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Gender Differences in Creative Perceptions of Undergraduate Students

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Abstract: This study investigated the difference between gender-role identity and creativity of students at Malaysian Universities. The respondents were 153 undergraduate Iranian students (48 females, 105 males; aged 19 to 27 years) in Malaysia Universities. All students were given a Khatena-Torrance Creative Perception Inventory Test (KTCPI). The instrument comprised two subscales, namely, Something About Myself (SAM) and What Kind of Person Are You (WKOPAY)? Each subscale had fifty items. The results revealed no significant difference between female and male students' overall creative perception. Further examination revealed that male students score higher in the WKOPAY subscale ($t = 2.578$, $p = 0.011$), while females scored higher than males in the initiative factor ($t = 3.566$, $p = 0.000$) and males scored higher than females in the environmental sensitivity factor ($t = -2.216$, $p = 0.028$) in the SAM subscale. Further replications on similar samples are needed.

Key words: Creative perception inventory, What Kind of Person Are You (WKOPAY), Something About Myself (SAM), gender, undergraduate students

INTRODUCTION

Numerous studies have been reported on creativity (Aitken, 2004; Chang and Birkett, 2004; Conti *et al*., 2001; Coppola *et al*., 2008; Craft and Wegerif, 2006; De Dreu *et al*., 2008; Dietrich, 2008; Giesecke, 2001; Hicks, 2007; Jung, 2008; Kaufman, 2002; Matud *et al*., 2007; Preckel *et al*., 2006; Rice, 2003; Simonton, 2000; Sternberg, 2005; Sternberg and Dess, 2001; Vass, 2006; Whatmore, 2002; Wong and Ladkin, 2008; Yadav, 2007). Although, Matud *et al*. (2007) have been interested in studying creativity and have conducted numerous investigations, which have led to progress in the understanding of creativity, much work still remains to be done. However, among the background characteristics, gender has been considered as one of the most important and most cited variables in educational and psychological research literature (Fennema, 1998). The significance of examining also creativity in relationship to gender also is based initially on the others variables differences between males and females (Abra, 1991; Emslie *et al*., 2006; Razumnikova and Bryzgalov, 2006; Vol'f *et al*., 2007).

Palaniappan (2000) investigated gender differences in creative perception among 101 males and 69 females, using Khatena Torrance Creative Perception Inventory (KTCPI) to measure creative perception. The findings indicated that although there were no gender differences in the overall measures of the two subscales Something About Myself (SAM) and What Kind of Person Are You (WKOPAY), it was detected that males obtained significantly higher scores on initiative than females. Palaniappan (2007b) also studied on Malaysian high school students, 142 boys and 154 girls (M age = 13.3 year, SD = 0.3) were compared on a talent measure, the Khatena-Morse Multitalent Perception inventory. Boys obtained significantly higher means on the overall score of versatility and the talent areas of artistry, creative imagination, initiative and leadership.

Other studies, on the other hand, showed that females scored higher on verbal while males scoring higher on figural creativity (DeMoss *et al*., 1993). Yet others had found the exact opposite results elsewhere (Chan *et al*., 2001; Dudek and Strobel, 1993). But

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study from Sajjadi-Bafghi (2007) has been shown different result. He studied on 886 Iranian students (407 boys and 479 girls). Analysis this study showed boys scored significantly higher than girls on creativity (verbal originality).

Sing and Wing-Ling (1996) investigated on 633 Chinese students in Hong Kong. Based on peer nominations, the subjects were placed in five status groups: average, popular, neglected, rejected and controversial. Through peer nominations and teacher ratings the perception of the students' degree of creativeness was obtained, between students', males were viewed to be more creative than females. However, Chusmir and Koberg (1986) examined creativity differences and gender. The result indicates that male and female do not differ significantly in level of creative.

Past research on gender differences in creative perception are limited and revealed inconsistent findings on gender differences and creativity. Another important advantage of the Khatena-Torrance Creative Perception Inventory (KTCPI) is that although it is mainly used for students in high school and below, it can be effectively administered on students in universities.

While studies on gender differences and creative perception are numerous, studies on undergraduate students are rare and none have explored gender differences in creative perceptions of Iranian students overseas. Therefore, this study attempts to examine gender differences in creative perception among undergraduate Iranian students in Malaysian Universities, using a Khatena-Torrance Creative Perception Inventory (KTCPI) to measure creative perception of the students (Palaniappan, 2005). In line with the aim of the study, the research questions are:

- Is there any gender difference on creative perception?
- Is there any difference between the males and females scores on the subscale something about myself and their subscores?
- Is there any difference between the males and females scores on the subscale what kind of person are you and their subscores?

MATERIALS AND METHODS

Participants: One hundred and fifty three Iranian undergraduate students in Malaysian Universities (31.4% females and 68.6% males) were recruited as respondents in this study. Their ages ranged from 18-27 years for females (mean = 22.27, SD = 2.62) and 19-27 years for males (mean = 23.28 and SD = 2.43).

Instruments: Creative perception was examined using KTCPI (Khatena-Torrance Creative Perception Inventory) (Palaniappan, 2005). The (KTCPI) instrument comprising of two subscales, namely, Something About Myself (SAM) and What Kind of Person Are You (WKOPAY)? The Table 1 shows the SAM measure of creative perception is based on the rationale that creative behaviour is reflected in the individual's personal characteristics. It tests six factors, namely, Environmental, Sensitivity, Initiative, Intellectuality, Self-strength, Individuality and Artistry.

Palaniappan (2005) the (WKOPAY) also measure of creative perception is based on the rationale that an individual has a psychological self whose structures have incorporated both creative and noncreative ways of behaving. It covers five factors: Acceptance of Authority, Self-confidence, Inquisitiveness, Awareness of others and disciplined imagination. The creative perception score is the total score obtained on What Kind of Person Are You?

Like the Test Your Creativity Level scale, tow subscales were 100 items. The SAM consists of 50 items that require yes or no answers and the WKOPAY be composed of 50 items that need A or B answers. Scoring of responses to this measure presents little difficulty and can be done by simple frequency counts of the positive responses on the total scale. The respondents took their own time to compete the test, but it usually takes 20-30 min (Palaniappan, 2007a). Scoring answers to items is done by counting the number of positive responses, giving a credit of 1 for each positive answer. All blank responses are scored zero. However, the test was translated into Language of Persian. An example of a translated item where the student is required answering Yes or No is: تمایل دارم نظر جدید ارائه نمایم or I like adding to an idea for the SAM and student is required answering A or B for the (WKOPAY) is:

A: به تنهائي كار كردن علاقمندم
a: likes to work alone
B: ترجيح ميدهم كار گروهي انجام دهم
b: Prefers to work in a group

Table 1: Subtest KTCPI

KTCPI	SAM	WKOPAY
SAM	Environmental sensitivity	Acceptance of authority
	Initiative	Self confidence
	Self-strength	Inquisitiveness
WKOPAY	Intellectuality	Awareness of others
	Individuality	Disciplined imagination
	Artistry	

Finally, reliability established in a pilot study. As in study has been good reliability in their assessments of creativity (SAM) was (α = 0.779) and creativity of (WKOPAY) was (α = 0.775).

Procedure: Undergraduate students participated in this study. The research questions posed for the study required identifying and analyzing the distributions and correlations of certain creativity perception were best addressed in the form of a descriptive study. Creativity levels were assessed by self-report instruments were assessed by result of administration office of universities (described below), divided by gender, with total scores and subscales calculated. The samples women (18-27 years) and men (19-27 years) were selected during the regular course time. Written instructions were given and orally for the all participants and the subjects were ready to answer upcoming questions in the class. Multiple significance tests were conducted and data were analyzed by t-test. Participants answered to the tests namely or anonymously (if they would like). Students received no rewards but be given information of result in the form of a self- referenced level of abilities. Scores for creativity scale and its factors, were entered into the SPSS statistical program.

RESULTS

Creative Perception Inventory (CPI): In this instance (Table 2) the females' mean score was not higher than the males. The standard deviations between females and males for creative perception were not also lager, ranging from a low of (38 = females and 36 = males) to a high of (71 = females and 75 = males). Also, Normal P-P Plot graphs (Expected Cumulative Probability by Observed Cumulative Probability) were obtained for creative perception inventory scores is shown in Fig. 1. Independent samples t-test for equality of mean was used to determine whether there was not significant difference between these scores on the basis of gender. Table 2 shows the t-ratios for males and females on creative perception. On this overall score, Iranian males and females did not differ significantly on creativity perception (p = 0.490).

Something About Myself (SAM): Table 3 shows the independent samples t-test for males and females on something about myself and its factors. On this overall score, males and females did not differ significantly on something about myself, but males students differed significantly from females on scores for environmental sensitivity (p = 0.028) and initiative (p = 0.000) but not on the other factor scores of something about myself.

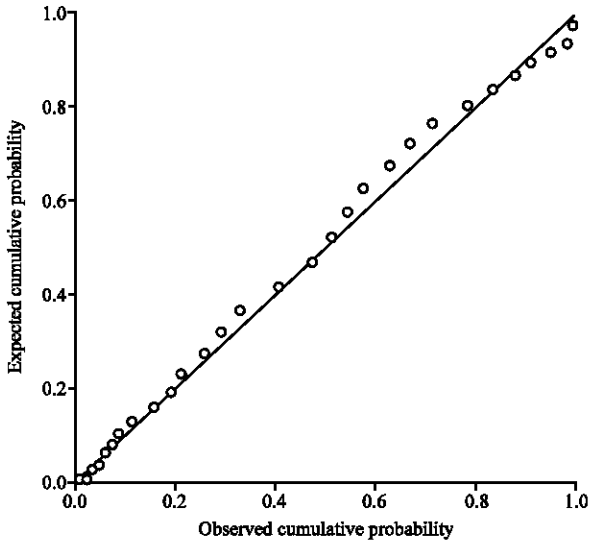

Fig. 1: Normal P-P plot-KTCPI

Table 2: Comparisons of creativity perception inventory

Measure	N	Minimum	Maximum	Mean	SD	t-score*
Male	105	36	75	60.87	7.58	
Female	48	38	71	59.95	7.66	
Total score	153	36	75	60.58	7.59	-0.692

*p<0.05

Table 3: Comparisons of something about my self scores of males and females

Something about my self	Males (n = 105) M	Males (n = 105) SD	Females (n = 48) M	Females (n = 48) SD	t*	Significant (2-tailed)
Total score	31.90	4.36	33.21	4.55	-1.706	0.90
Environmental sensitivity	4.71	1.25	5.10	0.88	-2.216	0.028*
Initiative	2.98	1.61	2.23	0.973	3.566	0.000**
Self-strength	7.10	1.68	7.58	1.47	-1.733	0.085
Intellectuality	6.54	1.65	7.04	1.77	-1.693	0.093
Individuality	3.48	1.30	3.70	1.57	-0.958	0.340
Artistry	2.60	1.50	2.31	1.53	1.091	0.277

*p<0.05, **p<0.001

In this data (Table 3) the females' mean score was greater than the males for something about myself, but the standard deviations between females and males were not higher differences (males = 4.36 and females = 4.55). However, we have different result about its factors scores; the females' mean scores were higher than the males for environmental sensitivity, self-strength, intellectuality and individuality, but females' mean scores were lower than males on scores for Initiative and Artistry. Finally, Normal P-P plot graphs (expected cumulative probability by observed cumulative probability) were obtained for Something About My Self (SAM) scores is shown in Fig. 2.

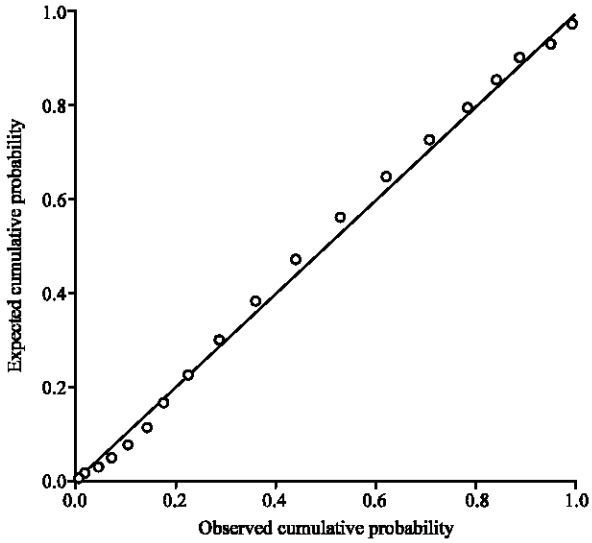

Fig. 2: Normal P-P plot-SAM

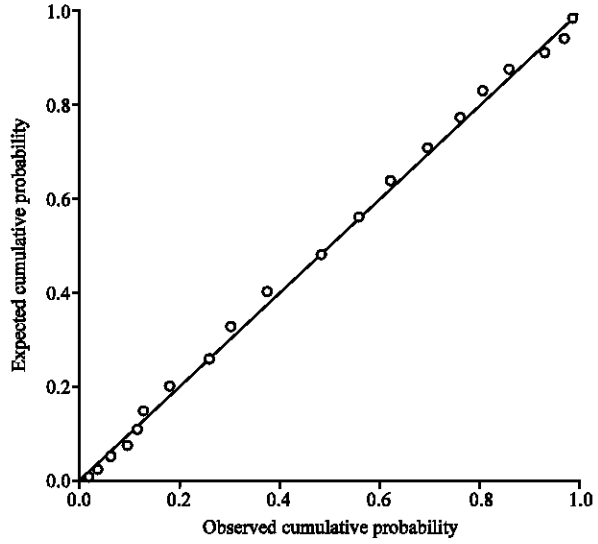

Fig. 3: Normal P-P plot-WKOPAY

What Kind of Person Are You? (WKOPAY): Table 4 shows the independent samples t-test for males and females on scores for what kind of person are you? and its factors. These findings indicate that, there are significant gender differences on the what kind of person are you? ($p = 0.011$), but Iranian males students did not differed significantly from females on scores for on the factor scores the subtest of what kind of person are you. However, we have different result about its factor scores; the males' mean scores were more than the females for the generally as well as the factor scores the subtest of what kind of person are you. Also, Normal P-P plot graphs

Table 4: Comparisons of what kind of person are you scores of males and females

Something about my self	Males (n = 105) M	SD	Females (n = 48) M	SD	t*	Significant (2-tailed)
Total score	28.97	4.80	26.75	5.25	2.578	0.011*
Acceptance of authority	2.30	1.40	2.25	1.60	0.214	0.831
Self confidence	6.15	1.95	5.87	1.72	0.846	0.399
Inquisitiveness	2.79	1.09	2.56	1.341	0.117	0.266
Awareness of others	5.73	1.82	5.65	2.32	0.252	0.801
Disciplined imagination	4.65	1.91	4.46	1.57	0.601	0.549

*p<0.05

(Expected cumulative probability by observed cumulative probability) for this study were obtained for What Kind of Person Are You (WKOPAY) scores is shown in Fig. 3.

DISCUSSION

Findings from this present study demonstrate that there are no gender differences in creativity perception between males and females. This result match and consistent with other studies that also indicated no gender differences in the creativity (Palaniappan, 2000, 2007b). However, other studies showed the opposite results elsewhere (Abra, 1991; Emslie *et al*., 2006; Razumnikova and Bryzgalov, 2006; Vol'f *et al*., 2007).

It was found that although in general there was no gender differences in both of the creativity perception measures; what kind of person are you subtest and something about myself subtest, Palaniappan (1994) reported that boys scored significantly higher than girls on the overall scores of both what kind of person are you as well as something about myself, however in another study indicated that there were no gender differences in the overall measures of these two subscales (Palaniappan, 2000).

In present study there were no significant gender differences on overall the factor scores of both what kind of person are you and something about myself except for environmental sensitivity and Initiative. Males obtained significantly higher scores on Initiative than females, but female achieved significantly higher scores on environmental sensitivity than males. Palaniappan (2000) has supported for generally factor scores (including factor of initiative) with the exception of environmental sensitivity studied in this research (Palaniappan, 2000) stated there is no significance difference on the factor Environmental Sensitivity between boys and girls. In view of the fact that most research on creativity focused on males, little is known about creativity of females (Reis, 2002). Additional studies are required to understand gender differences in creativity across all grade levels.

The findings in this study shade a bit of light on female creativity, in the sense that their creativity is associated with a higher level of environmental sensitivity than the males.

One possible explanation for this lack of overall gender differences is that males and females generally excel in different aspects creativity, beside initiative and environmental sensitivity. In another word, the result the study represents a step toward our understanding gender differences in creative perception. As is the case with most research, this study probably raises more questions than it answers. Future studies might give a better understanding of how gender differences have an effect on interrelationships between factors in creative perceptions.

CONCLUSION

The findings of this study seem to suggest that the existence of gender differences in creative perceptions depends of the measures used to assess creative perceptions. Further research obtained using other instruments to assess creative perception need to be compared and correlated with the results obtained using the KTCPI. Further investigations is needed in order to better understand human perception of creativity and how creativity is manifested in different populations, cultural, age and ethnic groups need to be explored. Finally, replications of the study may shed more light on gender differences on how one perceives oneself as creative and attributes of diverse samples.

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