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Influence of Individual Characteristics on Work Engagement and Job Stress in a Sample of National and Foreign Workers in Switzerland

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Abstract. In most Western postindustrial societies today, the population is aging, businesses are faced with global integration, and important migration flows are taking place. Increasingly work organizations are hiring crossnational and multicultural workteams. In this situation it is important to understand the influence of certain individual and cultural characteristics on the process of professional integration. The present study explores the links between personality traits, demographic characteristics (age, sex, education, income, and nationality), work engagement, and job stress. The sample consisted of 618 persons, including 394 Swiss workers (200 women, 194 men) and 224 foreigners living and working in Switzerland (117 women, 107 men). Each participant completed the NEO-FFI, the UWES, and the GWSS questionnaires. Our results show an interaction between age and nationality with respect to work engagement and general job stress. The levels of work engagement and job stress appear to increase with age among national workers, whereas they decrease among foreign workers. In addition, work engagement was negatively associated with Neuroticism and positively associated with the other four personality dimensions. Finally, job stress was positively associated with Neuroticism and Conscientiousness, and negatively associated with Extraversion. However, the strength of these relationships appeared to vary according to the worker's nationality, age, sex, education, and income.

Keywords: nationality, personality, work engagement, job stress

The structure of the labor market in many Western postindustrial societies has recently changed drastically, mainly because of two important phenomena: the overall aging of the population and economic globalization. The first phenomenon, caused mainly by a decrease in the birth rate following the baby-boom generation (Mermin, Johnson, & Murphy, 2007), resulted in a shortage of young workers, leading many organizations to extend their workforce recruitment efforts to beyond national borders. Moreover, economic globalization led to the progressive opening of geographical borders, which in turn facilitated work-related migration and increased the overall percentage of foreign workers integrated into national labor markets. This is particularly the case in Switzerland, where 1,869,969 non-Swiss inhabitants live in the country and represent 23.26% of the total population (8,039,060 people). Switzerland was one of the first countries in Europe to experience such significant immigration. As to the workforce, a total of 4,818,406 people were employed in Switzerland in 2013, 3,417,360 of whom were Swiss nationals and 1,401,045 of whom were foreigners (Swiss Federal Statistical Office, 2013). Given these major changes in the labor market, many companies nowadays employ crossnational and multicultural workteams. On an individual level, migrant workers invest considerable psychological effort into reconciling the culture and values of the host environment with their own cultural identity and values. Migrant workers not only have to cope with general work demands, but also need to adapt to a new cultural setting, which can lead to "acculturative stress" (Berry, 1997, 2008; Oberg, 1960). On the other hand, sociocultural adaptation and work engagement can also be considered positive outcomes of the acculturation process (Berry, 2005; Berry, Phinney, Sam, & Vedder, 2006). We thus believe that it is necessary to

incorporate the role of the culture-driven differences and specificities in the study of individual reactions to job demands. To our knowledge, however, very few studies have explored the topic of professional integration and adjustment in a multicultural context (Allik, Massoudi, Realo, & Rossier, 2012; van der Zee, van Oudenhoven, & de Grijs, 2004). In a study focusing on the relationship between psychosocial working conditions and well-being, Hoppe (2011) found that migrant workers reported more social stressors in the work environment than did their German coworkers, whereas the reported number of task-related stressors was similar in both groups. In terms of resources, this study also found that job control served as a resource only among German workers, whereas supervisor and coworker support were more important for immigrant workers. Another study comparing migrant and native workers in Great Britain showed that a higher level of job control was associated with lower levels of job distress among natives, but not among immigrant workers (Wadsworth et al., 2007). Another study showed that high psychosocial job demands were not linked with reduced well-being among Latino immigrant workers in the United States (Grzywacz, Quandt, & Arcury, 2008). According to Berry (1997), it is plausible that the motivation that drives immigrant workers to leave their country of origin, the expectations of work possibilities, and the political and economic situation in the society of origin are all factors that may influence the transactional stress process. However, additional factors may come into play in the work adaptation process that have not received enough attention in the literature. Therefore, this research focuses on the influence of individual characteristics on work engagement and job stress in a sample of national and foreign workers in Switzerland in order to determine the potential impact of nationality and cultural background on health and well-being in the workplace.

An important individual characteristic is certainly personality, which can be described in terms of personality traits. Current personality models propose that five supertraits, commonly known as the Big Five, are sufficient to provide a parsimonious and comprehensive description of personality (Rossier, Meyer de Stadelhofen, & Berthoud, 2004). Based on the multidimensional and dynamic five-factor model (FFM) and the theory of personality (Costa & McCrae, 1992), these super-traits are fundamentally independent dimensions: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Moreover, various personality theorists highlight the importance of the stability and continuity of personality over time, across situations, and across cultures (McCrae & Costa, 1987; Pervin, & John, 1997). To date, the use of the FFM has led to robust findings in the study of personality and its relationship to work stress and the coping process (Costa & McCrae, 1992). For example, a study conducted by Massoudi (2009) showed that Conscientiousness may be considered a protective factor, predicting high work engagement and satisfaction and low levels of perceived stress and functional coping strategies.

Commonly used as a positive indicator of professional commitment, work engagement is a multidimensional construct defined as a positive, fulfilling work-related state of mind that is characterized by the level of energy, dedication, and absorption individuals invest in their work (Rothmann, Steyn, & Mostert, 2005; Schaufeli, Salanova, Gonzàles-Romà, & Bakker, 2002). People who are highly engaged in their work personally identify with their job and show a high level of intrinsic motivation. These people tend to work hard, feel devoted to their job, and appreciate being absorbed in their professional tasks, as defined by the three dimensions of work engagement: vigor, devotion, and absorption, respectively. This construct is derived from the positive psychology approach, which focuses on the study of positive subjective experiences, positive individual traits, quality of life, and the absence of illnesses when life seems meaningless (Seligman & Csikszentmihalyi, 2000). Along with its positive impact on individual health and subjective well-being, work engagement is also significantly related to several positive outcomes at the organizational level, such as improvement in customer satisfaction, profit, productivity, turnover rate, and safety record (Harter, Schmidt, & Hayes, 2002).

While *work engagement* is defined as positive energy and concentration that an individual puts into work, job stress represents the negative outcomes resulting from work overload. *Job stress* can be defined as psychological and physical strain that appears when a mismatch is experienced between work demands and resources (Ganster & Schaubroeck, 1991; Lazarus, 1993). More specifically, *psychological stress* can be defined as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 19). The consequences of stress include symptoms of poor health and various other nonspecific illnesses (Ganster & Schaubroek, 1991; van der Zee, van Oudenhoven, & de Grijs, 2004).

According to the literature, personality traits can influence a person's level of engagement and perception of stress at work (Györkös, Becker, Massoudi, de Bruin & Rossier, 2012; Massoudi, 2009; Rossier, Zecca, Stauffer, Maggiori & Dauwalder, 2012). Generally, Extraversion has a positive impact on work engagement, whereas Neuroticism, which is positively associated with psychological distress and negatively associated with health outcomes, can have a negative influence on commitment to one's job (Bakker, 2011). In addition, among a sample of managers in Australia, Grant and Langan-Fox (2007) found that high Neuroticism was associated with increased strain, while high Extraversion and Conscientiousness were associated with reduced strain. Williamson, Pemberton, and Lounsbury (2005) found that high levels of Conscientiousness and low levels of Neuroticism contribute to job satisfaction. Neuroticism shows the strongest links with stress (Bowling & Eschleman, 2010). In particular, high scores in Neuroticism in adults can be

viewed as the result of a chronic exposure to stress and are generally associated with greater physical and emotional reactivity toward stress (Connor-Smith & Flachsbart, 2007). In their meta-analysis on the relationship between personality and coping, Connor-Smith and Flachsbart (2007) found that Extraversion and Conscientiousness predicted higher levels of problem-solving and cognitive restructuring, while Neuroticism predicted problematic strategies such as wishful thinking, withdrawal, and emotion-focused coping. Lazarus (1991) argued that emotional reactions to stressful situations depend on an individual's tendency to appraise the situation as challenging or threatening. Personality, in turn, has an impact on the subjective appraisal of stressful situations and subsequent affective reactions (Lazarus, 1993). This demonstrates that high negative affectivity increases people's perception of job stressors as being worse, which in turn has a negative impact on well-being (Oliver, Mansell, & Jose, 2010). A few differences have been found between sex or age and attitudes toward stress and work engagement: Women often report being exposed to more types of job stress than men do. Some studies have shown that women exhibit more symptoms of psychological distress in terms of depression and anxiety, while men are more frequently diagnosed with behavioral and personality disorders. These gender differences have also been observed across cultures (Tanaka-Matsumi & Draguns, 1997). Moreover, according to the meta-analysis of Kling, Hyde, Showers, and Buswell (1999), women report lower self-esteem, which seems to reflect a weaker professional effectiveness perception.

In our study, we explored the links between personality features, demographic characteristics (age, sex, income, education, and nationality), work engagement, and job stress in a sample of national and foreign Swiss workers. Given that part of our sample of foreigners had moved to Switzerland in order to work and therefore had to adjust to a new culture, we expected them to be more engaged and stressed at work. In this context, the question is whether age may also have an impact. Concerning the influence of personality, we expect to find a negative link between work engagement and Neuroticism, and positive associations with Openness, Extraversion, Agreeableness, and Conscientiousness. However, we expect job stress to be positively related to Neuroticism and negatively related to the four other personality dimensions.

Method

Participants

The sample consisted of 618 participants including 394 Swiss nationals (63.75% of the total sample; 200 women and 194 men) and 224 foreigners living and working in Switzerland (36.25% of the total sample; 117 women and 107 men). Among the foreigners, 86.60% were from a European country (n = 194), 4.46% from an African country (n = 10), 3.11% from Latin America (n = 6), 2.67% from North America (n = 5), and 1.33% from Asia (n = 3). Among the foreigners, 132 participants (58.92%; 60 women and 72 men) had a permanent residence permit (Type C), 68 participants (30.36%; 37 women and 31 men) had an initial residence permit (Type B), 20 participants resided in France (8.93%; 8 women and 12 men) and had a cross-border commuter permit (Type G), and 4 women (1.79%) had a short-term permit (Type L). Thus, the majority of migrant workers who participated in this study were long-term or permanent residents of Switzerland. On average, the migrant workers (mean age 38.58 years, SD = 11.62) were slightly younger than the Swiss nationals (40.83 years, SD = 13.52). We divided our sample into three age-group categories (18–29 years, 30–49 years, and 50–65 years) of approximately equal size. The first category (18–29 years) included young workers entering the work force (32.36%, n = 200; 132 Swiss and 68 non-Swiss). The second category (30–49 years) included workers who were in the middle of their careers and potentially in a stability phase (35.28%, n = 218; 114 Swiss and 104 non-Swiss). The third category (50–65 years) included workers approaching retirement and in a maintenance phase (Super, 1999) (32.36%, n = 200; 148 Swiss and 52 non-Swiss). As to education level, 47.72% of the Swiss workers had completed vocational training, 21.96% secondary school (equivalent to high school), and 30.32% had university degrees, while 39.46% of the foreigners had completed an obligatory school level, 15.24% secondary school, and 45.30% had university degrees. As to income, 70.21% of the Swiss workers and 76.76% of the migrant workers earned less than CHF 60,000 per year, 14.03% of the Swiss workers and 12.77% of the migrant workers earned from CHF 61,000 to 120,000 per year, and 15.76% of the Swiss workers and 10.47% of the non-Swiss workers earned over CHF 120,000 per year.

Measures

The NEO Five-Factor Inventory Revised (McCrae & Costa, 2004)

The French version of the NEO Five-Factor Inventory Revised (NEO-FFI-R) is a short version of the Revised NEO Personality Inventory and measures the five main personality dimensions of the Five-Factor Model: Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C). The respondents are asked to respond to 60 items using a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Previous internal reliability coefficients reported for the French version of the NEO-FFI-R ranged from .70 to .83 for the five subscales *(Mdn* = .76; see Aluja, García, Rossier, & García, 2005).

The Utrecht Work Engagement Scale-Short Form

The 9-item version of the Utrecht Work Engagement Scale (UWES-9; Schaufeli, Salanova, Gonzàles-Romà, & Bakker, 2002) is a self-rating questionnaire assessing general work engagement. It consists of three dimensions, each composed of three items: vigor, dedication, and absorption. *Vigor* is characterized by high levels of energy, mental resiliency during work, the willingness to invest effort into one's work, and persistence when difficulties are encountered. *Dedication* is defined as strong involvement in one's work and experiencing a sense of significance and enthusiasm throughout. *Absorption* represents a state of concentration and positive involvement experienced at work. The items are scored using a 7-point frequency scale ranging from *never* (0) to *always* (6). The reliability coefficient of the total score exceeds .85, whereas the reliability coefficients of the dimensions exceed .70 (Schaufeli, Bakker, & Salanova, 2006). The previously observed α coefficient of the total score was .93 for the French version, with values of .80 or higher for the three dimensions (Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012).

General Work Stress Scale

The general work stress scale (GWSS; De Bruin & Taylor, 2005) is a self-rating questionnaire composed of 9 items that assess the individual's subjective experience of work-related stress. These items correspond to emotional, cognitive, motivational, and social consequences of work-related demands. Items are scored using a 5-point Likert scale, ranging from *never* (1) to *always* (5). High scores for the GWSS correspond to a high level of perceived work stress. The reliability of the instrument previously reported is satisfactory, with an alpha coefficient of .88 (De Bruin, 2006).

Procedure

The subjects were recruited in the community through journal announcements and with the help of bachelor-level psychology students enrolled in a seminar. All participants completed the NEO-FFI-R, the UWES-9, the GWSS, and provided general demographic information. The research complies with the ethics rules of the Swiss Society for Psychology (SSP).

Statistical Analysis

The data were analyzed using SPSS, Version 21, and R (R Development Core Team, 2009). Table 1 gives the descriptive statistics for the foreigners and the Swiss nationals. We also calculated the effect sizes (Cohen, 1988). To analyze the overall effects of age and nationality on work engagement and job stress, a MANOVA (Roy's greatest root criterion; Roy, 1957) was conducted. Then we examined the main effects of age and nationality and their interaction on engagement using ANOVAs. Because the interactions were significant, we also tested the main effects according to three age categories taking multiple comparisons into account (Tukey contrasts). Simultaneous tests for general linear hypotheses were used. Similarly, we computed ANOVAs to examine the main effect and the interactions for each scale of work engagement (dedication, absorption, and vigor). We proceeded in the same manner with the GWSS scale data. In order to determine the links between personality features, demographic characteristics (age, sex, and nationality), work engagement, and job stress, we calculated the point-biserial correlations. Finally, the interactions between personality dimensions and demographic variables on work engagement and job stress outcomes were assessed through hierarchical multiple regressions.

Table 1
Demographics and descriptive statistics

	Foreigners (n = 224)		Nationals (n = 394)			
	Mean	*SD*	*Mean*	*SD*	*d*	α
Age	38.58	11.63	40.83	13.52	0.18	
Neuroticism	34.43	4.54	33.51	4.33	–0.21*	.83
Extraversion	41.12	4.00	41.19	4.20	0.00	.75
Openness	37.33	3.62	37.61	3.48	0.07	.72
Agreeableness	33.83	4.43	33.80	4.43	–0.01	.68
Conscientiousness	40.66	3.75	40.27	3.40	–0.11	.82
Work stress	19.41	5.96	18.82	6.07	–0.11	.88
Work engagement	36.26	11.59	38.10	8.69	0.21*	.93
Vigor	11.94	3.64	12.38	3.07	0.14	.81
Dedication	12.48	4.67	13.19	3.58	0.20*	.90
Absorption	11.84	4.22	12.53	3.16	0.20*	.83

Note. *p < .05, **p < .01, ***p < .001.

Results

Age, Personality Dimensions, Work Engagement, and Job Stress According to Nationality

The participants' nationality (Swiss versus non-Swiss) had an impact on the level of work engagement, $t(361) = 2.28$, $p = .02$, $d = 0.21$ (using the Welch test, given that the assumption of homogeneity of variance was not satisfied), which was associated with a small effect size. Nationality had an effect only on two dimensions of work engagement: dedication and absorption, whereas nationality did not have a significant influence on level of job stress. Of the five personality dimensions, only Neuroticism differentiated the two groups of participants. Moreover, the foreigners were slightly younger than the Swiss nationals (see Table 1).

A MANOVA (Roy's greatest root; Roy, 1957) revealed a clear interaction between age and nationality on the total score of work engagement and the job the stress score, $F(2, 612) = 9.70$, $p < .001$. Age was not significant, $F(2, 612) = 1.60$, $p = .19$. In contrast, we found a weak effect for nationality, $F(2, 612) = 2.50$, $p = .08$. Separate univariate ANOVAs on the outcome variables also revealed significant effects on engagement, $F(2, 612) = 3.68$, $p = .03$, $\eta^2 = .01$. We calculated the effects of nationality for each age group and only found a significant effect of nationality for the oldest age group (50–65 years). In this age group, foreign workers reported a lower level of engagement than did nationals workers, $t(198) = 3.16$, $p < .001$, $d = .021$. We did not find a significant effect of nationality in the two younger age groups: neither for the 18- to 29-year-olds, $t(198) = –0.79$, $p = .45$, $d = 0.06$, nor for the 30- to 49-year-olds, $t(216) = 1.56$, $p = .12$, $d = 0.09$. As for work engagement, the following interactions were significant: for dedication, $F(2, 612) = 3.69$, $p = .02$, $\eta^2 = .01$, for absorption, $F(2, 612) = 3.28$, $p = .03$, $\eta^2 = .01$, and for vigor, $F(2, 612) = 3.68$, $p = .02$, $\eta^2 = .01$. Overall, the level of work engagement tended to increase with age in the Swiss group, whereas the migrant group showed the opposite pattern (see Figure 1).

There was also an interaction between age and nationality on work stress, $F(2, 612) = 2.96$, $p = .05$, $\eta^2 = .01$. The main effect of nationality calculated for each age group only revealed a significant difference for the first age group (18 to 29 years), in which migrant workers reported a higher level of job stress than national workers did, $t(198) = –2.28$, $p = .02$, $d = 0.19$. No significant effect of nationality was found for the two remaining age groups: neither for the 30- to 49-year-olds, $t(216) = –0.83$, $p = .41$, $d = 0.07$, nor for the 50- to 65-year-olds, $t(198) = 1.22$, $p = .22$, $d = 0.09$. These results converge with the interaction observed previously between nationality and age on work engagement, that is, stress perceived at work tends to decrease with age for migrants and increase with age for Swiss nationals (see Figure 1).

Neither sex nor age had an impact on the level of work engagement or job stress (see Table 2). Moreover, no significant interactions between sex and age or between sex and nationality on work engagement or job stress were observed.

Personality Traits, Work Engagement, and Work Stress

The respondents' nationality had a small impact on their Neuroticism scores, $t(612) = –2.46$, $p = .01$, $d = –0.21$. Ta-

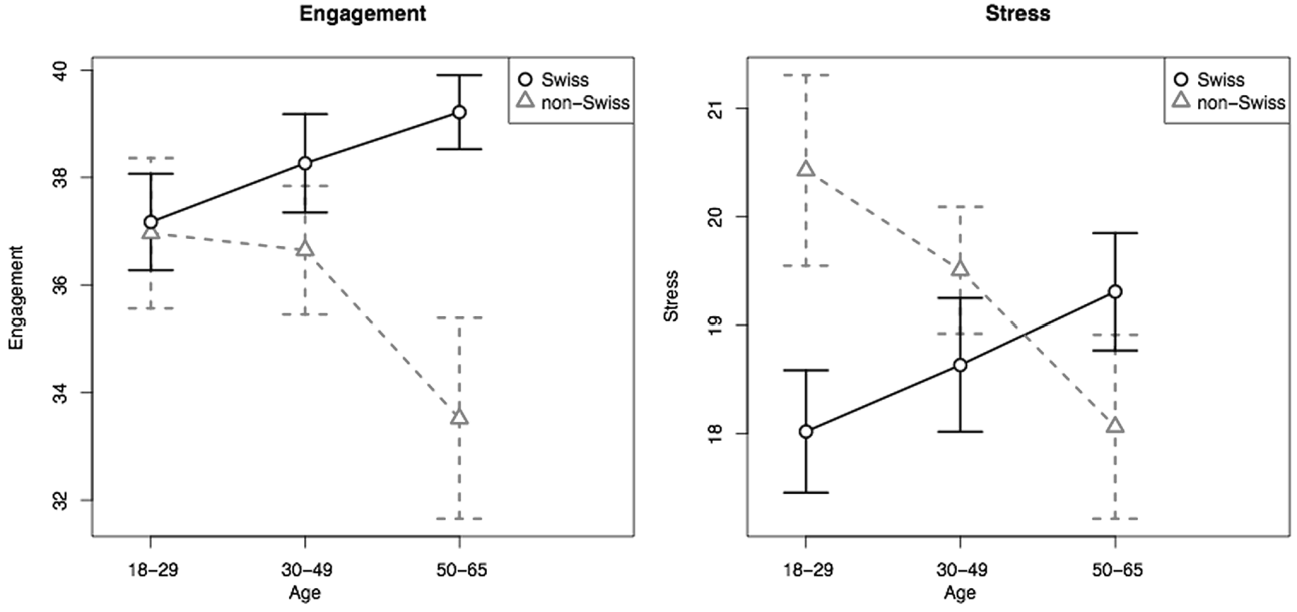

Figure 1. Impact of age and nationality on level of work engagement and job stress.

Table 2
Correlations between personality, work engagement, work stress, nationality, sex, and age

	1.	2.	3.	4.	5.	6.	6.1	6.2	6.3	7.	8.	9.
1. Neuroticism												
2. Extraversion	–.03											
3. Openness	.09*	.32**										
4. Agreeableness	.14**	.18**	.28**									
5. Conscientiousness	.04	.37**	.34**	.25**								
6. Engagement	–.27**	.29**	.21**	.11**	.29**							
6.1 Vigor	–.24**	.32**	.17**	.08*	.25**	.90***						
6.2 Dedication	–.30**	.24**	.20**	.11**	.26**	.93***	.78***					
6.3 Absorption	–.15**	.26**	.22**	.10*	.31**	.88***	.67***	.73***				
7. Work stress	.37**	–.09*	.04	.07	.09*	–.32**	–.40**	–.35**	–.11**			
8. Nationality	.10*	.00	–.03	.01	.06	–.10*	–.07	–.09*	–.10*	.05		
9. Sex	.01	.08	–.16**	–.30**	.02	.03	.03	.02	.01	.05	.02	
10. Age	–.10*	–.16**	–.18**	–.11**	–.09*	.05	.07	.05	.02	.04	–.09*	.03

Note. Point-biserial correlations are presented For nationality and sex. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 3
Interactions between age, sex, nationality, education, income, and personality for predicting work engagement

	Neuroticism		Extraversion		Openness		Agreeableness		Conscientiousness	
Individual characteristics	Step 1	Step 2	Step1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Age	–.06	–.05	.01	.02	–.01	.01	–.05	–.04	–.02	–.02
Sex (ref. male)	.18*	.16	.12	.12	.29***	.29***	.27**	.26**	.19*	.20*
Nationality (ref. Swiss)	–.18*	–.18*	–.20*	–.20*	–.20*	–.21*	–.20*	–.18*	–.24**	–.26*
Education	–.01	–.01	.01	.01	–.01	–.01	–.01	–.01	–.01	.01
Income	.18***	.18***	.21***	.21***	.26***	.25***	.24***	.23***	.22**	.24**
Personality	–.21**	–.24***	.31***	.33***	.25***	.22***	.13**	.17**	.31***	.33***
Age × Personality		.10*		.03		.01		.08		.04
Sex × Personality		–.02		.07		.01		–.24**		–.19*
Nationality × Personality		.10*		.20*		.09		.23*		.21*
Education × Personality		.05		–.03		.01		–.09*		–.06
Income × Personality		–.03		–.02		–.11*		–.01		–.06
R^2	.10	.11	.14	.16	.12	.14	.07	.10	.15	.18
ΔR^2		.01		.02		.02		.03		.03
F	9.88***	6.13***	15.67**	9.34***	12.62**	7.77**	7.17**	5.57**	16.87**	10.9***

Note. Standardized beta coefficients are presented for each step. *$p < .05$, **$p < .01$, ***$p < .001$.

ble 2 presents the Pearson and point-biserial correlations between personality, nationality, age, sex, work engagement, and work stress. Work stress and work engagement were negatively correlated. Sex and age were not significantly correlated with work engagement or work stress. However, several correlations between personality and work engagement or work stress were associated with a medium ($r = .30$) or small effect size ($r = .10$). For example, Neuroticism was negatively correlated with work engagement, but positively correlated with work stress, while Extraversion was positively correlated with work engagement and negatively correlated with job stress.

The interaction between each of the five higher-order personality dimensions and demographic variables (age, sex, nationality, education, income) on work engagement were assessed with hierarchical multiple regressions. In Step 1 the relevant main effects were entered into the regression equation, and in Step 2 the constituent interaction terms were entered. As shown in Table 3, work engagement was partially explained by a set of variables in the first step. The interactions between personality and demographic factors in the second step contributed to an increase in R^2 by a maximum of 3%. For Neuroticism, the negative relationship was stronger for Swiss and younger participants as compared to non-Swiss and older participants. The positive relationship between Extraversion and work engagement

Table 4
Interactions between age, sex, nationality, income, education, and personality for predicting job stress

	Neuroticism		Extraversion		Openness		Agreeableness		Conscientiousness	
Individual characteristics	Step 1	Step 2	Step1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Age	.06	.05	.01	.03	.06	.06	.04	.06	.05	.05
Sex (ref. male)	–.07	–.05	–.07	–.07	–.09	–.10	–.08	–.09	–.10	–.11
Nationality (ref. Swiss)	.04	.04	.13	.12	.13	.14	.10	.09	.13	.13
Education	–.01	–.01	–.03	–.03	–.04	–.04	–.04	–.04	–.01	–.03
Income	.07	.07	–.01	–.01	–.01	.01	–.01	–.01	–.01	–.01
Personality	.40***	.28***	–.09*	–.05	.05	.04	.07	.04	.08*	.14*
Age × Personality		–.03		–.03		–.01		–.02		.01
Sex × Personality		.11		–.29***		–.05		.13		–.06
Nationality × Personality		.14*		.02		.07		.13		–.08
Education × Personality		–.06		.09*		–.03		–.01		.04
Income × Personality		.04		–.07		.05		–.06		–.04
R^2	.16	.17	.02	.04	.01	.02	.01	.03	.02	.02
ΔR^2		.01		.02		.01		.02		.00
F	17.72**	10.26**	1.44	2.33*	1.07	.80	1.23	1.53	1.48	.99

Note. For each step, standardized beta coefficients are presented. *$p < .05$, **$p < .01$, ***$p < .001$.

was also slightly stronger for Swiss as compared to non-Swiss workers. The positive impact of Openness was especially strong for the very low-income group (below CHF 20,000 per year). The positive relationship between Agreeableness and work engagement was stronger for male participants, non-Swiss participants, and those with lower educational levels. Finally, the positive relationship between Conscientiousness and work engagement was slightly stronger for male and non-Swiss workers.

Similarly, hierarchical regressions were performed to predict job stress and to test the potential moderating effect of the demographic variables. These regressions confirmed that Neuroticism and Conscientiousness were positively associated and Extraversion negatively associated with job stress (Step 1). Moreover, these analyses revealed that the positive relationship between Neuroticism and job stress was moderated by nationality, whereby the relationship was stronger for non-Swiss workers. The negative relationship between Extraversion and job stress was moderated by sex and level of education, whereby the relationship was slightly stronger for women and for participants with lower educational levels (Table 4). These results confirm the existence of interactions between personal and social factors in their relationship with work engagement and job stress. However, these effects were mainly associated with small effect sizes.

Discussion

This paper examined the relationship between personality dimensions, sociodemographic characteristics (age, sex, income, education, and nationality), work engagement, and job stress in a sample of national and foreign workers in Switzerland. Accordingly, the direct effects of sociodemographic characteristics on work engagement and job stress as well as the moderating effects of sociodemographic characteristics on the relationship between personality and job-related indicators were studied. The statistical analyses reported herein show an interaction effect between age and nationality when explaining the level of work engagement. Contrary to our expectations, the non-Swiss workers reported being less engaged and less stressed at work. Indeed, the work engagement of Swiss workers appears to increase with age, while the results show an opposite trend for migrant workers. This interaction effect between age and nationality has an impact on the dedication, absorption, and vigor subscales, as well as the total work engagement score. When we separated the population into three age groups, the results showed no significant differences between migrant and national workers in the first age group (18 to 29 years). One can assume that the personal resources of young migrants, such as high levels of energy and enthusiasm about their work, allow them to more easily cope with the demands of work. This observation may also reflect the intrinsic motivation and personal commitment of young people when facing their future career (Kaiser, Hyde, Showers, & Buswell, 2007), causing them to appraise transitions as challenges that do not exceed their personal resources. However, as age increases, a difference between national and non-Swiss workers appears which is especially large for the third age group (50 to 65 years): Work engagement scores tend to increase with age among Swiss workers, while they decrease in the foreign population, suggesting that after a certain age foreigners experience less satisfaction in their work environment or might have less stimulating and challenging jobs (possibly due to a

glass-ceiling effect). However, these results should be interpreted cautiously, given the cross-sectional design of the study. Indeed, the observed differences cannot simply be attributed to biological age, rather a cohort or generational effect should also be considered. Nevertheless, other studies have shown that foreign workers have to face social and institutional barriers due to their nationality and that these barriers are harder to overcome for older workers (Bolzman, Poncioni-Derigo, Vial, & Fibbi, 2004). The level of work engagement of migrant workers may therefore depend on the age at which they arrived in Switzerland and the length of stay in the country. This finding has important implications for the field of career psychology since migrant workers may face career paths that are significantly different from those of Swiss nationals. A longitudinal design in future studies and clearer information about the arrival date and length of stay could assist in differentiating between static characteristics and dynamic or developmental processes that possibly explain the observed differences.

Concerning job stress, the results show a significantly higher level of job stress among young foreigners (18 to 29 years) compared to national workers of the same age group. This may be related to acculturation stress as defined by Berry (1997): Foreigners have to cope with the additional demands of adaptation to cultural norms and values as well as expend considerable effort to conciliate two cultural systems. It appears that after reaching 30 years of age, the level of perceived job stress declines slowly for the foreign workers, while for Swiss natives it converges with their work engagement. A possible explanation for this is that foreign workers have less rewarding career prospects with careers that differ in terms of development and are characterized by a slower progression and possibly a glass ceiling effect. This may mean that they have less stimulating jobs, which would explain the observed decrease in foreign workers' job stress.

When it comes to understanding work engagement and well-being in Switzerland, several expected links were demonstrated between personality dimensions and job-related indicators. As expected, work engagement was negatively associated with Neuroticism and positively linked with the other four personality dimensions. The results show a small moderation effect of several demographic variables such as, age, sex, education, or income. Trends toward economic globalization, intense international competition and mobility demands, fast technological evolution, and frequent changes in organizational structures suggest that the capacity to cope with changes, adaptability, and openness to change are desirable skills for workers in the current labor market (Johnston et al., 2013; Rossier, 2014; Rossier et al., 2012). Note, however, that these protective individual resources alone are not sufficient to explain well-being or adaptability at work. Indeed, contextual factors such as the characteristics of the organization's environment also play an essential role and represent undeniable resources and contributors of well-being among workers, regardless of the individual's resources or vulnerabilities (Györkös, Becker, Massoudi, de Bruin, & Rossier, 2012). Emotional stability (vs. Neuroticism) may represent a protective resource and contributor to work engagement in circumstances in which stress is experienced at work in manageable doses. If the stressors do not endure over time or become a pathological source of stress, individuals who are emotionally stable and optimistic tend to use more active and functional coping strategies to deal with stressful situations (Aspinwall, Ritchter, & Hoffman, 2001; Reicherts & Pihet, 2000) and show greater task persistence when facing adversity (Seligman, 1990). As observed by Lounsbury and colleagues (2003), one can easily understand the importance of Openness to experience as a personal resource, a term that refers to a readiness to change and the ability to engage in new learning experiences. Furthermore, increasing demands in terms of individual and autonomous career management and the importance of interpersonal contacts in modern work settings may in turn justify the importance of Extraversion, which is recognized as a personality feature that facilitates activities such as effectively expressing one's ideas and views, readily communicating in group settings, forming positive relationships and networking, joining groups and associations, and engaging in meetings and discussions (Guillet, Hermand, & Mullet, 2010; McCrae & Costa, 2003). Similarly, social needs assume that displaying warmth, trust, or tendermindedness in interpersonal and communication skills are behaviors characterized by the dimension of Agreeableness. Finally, Conscientiousness represents an individual's sense of mastery, self-discipline, order, dutifulness, achievement striving, and deliberation. Given a healthy work environment (e.g., characterized by high decisional latitude) (Karasek, 1979), these personality variables may be expressed in the work setting and, in turn, facilitate an individual's engagement through higher levels of vigor, dedication, and absorption (Bakker, Demerouti, & Brummelhuis, 2012). When considering the influence of personality traits on job stress, our results are different from what we expected. In particular, Conscientiousness was positively related to stress. This contrasts with the data reported by Grant and Langan-Fox (2007) or Massoudi (2009). Further studies may be necessary to better understand the role of Conscientiousness in the work setting and with respect to different ethnic groups.

Limits and Perspectives

Our study has the advantage of bringing together a large number of participants with different professions and nationalities. However, the sample of foreign workers is very heterogeneous with respect to origin, length of stay in Switzerland, and professional status. Moreover, the amplitude of variance differences between our two groups is relatively small. Therefore, a replication of this study in a more representative and specific sample is necessary. Although a large pool of variables was considered, the cross-sectional design of this

study might suffer from a methods bias and does not allow us to grasp dynamics such as professional commitment and career development processes. A longitudinal view is needed to better understand how different personal and sociodemographic characteristics influence workers' attempt to adapt to the norms and demands of a professional environment as well as the implications of this interaction in terms of work-related health. Studying career trajectories might also allow us to conduct a more indepth analysis of the social, institutional, and cultural barriers that could explain discrimination among certain working groups on the basis of their origin, socioeconomic status, or sex. The results of such studies may help us to understand stigmatized groups at work and better facilitate their integration.

Our results have practical implications in terms of career counseling interventions and measures aimed at helping workers cope more efficiently with work demands and prevent disparity and discrimination between different groups of workers. Since foreign workers represent a significant proportion of the Swiss workforce, this could affect the entire Swiss labor market and economic health. Hence, appropriate measures could contribute to facilitating the professional commitment and maintenance of migrants in Switzerland and stimulate their work engagement, which would be beneficial for both workers and organizations.

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References

Allik, J., Massoudi, K., Realo, A., & Rossier, J. (2012). Personality and culture: Cross-cultural psychology at the next crossroads. *Swiss Journal of Psychology*, *71*, 5–12. doi 10.1024/1421-0185/a000069

Aluja, A., García, O., Rossier, J., & García, L. F. (2005). Comparison of the NEO-FFI, the NEO-FFI-R and an alternative short version of the NEO-PI-R (NEO-60) in Swiss and Spanish samples. *Personality and Individual Differences*, *38*, 591–604. doi 10.1016/j.paid.2004.05.014

Aspinwall, L. G., Ritchter, L., & Hoffman, R. R., III. (2001). Understanding how optimism works: An examination of optimists' adaptative moderation of belief and behavior. In E. C. Chang (Ed.), *Optimism and pessimism: Implications for theory, research, and practice* (pp. 217–238). Washington, DC: American Psychological Association. doi 10.1037/10385-010

Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, *20,* 265–269. doi 10.1177/0963721411414534

Bakker, A. B., Demerouti, E., & Brummelhuis, L. (2012). Work engagement, performance, and active learning: The role of conscientiousness. *Journal of Vocational Behavior*, *80*, 555–564. doi 10.1016/j.jvb.2011.08.008

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An International Review, 46*, 5–34. doi 10.1080/026999497378467

Berry, J. W. (2005). Acculturation: Living successfully in two cultures. *International Journal of Intercultural Relations, 29*, 697–712. doi 10.1016/j.ijintrel.2005.07.013

Berry, J. W. (2008). Globalisation and acculturation. *International Journal of Intercultural Relations, 32*, 328–336. doi 10.106/j.ijintrel.2008.04.001

Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. (2006). Immigrant youth: Acculturation, identity, and adaptation. *International Association for Applied Psychology, 55*, 303–332. doi 10.1111/j.1464-0597.2006.00256.x

Bolzman, C. R., Poncioni-Derigo, M., Vial, R., & Fibbi, R. (2004). Older labor migrants' well-being in Europe: The case of Switzerland. *Ageing and Society, 24*, 41–429. doi 10.1017/S0144686X03001557

Bowling, N. A., & Eschlemann, K. J. (2010). Employee personality as a moderator of the relationships between work stressors and counterproductive work behavior. *Journal of Occupational Health Psychology*, *15*, 91–103. doi 10.1037/a0017326

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Connor-Smith, J. K., & Flachsbart, C. (2007). Relations between personality and coping: A meta-analysis. *Journal of Personality and Social Psychology, 93*, 1080–1107. doi 10.1037/0022-3514.93.6.1080

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO-Five-Factor (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.

De Bruin, G. P. (2006). Th2e dimensionality of the general work stress scale: A hierarchical exploratory factor analysis. *SA Journal of Industrial Psychology, 32*(4), 68–75. doi 10.4102/sajip.v32i4.250

De Bruin, G. P., & Taylor, N. (2005). *Sources of work stress inventory: Technical manual.* Johannesburg, South Africa: Jopie van Rooyen.

Ganster, D. C., & Schaubroeck, J. (1991). Work stress and employee health. *Journal of Management, 17*, 235–271. doi 10.1177/014920639101700202

Grant, S., & Langan-Fox, J. (2007). Personality and the occupational stressor-strain relationship: The role of the Big Five. *Journal of Occupational Health Psychology, 12*, 20–33. doi 10.1037/1076-8998.12.1.20

Grzywacz, J. G., Quandt, S. A., & Arcury, T. A. (2008). Immigrant farmworkers' health-related quality of life: An application of the job demands-control model. *Journal of Agricultural Safety and Health, 14(1)*, 79–92.

Guillet, L., Hermand, D., & Mullet, E. (2010). The importance of social support in workers' lay conceptualizations of stress.

Swiss Journal of Psychology, *69*, 65–69. doi 10.1024/1421-0185/a000007

Györkös, C., Becker, J., Massoudi, K., de Bruin, G. P., & Rossier, J. (2012). The impact of personality and culture on the job demands-control model of job stress. *Swiss Journal of Psychology, 71*, 21–28. doi 10.1024/1421-0185/a000065

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, *87*, 268–279. doi 10.1037/0021-9010.87.2.268

Hoppe, A. (2011). Psychosocial working conditions and well-being among immigrant and German low-wage workers. *Journal of Occupational Health Psychology*, *16*, 187–201. doi 10.1037/a0021728

Johnston, C. S., Broonen, J.-P., Stauffer, S. D., Hamtiaux, A., Pouyaud, J., Zecca, G., . . . Rossier, J. (2013). Validation of an adapted French form of the career adaptabilities scale in four Francophone countries. *Journal of Vocational Behavior*, *83*, 1–10. doi 10.1016/j.jvb.2013.02.002

Kaiser, C. A., Davaud, C., Evrard, A., & Rastoldo, F. (2007). Les jeunes en formation professionnelle. Rapport II: Comment les jeunes interprètent leur parcours de formation [Youth in vocational training. Report II: How young people view their vocational training]. Geneva, Switzerland: Service de la recherché en education (SRED).

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*, 285–308. doi 10.2307/2392498

Kling, K. C., Hyde, J. S., Showers, C. J., & Buswell, B. N. (1999). Gender differences in self-esteem: A meta-analysis. *Psychological Bulletin, 125*, 470–500. doi 10.1037/0033-2909.125.4.470

Lazarus, R. S. (1991). *Emotion and adaptation*. New York, NY: Oxford University Press.

Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology, 44*, 1–21. doi 10.1146/annurev.ps.44.020193.000245

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer-Verlag.

Lounsbury, J. W., Loveland, J. M., Sundstrom, E., Gibson, L. W., Drost, A. W., & Hamrick, F. (2003). An investigation of personality traits in relation to career satisfaction. *Journal of Career Assessment*, *11*, 287–203. doi 10.1177/1069072703254501

Massoudi, K. (2009). *Le stress professionnel: Une analyse des vulnérabilités individuelles et des facteurs de risque environnementaux* [Job stress: An analysis of individual vulnerabilities and environmental risk factors]. Bern, Switzerland: Peter Lang.

McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, *52*, 81–90. doi 10.1037/0022-3514.52.1.81

McCrae, R. R., & Costa, P. T., Jr. (2003). *Personality in adulthood: A five-factor theory perspective* (2nd ed.). New York, NY: Guilford.

McCrae, R. R., & Costa, P. T., Jr. (2004). A contemplated revision of the NEO Five-Factor Inventory. *Personality and Individual Differences*, *36*, 587–596. doi 10.1016/S0191-8869%2803%2900118-1

Mermin, G. B. T., Johnson, R. W., & Murphy, D. P. (2007). Why do boomers plan to work longer? *Journal of Gerontology: Social Sciences, 62*, S286–S294. doi 10.1093/geronb/62.5.S286

Oberg, K. (1960). Cultural shock: Adjustment to new cultural environments. *Practical Anthropology*, *7,* 177–182.

Oliver, J. E., Mansell, A., & Jose, P. E. (2010). A longitudinal study of the role of negative affectivity on the work stressor-strain process. *International Journal of Stress Management, 17*, 56–77. doi 10.1037/a0017696

Pervin, L. A., & John, O. P. (1997). *Personality: Theory and research* (7th ed.). New York, NY: Wiley.

Reicherts, M., & Pihet, S. (2000). Job newcomers coping with stressful situations: A micro-analysis of adequate coping and well-being. *Swiss Journal of Psychology*, *59*, 303–316. doi 10.1024//1421-0185.59.4.303

Rossier, J. (2014). Personality assessment and career interventions. In P. J. Hartung, M. L. Savickas, & W. B. Walsh (Eds.), *APA handbook of career intervention: Volume 1. Foundations* (pp. 327–350). Washington, DC: American Psychological Association.

Rossier, J., Meyer de Stadelhofen, F., & Berthoud, S. (2004). The hierarchical structures of the NEO-PI-R and the 16 PF 5. *European Journal of Psychological Assessment*, *20,* 27–38. doi 10.1027//1015-5759.20.1.27

Rossier, J., Zecca, G., Stauffer, S. D., Maggiori, C., & Dauwalder, J.-P. (2012). Career Adapt-Abilities Scale in a French-speaking Swiss sample: Psychometric properties and relationships to personality and work engagement. *Journal of Vocational Behavior, 80*, 734–743. doi 10.1016/j.jvb.2012.01.004

Rothmann, S., Steyn, L. J., & Mostert, K. (2005). Job stress, sense of coherence and work wellness in an electricity supply organization. *South African Journal of Business Management, 36*(1), 55–63.

Roy, S. N. (1957). *Some aspects of multivariate analysis.* New York, NY: Wiley.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, *66,* 701–716. doi 10.1177/0013164405282471

Schaufeli, W. B., Salanova, M., Gonzàles-Romà, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, *3*, 71–92. doi 10.1023/A:1015630930326

Seligman, M. E. P. (1990). *Learned optimism*. New York, NY: Pocket Books.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5–14. doi 10.1037/0003-066X.55.1.5

Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown & L. Brooks (Eds.), *Career choice and development* (2nd ed., pp. 197–261). San Francisco, CA: Jossey-Bass.

Swiss Federal Statistical Office (2013). *ESPA in brief 2013: The Swiss survey of the active population. Neuchâtel, Switzerland.* Retrieved from http://www.bfs.admin.ch/bfs/portal/fr/index/themen/03/22/publ.html?publicationID=562 3

Tanaka-Matsumi, J., & Draguns, J. (1997). Culture and psychopathology. In J. W. Berry, M. H. Seegall, & C. Kagitcibasi (Eds.), *Handbook of cross-cultural psychology: Social behaviors and applications* (2nd ed., Vol. 3, pp. 413–448). Boston, MA: Allyn & Bacon.

van der Zee, K. I., van Oudenhoven, J. P., & de Grijs, E. (2004).

Personality, threat, and cognitive and emotional reactions to stressful intercultural situations. *Journal of Personality*, *72*, 1069–1096. doi 10.1111/j.0022-3506.2004.00290.x

Wadsworth, E., Dhillon, K., Shaw, C., Bhui, K., Stanfeld, S., & Smith, A. (2007). Racial discrimination, ethnicity and work stress. *Occupational Medicine*, 57, 18–24. doi 10.1093/occmed/4gl088

Williamson, J. M., Pemberton, A. E., & Lounsbury, J. W. (2005). An investigation of career and job satisfaction in relation to personality traits of information professionals. *The Library Quarterly*, *75*, 122–141. doi 10.1086/431330

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