

Personality Traits of Students of Helping and Non-Helping Professions: Case-Based Reasoning Approach

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ABSTRACT

Personality traits are very important in choosing future profession because most professions require certain skills that are related to certain personality traits. The aim of our research was to determine which personality traits contribute the most to the distinction between the students of different professions, e.g. helping and non-helping professions. On a sample of 356 students, of which 216 study helping professions, Big Five Plus Two (BF+2) personality inventory was applied. For obtained data, the classification accuracies were tested with different combinations of 184 items and 18 subtraits of the BF+2 using Case based reasoning classifier. Results showed that the best accuracy had the set of all 18 subtraits and this set outperformed the classification of every combination of subtraits or items.

KEYWORDS

Case-Based Reasoning, Classification, Helping and Non-Helping Professions, Personality Traits

INTRODUCTION

Personality traits are very important when choosing one's future profession. Previously studies showed that personality traits are significant correlates of career maturity (Coertse & Schepers, 2004) as of career decision-making (Somayeh, Abdolhamid, & Gholamreza, 2012).

In order to be successfully, most professions require certain skills that are related to certain personality traits. This means that success in a given profession depends on the compatibility of personality traits of worker and requirements of the profession itself. If there is an adequate synergy between the two, professional objectives can be achieved more easily and with greater success. Furthermore, individuals are more satisfied and perform better when engaged in occupations that match their interests (*Carpenter, Bauer, & Erdogan, 2010*).

The importance of personality traits is perhaps most prominent in helping professions, i.e. those professions that entail working with people, primarily for the purpose of providing assistance, support and encouragement of various aspects of others' welfare. In this study, we want to test differences in personality traits between helping and non-helping professions.

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The aim of this study is to empirically check, in what extent the personality traits and subtraits contribute to the differences between professions. We will use data from personality inventory which was performed on 356 students from the University of Novi Sad. With such data, the classification accuracies were tested with different combinations of items and subtraits. Case based reasoning classifier is used, since this methodology is appropriate for domains where the dependencies between parameters are not known in advance. Additionally, several feature-selection methods are applied in order to select an optimal subset of items/subtraits.

The rest of the paper is organized as follows. Next section brings description of some related works. The main aim of this study is briefly presented in section 3. Section 4 is devoted to the methodology and experimental setup including used data set and instrument. Achieved results are discussed in section 5. Last section brings final conclusions.

RELATED WORK

As we mentioned, the purpose of this study is to determine difference in personality traits between helping and non-helping professions. Previous studies (Hussain, Abbas, Shahzad, & Bukhari, 2012; Zášková, 2010; Zvenko, 2013) have shown that those who work in helping professions show characteristics that are desirable in social communication, such as kindness and generosity in negotiations, but also altruism, empathy, trustworthiness and care for other peoples' needs. In addition to these characteristics, also important but to a lesser extent are characteristics related to attitude towards work, such as organization, persistence, goal-oriented behavior, inclination towards risk avoidance, and control of undesirable behaviours. In dominant personality trait models such as Five Factor Model and Big Five, these and other similar characteristics capture the agreeableness and consciousness traits. For the remaining three traits of the model (neuroticism, extraversion and openness), there is no agreement whether they contribute to a distinction between helping and non-helping professions. The characteristics that are part of these personality traits pertain to the tendency towards negative or positive emotions and affects, emotional stability, activity and intellectual curiosity (Goldberg, 1990, 1993).

From the standpoint of other personality model, such is Holland Personality Theory of Career Choice, results showed that there is significant relationship between personality types and career choice of students (Kimongo Kemboi, Kindiki, & Misigo, 2016). Moreover, there is congruency between investigative personality type and investigative career choice (which could be related to non-helping professions), as between social personality type and social career choice (which could be related to helping professions).

There is one interesting approach which was proposed by Martínez, Castro, Licea, Rodríguez-Díaz, and Salas (2013). Instead of dimensional approach, authors proposed person-centered approach by using Fuzzy Subtractive Clustering to define Big Five clusters on engineering students i.e. non-helping professions. In comparison to some other methods, like adaptive neuro-fuzzy inference system, proposed clustering method gave better insight into relationship between personality traits and choosing a career. Authors conclude that based on this method, students have better opportunity to choose a career and match their personality type with it.

However, it can be assumed that a better insight into the differences between helping and non-helping professions could be achieved through analysis of specific personality traits, so-called subtraits, that are, in fact, part of the basic personality traits. Therefore, this study is focused in that direction, aimed to explore on which hierarchical level of personality the prediction of helping or non-helping professions is better.

Besides that, we can emphasise and conclude that majority of authors in this area usually uses standard statistical methods and rarely tries to apply some of wide range of artificial intelligence (AI) techniques to process data sets. AI methods generally can obtain more reliable and more quality processing data and accordingly higher quality results. In this study, we use Case-Based Reasoning -

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