause them to change their lives with crave excitement and stimulation (E5) in an attempt to create an interesting inner world (O1) to

reduce their frustration or anger hostility (N2). They become more self-centered and reluctant to get involved in the problems of others (low A3). Finally, the agreeableness results indicate that the Saudi culture is more collectivist than the Egyptian (see Taras, Kirkman, & Steel, 2010).

As for the findings related to the Saudi versus the American students, the former were more orderly (C2). They scored lower than the Americans on fantasy (O1), excitement seeking (E5), and positive emotion (E6). In general, the Saudi culture was higher than the American one on all of Hofstede's dimensions. However, it has to be noted here that Bernardi (2006) has maintained that there is a positive correlation between social desirability, on the one hand, and collectivism, and uncertainty avoidance, on the other. Thus, the Saudi students (exclusively females) showed more social desirability than did the American ones (males and females). This may be interpreted in terms of women's higher social desirability (Bernardi, 2006). This variation also explains why the Saudi students scored higher than the Americans on order (C2). Similarly, it explains the reason why the Saudi students score higher than their Egyptian counterparts on altruism (A3), tender-mindedness (A6), and excitement seeking (E5).

The American students scored higher on fantasy (O1) and positive emotion (E6) than their Egyptian and Saudi counterparts. On the other hand, they scored higher on excitement-seeking than the Saudis. That the findings of the American students indicated that they had more fantasy, vivid imagination, and an active fantasy life can be due to the fact that their culture is characterized by wealth and advancement. Their daydream is not simply an escape but a way of creating an interesting inner world. Their high excitement-seeking (E5) is related to enhancing their level of fantasy (O1) and positive emotions experiences (E6).

The results indicated that, generally speaking, culture did not predict the four MFFT categories. The only exception here is in the case of the Egyptian students, who were more inefficient than the American students as a reference group. According to Hofstede's 2005 study (as cited in Lee et al., 2012), individualism refers to societies where individuals look after themselves and their immediate families.

The results showed that only the extraversion personality dimension predicts impulsivity. Concerning the relationship between impulsive-reflective cognitive style and extraversion, previous studies had conflicting results. Some studies, e.g., Block, Block, and Harrington's 1974 study (as cited in Bentler & McClain, 1976) and Weijer et al. (2001), revealed a significant correlation. On the other hand, other studies, e.g., Young' 1973 study (as cited in Messer, 1976), Cairns and Habirson's 1975 study (as cited in Carretro-Dios et al., 2009), and Bentler and McClain (1976) did not find this correlation. This conflict may be ascribed to the diversity of extraversion dimension components among models and measures. For example, the extraversion is differed between EPI and EPQ underlying Eysenck personality model. EPI scale measures extraversion mix of impulsivity and sociability were used, but the extraversion on EPQ scale almost purely measures of sociability (Rocklin & Revelle, 1981). The extraversion dimension on NEO PI (Costa & McCrae, 1992) does not include the impulsivity trait, which it included in the neuroticism dimension, which indicated that there are various types of extraversion among measures.

It has to be noted that the results of the present study were limited to small samples, especially the American one. In addition, MFFT and some NEO-PI facets are of low reliability. Therefore, it is necessary to replicate this study.

References

- [1]. Alkailani, M., Azzam, I.A. & Athamneh, A. (2012). Replicating Hofstede in Jordan: Ungeneralized, reevaluating the Jordanian culture. *International Business Research*, 5
- [2]. (4), 71- 80. doi:10.5539/ibr.v5n4p71
- [3]. Bentler, P. M. & McClain, J. (1976). A multitrait - multimethod analysis of reflectionimpulsivity. *Child Development*, 47, 218-226.
- [4]. Bernardi, R. (2006). Associations between Hofstede's cultural constructs and social desirability response bias. *Journal of Business Ethics*, 65, 43-53. doi: 10.1007/s10551005-5353-0
- [5]. Berry, J. W., Poortinga, Y. H., Sigall, M. H. & Dasen, R. (2002). Cross-cultural psychology: Research and applications (2nd ed.). New York: Cambridge University Press.
- [6]. Bierbryer, B. (1973). Conceptual tempo, sex, and creative. *Dissertation Abstract International*, 33 (11A) 3168.
- [7]. Boyer, W. N. & Strachan, D. E. (1990). Conceptual tempo and resolution of social conflict by children. *Perceptual and Motor Skills*, 70, 225-226.
- [8]. Buela - Casal, G., Carretro- Dios, H. & De los Santos-Roig, M. (2001). Assessment of longitudinal consistency for Matching Familiar Figures Test-20 (MFFT 20) on reflexivity – impulsivity. *Clinical Salud*, 12 (1), 51 – 70.
- [9]. Buela-Casal, G., Carretro- Dios, H., De los Santos-Roig, M. & Bermúdez, M. P. (2003). Psychometric properties of a Spanish adaptation of matching familiar figures test (MFFT- 20). *European Journal of Psychological Assessment*, 19 (2), 151- 159.
- [10]. Cheung, F. M., Leung, K., Zhang, J., Sun, H., Gan, Y. Song, W. & Xie, D. (2001). Indigenous
- [11]. Chinese personality constructs: Is the Five-Factor Model complete?. *Journal of Cross-*
- [12]. *Cultural Psychology*, 32 (4), 407-433. doi: 10.1177/0022022101032004003
- [13]. Church, A. T., Katigbak, M. S. & del Prado, A. M (2010). Cultural similarities and differences in perceived affordances of situations for big five behaviors. *Journal of Research in Personality*, 44, 78–90. doi:10.1016/j.jrp.2009.11.003
- [14]. Costa, P. T. & McCrae, R. R. (1992). Revised Neo personality inventory (NEO PI-R) and Neo Five – Factor inventory (NEO-FFI) professional manual. Florida: Psychological Assessment Resources, Inc.
- [15]. Davidson, W. B. (1984). Personality correlates of Matching Familiar Figures Test in adults. *Journal of Personality Assessment*, 48 (5), 478- 482.

- [16]. Karkheck, R. H. (1984). Improving children's problem solving abilities: The moderating effect of selected cognitive / personality variables on divergent thinking. *Dissertation Abstract International*, 45 (4B), 1302.
- [17]. Kenny, R. (2007). Digital narrative as a change agent to teach reading to media – centric students. *International Journal of social Science*, 2 (3), 187 – 195.
- [18]. Kopfsstein, D. (1973). Risk-taking behavior and cognitive style. *Child Development*, 44, 190192.
- [19]. Inglehart, R. & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, 65, 19-51.
- [20]. Jamieson, J. (1992). The cognitive style of reflection / impulsivity and Field independence / dependence and ESL success. *The Modern Language Journal*, 76 (4), 491- 501.
- [21]. Heckel, V., Allen, S., Andrews, L., Roeder, G., Ryba, P. & Zook, W. (1989). Normative data on the Kagan Matching Familiar Figures Test for adult male incarcerated. *Journal of Clinical Psychology*, 45 (1), 155- 160.
- [22]. Herman, A. M.; Critchley, H. D. & Duka, T. (2018). Risk-taking and impulsivity: The role of mood states and interoception. *Frontiers in Psychology*, 9, 1-11. doi: 10.3389/fpsyg.2018.01625
- [23]. Hinkel, H. W. (1973). Creativity and conceptual tempo. *Dissertation Abstract International*, 33 (12- B), 6059 – 6060.
- [24]. Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. *Online*
- [25]. *Readings in Psychology and Culture*, Unit 2. Retrieved from <http://scholarworks.gvsu.edu/orpc/vol2/iss1/8>
- [26]. Hofstede, G & McCrae, R. R. (2004). Personality and culture revisited: Linking traits and dimensions of culture. *Cross-Cultural Research*, 38 (1), 52-88. doi: 10.1177/1069397103259443
- [27]. Lee, C. H., Sudweeks, F. & Cheng, y. W. (2012). A Longitudinal study on the effect of hypermedia on learning dimensions, culture, and teaching evaluation. In M. Strano, H. Hrachovec, F. Sudweeks and C. Ess (eds). *Proceedings Cultural Attitudes towards Technology and Communication* (pp. 146- 162). Australia: Murdoch University.
- [28]. Messer, S. B. (1976). Reflection- impulsivity: A review. *Psychological Bulletin*, 83 (6), 1026- 1052.
- [29]. Messick, S. (1984). The nature of cognitive styles: Problems and promise in educational practice. *Educational Psychologist*, 19 (2), 59-74.
- [30]. Migliore, L. A. (2011). Relation between big five personality traits and Hofstede's cultural dimensions. *Cross Cultural Management: An International Journal*, 18 (1), 38- 54.
- [31]. Nietfeld, J. & Bosma, A. (2003). Examining the self-regulation of impulsive and reflective response styles on academic tasks. *Journal of Research in Personality* 32, 118–140. doi:10.1016/S0092-6566(02)00564-0
- [32]. Olaseinde, O. (1994). The relationship of cognitive style dimension of impulsivity / reflectivity with creativity in secondary schools. *An International Journal of Psychology*, 2 (1), 64-74.
- [33]. Ortiz, F. A, Church, A. T., Vargas-Flores, J., Ibáñez-Reyes, J., Flores-Galaz, M., IuitBriceño, J. & Escamilla, J. (2007). Are indigenous personality dimensions culturespecific? Mexican inventories and the Five-Factor Model. *Journal of Research in Personality*, 41, 618–649.
- [34]. Peters, R. D. & Bernfeld, G. (1983). Reflection-impulsivity and social reasoning. *Developmental Psychology*, 19 (1), 78-81.
- [35]. Riding, R. (1997). On the nature of cognitive style. *Educational Psychology*, 17 (1/2), 29-50.
- [36]. Riding, R. & Cheema, I (1991). Cognitive styles: An overview and integration. *Educational Psychology*, 11 (3/4), 193- 223.
- [37]. Riding, R. & Wigley, S. (1997). The relationship between cognitive style and personality in further education students. *Personality and Individual Differences*, 23 (3), 379-389.
- [38]. Rocklin, T. & Revelle, W. (1981). The measurement of extraversion: A comparison of the Eysenck Personality Inventory and the Eysenck Personality Questionnaire. *British Journal of Social Psychology*, 20, 279- 284.
- [39]. Rosenfield, S., Houtz, J. C. & Steffero, F. A. (1977). Relationship of children's conceptual tempo to problem solving and creativity. *Psychology in the Schools*, 14 (3), 364- 371.
- [40]. Ruby, M. B., Falk, C. F., Heine, S. J., Villa, C. and Silberstein, O. (2012). Not all collectivism are equal: Opposing preferences for ideal affect between East Asians and Mexicans. *Emotion*, Online First Publication, July 9. doi: 10.1037/a0029118
- [41]. Savvas, M, El-Kot, G. & Salder-Smith, E. (2001). Comparative study of cognitive styles in
- [42]. Egypt, Greece, Hong Kong and the UK. *International Journal of Training and Development*, 5 (1), 64- 73.
- [43]. Schmitt, P., Allik, J., McCrae, R. & Benet-Martínez, V. (2007). The geographic distribution of big five personality traits: Patterns and profiles of human self-description across 56 nations. *Journal of Cross-Cultural Psychology*, 38 (2), 173-212. doi: 10.1177/0022022106297299
- [44]. Schmitt, D. P., Realo, A., Voracek, M. & Allik, J. (2008). Why can't a man be more like a woman? Sex differences in big five personality traits across 55 cultures. *Journal of Personality and Social Psychology*, 94 (1), 168-182.
- [45]. Shoimah, R. N.; Lukito, A. & Siswono, T. Y. (2018) The creativity of reflective and impulsive selected students in solving geometric problems. *Journal of Physics: Conference Series* 947- 012023. doi :10.1088/1742-6596/947/1/012023
- [46]. Silvestro, J. R. (1976). Brainstorming, convergent thinking tasks and conceptual tempo of impulsive and reflective children. *Psychological Reports*, 38, 873 – 874.
- [47]. Smith, J. D. & Caplan, J. (1988). Cultural differences in cognitive style development. *Developmental Psychology*, 24 (1), 46 – 52.

- [48]. Soubelet, A. & Salthouse, T. A. (2011). Influence of social desirability on age differences in self-reports of mood and personality. *Journal of Personality*, 79(4), 741–762. doi: 10.1111/j.1467-6494.2011.00700.x
- [49]. Sternberg, R. J. & Grigorenko, E. L. (1997). Are cognitive styles still in style?. *American Psychologists*, 52 (7), 700 – 712.
- [50]. Szeschlik, T. (1993). General intelligence, temperament, and the Matching Familiar Figures Test. *European Journal of Personality*, 7, 379 – 386.
- [51]. Taras, V., Kirkman, B.L. & Steel P. (2010). Examining the impact of culture's consequences:
- [52]. a three-decade, multilevel, meta-analytic review of Hofstede's cultural value dimensions. *Journal of Applied Psychology*, 95(3), 405-439.
- [53]. Templer, K. J. (2012). Five-Factor Model of personality and job satisfaction: The importance of agreeableness in a tight and collectivistic Asian society. *Applied Psychology: An International Review*, 61 (1), 114–129. doi: 10.1111/j.1464-0597.2011.00459.x
- [54]. Triandis, H. C. & Suh, E. M. (2002). Cultural influences on personality. *Annual Review of Psychology*, 53(1), 133-160.
- [55]. Younis, F. & Khalil, E. (2007). Personality five factors model: Validation and cross-cultural explicability. *Derasat Nafseyah*, 17 (3), 553- 583.(in Arabic)
- [56]. Waring, D. A. & Farthing, C. B. (1999). Impulsive response style affects computer – administrated multiple – choice test performance. *Journal of Instructional Psychology*, 26 (2),
- [57]. Weijer, H., Wiesbeck, G. & Böning, J. (2001). Reflection – impulsivity, personality and performance: A psychometric and validity study of Matching Familiar Figures Test in detoxified alcoholics. *Personality and Individual Differences*, 31, 731 – 754.
- [58]. Wu, K., Lindsted, K., Tsai, S. and Lee, J. (2008).Chinese NEO – PI -R in Taiwanese adolescents. *Personality and Individual Differences*, 44, 656–667.