

## Big Five Personality Factors : Cross Cultural Comparison between Japanese and Egyptian Students

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### Abstract :

The present study aimed to identify the differences between Japanese and Egyptian university students in reference to the Big Five personality factors. Japanese students (N=83) and Egyptian students (N=100) responded to the NEO Five-Factor Inventory (NEO-FFI; Costa et al., 1992). The results indicated that there are significant differences between Japanese students and Egyptian students in Neuroticism and Conscientiousness. There are strong similarities between the two student groups in other factors : Neuroticism, Extroversion, Openness to Experience, Agreeableness and Conscientiousness. Sex type had influence only in the Neuroticism category.

**Key words :** Big Five personality factors, cultural differences, students

### Introduction

The Big Five Personality Factors Model has received tremendous empirical attention over the past several years, and there has been increasing interest among researchers in studying it. The Big Five Personality Factors Model (McCrae & Costa, 1997) represents the dominant conceptualization of personality structure in the current literature. This model is comprised of five relatively independent dimensions :

Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness reside at the highest level of the personality hierarchy.

Extraversion reflects Eysenck's (1947) Extraversion/Introversion dimension, and the typical behavioral tendencies associated with it include being assertive, talkative, and sociable (Barrick & Mount, 1991). The second factor, Neuroticism, reflects the Neuroticism/Emotional Stability dimension from Eysenck's (1947) model. It represents individual differences in the tendency to experience distress (McCrae & John, 1992), and the typical behaviors that are associated with it include being anxious, depressed, emotional, worried, and insecure (Barrick & Mount, 1991). Taken together, these two dimensions (Extraversion and Neuroticism) represent the "Big Two" first described by Eysenck over 50 years ago (Eysenck, H. J., 1991). The third factor is Conscientiousness, which has been argued to reflect volition (i. e., Will to Achieve) and dependability ; that is, being careful, thorough, responsible, and planning carefully (Barrick & Mount, 1991). The typical behaviors associated with Conscientiousness include being hardworking, achievement-oriented, and persevering (Barrick & Mount, 1991). The fourth factor is Agreeableness, which describes the humane aspects of people, such as altruism, nurturance, caring, and emotional support at one end, and hostility, indifference to others, self-centeredness, spitefulness, and jealousy

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at the other end (Digman, 1990). The behavioral tendencies typically associated with this factor include being courteous, good-natured, co-operative, soft-hearted, and tolerant (Barrick & Mount, 1991). The last factor is called Openness to Experience, and is related to scientific and artistic creativity, divergent thinking, and political liberalism (see Judge, Heller, & Mount, 2002 ; McCrae, 1996). At the core of this dimension is openness to feelings and new ideas, flexibility of thought, and a readiness to indulge in fantasy (Digman, 1990). The behavioral tendencies typically associated with it include being imaginative, cultured, curious, intelligent, and artistically sensitive (Barrick & Mount, 1991) and several studies referred to cultural differences between countries in terms of personality factors (Wang, M. & Erdhiem J., 2007).

Cross-cultural research is thriving, with a consistent increase of publications dealing with cross-cultural issues. In the electronic database of psychological publications, the number of publications dealing with cross-cultural differences has grown in the last ten years, both in absolute numbers and in their relative contribution to the total number of publications in the database (Fons, J.R., Van De Vijver, 2002).

Many studies referring to the Big Five Personality Factors Inventory were concerned with cross-cultural stability (Jang et al, 2003), and self-report data sets were collected from ten European and three non-European countries (Belgium, England, Germany, the Netherlands, USA), Romance (Italy, Spain), and Slavic branches (Croatia, Czech Republic, Slovakia) of the Indo-European languages, as well as the Semito-Hamitic (Israel) and Altaic (Hungary, Japan) language families. Each data set was subjected to principal component analysis, followed by varimax rotation and orthogonal Procrustes rotation to optimal agreement with (i) the Dutch normative structure and (ii) an American large-sample structure. Three criteria (internal consistency reliabilities of the varimax-

rotated components, and parallel analysis) were used to establish the number of factors to be retained for rotation. Clear five-factor structures were found in all samples except in the smallest one (USA, N<sup>1</sup>/497). Internal consistency reliabilities of the five components were generally good and high congruence was found between each sample structure and both reference structures. More than 80% of the items were equally stable within each country.

This study aims to discern the differences between two distinctive cultural groups, specifically from an Arabian country (Egypt) and an Asian country (Japan), including the study of males and females as an integral part of this investigation.

## Method

### Samples :

Two samples were used in this study. The first sample from Egypt consisted of undergraduate students (n=100 ; 54 females and 46 males) from Faculty of Arts and Faculty of Education, El-Minia University. The second sample were Japanese students (n=83 ; 43 females and 40 males) of the Faculty of Education, Iwate University. Ages ranged from 18 to 22 for both samples.

### Measurement :

We used the NEO Five-Factor Inventory (NEO-FFI ; Costa et al., 1992), which is a 60-item inventory, comprising questionnaires for measuring the Big Five personality factors. Participants in our study rated the 60 behavior-descriptive statements on 7-point Likert-type scales, ranging from 1 (strongly disagree) to 7 (strongly agree), indicating the degree to which they thought the items were characteristic of them. The NEO-FFI is one of the most widely used measurement tools of the Big Five and has very strong psychometric properties. Six-year test-retest reliability have ranges from .63 to .82, and there is

strong consensual validity between self, peer, and spouse reports of the test, and the validity evidence for the scales has been shown in personality and mental health domains (Costa & McCrae, 1992). For the NEO FFI (the 60-item-domain-only version), the internal consistencies reported in the manual were : N= .79, E= .79, O= .80, A= .75, C= .83. In the literature, the NEO FFI seems to be used more often as a whole, while investigators using the NEO PI-R usually select the items from just the domains they are interested in. A recent article using the NEO FFI to study perfectionism had internal consistencies at : N= .85, E= .80, O= .68, A= .75, C= .83 (Sherry, Hewitt, Flett, Lee-Baggley, Hall, 2007). The literature appears to support the internal consistencies listed in the manual, but more interestingly, the NEO

has been translated and evaluated in many different languages and cultures. A translation of the NEO to be used in the Philippines has the internal consistency of the domain scores from .78-.90 (Church, 2001 ; Katigbak, et al, 2002), with facet alphas having a median of .61 (Katigbak et al., 2002). The NEO was the assessment used in a recent study which involved self report measurements in 50 different cultures to assess whether individuals' perception of the "national character" of the culture accurately reflected the personality of the members of that culture (McCrae, R.R. & Terracciano, A., 2005). In this study we evaluated reliability of NEO-FFI for Egyptian and Japanese students via Cronbach's alpha reliability, as shown in Table 1 :

Table 1. Cronbach's alpha reliability of Japanese and Egyptian Students on Big Five personality factors

Big five personality	Cronbach's alpha	Cronbach's alpha
Big five personality factors	Cronbach's alpha reliability Japanese students (N= 50)	Cronbach's alpha reliability Egyptian students (N =50)
1-Extraversion	0.89	0.76
2-Neuroticism	0.87	0.63
3-Openness to Experience	0.86	0.75
4-Conscientiousness	0.83	0.73
5-Agreeableness	0.81	0.79

Table 1 shows that both Japanese and Egyptian scores of the NEO Five-Factor Inventory have high Cronbach's alpha reliability ranging between 0.89 and 0.81 for Japanese, and between 0.79 and 0.63 for Egyptians.

#### Procedure :

To collect data from Egyptian samples, the first researcher collected data from Egypt in classrooms in small groups, and Japanese data was collected by the

third researcher by the same method. After that, data was input by the first researcher and analyzed by SPSS 15.

#### Results :

To compare data between Japanese and Egyptian students we used t-test and one-way ANOVA (see Table 2). Differences are shown between Japanese and Egyptian means in Big Five personality factors.

**Table 2.** Means, SDs of Japanese and Egyptian Students of Big Five personality factors and t-values indicating significance of differences

Big Five Personality Factors	Japanese Students (N = 83)		Egyptian Students (N = 100)		t-value (df=181)
	Mean	SD	Mean	SD	
Extraversion	58.16	11.75	57.52	6.59	0.47
Neuroticism	52.30	14.38	46.01	6.68	3.89**
Openness to Experience	51.72	9.41	49.99	5.96	1.51
Conscientiousness	44.42	9.85	41.77	6.00	2.23*
Agreeableness	55.80	10.01	54.39	6.34	1.16

Table 2 shows the differences between Japanese and Egyptian students in only two out of the Big Five personality factors. Neuroticism ( $p < .01$ ) and Conscientiousness ( $p < .05$ ) for Japanese students were higher than Egyptian students in means of Neuroticism and Conscientiousness. It also appears that no significant differences existed between the two sam-

ples regarding Extroversion, Openness to Experience and Agreeableness.

To evaluate the differences between the male and female groups of the Japanese and Egyptian students, one-way ANOVA was performed (as shown in Table 3):

**Table 3.** One-Way ANOVA of differences between Japanese and Egyptian male and female students among Big Five personality factors

Big Five Personality Factors	SV	SS	MS	F
Extraversion	Between groups	276.824	92.275	1.07
	Within groups	15368.859	85.860	
	Total	15645.683		
Neuroticism	Between groups	2376.809	792.270	6.81**
	Within groups	20812.779	116.272	
	Total	23189.585		
Openness to Experience	Between groups	315.227	105.076	1.77
	Within groups	10614.587	59.299	
	Total	10929.814		
Conscientiousness	Between groups	375.581	125.194	1.95
	Within groups	11479.283	64.13	
	Total	11854.863		
Agreeableness	Between groups	281.003	93.668	1.39
	Within groups	12016.800	67.133	
	Total	12297.803		

\*\*  $p < .001$

In Table 3 we see significant differences between the Japanese and Egyptian male and female groups only in Neuroticism ( $P < .001$ ), and no differences in

the other personality factors.

Table 4 shows the LSD mean differences between the four groups :

Table 4. Mean differences, by LSD to multiple comparisons of four groups for Neuroticism

Groups	Japanese males N= 40 Mean = 54.25	Japanese females N= 43 Mean = 50.23	Egyptian males N=46 Mean = 44.47	Egyptian females N = 54 Mean = 47.31
Japanese females	4.29	————		
Egyptian males	10.05 *	5.75 *	————	
Egyptian females	7.21 *	2.92	2.83	————

\*  $p < .05$

Table 4 shows the significant differences between four groups under Neuroticism. Male and female Japanese students scored higher than Egyptian students ; in particular, Japanese males scored higher than Japanese females, and both Japanese groups were higher than Egyptian males and females (Japanese male > Japanese females > Egyptian females > Egyptian males). These differences were significant at  $p < 0.5$ .

#### Discussion :

The analyses of data have led us to conclude that there are differences between all Japanese and Egyptians in two of the Big Five factors, Neuroticism and Conscientiousness. On the other hand, we conclude that there are differences between two sexes in both country groups only in Neuroticism. This means that culture and sex play important roles in Neuroticism only, but no differences exist between the two country groups in the other personality factors. These findings differ with those of previously conducted studies (Colin Silverthorne, 2001), which showed that among the Big Five personality factors there are cultural differences only in Open to Experience in the groups from China, Taiwan, Thailand and the US,

and no differences found among those same four countries in the other factors. But the fact that Japanese students scored higher than Egyptian students in Neuroticism is a result that we did not expect before the study. Egyptian students have a lot of stressful situations (Abdel Moutie, H., 1994), perhaps more so than do Japanese students, and Japanese students have a more modern lifestyle and higher degree of technology compared to their Egyptian counterparts. Nevertheless, they showed higher degrees in Neuroticism. We assume that these differences are due to Japanese students having a faster-paced life, and a weaker network of scarce social-relations compared to the Egyptian students. On the other hand, the Japanese students had obtained higher degrees in the Conscientiousness category compared to the Egyptians, and this means that the Japanese students, in the highest case, had a stronger desire for achievement, activity, accuracy and capacity planning. This may be due to the style and methods of socialization of modern education received by Japanese students. But Egyptian students are suffering more than their Japanese counterparts from unemployment and facing a lack of job opportunities after graduation from university.

We noticed that scores for other Big Five factors of Extroversion, Openness to Experience and Agreeableness were similar between Japanese and Egyptian students, with all participants describing themselves as more extroverted, more open to experience and more agreeable. Other results obtained by other studies (Jang et al, 1998) indicated that there are no differences between Canadian and German Twin samples among Big Five personality factors. Support for this view has been found in a variety of studies in the United States (see McCrae & Costa, 1990) and in other countries (see Church & Lonner, 1998). McCrae and Costa (1997) analyzed personality data from Germany, Portugal, Israel, China, Korea, and Japan, and reported that the five factors were replicated in all six samples. McCrae, Costa, del Pilar, Rolland, and Parker (1998) reported similar results in France and the Philippines. These findings of high factor similarity in such diverse language/culture groups led McCrae and Costa (1997) to propose that the FFM may represent a universal model of the way in which human personality characteristics are organized.

Concerning the differences between the sexes in both Japanese and Egyptian groups, it was the Japanese males who scored higher than Japanese females and higher than Egyptian females and males, but there are no differences between Japanese females and Egyptian females in Neuroticism (see Table 4). These findings differed with those of other studies (McCrae R., Costa et al, 2002; Terracciano & McCrae, 2001; Feingold, 1994; Schmitt et al, 2008) which found that Neuroticism appeared to increase in girls and Openness to Experience increased in both boys and girls, while mean levels of Extroversion, Agreeableness and Conscientiousness were stable. Costa et al. (2001) conducted the first comprehensive study on the consistency of sex differences in personality across cultures. Using the Revised NEO Personality Inventory to assess Big Five

factors and facets in over 23,000 men and women from 26 cultures, they documented cross-culturally consistent sex differences in the factors of Agreeableness and Neuroticism and also in a number of facets of extraversion and openness. They further showed that, across cultures, the magnitude of sex differences in one personality trait correlated strongly with the magnitude of sex differences in other personality traits, suggesting a generalized tendency for members of given societies to show large or small sex differences in personality. Most relevant to the predictions of social role and gender socialization theories, Costa et al. found that larger sex differences in personality were associated with weaker gender roles and with nations' modernity, across nations. These findings have recently been replicated in a large-scale study of sex differences in Big Five personality traits across 55 nations surveyed as part of the International Sexuality Description Project (Schmitt et al., 2008).

Finally, the current study concluded that there are significant differences between Japanese students and Egyptian students in Neuroticism and Conscientious. There are great similarities between the Japanese students and Egyptian students in other factors: Neuroticism, Extroversion, Openness to Experience, Conscientiousness, and Agreeableness. Sex type had influence in the Neuroticism category only, which made us interested in pursuing further comparative studies of different cultures to better understand the effect of cultural impact on the personality traits.

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