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Frequency Analysis of Personality Development in Malaysian Engineering Students Influenced by German Sojourn

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Abstract

The required personality sets of engineering graduates are always associated with the needs of the working market. These personality sets could be gained and moulded by the engineering graduates based on the academic landscape, curricular activities, and the social environment to which the students are exposed. With the establishment of the double-degree programme between the National University of Malaysia (Universiti Kebangsaan Malaysia, UKM) and the University of Duisburg-Essen (UDE, Germany), there is interest to compare the personality outcome acquired by the UKM students who participated in the double-degree programme (UKM-UDE) to the students who chose to continue their education to completion in UKM. Hence, this study aims to compare both groups of students in a frequency method using the Big Five Inventory (BFI) survey. Graphically analysed BFI data collected from filled questionnaires by the students displays the scores of the parameter “agreeableness” marked by the participants of both groups of samples. The frequency analysis of personality development in the UKM engineering students exhibits an increase in scoring of *extraversion* domain while showing small changes on other domain scores such as *agreeableness*, *openness* and *conscientiousness*. This resulted from the purely UKM study environment (i.e., curricular activities, academic landscape, and social environment). On the other hand, the frequency analysis of personality development in the UKM-UDE students displays an increase in *openness* domain although with slight decrease in the *agreeableness* domain. Such personality development is presumably due to exposure of the international study environment in UDE, Germany. The results from both sets of student samples are compared and discussed.

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1. Introduction

Engineers are members of the community directly responsible for developing and achieving a country's visions. A country's ability to progress significantly depends on the performance of engineering professionals. Thus, how well an engineer should perform is crucial. Given that many nations have drawn closer to be dependent on one another, the ability of an engineer now extends to performing well internationally.

The current market expects engineers to be reliable in working with foreigners, to work as a team, and to communicate and share ideas among others. The traditional method of learning seems insufficient because prospective engineers need to gain basic international communication skills before joining the work force. This demand for ability among engineers has influenced the way engineers are trained in the academe. Educational institutions comply with the market demand by improving and enhancing the current curricula [1].

One of the most common methods in enhancing students with international exposure is the establishment of a double degree programme. The programme is alluring; the participants will benefit international experience with a lesser cost and in shorter period of stay in an international study environment. The National University of Malaysia (Universiti Kebangsaan Malaysia, UKM) and the University of Duisburg-Essen (UDE), Germany established a double degree programme to address the need for such an international exposure. Both well-respected universities from Malaysia and Germany collaborated to provide foreign experience to the undergraduates of both universities [2-3].

In 2003, the first UKM-UDE double degree batch was sent to Germany to complete their study. Aside from the opportunity to learn and to experience life in Germany, both institutions awarded students with a bachelor's degree upon completion. Since then, the number of students who enrolled in the programme has increased, with nine batches of UKM-UDE undergraduates have arrived in Germany and studied in UDE [2-3]. Thus, in 2009, a funded project was awarded to investigate the influence of the programme on the participants [2-3].

A total of 112 students have flown to Germany through the UKM-UDE programme (as of October 2012). The students who enrol with the programme are from the mechanical, civil and electrical engineering disciplines. The double degree programme involves a learning experience in Germany for about 18 months. The UKM-UDE has made the learning of basic German language necessary for all undergraduates of the double degree programme. Participation in language class helps in the coping process when studying in Germany starts.

However, despite the preparation provided for the UKM-UDE students to weather the UDE learning environment, there is a concern that the challenges in Germany may be too overwhelming. Narjes Mehdizadeh and Gill Scott highlighted this concern in a study of personality adjustment of a group of Iranian students in Scotland. They found that the sojourners living in a leaning environment that has great cultural differences might cause the manifestation of high level of anxiety and nervousness [4]. Similarly, there is interest to understand how the UKM students are affected by their sojourn in Germany. There has never been a study conducted in a longitudinal manner in order to investigate the influence of the UKM-UDE double degree programme since its first operation in 2003. Therefore, to address this concern, this research intends to investigate the influence of the German learning settings towards the UKM-UDE double degree students. The frequency analysis is applied on data collection for both longitudinal and cross-sectional analysis of the students.

2. Samples

The present study considers two samples of third-year engineering students batch of year 2009/2010. The samples are UKM-Bangi students ($n = 264$) and UKM-UDE students ($n = 24$). The UKM-Bangi students assume their role as full time students in UKM until they complete their studies, whereas the UKM-UDE students

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