

## EPP0923

# Personality risk factors in assessing the reliability of the performance of operating personnel

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**Introduction:** The development of complex human-machine systems has led to greater demands on operators' skills, and has increased the importance of human error (Pribytkova et al, 2012; Vondráčková et al, 2017; Jian Ai Yeow, 2014). For this reason performance reliability, defined as operators' capacity to conduct essential work processes in a high-quality and timely manner (Bodrov, Orlov, 1998) has become a topical subject.

**Objectives:** This study concerns an investigation of subjective predictors of operators' reliability, namely personality risk factors (supported by the RFBR #19-013-00799).

**Methods:** Subjects: 67 operators and 69 engineers at a hydro-power station. Personality traits were assessed using Sobchik's verbatim Russian translation of the MMPI (Sobchik, 1990). Performance reliability was assessed using simple and complex sensorimotor reaction tests as standard procedures for the pre-shift assessment of operators.

**Results:** In the operators' group significant correlations (Spearman's test) were found between the level of quality of complex sensorimotor reactions and the level of such personal traits as impulsiveness and individualism: a higher manifestation of these traits was associated with a higher level of mistakes in conducting the pre-shift psychophysiological test ( $p < 0.05$ ). With the engineers there was a significant link between the higher speed of simple sensorimotor reactions and higher optimism scores.

**Conclusions:** The results suggest that a tendency to behave spontaneously, and orientation to one's own needs, could be risk factors in terms of operator reliability. They also reveal the specifics of reliability predictors in different professions at the power plant.

**Keywords:** human factor error; performance; personality traits; operator's reliability

## EPP0922

# The portuguese version of the big three perfectionism scale – further validation with adults from the general population

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**Introduction:** Both original Big Three Perfectionism Scale (BTPS; Smith et al. 2016), and the Portuguese version validated with a

sample of university students (Lino et al. 2018) evaluates three second-order factors (rigid, self-oriented and narcissistic perfectionism) and ten facets.

**Objectives:** To confirm the BTPS three-factors-ten-dimensions' structure in a sample of Portuguese adults from the general population.

**Methods:** A sample of 467 adults (70.7% females; Mean age=38.44±12.27; range: 25-82) answered the BTPS Portuguese version and other validated perfectionism measures (Multidimensional Perfectionism Scales from Frost and Hewitt & Flett; Self-Presentation Perfectionism Scale). To study the temporal stability a sub-sample of 132 participants completed the BTPS again after approximately five weeks. SPSS and AMOS software was used.

**Results:** The second order model presented an acceptable fit ( $X^2/df=3.115$ ; TLI=.811; CFI=.825; RMSEA=.067). There was also evidence of a general factor comprising all the 45 items ( $X^2/df=3.127$ ; TLI=.809; CFI=.823; [JA1] RMSEA=.068). The Cronbach alphas of the three factors ranged from  $\alpha=.88$  to  $\alpha=.92$ ; and facets had  $\alpha>.70$  showing a total of  $\alpha=.94$ . Total and dimensional scores showed significant positive and moderate to high correlations with the other perfectionism measures and their test-retest correlation coefficients were  $r=.85$  ( $p<0.001$ ).

**Conclusions:** This study confirms the validity and reliability of the Portuguese BTPS underlying three-factors structure. Additionally, we found, for the first time, that BTPS can also be validly and reliably used to measure a global perfectionism construct. It is our intention to develop a shorter version the Portuguese BTPS in the near future.

**Keywords:** adults; BTPS; Perfectionism; confirmatory factor analysis

## EPP0923

# Big five personality traits prediction with AI

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**Introduction:** Openness, conscientiousness, extroversion, agreeableness and neuroticism are known as the Big Five personality traits (BFPT). They are theoretical building blocks of the personality and comprise wide and interconnected spectra. Artificial intelligence (AI) could help to grasp their complexity.

**Objectives:** To investigate whether AI could predict the BFPT from themselves.

**Methods:** Data from 2,697 questionnaires were analysed using an AI. The short form of the International Personality Item Pool was used to assess the BFPT. Four of the BFPT scores were employed to predict the fifth one and the procedure was repeated for all of them alternatively. The AI was conservatively tuned to maximize the one-way random intraclass correlation coefficient (ICC) between predicted and real values. Their Pearson's  $r$  was calculated too. The free and open source programming language R was used for all the analyses. Dataset source: Hansson, Isabelle; Berg, Anne Ingeborg; Thorvaldsson, Valgeir (2018), "Can personality predict longitudinal study attrition? Evidence from a population-based sample of older adults", Mendeley Data, V1, doi: 10.17632/g3jx8zt2t9.1

**Results:** Openness, conscientiousness, extroversion, agreeableness and neuroticism predictions obtained ICC of 0.219, 0.146, 0.306, 0.354, 0.121 and Pearson's  $r$  of 0.254, 0.149, 0.393, 0.446, 0.122 respectively. The results for extroversion and agreeableness were indicative of fair performance.

**Conclusions:** AI might be useful to predict personality traits, mainly extroversion and agreeableness. This could be utile in many situations, such as dealing with missing data or deciding whether to formally test someone. Finally, the AI used in this study is freely available, allowing anyone to experiment.

**Keywords:** traits; psychometry; Artificial Intelligence; Personality

## EPP0924

### Specifics of professional deformations of personality in military personnel

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**Introduction:** Work experience develops not only professional skills, but also affects people's personal characteristics. A long period of intensive work usually promotes the development of professional deformations. Prolonged exposure in stressful conditions is a risk factor for developing professional deformations. Military service is intense and stressful. Armed forces personnel work is related to unquestioning execution of orders and extreme working conditions (Kozlova, 2013). These risk factors may cause professional deformations of personality. The study was supported by the RFBR #19-013-00799 A.

**Objectives:** Influence of working activity on professional deformations development in military personnel.

**Methods:** The research involved 708 participants, the sample consisted only of men. Average age 20.3 years (min – 18, max – 32). They fulfilled 2 standardized questionnaires: Managerial stress survey — MSS (Leonova, 2007), The Sixteen Personality Factor Questionnaire (ed. Kapustina, 2001).

**Results:** Based on the findings the following outcome can be seen: the high scores of the Acute stress ( $M=45.7$ ;  $SD=5.2$ ), medium level of Chronic stress ( $M=43.6$ ;  $SD=6.5$ ), and Professional deformations ( $M=43.4$ ;  $SD=7.1$ ). In particular it turned out that burnout syndrome ( $M=46.1$ ;  $SD=6.9$ ), neurotic reactions ( $M=45.4$ ;  $SD=7.0$ ) and behavioral risk factors ( $M=46.7$ ;  $SD=8.7$ ) are high.

**Conclusions:** In that way, we can assume that Professional deformations aren't developed by military personnel in our research. That point of view confirms on Acute and Chronic stress level. Despite the fact that there are some behavioral risk factors. That can cause a reduction of work efficiency and a decline in the health level of military personnel.

**Keywords:** Professional Deformations; Military Personnel; Chronic Stress; Burnout Syndrome

## EPP0925

### Personality traits among the staff of moroccan call centers

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**Introduction:** The aim of this research is to study the five major personality traits in a sample of call center employees in the Rabat-Salé-Kénitra Region, Morocco.

**Objectives:** Demonstrate the domination of certain personality dimensions over others in this population.

**Methods:** This is a cross-sectional epidemiological study that involved 121 individuals, including 59 men and 62 women with an average age of  $31.74 \pm 7.93$ . The personality traits were assessed using the Big Five test.

**Results:** The results show that, (63.64%) of our sample has a more dominant extraversion pole, while (36.36%) of the participants have a more dominant introversion pole. (66.12%) of our study subjects have a dominance of agreeableness dimension, while for (33.88%) of the sample the disagreeableness dimension dominates. Almost parity is observed between those in our sample who have a dominance of the conscientiousness pole (50.41%), and those who have a dominance of the impulsivity pole (49.59%). 74.38% of the participants have a dominance of the neuroticism pole, while (25.62%) have a dominance of the emotional stability pole. (57.02%) has a dominance of the openness pole, while (42.98%) have a dominance of the closedness pole.

**Conclusions:** This study sample is characterized to a large extent by extraversion and agreeableness; moreover this study has shed light on the dominance of the neuroticism trait in this kind of population. However, considering this study concerned only one region, it would be interesting to widen the geography of the survey to acquire more exhaustive results.

**Keywords:** Personality; Call centers; employees; morocco

## EPP0927

### Deviations of personality development in children from families of different social status

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**Introduction:** Methodological foundations of Lev Vygotsky's school enable to reveal the mechanisms shaping personality disorders and to explore the process of disorder formation. The genesis of symptoms is examined in the context of the social situation of child's development and historical environment.

**Objectives:** 2 groups of children (aged 5,5-7): (1) upper middle class, from prestigious development center ( $n = 31$ ); (2) lower middle class, from social assistance center ( $n = 35$ ).

**Methods:** The following methods were used: CAT (Bellak); objective description of the cultural and social context of the child's development; long-term observation.

**Results:** 1) Deviations of personal development in children from the first group are expressed in individualism and related