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# Individual differences and occupational stress perceived: a Croatian survey



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# Individual differences and occupational stress perceived: a Croatian survey

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### **Abstract**

Apart from elaborating the concept of occupational stress (through its definition, sources, consequences, ways of dealing with it, and its relationship with individual differences), the research had two objectives: (1) to measure occupational stress levels among different categories of employees working in Croatian enterprises, and (2) to study and analyze stress in Croatia in relation to individual differences (gender, age, marital status, parenthood, number of children, hierarchical level, department, and working hours).

The greatest level of stress perceive respondents who have three or more children, who are more than 50 year old, and those employed in marketing, at middle levels or in procurement, while the lowest level of stress perceive employees younger than 30 years of age, those employed in HR, finances and production, and parents of one child. Concerning the relationship between individual differences and levels of stress experienced, although the cross-sectional design of the study does not allow for causal interpretation of relationships found, findings suggest that there is a connection between age, marital status, parenthood, number of children and hierarchical level, and the way stress is perceived, while gender, department and working hours are not connected to it.

The research integrated a broader set of antecedent variables which enable a better understanding of the demographic and work factors that lead to occupational stress. That should subsequently help managers understand a greater proportion of the variance of employees' satisfaction, performance and turnover, and help them better deal with it.

### **Keywords**

occupational stress, sources of occupational stress, consequences of occupational stress,  
individual differences, Croatia

### **JEL classification**

M1

## 1. Introduction

Stress, in general, and occupational stress, in particular, is a fact of modern day life that seems to have been on the increase. The topic is, therefore, still popular, although it occupies academics' and practitioners' attention now for more than half a century.

Numerous studies have explored stress, primarily from the psychological, sociological, and medical perspective. From the business perspective, researchers dealt with the issue of occupational stress, as job/work causes a great deal of stress to contemporary employees.<sup>1</sup> As well, there is a vast amount of research on individual differences involved in the work-stress process.<sup>2</sup> Researchers have studied individual differences in the belief that they influence reactions to objectively stressful events or appraisals of events as being stressful, or they simply add to the variance explained in the stress outcomes (Ganster & Schaubroeck, 1991).

In Croatia, very little research addressed the concept of occupational stress and its determinants in relation to varied employee demographics. Thus, apart from elaborating the concept of occupational stress (through its definition, sources, consequences, ways of dealing with it, and its relationship with individual differences), the main objectives of this study were the following: (1) to measure occupational stress levels among different categories of employees working in Croatian enterprises, and (2) to study and analyze stress in Croatia in relation to individual differences (gender, age, marital status, parenthood, number of children, hierarchical level, department, and working hours).

## 2. Occupational stress

Occupational (job, work or workplace) stress has become one of the most serious health issues in the modern world (Lu et al., 2003, 479), as it occurs in any job and is even more present than decades ago. Namely, the world of work differs considerably from the working environment of 30 years ago: longer hours at work are not unusual, frequent changes in culture and structure are often cited, as well as the loss of lifetime career paths (Cooper & Locke, 2000 in Fotinatos-Ventouratos & Cooper 2005), which all leads to greater presence and levels of stress.

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<sup>1</sup> Specifically, researches dealt with: (1) sources of occupational stress (Cooper & Marshall, 1976); (2) dealing with occupational stress (Comish & Swindle, 1994; Murphy, 1995; Rees, 1997; Shuttleworth, 2004); (3) costs of occupational stress (McHugh, 1993; Hoel et al., 2001); (4) relationship between occupational stress and concepts such as job satisfaction, job performance and organizational commitment (Sullivan & Bhagat, 1992; Blake, 1996; Vakola & Nikolaou, 2005; Chen et al., 2006); (5) relationship between occupational stress and employee health (Ganster & Schaubroeck, 1991); (6) occupational stress in different countries (Ben-Bakr et al., 1995; Kirkcaldy & Furnham, 1999; Lu et al., 2003); (7) occupational stress in different industries (for example Dua (1994), Sharpley et al. (1996) and Antoniou et al. (2006) dealt with stress in teaching industry, while Ross (2005) and Erkutlu & Chafra (2006) dealt with stress in tourism industry); (8) stress in different professions (about stress in HR field see Lind & Otte (1994), and about stress in sales see Sager (1990) and Montgomery et al. (1996)); and (9) managerial stress and managers' stress coping styles (Chusmir & Franks, 1988; Sager, 1990; Fulcheri et al., 1995; Blake et al., 1996; Rees, 1997; Kirkcaldy & Furnham, 1999).

<sup>2</sup> Researches dealt with the relationship between various individual characteristics/circumstances and occupational stress, such as gender (Dua, 1994; Sharpley et al., 1996; Kirkcaldy & Furnham, 1999; Antoniou et al., 2006; Fotinatos-Ventouratos & Cooper, 2005; Vakola & Nikolaou, 2005), age (Sager, 1990; Dua, 1994; Ben-Bakr et al., 1995; Sharpley et al., 1996; Kirkcaldy & Furnham, 1999; Antoniou et al., 2006; Vakola & Nikolaou, 2005), educational level (Dua, 1994; Ben-Bakr et al., 1995; Kirkcaldy & Furnham, 1999; Vakola & Nikolaou, 2005), nationality/ethnic background (Dua, 1994; Ben-Bakr et al., 1995; Lu et al., 2003), marital status (Kirkcaldy & Furnham, 1999), social class (Fotinatos-Ventouratos & Cooper, 2005), hierarchical level (Dua, 1994; Kirkcaldy & Furnham, 1999), tenure and experience (Ben-Bakr et al., 1995; Moran, 1998; Kirkcaldy & Furnham, 1999), performance (Varca, 1999), management style of superiors (Lind & Otte, 1994), organization size and type of organization (Ben-Bakr et al., 1995), supervisor's power (Erkutlu & Chafra, 2006), and personality traits (Sager, 1990; Lind & Otte, 1994; Montgomery et al., 1996; Frei et al., 1999).

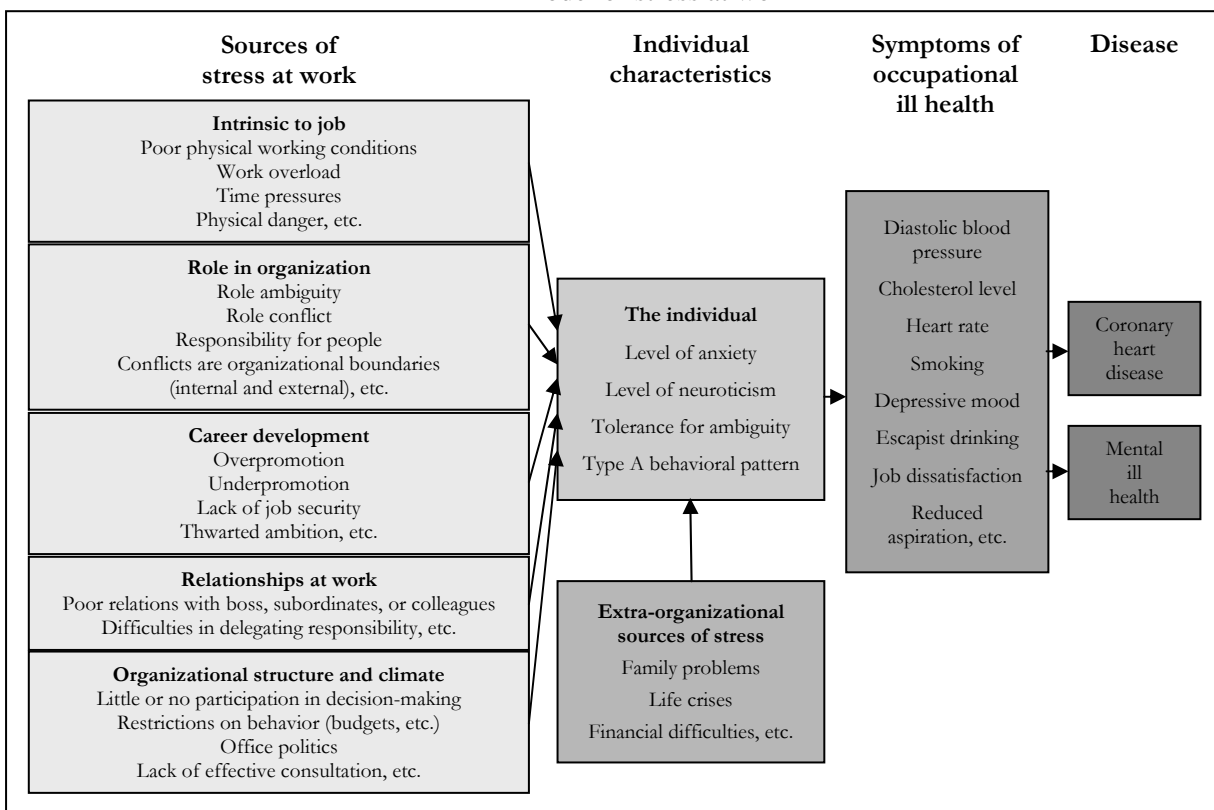
2.1. Definition of occupational stress

Stress, in general, can be defined as the reaction of individuals to demands (stressors) imposed upon them (Erkutlu & Chafra, 2006, 287). It refers to situations where the well-being of individuals is detrimentally affected by their failure to cope with the demands of their environment (Erkutlu & Chafra, 2006, 287).

Occupational stress, in particular, is the inability to cope with the pressures in a job (Rees, 1997), because of a poor fit between someone’s abilities and his/her work requirements and conditions (Holmlund-Rytkönen & Strandvik, 2005). It is a mental and physical condition which affects an individual’s productivity, effectiveness, personal health and quality of work (Comish & Swindle, 1994, 26).

Main components of the work-stress process are potential sources of stress (stressors), factors of individual differences (moderators/mediators), and consequences of stress (strain) (Lu et al., 2003, 481), as figure 1 reveals. Stressors (job-related and extra-organizational) are objective events, stress is the subjective experience of the event, and strain is the poor response to stress. Accordingly, the nature and effects of stress might be best understood by saying that some environmental variables (stressors), when interpreted by the individual (cognitive interpretation), may lead to stress (Dua, 1994, 59).

Figure 1  
A model of stress at work



Source: Cooper, C. L., Marshall, J. (1976), Occupational sources of stress: a review of the literature relating to coronary heart disease and mental ill health, *Journal of occupational psychology*, Vol. 49, No. 1, pp. 12

2.2. Sources of occupational stress

Among life situations, the workplace stands out as a potentially important source of stress purely because of the amount of time that is spent in this setting (Erkutlu & Chafra, 2006, 287). Over the years, a large number of workplace stressors of varying degrees of gravity have been identified.

According to Hurrell et al. (1988 in Murphy, 1995), common organizational and individual stressors could be classified into five groups: (1) organizational practices (performance reward systems, supervisory practices, promotion opportunities), (2) job/task features (workload, workspace, autonomy), (3)

organizational culture/climate (employee value, personal growth, integrity), (4) interpersonal relationships (supervisors, coworkers, customers), and (5) employee personal characteristics (personality traits, family relationships, coping skills). Burke (1988 in Lu et al., 2003) grouped job stressors into the following six categories: physical environment, role stressors, organizational structure and job characteristics, relationships with others, career development, and work-family conflict, while Copper et al. (1988 in Lu et al., 2003) identified six sources of stress at work: factors intrinsic to the job, management role, relationship with others, career and achievement, organizational structure and climate, and home/work interface. More simply, Antoniou et al. (2006) point that specific conditions that make jobs stressful can be categorized either as exogenous (i.e. unfavorable occupational conditions, excessive workload, lack of collaboration, etc.) or endogenous pressures (i.e. individual personality characteristics, etc.).

When we add the complexity and turbulence of contemporary business environment and organizational life, altogether, causes of occupational stress can be grouped into two main groups: (1) job-related stressors, with three major subgroups – environment specific, organization specific, and job specific stressors, and (2) individual-related stressors, which can be either a consequence of individual characteristics or a consequence of individual life circumstances, as table 1 depicts.

*Table 1*  
Sources of occupational stress

<b>Job-related stressors</b>		
<b>Environment specific</b>	<b>Organization specific</b>	<b>Job specific</b>
Economic conditions Increased levels of competition Market changes Technological development Changes in production and products New forms of organization and product development Drive for greater cost-effectiveness Networks Multinationals General public concern for the environment, etc.	Changes within organization Reorganizations Delaying Layoffs Organizational structure Organizational culture/climate Mergers, acquisitions and similar Changes of company ownership Workforce diversity Reward systems Promotion policies Job security Leadership style More training needed, etc.	Poor fit between abilities and skills needed to perform job effectively Work overload Workpace Pressure to work longer hours Job characteristics Conflicting job demands Unclear job expectations Pressures of responsibility Time pressures Lack of resources to perform job Lack of information Lack of collaboration Relations with subordinates, coworkers and superiors Working conditions Physical danger Over or underpromotion Insufficient training, etc.
<b>Individual-related stressors</b>		
<b>Individual characteristics</b>		<b>Individual life circumstances</b>
Personality traits Demographic characteristics Coping skills, etc.		Work/life conflict Family problems Personal problems Social problems Financial difficulties, etc.

Compiled using: Cooper & Marshall (1976); Burke (1988) in Lu et al. (2003); Chusmir & Franks (1988); Hurrell et al. (1988) in Murphy (1995); Jamal (1990) in Montgomery et al. (1996); McHugh (1993); Dua (1994); Fulcheri et al. (1995); Murphy (1995); Blake et al. (1996); Montgomery et al. (1996); Rees (1997); Schabracq & Cooper (2000); Antoniou et al. (2006)

### 2.3. Consequences of occupational stress

Stress produces a range of undesirable, expensive, and debilitating consequences (Ross, 2005), which affect both individuals and organizations. In organizational setting, stress is nowadays becoming a major contributor to health and performance problems of individuals, and unwanted occurrences and costs for organizations.

Consequences of occupational stress can be grouped into those on individual and those on organizational level. On the individual level, there are three main subgroups of strains:<sup>3</sup>

- 1) *Unwanted feelings and behaviors* – such as job dissatisfaction, lower motivation, low employee morale, less organizational commitment, lowered overall quality of work life, absenteeism, turnover, intention to leave the job, lower productivity, decreased quantity and quality of work, inability to make sound decisions, more theft, sabotage and work stoppage, occupational burnout, alienation, and increased smoking and alcohol intake.
- 2) *Physiological diseases (poor physical health)* – such as increased blood pressure and pulse rate, cardiovascular diseases, high cholesterol, high blood sugar, insomnia, headaches, infections, skin problems, suppressed immune system, injuries, and fatigue.
- 3) *Psychological diseases (poor emotional (mental) health)* – psychological distress, depression, anxiousness, passiveness/aggressiveness, boredom, loss of self-confidence and self-esteem, loss of concentration, feelings of futility, impulsiveness and disregarding of social norms and values, dissatisfaction with job and life, losing of contact with reality, and emotional fatigue.

On the organizational level, consequences of occupational stress can be grouped into two major subgroups:<sup>4</sup>

- 1) *Organizational symptoms* – such as discontent and poor morale among the workforce, performance/productivity losses, low quality products and services, poorer relationships with clients, suppliers, partners and regulatory authorities, losing customers, bad publicity, damage to the corporate image and reputation, missed opportunities, disruption to production, high accident and mistakes rates, high labor turnover, loss of valuable staff, increased sick-leave, permanent vacancies, premature retirement, diminished cooperation, poor internal communications, more internal conflicts, and dysfunctional workplace climate.
- 2) *Organizational costs* – such as costs of reduced performance/productivity (lack of added value to product and/or service), high replacement costs in connection with labor turnover (increase in recruitment, training and retraining costs), increased sick pay, increased health-care costs and disability payments, higher grievance and litigation/compensation costs, and costs of equipment damage.

As evident from the above, consequences of occupational stress, both on individual and organizational level, are a real cost to organizations. Because of its significant economic implications, stress is not only a huge burden (Ben-Bakr et al., 1995), but one of the fastest growing concerns to contemporary organizations, especially given the high levels of competition and environmental turbulence, which do not allow organizations to bear costs such as those caused by stress (McHugh, 1993). However, costs which are a consequence of stress are hardly ever assessed or calculated either in human or financial terms. Despite the apparent need for measuring costs of stress, it seems that to date relatively limited number of organizations estimated those enormous indirect costs.

Finally, it is important to stress that contrary to popular belief, stress can be associated with both pleasant and unpleasant events, and only becomes problematic when it remains unresolved (Erkutlu & Chafra, 2006, 287). In other words, one could argue that not all stress is dysfunctional and that, in fact, stress is not inherently bad, while a limited amount of stress combined with appropriate responses actually can benefit both the individual and the organization (Chusmir & Franks, 1988, 70). Namely, as low and high<sup>5</sup> stress predict poor performance, and moderate stress predicts maximum performance (Yerkes & Dodson, 1908 in Sharpley et al., 1996), the total elimination of stress should not be aimed at.

#### 2.4. Dealing with occupational stress

The harmful and costly consequences of stress demonstrate the need for strategies to limit stressors within the organization (Comish & Swindle, 1994, 26), as well as to deal with stress that already occurred. Namely, those organizations which fully address the issue of work-related stress through problem

<sup>3</sup> Compiled using: Chusmir & Franks (1988), Comish & Swindle (1994), Dua (1994), Lind & Otte (1994), Ben-Bakr et al. (1995), Johnson & Indvik (1996), Earnshaw & Morrison (2001), and Antoniou et al. (2006).

<sup>4</sup> Compiled using: McHugh (1993), Schabracq & Cooper (2000), Hoel et al. (2001), and Ross (2005).

<sup>5</sup> Severe or chronic job stress is dysfunctional (Montgomery et al., 1996), in that it is linked to many strains on organizational and individual level, all of which adversely affect net profits.

recognition and problem-solving activities will be better placed to deal with the demands of a rapidly changing world and thus enhance their chances of gaining competitive advantage (McHugh, 1993, 30). Fortunately, there are ways of dealing with occupational stress.

Firstly, organizations and their employees should become more aware of the degree to which stress is an unnecessary cost, and a cost which they must seek to eliminate if their organizations are to survive and grow. Naturally, this awareness must start at top management level where the estimated cost of stress is sufficient to generate organizational commitment to subsequent action (McHugh, 1993, 31).

Secondly, work-related stress should become an issue which increasingly features on the agenda of efficient managers (McHugh, 1993, 18). In an increasingly competitive and fast changing business world, efficient managers should feel compelled to address the issue of work-related stress through counting the costs and taking appropriate action so as to minimize its effects (McHugh, 1993, 19). Managers should expend their efforts in reducing the significant sources of stress (Blake et al., 1996), as this leads to a higher employee satisfaction, increases the productivity of the workforce and reduces negative consequences of stress, which at the end results in higher profits.

Thirdly, training and employee assistance programs dealing with stress should be on employees' disposal. Various workshops, seminars and conferences should increase employees' awareness of the costs associated with employee stress, and should teach them how to cope with stressful situations and states. As Shuttleworth (2004) explains, training can have a positive impact on tackling stress in the workplace, as it helps employees become more resilient towards stress, enables them to tackle the root causes of any problems, and helps managers who not only need to manage their own stress levels, but are responsible for their direct reports. Considering the organizational and personal costs of high stress, there is certainly an implied payoff in training managers and employees to recognize organizational factors that contribute to stress, and to take steps to alleviate them (Chusmir & Franks, 1988).

At the end, unfortunately, it has to be said that advanced organizations of the west appear to have taken actions based upon their increased understanding of the relationship between stress and organizational outcomes, while benefits which accrue from such initiatives are so far not recognized in Croatia.

### *2.5. Relationship between individual characteristics and occupational stress*

Individual differences affect our perceptions and interpretations of events around us. They contribute to our experience of stress (primary appraisal), and our decisions what to do to deal with the stressor – our choice of coping process (secondary appraisal) (Moran, 1998). As Lu et al. (2003, 481) explain, vast individual differences in vulnerability to stress alter an individual's perception of a potential source of stress (direct effect), impact on the transformation of perceived stress into various consequences of stress (indirect effect), and ameliorate these stress consequences (direct effect).

The personality variables that have been linked to stress include locus of control, self-esteem, type A behavior pattern, hardiness, and negative affectivity (Ganster & Schaubroeck, 1991; Lind & Otte, 1994; Murphy, 1995). Demographic variables that are proven to relate to someone's job stressor/health relationships include gender, age, marital status, job tenure, job title, and hierarchical level (Dua, 1994; Lind & Otte, 1994; Murphy, 1995), among which gender, age and hierarchical level were found to be the most significant, as further explanations reveal.

A general tendency exists in the literature according to which females experience higher levels of occupational stress regarding gender-specific stressors and have different ways of interpreting and dealing with problems related to their work environment (Offerman and Armitage, 1993 in Antoniou et al., 2006). For example, Sharpley et al. (1996) found that males have statistically significant lower job stress scores, Davidson et al. (1995 in Fotinatos-Ventouratos & Cooper, 2005) found that female managers are under much more pressure than their male counterparts, and Antoniou et al. (2006) found that female teachers experienced significantly higher levels of occupational stress compared to their male counterparts. Ganster and Schaubroeck (1991) point that women experience the greater level of stress as they are more vulnerable to the demands of work to the extent that they often have more non-work demands than men. Gregory (1990) notifies that, for the female professional, gender stereotyping in the workplace ads to the role conflict stress experiences, while Comish and Swindle (1994) explain that role demands such as that of



being wife, mother and professional provoke role conflict. Finally, the results of the bivariate analysis conducted by Fotinatos-Ventouratos and Cooper (2005) revealed significant differences in terms of physical and psychological wellbeing amongst the male and female sample.

Concerning the relationship between age and occupational stress, the ability to handle stress associated with job and organization was found to increase with age (experience) (Sager, 1990). For example, researches revealed that younger staff members reported more job stress than older staff (Dua, 1994), that employees who are less than 30 years old experience the highest levels of stress (Ben-Bakr et al., 1995), that staff between the ages 31 and 40 suffered the most from job stress (Sharpley et al., 1996), and that younger teachers experienced higher levels of burnout, specifically in terms of emotional exhaustion and disengagement from the profession (Antoniou et al., 2006). The major explanation for such a finding is that older employees have often reached a stage where career development is not their major concern, and hence a number of job characteristics which may cause stress to younger staff, who have their career ahead of them, do not cause stress to older staff (Dua, 1994, 75).

Lastly, staff employed at the higher job levels were found to be less stressed than those employed at the lower job levels (Dua, 1994). As well, different levels of management influence preference for stress coping styles, specifically, as it is progressed towards the more senior levels of management, delegation and maintaining style relationships are considered the most useful forms (Kirkcaldy & Furnham, 1999).

### 3. Research objectives and methodology

As already mentioned, objectives of the empirical part of this paper were: (1) to measure occupational stress levels among different categories of Croatian employees, and (2) to find out whether there is a relationship between individual differences and occupational stress perceived. The impetus for such a study came from the literature, which reveals that in addition to the job stress experienced by most individuals, there also exist stressors unique to certain employee groups that add to the shared job-related stressors and inflict a handicap on those groups not borne by most of the other employees (Comish & Swindle, 1994).

Variables upon which employees were grouped into different categories and that were used for the assessment of the relationship between individual differences and self-reported occupational stress were chosen from earlier researches and models of stress (see footnotes 1 and 2). Precisely, five demographic (gender, age, marital status, parenthood, and number of children) and three organizational determinants (hierarchical level, department, and working hours) of various levels of stress were assessed.

The stress data were collected by means of the "Occupational stress intensity questionnaire" obtained from the Faculty of philosophy in Zagreb, Croatia. The stress measurement questionnaire consisted of 20 items, and used a five-point Likert-type numerical scale ranging from 1 (practically never) to 5 (almost always).<sup>6</sup> In addition to stress measurement questionnaire, study participants were asked to respond to a number of items related to their individual characteristics.

A self-report measure<sup>7</sup> was administered to 147 employees.<sup>8</sup> Table 2 depicts their profile.

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<sup>6</sup> The original scale of the "Occupational stress intensity questionnaire" ranges from 0 to 4. However, authors of this paper decided to modify the scale into 1 to 5 one, as Croatian employees are accustomed to such a scale.

<sup>7</sup> The data regarding the level of occupational stress were self-reported, introducing distortion inherent to that medium. However, stress measure of self-report type is common in researches dealing with the issue (for example, see Dua, 1994; Lind & Otte, 1994; Ben-Bakr et al., 1995; Sharpley et al., 1996; Frei et al., 1999; Kirkcaldy & Furnham, 1999; Varca, 1999; Lu et al., 2003; Fotinatos-Ventouratos & Cooper, 2005; Vakola & Nikolaou, 2005; Antoniou et al., 2006; Chen et al., 2006; Erkutlu & Chafra, 2006).

<sup>8</sup> The sample size is acceptable, as researchers in the field often draw their conclusions using similar sample sizes. For example, Blake et al. (1996) had a total study population of 62 production supervisors and 15 maintenance supervisors, 104 questionnaires were returned in the study conducted by White et al. (1997), 71 service consultants participated in Varca's (1999) final data collection process, and Chen et al. (2006) had 144 employees working in accounting capacities in various businesses in their sample.

*Table 2*  
Profile of respondents

Variable	Structure (%)
<b>Gender</b>	male (26.53%), female (73.47%)
<b>Age</b>	under 30 years (22.45%), 30-40 years (34.69%), 40-50 years (28.57%), over 50 years (14.29%)
<b>Marital status</b>	not married (44.90%), married (55.10%)
<b>Parenthood</b>	no children (38.78%), children (61.22%)
<b>Number of children</b>	one (36.67%), two (60.00%), three or more (3.33%)
<b>Hierarchical level</b>	low level managers (17.25%), middle managers (13.8%), top managers (2.60%), other (20.70%)
<b>Department</b>	R&D (21.28%), procurement (6.38%), production (4.26%), sales (23.40%), finances (12.77%), accounting (17.02%), marketing (8.51%), human resources (2.13%), other (4.26%)
<b>Working hours</b>	less than 8 hours per day (22.45%), 8 to 9 hours per day (57.14%), more than 9 hours per day (20.41%)

Except descriptive statistics calculations (mean values and standard deviations), in order to test the relationship between different categories of employees and their perceived levels of job stress, one-way ANOVA analysis (F tests) was used. Calculations and tests were conducted using Statistical Package for the Social Sciences (SPSS).

#### 4. Research findings

Research findings are presented in two sections, following the two research objectives. Firstly, the level of occupational stress among different categories of Croatian employees is elaborated. Secondly, the relationship between individual differences and occupational stress is assessed.

##### *4.1. Occupational stress among different categories of Croatian employees*

In order to find out whether employees differ in their average level of stress perceived as a consequence of their demographic and work characteristics, employees were grouped into 28 subgroups devised using eight individual differences (gender, age, marital status, parenthood, number of children, hierarchical level, department, and working hours). Average stress results (ASR) for different categories of respondents are given in table 3.

*Table 3*  
Average stress results for different categories of employees

Individual difference	Subgroups	Average stress result*	Standard deviation
<b>Gender</b>	male	50.31	13.40
	female	55.31	13.70
<b>Age</b>	up to 30 years old	43.77	11.40
	30-40 years old	54.53	12.41
	40-50 years old	56.14	14.27
	more than 50 years old	62.86	9.12
<b>Marital status</b>	not married	51.00	13.63
	married	56.41	13.45
<b>Parenthood</b>	no children	50.21	12.07
	children	56.13	14.11
<b>Number of children</b>	one	49.55	16.30
	two	59.39	10.93
	three or more	70.00	12.12
<b>Hierarchical level</b>	low level managers	50.90	11.30
	middle managers	61.80	14.39
	top managers	51.75	17.95
<b>Department</b>	R&D	50.70	14.34
	procurement	60.33	13.12
	production	49.50	6.03
	sales	55.82	15.26
	finances	49.00	12.06
	accounting	55.50	15.48
	marketing	62.50	7.83
	human resources	44.33	10.97
	other	55.50	11.50
<b>Working hours</b>	less than 8 hours per day	55.45	12.14
	8 to 9 hours per day	53.43	13.76
	more than 9 hours per day	53.90	15.64
<b>TOTAL</b>	<b>all respondents</b>	<b>53.98</b>	<b>13.75</b>

\* Average stress result was measured on the scale from 20 to 100.

As evident from table 3, altogether, Croatian employees perceive moderate stress. Namely, as stress instrument used measures stress on the scale from 20 to 100, with 60 being the boundary between high and low stress perceived, the average result of 53.98 for all respondents in the sample implies that they on average experience moderate stress.

Among 28 subgroups of respondents, the greatest level of stress perceive respondents who have three or more children (ASR = 70.00), those of age 50 and over (ASR = 62.86), employed in marketing (ASR = 62.50), middle managers (ASR = 61.80), and those in procurement (ASR = 60.33). The lowest level of stress perceive respondents younger than 30 years old (ASR = 43.77), those employed in HR (ASR = 44.33), finances (ASR = 49.00) and production (ASR = 49.50), and parents of one child (ASR = 49.55). Respondents in all other subgroups (18 of them) express average stress between 50.21 and 59.39.

Consequently, it can be concluded that certain employee groups perceive higher levels of stress than others. Having that in mind, organizations should attach greater importance to demographic and work characteristics of individuals when recruiting, developing and motivating, as those characteristics provide a good starting point for understanding and predicting how people will respond under different types of stress. More to it, findings may help to implement effective prevention programs against occupational stress, considering how different categories of employees perceive stress at work. Still, we have to be aware that interpreting differences in levels of stress is a difficult task since there are many intervening factors.<sup>9</sup>

<sup>9</sup> As Cooper and Marshall (1976, 24) stress, the area of stress is essentially multifactorial, requiring that we focus on more than one stressor at a time, if we are to draw meaningful conclusions from our data.

*Relationship between individual differences and occupational stress*

As said before, individual differences that were explored whether they relate to the level of stress experienced by individuals were gender, age, marital status, parenthood, number of children, hierarchical level, department, and working hours. Results of the one-way ANOVA analysis, conducted with the purpose of determining the significant findings related to the variables explored, are given in table 4.

*Table 4*  
One-way ANOVA results for the relationship between individual differences  
and level of occupational stress perceived

Individual difference	F-ratio	Sign.	Level of sign.
<b>Gender</b>	3.858	0.051	
<b>Age</b>	<b>7.893</b>	<b>0.000</b>	<b>0.01</b>
<b>Marital status</b>	<b>5.807</b>	<b>0.017</b>	<b>0.05</b>
<b>Parenthood</b>	<b>6.864</b>	<b>0.010</b>	<b>0.05</b>
<b>Number of children</b>	<b>7.422</b>	<b>0.001</b>	<b>0.01</b>
<b>Hierarchical level</b>	<b>3.357</b>	<b>0.042</b>	<b>0.05</b>
<b>Department</b>	1.736	0.096	
<b>Working hours</b>	0.255	0.775	

Table 4 depicts that five out of eight respondents' demographic and work characteristics are significant for their level of occupational stress experienced. ANOVA showed that age, marital status, parenthood, number of children and hierarchical level should be thought of and dealt with in organizational setting as variables that are significantly related to the levels of stress perceived, while gender, department and working hours could not be predictors of stress. Precisely, ANOVA revealed the following:

- 1) There is no significant difference in stress perceived by men and women, just as Kirkcaldy and Furnham (1999) found in their survey. This finding does not correspond with the prevailing findings around the globe (see section 2.5.), as Croatian males and females did not perceive significantly differential job stress, although women average (ASR = 55.31) is greater than men average (ASR = 50.31).
- 2) Opposite to dominant research findings (see section 2.5.), study revealed that older people perceive significantly higher levels of stress. This could be explained in part by the persistent problem in Croatia of older (and on average technologically less competent) employees' surplus.
- 3) Marital status is found to be significantly related to the occupational stress level perceived. Married people, probably because of their work/home conflict, experience higher levels of stress (ASR = 56.41) than singles (ASR = 51.00).
- 4) People who have children perceive significantly higher levels of stress (ASR = 56.13) comparing to their colleagues without children (ASR = 50.21). This could be, just as marital status, a result of the work/family conflict they live with.
- 5) The occupational stress level not only increases with the number of children, but is significantly higher with every additional child. Respondents with one child report ASR of 49.55, those with two children of 59.39, and those with three or more children have ASR of 70.00. Such a finding corresponds with the common sense of multiplication of responsibilities connected to the number of children an individual has.
- 6) Hierarchical level is found to relate significantly with the occupational stress level, with middle managers experiencing the highest level of stress (ASR = 61.80), and low level managers experiencing the lowest level of stress (ASR = 50.90). This could be a consequence of middle managers' intermediate position, as they are responsible for lower levels, and report to higher levels.
- 7) Field of work or department in which respondent works does not relate significantly with his/her level of occupational stress. This finding is perhaps a consequence of relatively high number of departments surveyed and relatively small number of respondents.
- 8) Number of hours respondent works (less, equivalent, or more than he/she should according to the law), is not found to be the variable that relates significantly to someone's level of occupational stress

perceived, although common sense implies that employees working longer hours experience greater stress.

Altogether, because of the cross-sectional nature of this research, cause and effect relationship between the parameters could not be established. However, demonstrating that there is a linkage between individual differences of age, marital status, parenthood, number of children and hierarchical level, and levels of stress experienced, helps focus on variables that might merit closer inspection in longitudinal studies, as well as which variables should occupy managers attention more.

## 5. Conclusion

Demands on employees to keep up with the ever-quickening pace of change and to push levels of productivity and accuracy ever higher will stress some of them to the breaking point (Johnson & Indvik, 1996, 26). Even more, employees struggling with personal problems, emotional frustrations, and substance abuse will increasingly bring those problems into the workplace (Johnson & Indvik, 1996, 26). Employers would, therefore, do well to take occupational stress seriously, as at the end of the day the message is that occupational stress costs – in litigation, on out-of-court settlements, in sick pay and in having a demotivated and underproductive workforce (Earnshaw & Morrison, 2001, 485). Namely, it is said that in total stress at work may account for 1-3.5% of GDP of a country (Hoel et al., 2001). Unfortunately, at present it still seems that few managers perceive a direct relationship between employee stress and organizational performance outcomes, and that many organizations fail to recognize that one way of achieving bigger profits is through healthier people.

This research is unique in that it integrates a broader set of antecedent variables (i.e. demographic and work characteristics of gender, age, marital status, parenthood, number of children, hierarchical level, department, and working hours). A better understanding of the demographic and work factors that lead to occupational stress should subsequently help managers understand a greater proportion of the variance of employees' satisfaction, performance and turnover, and help them better deal with it. Namely, the research found that employees belonging to different subgroups perceive different levels of stress, and that there is a link between individual characteristics and stress.

Precisely, the greatest level of stress perceive employees who have three or more children, who are more than 50 year old, and those employed in marketing, at middle levels or in procurement, while the lowest level of stress perceive employees younger than 30 years of age, those employed in HR, finances and production, and parents of one child. Concerning the relationship between individual differences and levels of stress experienced, although the cross-sectional design of the study does not allow for causal interpretation of relationships found, findings suggest that there is a connection between age, marital status, parenthood, number of children and hierarchical level, and the way stress is perceived, while gender, department and working hours are not connected to it.

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