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# Occupational Stress, Symptoms of Burnout in the Workplace and Work Satisfaction of the Age-diverse Employees

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**Background and Purpose:** Age diverse employees are faced with different types of occupational stress and different symptoms of burnout when carrying out their work. Therefore, the role of age in job design and implementation of work should not be ignored. The main aim of this paper is to investigate the age differences of occupational stress and symptoms of burnout of employees and to analyze the impact of occupational stress, symptoms of burnout and age on employees' work satisfaction.

**Methodology:** The paper is based on research that includes a survey of employees in two age groups: younger employees under 50 years of age and older employees between 50 to 65 years of age. Factor analysis was used to form the constructs of occupational stress, symptoms of burnout and employees' work satisfaction. The non-parametric Mann-Whitney U test was used to test differences in the obtained constructs of occupational stress and symptoms of burnout in the workplace between two independent groups. The multiple regression analysis was used to examine the impact of occupational stress, symptoms of burnout and age on employees' work satisfaction.

**Results:** The results show there are statistically significant differences in occupational stress and symptoms of burnout in the workplace between older and younger employees. On average, younger employees perceived higher levels of occupational stress and burnout as compared to the older group. Research results also show that occupational stress, behavioral symptoms and emotional symptoms of burnout, as well as age, have a significant impact on employees' work satisfaction.

**Conclusion:** Managing diversity requires a strategic approach to managing people at work. Therefore, this research adds to the body of knowledge by pointing out the relationship between age and occupational stress and burnout symptoms. Because the role of age in job design has largely been ignored, these relationships have not been studied enough.

**Keywords:** *Occupational stress; burnout; symptoms of burnout; age-diverse employees; work satisfaction*

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## 1 Introduction

Job design is of special importance in contemporary human resource management. It is essential to design jobs so that stress can be reduced, motivation can be enhanced and the satisfaction of employees and their performance can be improved to ensure that organizations can effectively compete in the global marketplace (Garg and Rastogi, 2006). Stressful, depressed and dissatisfied employees are not able to obtain the same quality level of work and productivity as those employees with low stress and high satisfaction (George and Zakkariya, 2015). It is essential that the employees' psychological aspects are considered. Employers should create a safe, stress-reduced environment in which to work.

Further, it has become important to understand the role of individuals' differences in examining the effects of job characteristics on job attitudes (Morgeson and Humphrey, 2006). This means that job characteristics are not experienced in the same way by all groups of workers (Zaniboni et al., 2014). Due to demographic changes in most industrialized countries, the average age of working people is continuously increasing and the workforce is becoming more age diverse (Hertel et al., 2013). Zaniboni et al. (2014) demonstrated that the role of age in the relationship between job characteristics and job attitudes is important; with the ageing population it is necessary to see how jobs might be redesigned to enable people to continue to work successfully. It is also appropriate to examine the interplay between age and work characteristics because people generally spend a significant part of their lifespan working, and, therefore, have ample opportunity to display these adaptive processes throughout their working lives. Yet the role of age in job design has largely been ignored (Truxillo et al., 2012). Satisfied employees are a vital prerequisite for a "healthy" company (Halkos and Bousinakis, 2010); it is important that employers create a safe and friendly work environment (George and Zakkariya, 2015).

Demographic changes caused by the ageing of the population have an impact on organizations and the age structure of their employees; organizations face new challenges in the field of human resources management since employees belonging to different age groups also perceive their working environment differently and react differently. The first step towards the adequate management of age diverse employees is to create an appropriate working environment that dictates the successful result of ageing for employees, and, thus, facilitates the achievement of goals, performance and competitiveness of the company (see, e.g., Jolynn et al., 2011; Ilmarinen, 2006). Robertson and Cooper (2010) found that low levels of stress, high levels of psychological well-being and the work satisfaction of older and younger employees play a central role in delivering the important outcomes associated with success in companies.

This paper aims to answer the following research questions: (1) RQ1: Are there statistically significant differences in occupational stress in the workplace of older employees as compared to younger employees in Slovenian companies? (2) RQ2: Are there statistically significant differences in the symptoms of burnout of older employees as compared to younger employees in Slovenian companies? (3) RQ3: Do occupational stress, symptoms of burnout and age have a significant impact on the employees' perceived work satisfaction?

Therefore, the main objectives of this paper are: (i) to investigate the differences between occupational stress and symptoms of burnout of employees from different age groups in the workplace and (ii) to analyze the impact of occupational stress, symptoms of burnout and age on work satisfaction of employees.

## 2 Literature Review

### 2.1 Occupational stress

Occupational stress is defined as "the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources or needs of the worker" (De Silva et al., 2017). Consequences of occupational stress are observed at two levels, at the company level and at the level of the worker, and there is a correlation between the two; economic losses within a company correlates (affects) employees' health state (Mosadeghrad, 2014). Workers not capable of coping with stressful situations might face a variety of negative effects in their physical, psychological or behavioral states. In the physical area, people may feel different pains such as headaches, neck pain and shoulder pain or have an elevated heart rate. In the psychological area negative effects may include insomnia, anxiety, depression and other psychological issues. Behavioral factors include fatigue, less efficacy at work and many others; these factors will influence in a negative way the entire production, the branch's image and the quality of the final consumer product (Hespanhol, 2004). Research on the harmful effects of occupational stress on physical well-being and a worker's health show that among principal consequences are higher risks for cardiovascular diseases (Kang et al., 2005), musculoskeletal disorders, respiratory diseases, psychological disorders, sleep disturbances, lack of concentration, depression, intolerance and many others, as well as anxiety (O'Connor et al., 2000).

According to Hertel et al. (2013) older employees experience lower stress levels than younger employees. On the other hand, Götz et al. (2018) emphasized that the impact of stressful work differs depending on the period, or life stage, at which it occurs. Older persons may be more vulnerable to occupational stress because the ageing pro-

cess is accompanied by changes in coping capabilities and resources as well as changes of the physiological system. Older employees, therefore, may be more likely to become sick in the case of stressful work and may take longer to recover from illness. In that case, the association between stress and sickness absences would be more pronounced for older employees. The authors also argue that younger employees may face greater pressure to develop strong ties to the labour market, and therefore, they are more likely to continue working, compared to their older counterparts, even if conditions at work are poor. There are, however, also reasons why the association between occupational stress and sickness absence could be less pronounced for older employees than for younger employees. For example, older employees may face more difficulties in finding a new job in the case of job loss; therefore, they are probably more likely to tolerate adverse conditions than younger employees.

## 2.2 Burnout and symptoms of burnout

Occupational stress related to a severe and constant level of stress is known as burnout syndrome, which is characterized by a decrease in personal fulfillment, isolation from social relationships and emotional exhaustion (Yavas et al., 2013). Maslach et al. (2001) defined burnout as a “prolonged response to chronic emotional and interpersonal stressors on the job, and is defined by the three dimensions of exhaustion, cynicism, and inefficacy”. Also, the authors summarized research that indicates burnout has been associated with various forms of job withdrawal (absenteeism), intention to leave the job and actual turnover.

In our research, the burnout of employees was identified and measured by three separate groups of symptoms. Physical symptoms of burnout include exhaustion, fatigue, headaches, sleep disorders, loss of energy, nonspecific pain, reduced attention span, feelings of meaninglessness, apathy, raised blood pressure, chest pains and gastrointestinal disorders. Emotional symptoms of burnout in the workplace may include depressed mood states, anxiety, irritability, loss of confidence, tension or sadness. Behavioral symptoms of burnout in the workplace may include disturbed sleep patterns, reduced reaction times, reduced work capacity and less work motivation (Mosadeghrad, 2014).

## 2.3 Satisfaction in the workplace

Job satisfaction generally implies a positive evaluation of work and a positive effect deriving from it; that is, a “positive emotional state resulting from the appraisal of one’s job or job experiences” (see, e.g., Tansel and Gazioğlu, 2014). Existing studies have established a positive relationship between job satisfaction and performance (Judge

et al., 2001). Harrison et al. (2006) argued that job satisfaction is also understood in terms of its relationship with other key factors of employees, like general well-being in the workplace, stress and workload, control at work, home-work balance and working conditions.

The relationship between job satisfaction and age shows that levels of job satisfaction tended to change, with initially high levels giving way to declines in mid-career, and then starting to improve again later in the worker’s career. This was explained by an individual’s adjustment to his/her work and life situation (Halkos and Bousinakis, 2010). In terms of occupational stress, previous research has shown that middle-aged workers (30 to 50-year-olds) had slightly higher proportions in the reported high stress category than those at the extremes of the age range (Smith et al., 2000). This could be explained by multiple family and work-related tasks that potentially impact the stress levels during one’s middle-years (see, e.g., Darmody and Smyth, 2016). Also, a study conducted by Yang et al. (2016) reported that occupational stress decreases employees’ occupational satisfaction and self-motivation.

Occupational stress and burnout impact the health and psychological well-being of workers with the attendant effects on their attitude towards work (Babajide and Akintayo, 2011). When the working environment is perceived to be conducive, there is less stress, employees are satisfied and job performance is greatly enhanced (Parkes, 2002). Burnout leads to lower productivity and effectiveness at work. It is associated with decreased job satisfaction and a reduced commitment to the job or the organization (Maslach et al., 2001).

## 2.4 Age diversity in the workplace

Population ageing is impacting employers, and for many organisations there are strong business reasons to develop strategies for managing diversified age profiles in their workplaces (Hoyle, 2017). Job characteristics are not experienced in the same way by all age diverse workers. Given the demographic shifts in today’s workplace, a worker’s age appears to be an important individual difference (Zaniboni et al., 2014).

On the one hand, high diversity in teams or other organizational units might increase creativity, innovation and problem solving due to the multiple perspectives and backgrounds of the different workers. On the other hand, high diversity often comes with higher needs for communication, coordination and conflict management due to differences in expectations, working styles and general values. Therefore, to benefit from diversity, the accurate management of mutual perceptions and interactions is crucial (Hertel et al., 2013).

Hertel et al. (2013) asserted that ageing refers to changes that occur in biological, psychological and social functioning over time, thereby affecting individuals

on personal, organizational and societal levels. This also means that employees' age diversity has different effects on work-related attitudes. According to Schneid et al. (2018), understanding age diverse employees is essential for improving productivity and for ensuring the success of the company, which also leads to the well-being of all age diverse employees. Thus, on the basis of the literature review, we can summarize that age diverse employees are faced with different symptoms of burnout and occupational stress when carrying out their work.

## 2.5 Research hypotheses

Based on the theoretical ground, we formulated the following research hypotheses.

Hypotheses H1 is formed following Adams et al. (2013) and Hertel et al. (2013), who state that older employees report experiencing lower levels of stressors than younger employees. Adams et al. (2013) summarized two possible explanations for these findings. First, as employees age they accumulate more work experiences and acquire more occupational expertise and wisdom, which may act as a resource when dealing with role-related stressors. Second, older employees are more likely to be in high-status positions with certain characteristics, including job control, flexible work schedules and access to support from the job environment. These job characteristics may reduce employee exposure to stressors such as role ambiguity and role conflict.

H1: There are statistically significant differences in occupational stress in the workplace between older and younger employees.

Hypotheses H2.1, H2.2 and H2.3 were formed based on findings that showed age was differentially related to burnout in separate age groups (Ahola et al., 2008). The same approach when studying symptoms of burnout was used by Mosadeghrad (2014). The highest burnout prevalence was found among the younger employees. Haley et al. (2013) stated that possible reasons for younger employees' higher burnout levels seem to include a lack of skills to deal with everyday problems arising in the workplace, a "reality shock" when just entering the workplace, a lack of coping skills as a result of less experience in a working environment and transitional shock. On the other hand, Wang and Shultz (2010) emphasized that burnout increases with ageing. Among the demographic variables, age turns out to be the most related to burnout. It has been found that poor health is one of the major determinants of early retirement, and the poorer the health of older workers, the stronger their intentions appear to be to withdraw from the labour force early.

- H2.1: There are statistically significant differences in behavioral symptoms of burnout in the workplace between older and younger employees.
- H2.2: There are statistically significant differences in

emotional symptoms of burnout in the workplace between older and younger employees.

- H2.3: There are statistically significant differences in physical symptoms of burnout in the workplace between older and younger employees.

Hypotheses H3.1, H3.2, H3.3, H3.4 and H3.5 were formed based on the findings of Fairbrother and Warn (2003), who found strong correlations between the dimensions of workplace, stress and job satisfaction. High levels of work stress are associated with low levels of job satisfaction. Job stressors are predictive for job dissatisfaction and a greater propensity to leave the organization. According to Faragher et al. (2005) occupational stress has a negative effect on job satisfaction and deteriorates the physical and mental health of age diverse employees. Lu and Gursoy (2013) summarized that all symptoms of burnout have a significant negative impact on the age diverse employees' work satisfaction.

- H3.1: Occupational stress has a significant impact on the employees' perceived work satisfaction.
- H3.2: Symptoms of behavioral burnout have a significant impact on the employees' perceived work satisfaction.
- H3.3: Symptoms of emotional burnout have a significant impact on the employees' perceived work satisfaction.
- H3.4: Symptoms of physical burnout have a significant impact on the employees' perceived work satisfaction.
- H3.5: Age has a significant impact on the employees' perceived work satisfaction.

## 3 Methodology

### 3.1 Data and sample

A survey among Slovenian medium-sized (the average number of employees in business year does not exceed 250) and large companies (the average number of employees in business year exceeds 250) was conducted, and questionnaires were sent to 800 randomly selected medium-sized and large Slovenian companies. The questionnaire was addressed to the owner/manager of the company and sent via e-mail or ordinary post (depending on the availability of contact data). We asked the owner/manager of the company to distribute a questionnaire among age diverse employees. With the purpose of increasing the response rate, we sent the reminders to complete the questionnaire in three waves: twice by e-mails and once by personally contacting them by phone. The main survey involved 307 companies (the response rate was 38.4%). We limited the responses to up to four employees in each company, and, thus, the survey included 691 respondents.

The employees in the sample were divided into two age groups: younger employees under 50 years of age and older employees between 50 to 65 years of age. In most cases in the literature, the lower age limit defining older employees is 45 years (Brooke, 2003) or 50 years (Ilmarinen, 2001); the term “older employees” also refers to employees between 40 and 50 years of age (Ghosheh et al., 2006). For the purposes of the present research the age of 50 years is used. Table 1 shows the profile of respondents – employees with respect to control variables.

The survey responses included 47% younger employees aged 18 to 49 years and 52.8% older employees aged 50 to 65. Regarding the achieved education level of employees who participated in the research, 62.7% of the respondents finished high professional or university education, 21.7% of the respondents have a master’s degree or doctorate, 14.3% of the respondents finished college and the smallest percentage represents respondents who finished vocational or high school (1.3%). The biggest share of responses represented large companies (51.9%). Medium-sized companies comprised 48.1%.

### 3.2 Research instrument

Statements included in the questionnaire, describing different dimensions of occupational stress and symptoms of burnout (behavioral symptoms, emotional symptoms and physical symptoms), were designed and tested in empirical research by Mosadeghrad (2014). Statements describing different dimensions of employee satisfaction were also designed and tested by Groot and Brink (1999). The respondents indicated their agreement to the listed statements, using a 5-point Likert-type scale from 1–completely disagree to 5–completely agree.

### 3.3 Methods used

Factor analysis was used to form multidimensional constructs for the perceived occupational stress, symptoms of burnout and perceived employees’ satisfaction. We wanted to establish whether the use of factor analysis is reasonable on the basis of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy ( $KMO \geq 0.5$ ) (Kaiser, 1974) and Bartlett’s test of sphericity. For the communalities the threshold of 0.40 was used (Costello and Osborne, 2005). The initial factors’ rotation was conducted with the purpose to improve factors’ interpretability and achieve a more even distribution of variance across factors. The rectangular rotation Varimax maximises the variance of weight squares in every factor, and that simplifies the structure by columns (Manly, 2005).

To test hypotheses H1, H2.1, H2.2 and H2.3 about the differences between younger and older employees, the non-parametric Mann-Whitney U test was used. To test

hypothesis H3.1 – H3.5, about the impact of occupational stress, behavioral, emotional and physical symptoms of burnout and age on employees’ work satisfaction, the multiple regression analysis was used.

## 4 Results

### 4.1 Results of factor analysis

First the factor analysis was applied to form the constructs of occupational stress, symptoms of the three groups of symptoms of burnout and employees’ satisfaction. Results of the factor analysis are presented in Tables 1, 2 and 3.

Table 1 shows the results of factor analysis for the construct occupational stress. Results of the KMO measure and the Bartlett’s test of sphericity show that the use of factor analysis is justified. The values of all communalities in Table 1 for the construct occupational stress of age diverse employees are higher than 0.60, therefore we have not eliminated any measured variables. Table 1 also shows that total variance explained is 72.7%. All factor loadings are higher than 0.70. In our case, the most important role in occupational stress of age diverse employees is achieved by the statement: “Due to stress in the workplace, I feel a lack of energy, tiredness”. The value of the Cronbach’s alpha for the factor occupational stress of age diverse employees is 0.940, therefore the reliability of the measurement in occupational stress of age diverse employees is exemplary.

Table 2 shows the results of factor analysis for the constructs of burnout, where the three dimensions of burnout are analyzed: behavioral, emotional and physical symptoms.

The value of Kaiser-Meyer-Olkin measures of sampling adequacy and the results of Bartlett’s test of sphericity ( $p < 0.01$ ) justified the use of factor analysis. The values of all communalities for the construct symptoms of burnout are higher than 0.60, therefore we have not eliminated any variable. The total variance explained for behavioral symptoms of burnout is 84.9%, and for emotional symptoms of burnout it is 82.8%. In the case of physical symptoms of burnout, two factors were obtained which together explain 85.3% of variability (first factor 74.8%, second factor 10.4%). Thus, we obtained two factors: physical symptoms of burnout-1 and physical symptoms of burnout-2.

In our case, the most important role in behavioral symptoms of burnout of age diverse employees is achieved by the statement: “I lack the will to socialize with co-workers” and the most important role in emotional symptoms of burnout by the statement: “I feel anger”. The most important role in physical symptoms of burnout-1 (factor 1) is “I have vertigo”. For physical symptoms of burnout-2 the most important factor is “My sleep cycle is messy”.

Table 1: Results of factor analysis for the construct occupational stress

Construct occupational stress	Communalities	Factor loadings
I am facing with the stress in performing work tasks.	0.734	0.857
Due to an excessive amount of work, my lifestyle is rather uneven (irregular meals, an unsettled sleeping cycle, lack of sports activity).	0.685	0.828
Due to stress in the workplace, I feel a lack of energy, tiredness.	0.813	0.901
Due to stress in the workplace, I have problems with concentration.	0.719	0.848
I feel the lack of my capacity in performing my work tasks.	0.782	0.884
At workplace, the stance of my body is forced for a long time (siting, standing).	0.601	0.775
At the workplace there is tension, conflict between employees.	0.754	0.868
Kaiser–Meyer–Olkin measure: 0.898		
Bartlett’s test of sphericity	Approximate Chi-Square	4191.119
	df	21
	<i>p</i>	0.000
Cumulative percentage of explained variance: 72.675 %		
Cronbach’s Alpha: 0.940		

The values of the Cronbach’s alphas for all three constructs of burnout are high (over 0.9), indicating that the reliabilities of the measurement scales are again exemplary.

Table 3 shows the results of factor analysis for the construct employees’ satisfaction. Again, the value of the Kaiser-Meyer-Olkin measure of sampling adequacy and the results of the Bartlett’s test of sphericity ( $p < 0.01$ ) justified the use of factor analysis. The values of all communalities were higher than 0.70. The total variance explained for employees’ satisfaction is 82.1%. The most important role in satisfaction of employees is achieved by the statement: “At my workplace I am satisfied with the leadership in the company”. The value of the Cronbach’s alpha for the factor employees’ satisfaction is 0.964, therefore the reliability of the measurement in the satisfaction of employees is also exemplary.

#### 4.2 Differences between younger and older employees regarding the occupational stress and symptoms of burnout

In the second step, the obtained factors were used to test the hypotheses H1 and H2, where older and younger employees were defined according to age group. Table 4 presents

the results of the non-parametric Mann-Whitney U test of obtained factors for the construct occupational stress and the construct symptoms of burnout in the workplace.

By using the Mann-Whitney U test, we tested whether the observed differences between employees in the two age groups are statistically significant. Based on the results (Table 4), we found that there are statistically significant differences between older and younger employees in the levels of occupational stress as well as regarding the symptoms of burnout (behavioral symptoms of burnout, emotional symptoms of burnout and physical symptoms of burnout) in the workplace. Based on the results we confirmed the hypothesis H1: There are statistically significant differences in occupational stress in the workplace between older and younger employees and hypothesis H2.1: There are statistically significant differences in behavioral symptoms of burnout in the workplace between older and younger employees. We also confirmed hypothesis H2.2: There are statistically significant differences in emotional symptoms of burnout in the workplace between older and younger employees and hypothesis H2.3: There are statistically significant differences in physical symptoms of burnout in the workplace between older and younger employees. We can also conclude that the perceived levels of occupational stress as well as perceived symptoms of burnout (behavioral, emotional and physical) are on average lower in the group of older employees as compared

Table 2: Results of factor analysis for the construct symptoms of burnout

Behavioral symptoms of burnout	Communalities	Factor loadings	
I avoid activities.	0.841	0.917	
I have nightmares.	0.863	0.929	
I have insomnia.	0.631	0.794	
I have difficulties with concentration and memory.	0.856	0.925	
I wish for solitude.	0.892	0.945	
My working ability has declined.	0.896	0.947	
I lack the will to work.	0.904	0.951	
I lack the will to socialize with co-workers.	0.910	0.954	
Kaiser–Meyer–Olkin measure: 0.937			
Bartlett's test of sphericity	Approximate Chi-Square	8379.298	
	df	28	
	<i>p</i>	0.000	
Cumulative percentage of explained variance: 84.905			
Cronbach's Alpha: 0.968			
Emotional symptoms of burnout	Communalities	Factor loadings	
I have depressive feelings	0.864	0.929	
I am tense.	0.594	0.771	
I feel panic	0.877	0.937	
I am afraid of losing the job or not finishing the work on schedule.	0.644	0.802	
I am sad.	0.834	0.913	
I have a feeling of helplessness	0.872	0.934	
To me, everything seems meaningless	0.890	0.943	
I am emotionally exhausted	0.864	0.930	
I am exceedingly sensitive	0.879	0.938	
I am quarrelsome.	0.891	0.944	
I feel anger.	0.901	0.949	
Kaiser–Meyer–Olkin measure: 0.949			
Bartlett's test of sphericity	Approximate Chi-Square	12299.281	
	df	55	
	<i>p</i>	0.000	
Cumulative percentage of explained variance: 82.825			
Cronbach's Alpha: 0.977			
Physical symptoms of burnout	Communalities	Factor loadings	
		1	2
I have headaches, migraines.	0.814	0.283	0.857
My sleep cycle is messy.	0.859	0.253	0.892
I have vertigo.	0.948	0.917	0.327
I am sweating.	0.938	0.914	0.320
I have sweaty and cold hands.	0.937	0.913	0.323
My blood pressure varies.	0.938	0.901	0.354
I often have the flu or virosis.	0.770	0.690	0.542

Table 2: Results of factor analysis for the construct symptoms of burnout (continued)

I am often tired, exhausted.	0.795	0.483	0.749
I have stomach aches.	0.752	0.612	0.617
I have increased heart rate.	0.835	0.739	0.538
I have lower back pain, shoulder pain.	0.792	0.391	0.799
Kaiser–Meyer–Olkin measure: 0.934			

Table 3: Results of factor analysis for the construct employees' satisfaction

At my workplace I am satisfied:	Communalities	Factor loadings
With working hours and distribution of work obligations.	0.880	0.938
With flexible working hours.	0.863	0.929
With the balance between work and private life	0.659	0.812
With enabled self-regulation of speed of work performed.	0.855	0.925
With intergenerational cooperation.	0.880	0.938
With the working conditions, such as better light, air conditioning, and bigger inscriptions.	0.723	0.851
With the interpersonal relationships in the company.	0.828	0.910
With the leadership in the company	0.882	0.939
Kaiser–Meyer–Olkin measure: 0.941		
Bartlett's test of sphericity	Approximate Chi-Square	7211.576
	df	28
	<i>p</i>	0.000
Cumulative percentage of explained variance: 82.130%		
Cronbach's Alpha: 0.964		

Table 4: Mann-Whitney U test

Factors (constructs)	Mean		Mann-Whitney U	Z	Asymp. Sig. (2-tailed)	
	Younger employees	Older employees				
Occupational stress	-0.0069163	-0.1256373	46526.000	-4.775	0.000	
Behavioral symptoms of burnout	0.0337975	-0.0630286	49436.000	-3.599	0.000	
Emotional symptoms of burnout	0.0490263	-0.0468914	48887.000	-3.638	0.000	
Physical symptoms of burnout	Factor 1	0.0380275	-0.1218029	113750.500	-4.357	0.000
	Factor 2	-0.0027594	-0.2210989	110419.500	-5.644	0.000

to the group of younger employees (average factors' values are lower for older employees), which is in line with several previous findings (Mosadeghrad, 2014; Henkens and Leenders, 2010; Maslach et al., 2001; Schaufeli and Enzmann, 1998; Campanelli, 1990).

To further illustrate these results, Table 5 presents the non-parametric Mann-Whitney U test of individual com-

ponents for the construct occupational stress and Table 6 presents the non-parametric Mann-Whitney U test of the age diverse employees of individual components for constructs of behavioral, emotional and physical symptoms of burnout.

Based on the results (Table 5), we found there are statistically significant differences between older and young-



Table 5: Mann-Whitney U Test for individual components of the constructs of occupational stress of younger and older employees

Statement	Mean		Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
	Younger employees	Older employees			
I am facing with the stress in performing work tasks.	3.68	3.66	56510.500	-1.167	0.243
Due to an excessive amount of work, my lifestyle is rather uneven (irregular meals, an unsettled sleeping cycle, lack of sports activity).	3.69	3.59	43504.000	-6.277	0.000
Due to stress in the workplace, I feel a lack of energy, tiredness.	3.25	3.24	56846.500	-0.990	0.322
Due to stress in the workplace, I have problems with concentration.	2.52	2.59	39169.500	-8.534	0.000
I feel the lack of my capacity in performing my work tasks	2.76	2.81	43564.500	-6.598	0.000
At workplace, the stance of my body is forced for a long time (siting, standing).	3.68	3.63	50059.500	-3.772	0.058
At the workplace there is tension, conflict between employees.	3.05	3.03	48800.500	-4.191	0.064

er employees regarding the statement “Due to an excessive amount of work, my lifestyle is rather uneven (irregular meals, an unsettled sleeping cycle, lack of sports activity)”, where older employees on average perceive a lower level of stress, as compared to younger employees. On the other hand, significant differences are found also regarding the statements “Due to stress in the workplace, I have problems with concentration” and “I feel the lack of my capacity in performing my work tasks” ( $p < 0.05$ ), where older employees on average perceive slightly higher levels of stress, as compared to younger employees. Other differences are not statistically significant ( $p > 0.05$ ).

Table 6 presents the non-parametric Mann-Whitney U test results of the age diverse employees for individual components for constructs of behavioral, emotional and physical symptoms of burnout.

For all statements regarding the physical symptoms of burnout, where the significant differences are found, the average levels of agreement with the individual statements in the group of older employees are again lower than compared to those of younger employees, which is in line with the research results presented in the literature (Maslach et al., 2001). Statistically significant differences between older and younger employees regarding the physical symptoms of burnout are identified at the following items: “I have headaches, migraines”, “My sleep cycle is messy”, “I have vertigo”, “I am sweating”, “I have sweaty and cold hands”, “I often have the flu or virus” and “I have stomach aches” ( $p < 0.05$ ).

For each and every individual statement of the behav-

ioral symptoms of burnout the average levels of agreement, indicating the perceived level of burnout, are lower for older employees. Statistically significant differences are identified regarding the following items: “I avoid activities”, “I have difficulties with concentration and memory”, “I wish for solitude” and “My working ability has declined” ( $p < 0.05$ ).

Also there are statistically significant differences between older and younger employees in statements that describe emotional symptoms of burnout: “I feel panic”, “I am sad”, “To me, everything seems meaningless”, “I am exceedingly sensitive”, “I am quarrelsome” and “I feel anger” ( $p < 0.05$ ), with on average lower levels observed in a group of older employees. Similarly, at all other statements the average levels of agreement for older employees are lower than compared to younger employees, but differences are not statistically significant ( $p > 0.05$ ).

### 4.3 The impact of occupational stress, symptoms of burnout and age on the employees' perceived work satisfaction

In the continuation we present the results of testing hypothesis H3, which was elaborated into the form of five sub-hypotheses:

- H3.1: Occupational stress has a significant impact on the employees' perceived work satisfaction.

Table 6: Mann-Whitney U Test for individual components of the constructs of the three groups symptoms of burnout of younger and older employees

	Mean		Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
	Younger employees	Older employees			
<b>Physical symptoms of burnout</b>					
I have headaches, migraines.	3.50	3.38	50311.500	-3.559	0.000
My sleep cycle is messy.	3.69	3.60	50866.500	-3.353	0.001
I have vertigo.	2.61	2.52	54122.500	-2.124	0.034
I am sweating.	2.64	2.52	53833.500	-2.233	0.026
I have sweaty and cold hands.	2.57	2.48	52387.500	-2.853	0.004
My blood pressure varies.	2.72	2.76	58860.500	-0.181	0.856
I often have the flu or virosis.	2.98	2.91	53367.500	-2.312	0.021
I am often tired, exhausted.	3.44	3.31	54775.500	-1.746	0.081
I have stomach aches.	3.09	2.88	47977.500	-4.286	0.000
I have increased heart rate.	2.90	2.85	55051.000	-1.575	0.115
I have lower back pain, shoulder pain.	3.56	3.53	58401.500	-0.362	0.718
<b>Behavioral symptoms of burnout</b>					
I avoid activities.	2.70	2.60	51006.000	-3.289	0.001
I have nightmares.	2.78	2.72	54897.500	-1.735	0.083
I have insomnia.	3.43	3.38	54459.000	-1.933	0.053
I have difficulties with concentration and memory.	2.51	2.43	53556.500	-2.321	0.020
I wish for solitude.	2.54	2.44	51623.000	-3.092	0.002
My working ability has declined.	2.88	2.76	53870.000	-2.118	0.034
I lack the will to work.	2.72	2.65	56190.000	-1.176	0.240
I lack the will to socialize with co-workers.	2.65	2.58	55095.500	-1.557	0.120
<b>Emotional symptoms of burnout</b>					
I have depressive feelings.	2.42	2.36	58017.500	-0.522	0.602
I am tense.	3.46	3.38	55109.500	-1.611	0.107
I feel panic.	2.50	2.39	53193.500	-2.531	0.011
I am afraid of losing the job or not finishing the work on schedule.	2.83	2.92	57005.000	-0.922	0.357
I am sad.	2.61	2.58	52485.000	-2.702	0.007
I have a feeling of helplessness.	2.43	2.34	55874.500	-1.415	0.157
To me, everything seems meaningless.	2.35	2.29	53790.000	-2.304	0.021
I am emotionally exhausted.	2.72	2.67	58959.500	-0.068	0.946
I am exceedingly sensitive.	2.64	2.55	53106.000	-2.410	0.016
I am quarrelsome.	2.58	2.47	51569.500	-3.128	0.002
I feel anger.	2.52	2.42	49988.500	-3.782	0.000

Table 7: Multiple regression results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.178	0.036		4.973	0.000		
Stress	-0.459	0.061	-0.459	-7.540	0.000	0.433	2.310
Behavioral symptoms of burnout	-0.284	0.084	-0.285	-3.378	0.001	0.954	1.048
Emotional symptoms of burnout	-0.147	0.079	-0.147	-1.864	0.003	0.963	1.038
Physical symptoms of burnout 1	0.042	0.040	0.043	1.057	0.291	0.403	2.480
Physical symptoms of burnout 2	0.060	0.043	0.060	1.398	0.162	0.373	2.684
Age	-0.328	0.051	-0.164	-6.490	0.000	0.978	1.023

- H3.2: Symptoms of behavioral burnout have a significant impact on the employees' perceived work satisfaction.
- H3.3: Symptoms of emotional burnout have a significant impact on the employees' perceived work satisfaction.
- H3.4: Symptoms of physical burnout have a significant impact on the employees' perceived work satisfaction.
- H3.5: Age has a significant impact on the employees' perceived work satisfaction.

The multiple regression model was formed, where the dependent variable was the multidimensional construct (factor) for employees' satisfaction, while the explanatory variables included in the model were constructs (factors) for occupational stress and burnout (physical, behavioral and emotional). The age differences were studied by the inclusion of the dummy variable age (0 – older and 1 – younger employees) into the regression model. Results are presented in Table 7.

Multiple regression results show that the regression model is significant ( $F = 181.765, p < 0.01$ ) and that over 60% of variance of a dependent variable is explained by the regression model (Adjusted R square = 0.618). Values of tolerance and the variance inflation factor (VIF) indicate no significant multicollinearity problems among variables. The cutoff for  $VIF < 5$  is used (Sheather, 2009).

Results also reveal that the impact of occupational stress of employees on their work satisfaction is, as expected, negative. The higher the perceived stress, the lower on average the employees' work satisfaction; the impact is significant ( $p < 0.05$ ). Therefore, hypothesis H3.1 is confirmed.

Behavioral and emotional symptoms of burnout also proved to have a significant and negative impact on employees' satisfaction ( $p < 0.05$ ); employees perceiving higher levels of behavioral and emotional symptoms of burnout, are on average, less satisfied with their work. Therefore, hypotheses H3.2 and H3.3 are confirmed. On the other hand, the physical symptoms of burnout were not identified as an important factor of employees' work satisfaction (for both factors  $p < 0.05$ ), thus hypothesis H3.4 is not confirmed. According to Veromaa et al. (2017) work ability is the degree to which an employee, given his/her health, is physically and mentally able to cope with the demands at work. On the other hand, work satisfaction and work engagement are more dependent on mental or emotional aspects.

Age is a significant factor shaping the employees' perceived work satisfaction – research results show that the regression coefficient for age variable is significant and negative ( $p < 0.05$ ), confirming that the level of work satisfaction for younger employees is on average lower than compared to their older counterparts. As already mentioned, the perceived occupational stress and perceived burnout are significantly higher in the group of younger employees, thus it is not surprising that these characteristics are also reflected in their lower perceived satisfaction with work. Therefore, hypothesis H3.5 is confirmed.

## 5 Discussion and conclusion

Based on the results, we found there are statistically significant differences between older and younger employees relating to occupational stress as well as regarding the behavioral, emotional and physical symptoms of burnout

in the workplace (Table 4). Results also revealed that the perceived levels of occupational stress as well as perceived symptoms of burnout (behavioral, emotional and physical) are on average lower in the group of older employees than compared to the group of younger employees, which is in line with several previous findings (Mosadeghrad, 2014; Henkens and Leenders, 2010; Maslach et al., 2001; Schaufeli and Enzmann, 1998; Campanelli, 1990). This at the same time provides the answers to the first two research questions: we established the statistically significant differences in occupational stress and in symptoms of burnout in the workplace of older employees as compared to younger employees in Slovenian companies.

Research results also show that the impact of employees' occupational stress on their work satisfaction is significant and negative (the higher the perceived stress, the lower on average the employees' work satisfaction). Behavioral and emotional symptoms of burnout also proved to have a significant and negative impact on employees' satisfaction, while physical symptoms of burnout do not. Employees perceiving higher levels of behavioral and emotional symptoms of burnout, are on average, less satisfied with their work. Age is a significant factor shaping the employees' perceived work satisfaction. Research results show that the regression coefficient for age variable is significant and negative, confirming that the level of work satisfaction for younger employees is on average lower than compared to their older counterparts (Table 7). The perceived occupational stress and perceived symptoms of burnout are significantly higher in the group of younger employees (Table 5 and Table 6), which is in line with several previous findings (Adams et al., 2013; Ahola et al., 2008; Haley et al., 2013). This also brings the answer to the third research question: we established that occupational stress, behavioral and emotional symptoms of burnout and age proved to have a significant and negative impact on employees' satisfaction, while the impact of physical symptoms of burnout was not confirmed.

The demographics of the global workforce are changing, specifically with a more age diverse workforce, bringing new research questions. It becomes more important to find ways for people to stay satisfied in their work at different life stages. The quality of working life has a big impact on all employees because we spend so much of our time at work. Therefore, investments in active ageing need to be secured during the working years.

Our study has several implications for employers and policymakers. Recommendations for employers that reduce occupational stress and symptoms of burnout for age diverse employees include redesign of the workplace (re-designing individual work tasks according to the needs and capabilities of employees), job simplification, job rotation, redistribution in the company (coordinating job requirements with the capabilities and skills of employees), job sharing and providing more frequent short breaks at work. For economic policymakers the main implication is

the need to formulate legislative measures that allow for more flexible forms of employment of a younger generation. Working conditions must be adapted to all employees; workplaces should be developed according to the age diversity of employees, with the workload adapted to all age groups. It is important to know that job characteristics are not experienced in the same way by all employees. From this perspective, our research shows the importance of well-being, health and a friendly work environment for age diverse employees in Slovenian companies.

Our study is limited to the focus of age differences among employees in Slovenia in medium-sized and large Slovenian companies. Further research may investigate in more detail the importance of control variables that are not included in the model, for example, gender, education or industry, as well as gender differences in the respective age groups. The multidimensional constructs included in our research model are the perceived occupational stress, symptoms of behavioral, emotional and physical burnout and work satisfaction that are limited to the work place situations. Further research may also include dimensions of individuals' lives; for example, we can assume that a great deal of stress of younger generations can be attributed to the greater dynamics and difficulties in balancing private-family care and employment. Therefore, for economic policy makers it could also be important to establish the importance of affordable, and, above all, safe, child-care. Allowing different precarious forms of employment, which the younger generations in Slovenia witness to a great extent, does not help to regulate the situation in this field, nor to create a balance between the family and the employment environment. Temporary contracts for employment are extremely common among young people in Slovenia; data show that in Slovenia the incidence of temporary contracts among young people is much higher (over 70%) as compared to OECD averages for the same age group (approximately 25%) (OECD, 2015). The negative effects of precariat are numerous and contribute to occupational stress and burnout: uncertainty, low pay, limited social security rights, mostly short-term work, flexibility on the part of an employee in terms of adapting to the needs of employers, etc. This is also an important area for further research – if further research confirms that occupational stress and burnout are deepened by the precarious forms of employment, then economic and social policy measures should pay more attention to this area immediately. From the methodological viewpoint, further research may include the development of a conceptual model using the structural equation modeling (SEM) approach. A multivariate analysis may be recommended in the structural model to examine differences by age in the paths.

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## **Poklicni stres, simptomi izgorelosti in zadovoljstvo na delovnem mestu starostno raznolikih zaposlenih**

**Ozadnje in namen:** Starostno raznoliki zaposleni se soočajo z različnim poklicnim stresom in različnimi simptomi izgorelosti pri opravljanju svojega dela. Zato ne smemo zanemariti vloge starosti zaposlenih pri upravljanju delovnih mest. Glavni namen prispevka je preučiti starostne razlike v poklicnem stresu in simptomih izgorelosti zaposlenih ter analizirati vpliv poklicnega stresa, simptomov izgorelosti in starosti na zadovoljstvo zaposlenih.

**Metodologija:** Prispevek temelji na raziskavi razlik med dvema starostnima skupinama, in sicer skupino mlajših zaposlenih, ki so bili razvrščeni v skupino pod 50 let in starejših zaposlenih med 50 in 65 letom starosti. Faktorska analiza je bila uporabljena za oblikovanje konstruktov poklicnega stresa, simptomov izgorelosti in zadovoljstva na delovnem mestu. Neparometrični Mann-Whitney U test je bil uporabljen za testiranje razlik v vrednosti konstruktov poklicnega stresa in simptomov izgorelosti na delovnem mestu med dvema neodvisnima skupinama. Multipla regresijska analiza je bila uporabljena za preučitev vpliva poklicnega stresa, simptomov izgorelosti in starosti na zadovoljstvo zaposlenih na delovnem mestu.

**Rezultati:** Rezultati kažejo, da obstajajo statistično značilne razlike v poklicnem stresu in simptomih izgorelosti na delovnem mestu med starejšimi in mlajšimi zaposlenimi. V povprečju mlajši zaposleni zaznavajo višjo stopnjo poklicnega stresa in izgorelosti v primerjavi s starejšimi zaposlenimi. Rezultati raziskave tudi kažejo, da poklicni stres, vedenjski simptomi izgorelosti in čustveni simptomi izgorelosti ter starost, statistično značilno vplivajo na zadovoljstvo zaposlenih na delovnem mestu.

**Zaključek:** Upravljanje starostne raznolikosti zahteva strateški pristop k upravljanju ljudi pri delu. S tega vidika raziskava dopolnjuje obstoječa raziskovalna spoznanja s poudarjanjem odnosov med starostjo in poklicnim stresom ter simptomi izgorelosti, ki do sedaj niso bili dovolj raziskani, saj je bila vloga starosti pri upravljanju delovnih mest v veliki meri prezrta.

**Ključne besede:** poklicni stres; izgorelost; simptomi izgorelosti; starostno raznoliki zaposleni; zadovoljstvo na delovnem mestu