Personality Traits Orientation of University Kebangsaan Malaysia (UKM) and UKM - University Duisburg-Essen (UDE) Engineering Students

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Abstract

The study aims to investigate the personality trait orientation of engineering students at UKM, alumni and the current students participating in the UKM-UDE double degree program. It is hypothesized that personality trait profile might be different between these respondents due to different academic, social and cultural background the students experienced. A total number of 54 respondents (19 alumni, 12 current students and 23 potential UKM engineering students) participated in the study. The 44 Big Five Inventory (John et al, 1991) was used to assess the personality profile. Data analyzed indicated some significant differences as expected. The current UKM-UDE engineering students were high on Neuroticism than those of UKM engineering students and UKM-UDE alumni. The alumni and current UKM-UDE students scored lower on Extraversion compared to the current local UKM engineering students. Current and the alumni of the UKM-UDE students scored higher on Openness than the current UKM engineering students. Overall findings suggest that environmental and socio-cultural factor play important role in the development of personal characteristics. Implications of the study on the benefits of the student mobility and exchange program were also discussed.

Keywords: personality; UKM; UKM-UDE; Engineering students; multi-cultural;

1. Introduction

Many studies on the experiences and challenges of students living and studying abroad have been conducted especially among international students from developing countries with collectivist cultures in the United States. The
greater the cultural distance between two countries, the greater will be the challenge for the international students to adapt during their sojourn. These studies generally found that these exchanged students, regardless of their majors, reported noticeable changes in their attitude, personal characteristics and perhaps, their life styles. It would be an interesting question to ask – why these changes took place?

2. Conceptual Framework

We conceptualize the new environments with different cultural, religious and physical surroundings acted as the underlying factors that influence the development of personal attributes or personality traits. Among foreign students, these factors were experienced during interaction with local students in lectures, campus activities and also with local public in daily interaction at shops, bus stations and other places. Social Investment Theory proposed by Roberts, Wood and Smith (2005) supports the contention that social environment could mould the psychological growth of individuals including the personality traits. However, the changes could only be traced after sufficient length of duration. This is contrast with quite established postulate that personal characteristics like personality traits, are stable and consistent across time (McCrae & Costa, 1990).

Another possible cause of changes in personality has been associated with changes of goals. Roberts et al. (2005) found that major life goals were associated with the Big Five, in modest, yet theoretically meaningful ways. People who rated economic goals as more important tended to be more extraverted and conscientious and less agreeable and open. Aesthetic goals were exclusively related to openness to experience. Finding social goals more important was related to higher agreeableness, neuroticism, and openness to experience. Relationship goals were associated with higher levels of two interpersonal components of the Big Five - Extraversion and Agreeableness.

In contrast, finding political goals important was related to higher Extraversion, but lower Agreeableness. Similarly, hedonistic goals were associated with higher Extraversion, lower Agreeableness, and higher Openness to Experience. Finally, religious goals were generally not associated with the Big Five. These findings indicate that the importance of major life goals is related in systematic ways to personality traits, but not at a level that would lead one to conclude that traits subsume goals, or vice versa.

With all these ‘new’ environmental factors, students’ personal characteristics who live in other countries of different cultural and climate background are expected to be influenced by these extraneous factors. In addition, they have some new goals to accomplished with the new learning and living environment. Thus, based on these earlier findings, we expect that there could be some differences in personality traits of students participated in the UKM-UDE program (current and alumni) in relation to the local UKM (non-UKM-UDE participants) in our present study.

3. Past Studies On Personality Of Engineering Students

Studying the personality dimension of engineering students is essential from the many perspectives: be it learning, career opportunities or prospects in a global scenario. Some studies were conducted to examine the personality of engineering students. An MBTI, a personality instrument, effectively characterizes differences in the ways engineering students approach learning tasks, respond to different forms of instruction and classroom environments, and formulate career goals (Myers & McCaulley, 1985; McCaulley et al. 1983). For example, it was found that extraverts reacted more positively than introverts when first confronted with the requirement that they work in groups on homework.

Studies using engineering students consistently find that top three personality types in the Engineering field are ISTJ, ESTJ, and INFJ (Godleski, 1984). For example, type ISTJ tend to be: cautious, conservative, and quiet; literal, realistic, and practical; careful and precise; logical, honest, and matter of fact; resistant to change and comfortable with routine; hard working and responsible. The most important thing to ISTJ is being of service, working hard, and being responsible. For example, Lounsbury et al. (2004) studied on a sample of information science professionals and found significant correlations between personality traits and career satisfaction (as well as life satisfaction) for six of the seven personality traits studied (assertiveness, conscientiousness, emotional stability, extraversion, openness, optimism and tough-mindedness).

Although this sample represents only one general occupational group, Lounsbury et al. (2003) found that there was extensive similarity in personality-career satisfaction relationships across diverse occupational groups including the engineering workers. Mastor and Halim (2004) examined personality and cognitive style profiles among
matriculation engineering and information technology students using the Big Five model. They found that prospective engineering students were lower on Openness in comparison with the prospective information technology students. Based on our search, there has been no studies on personality of engineering students or workers, especially, those who had the opportunity to study both, in Germany and Malaysia. It is with this reason, the present study was conducted.

In the present study, we employed another personality model that receives widespread agreement of its universality and usability. The Big Five model is currently the best model for describing the taxonomy of personality traits (McCrae et al., 1996, McCrae et al., 1998). The model has proposed that five basic factors constitute basic structure of human personality: Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C). This assertion has been supported, using different personality questionnaires, self-reports, and peer ratings, factoring procedures and sampling subjects (McCrae & John, 1992). This study aims to examine the personality profile of the engineering students at UKM, current UKM-UDE and the alumni and to examine the association between personality traits and some demographic variables.

4. Methodology

Total samples of the study were 54 respondents (12 current UKM-UDE program and 19 UKM-UDE alumni and 23 non UKM-UDE students). One German student participated in the UDE-UKM also responded to the personality questionnaire (data was not analyzed). They were enrolled in different engineering program in both universities (i.e completed data includes 11 in civil engineering, 7 in computer science engineering, 7 in electrical engineering and 9 in mechanical engineering). Most of the current UKM-UDE students were in the 3rd and 4th year study – they have experienced living in Germany for quite some time. They were involved in a larger scale of study dealing with social and psychological factors for employability among UKM-UDE students/alumni and current UKM students. Sampling was the purposive in such we selected students who were in the UKM-UDE program and those UKM-UDE alumni.

5. Instruments

The Big Five Inventory (BFI) (John et al., 1991) is a self-report inventory designed to measure the Big Five dimensions - Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness. It is quite brief for a multidimensional personality inventory (44 items total), and consists of short phrases with relatively accessible vocabulary. It takes about 10-15 minutes to complete the questionnaire. BFI scale scoring (“R” denotes reverse-scored items) follows the mean scores of each of the domain: Extraversion: 1, 6R, 11, 16, 21R, 26, 31R, 36; Agreeableness: 2R, 7, 12R, 17, 22, 27R, 32, 37R, and 42; Conscientiousness: 3, 8R, 13, 18R, 23R, 28, 33, 38, 43R; Neuroticism: 4, 9R, 14, 19, 24R, 29, 34R, 39; Openness: 5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44.

6. Procedure

We met UKM engineering students at Bangi campus to collect data prior to our departure to UDE, Germany. At UDE, we met all current UKM-UDE students and also few alumni. All respondents were given the Big Five Inventory questionnaire and most of them spent about 10-15 minutes to complete the questionnaire. We also interviewed some of current students and alumni of UKM-UDE to get more information on their experiences being in Germany, specifically at UDE. Mean scores of each domain and sub-domain were computed. Descriptive analysis was performed on demographic variables. Inference statistics (ANOVA) was employed but were cautiously interpreted due to small number of samples

7. Results And Discussion

Fourteen respondents were females, and 17 of them were males (4 respondents did not state their gender). Most of the respondents were born in 1984 and only 2 respondents born in 1981 and 1978 respectively. Mean age is 23.8. By ethnic background, sixteen participants were Chinese and 13 were Malays (5 respondents did not state their ethnicity). Three of the respondents stayed back in Germany to continue their studies upon graduation and another
went to another country to pursue his/her studies. 16 alumni are now currently employed in an engineering related job in Bochum, Germany, Essen, Singapore and Bahrain while the remaining 17 respondents working in Malaysia. Another 5 respondents enrolled in Master level or PhD program at local universities.

Table 1 shows the mean scores comparison between UKM-UDE alumni, UKM-UDE current students and UKM potential students to UDE. Only one domain which is Extraversion that UKM students wishing to study at UDE were higher significantly than the UKM-UDE alumni and UKM-UDE current students (F=3.354, p < 0.05). Also, UKM-UDE current students’ mean scores on Neuroticism were higher than the other two groups although the differences were almost close to significance. These three groups were not significantly different on Agreeableness, Openness and Conscientiousness.

<table>
<thead>
<tr>
<th></th>
<th>UKM-UDE Alumni (N=19)</th>
<th>UKM-UDE current students (N=12)</th>
<th>UKM potential students to UDE (N=23)</th>
<th>F (2, 52)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>2.79 (0.51)</td>
<td>3.08 (0.51)</td>
<td>2.63 (0.57)</td>
<td>2.883</td>
<td>0.065</td>
</tr>
<tr>
<td>Extraversion</td>
<td>3.04 (0.48)</td>
<td>3.25 (0.34)</td>
<td>3.38 (0.38)</td>
<td>3.354</td>
<td>0.043*</td>
</tr>
<tr>
<td>Openness</td>
<td>3.35 (0.36)</td>
<td>3.32 (0.48)</td>
<td>3.43 (0.41)</td>
<td>0.370</td>
<td>0.692</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3.86 (0.43)</td>
<td>3.79 (0.45)</td>
<td>3.87 (0.39)</td>
<td>0.246</td>
<td>0.783</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3.49 (0.47)</td>
<td>3.32 (0.54)</td>
<td>3.53 (0.41)</td>
<td>0.793</td>
<td>0.458</td>
</tr>
</tbody>
</table>

*p<0.05

Figure 1 shows the mean scores of the sub-domain of Neuroticisms. Based on the analysis, it can be seen that the current UKM-UDE students scored the highest mean scores on Neuroticism. The current UKM-UDE students might be tensed, depressed, moody and emotionally not stable probably to their ongoing adaptation and struggle in the new environment at UDE campuses and new life in Germany. One of the participants gave the following remarks – implying the challenges they face as students:

‘Lecture and notes were in German. I did not learn the language properly (only short time). Difficult to find past year exam paper and we did not know types of questions in exam’

‘The difficulties in understanding German languages restrained me to fully understand what I had learnt. So, sometimes I forced myself to just accept and memorize in order to pass the exam’

On the other hand, the UKM-UDE alumni did not score high on Neuroticism since they have gone through all those challenges during their students’ days and currently enjoying life in German or back in Malaysia.
Comparison between samples on Extraversion is shown in Figure 2. There were significant differences between UKM students, UKM-UDE students and alumni on Extraversion. UKM students were more energetic but less assertive and less outgoing and sociable. The findings show that the potential students from UKM to UDE have the highest extraversion traits compared to the UKM-UDE current students and the alumni. The UKM students wishing to study in Germany might be very excited about going to another country with different cultural background. Meanwhile, the alumni scored lower on Extraversion than the others – implying that they might be affected by the individualistic culture of the German people – by being less talkative, for instance.

In Figure 3, UKM-UDE students and alumni were quite similar in their level of Openness. Overall, both UKM-UDE alumni and current UKM students were more open than the current UKM-UDE students. Openness to experience characterizes someone who is open to novel experiences and ideas and who is imaginative, artistically sensitive and intellectual (Barrick & Mount, 1993). Here is one statement by previous UKM-UDE students with regard to that openness:

‘Learning a lot new things especially German technology and study scope’

‘Learn new language, gain new experiences and systems of study, learn how to be independence in study’

This situation might have occurred because in the midst of adapting to the new environment, our UKM-UDE current students were being more cautious, not yet open to new values in the new environment.
Profile of Agreeableness is shown in Figure 4. All three groups do not show any significant differences on the level of Agreeableness. However, at the lower level of analysis, we find that the UKM-UDE students were helpful and unselfish and willing to cooperate. Some values were successfully taken abroad among our students when they study in Germany. Being in a foreign country, UKM-UDE students maintain the warm and helpfulness among themselves and the German students. According to Costa & McCrae (1992), Openness to Actions is seen as behaviorally in the willingness to try different activities, prefer novelty and varieties, which is also among the characteristics of engineering students which were shown here among UKM-UDE students and alumni.

Figure 5 depicts the profile of Conscientiousness among samples. No significant differences were observed – indicating that students of both UKM and UKM-UDE and the alumni were hardworking individuals and all samples were shown to be more reliable and trusted persons. Based on the findings of this research, it can be seen that again the potential students scored higher on this trait than the alumni and current UKM-UDE students. This might have happened because the potential students were really looking forward for this opportunity to study abroad and they are motivated by that factor to work harder and to achieve their goal to go to Germany. On the other hand, the current students at UDE might be experiencing a tough time for them to adjust to many things – causing them a slight drop in conscientiousness scores. Another possible reason could be that the currents at UDE, might be facing some cultural shock which might have caused them to lose their concentration and to have motivation in them to work harder.
Overall findings show that there are differences in personality traits between existing engineering students at UKM, current UKM-UDE students and UKM-UDE alumni. Profiles of the alumni and the current UKM-UDE are better—implying it there seems that some positive effects on personal attributes of the double-degree UKM-UDE program. By exposing students into a different environmental settings, learning process take place, students were ‘geared’ to accomplish many immediate goals during their time in Germany. UKM-UDE students and their alumni reported that they are less susceptible to depression, shyness, and anxious-related situation and less impulsive. It can be seen that the dispositional factors like personality traits were subject to change when sufficient length of exposure is given.

8. Conclusion

The present study brings an important message that international educational program between UKM and UDE has brought a positive impact on the development of personal attributes. Such positive impact could be beneficial to the educational and learning process that one undergoes throughout the exchanged program. Besides being more matured and well-trained, students can have broader opportunity to work in the other countries and in international or transnational engineering companies. Future studies should be conducted to examine the pattern of the changes through longitudinal study design and perhaps with a greater number of samples.

References


