

THE EFFECTS OF DEMOGRAPHIC FACTORS ON JOB BURNOUT IN GOVERNMENTAL SERVICE ORGANISATIONS; AN APPLICATION OF NEURAL-FUZZY ANALYSIS IN RECOGNITION OF BEHAVIORAL MODELS

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ABSTRACT

In the current ever-changing business world, organisations need to emphasize on employees as key element of acquiring competitive advantage. As managerial view, job Burnout should be considered and improved because of their broad effects on human resource as intellectual capital which knowledge life cycle is fully depended of it. This problem may have crucial position among service organisations. The service organisations emphasize on human resource and their roles as their core competencies more than other forms of organisation. In this form of organisation human resources in stability of service providing and continuous improvement of it have crucial role and position. This kind of organisations is facing with two important aspects of social dynamics: first, the uncertain environment which may be influence on predictability of employee behaviors and second, complexity of human behaviors which are ill-defined. In this context, authors investigated the effects of organisational factors on Job Burnout. These Factors are arisen from nature of service organisations and environmental pressures which surrounded them. The contribution of this paper is the application of neural-fuzzy analysis on construct of appraisal model in better explaining of employee's behavior. It considers the contingency recommendation which can be led to a better strategic planning of organisation's Intellectual capital and can be applied to other contexts and would guide organisations to realistic appraisal of demographic factors. Authors have applied the proposed fuzzy-model in "Agricultural Jihad" organisation of Qazvin province and results are discussed.

Field of Research: *Job Burnout, Neural-fuzzy analysis, Governmental Service Organisation, Behavioral management.*

1. Introduction

1.1 Job burnout

Job burnout has been widely defined as an extreme expression of work stress and the end stage of chronic process of deterioration and frustration in an individual. Burnout was first introduced into the literature by Freudenberger in the early 1970s (Freudenberger, 1974). He defined burnout as a state of

fatigue or frustration that resulted from professional relationships that failed to produce the expected rewards (Freudenberger, 1974; Freudenberger and Richelson, 1980). Maslach (1981,1982a, 1982b) later defined burnout as a psychological syndrome involving emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment that occurred among various professionals who work with other people in challenging situations. Pines and Aronson (1988) described job burnout as a state of physical, emotional and mental exhaustion caused by long-term involvement in emotionally demanding situations. Wallace and Brinkerhoff (1991) defined job burnout as workers' inability to respond adequately to perceived demands and to their accompanying anticipation of negative consequences for these inadequate responses. The term burnout has also been used to depict two opposing manifestations (burke, 1992). Burnout has been used to describe individuals who appear angry, hostile, easily aggravated and frustrated and direct their negative emotions at convenient and suitable targets such as job boss, colleagues or clients (Gerstin et. al, 1987). In addition, burnout reactions represent those individuals who withdraw, alienate themselves and appear depressed as they go through the motions of their job and simply survive to qualify for a pension (stohr, lovrich and Wilson, 1994). Schaufeli and Enzmann (1998) defined it as a chronic stress reaction and in practice; the roots of burnout theories are mainly in general stress theories, which emphasize the interaction between work characteristics and the employee. Weber and Jaekel-Reinhard (2000) focused from social-medical point of view. They considered burnout as concept which be including result of stress that has been not successfully dealt with (strain and society as macro-level), misfit of personal with their environment (interaction between society and individual as meso-level) and discrepancy between expectation and reality (strain and individual as micro-level). Schaufeli and Bakker (2004) considered it as link between job demands and job resources. They used engagement concept as other section which has been effect on the both side of their construct model. Maslach and Leiter (2005) defined it as psychological syndrome that involves a prolonged response to chronic interpersonal stressors on the job. García-Campayo and colleagues (2009) proposed a classification criterion, made up of three different burnout subtypes including frenetic, under-challenged and worn-out.

From managerial point of view, burnout has critical role in maintenance of organisational and behavioral variables in desired levels. Burnout may lead to physical and emotional illness, increased job turnover, absenteeism, lower organisational commitment, lower performance and reduced personal accomplishment, reduced levels of motivation to perform and finally reduced productivity (Cordes and Dougherty, 1993; maslach and leiter, 1997; wright and cropanzano, 1998; Allen and Mellor, 2002; Shirom, 2003; halbesleben et. Al., 2007; Tomic and Tomic, 2008). Several studies have demonstrated that burnout is related to both job satisfaction and self-efficacy (Evers et al. 2002; LeCompte and Dworkin 1991; Sari 2005; Skaalvik and Skaalvik 2007, 2009, 2010; Skaalvik and Federici, 2012). Some of them have proved the negative effects of burnout on organisational behavior such as organisational citizenship behaviors (OCBs) and inferred burnout should be considered for promoting OCBs (Liang, 2005). He proved that burnout as a moderator can decrease the predictions of the relationship between work values and OCBs. Burnout has been also linked with various health problems such as depression, irritability, anxiety, fatigue, insomnia and headaches (Jackson and Maslach, 1982; Kahill, 1988).

Hence, it may be challenging for public service organisation and other semblable forms of organisation which human resources have critical role in service providing and organisation interactions. This subject has been detailed in section 1.3.

1.2 Burnout measurement

Due to the lack of consensus regarding the concept of burnout and the different burnout measures used in empirical research, one of the central questions is still whether burnout consists of one, two, or three dimensions (Cox et. al, 2005). The several burnout measures have been introduced or developed from projection of this concept. Pines and Kafry (1978) introduced a burnout scale composed of 21 items which represent physical, emotional, and mental factors. This measure has been developed later by Pines & Aronson (1981, 1988) as burnout measure (BM). According to Schaufeli et. Al. (1993), the BM is the second most widely used burnout measure after the Maslach Burnout Inventory (MBI). Different forms of MBI have been developed for different occupations by Maslach et. al. (1996). For example, because of its service-specific wording, the MBI was not usable outside the human service professions until Maslach Burnout Inventory-general survey (MBI-GS) has been developed. The MBI-Human Services Survey (MBI-HSS) was designed for use with people working in the human services and health care. The other version whose was developed for use by people working in educational settings (the MBI-Educators Survey, or MBI-ES). In whole of the GS, HSS and ES forms, the labels for the three dimensions reflected the focus on occupations where workers interacted extensively with other people (clients, patients, students, etc.): emotional exhaustion, depersonalization, and reduced personal accomplishment. Considering of characteristics of understudied organisation (see section 1.3) as human resource-oriented and governmental service organisation which be including professional employee in both specialized and managerial areas; we use MBI instrument for burnout measurement and analysis. Several researchers have added to the evidence confirming the MBI as a useful tool for research (Lee and Ashforth, 1996; Greenglass et. Al., 2001; Hastings et. Al., 2004), and supporting the three dimensionality of the MBI (Evans and Fischer, 1993). However, some researchers have conceptualized burnout as having a two-factor structure that includes only the emotional exhaustion and depersonalization attributes (Kalliath et. Al., 2000). Some have suggested viewing it as a unidimensional phenomenon (Brenninkmeijer and VanYperen, 2003; Halbesleben & Buckley, 2004). Still others have relied solely on the emotional exhaustion subscale of the MBI because of its strong predictive properties (Aiken and Sloane, 1997; Aiken et. Al., 2002). MBI captures three dimensions of burnout: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Emotional exhaustion (EE) involves feelings of being depleted of energy and drained of sensation due to excessive psychological demands. According to Maslach et. Al. (2001), EE is "the central quality of burnout and the most obvious manifestation of this complex syndrome". When people describe themselves or others as experiencing burnout, they are most often referring to the experience of exhaustion. Although exhaustion reflects the stress dimension of burnout, it fails to capture the critical aspects of the relationship people have with their work. Within the human services, the emotional demands of the work can exhaust a service provider's capacity to be involved with, and responsive to, the needs of service recipients (Maslach et. Al., 2001). Hence, EE has been considered as most critical dimension of burnout. Depersonalization (DP) denotes the tendency to de-individuate and dehumanize others through cynical, callous, and uncaring attitudes and behaviors. Their demands are more manageable when they are considered impersonal objects of one's work. Reduced personal accomplishment (PA) involves repeated efforts that fail to produce results, leading to an attitude of inefficacy and reduced motivation. The relationship of inefficacy (PA) to the other two aspects of burnout is somewhat more complex. Since, exhaustion or depersonalization interferes with effectiveness; It is difficult to gain a sense of accomplishment when feeling exhausted or when helping people toward whom one is indifferent (Maslach et. al., 2001).

Although, it has also been suggested that the items assessing the three components of burnout can be summed to form an overall measure of burnout (Golembiewski and Munzenrider, 1981; Meier, 1984) but Maslach has argued against viewing burnout as a unitary concept. Empirical evidence supports the

idea that emotional exhaustion, depersonalization, and personal accomplishment are conceptually distinct components and cannot be added up to one single measure (Iwanicki & Schwab, 1981; Maslach and Jackson, 1981; Byrne, 1994). Maslach (1993) has suggested that employees who are suffering from burnout first experience exhaustion, then depersonalization and reduced personal accomplishment. In contrast, Golembiewski and Munzenrider (1988) have argued that the chain of events begins with depersonalization, which induces feelings of inadequacy, and ends with the development of emotional exhaustion. Data have been presented to support both arguments. Some evidence indicates that while exhaustion and depersonalization are clearly interrelated (Cordes and Dougherty, 1993), personal accomplishment may be a separate aspect of the burnout syndrome that develops in parallel with (rather than sequentially from) emotional exhaustion (Lee and Ashforth, 1996; Leiter, 1993). Such as described previously, we consider first dimension as critical predictor for job burnout.

1.3 GSOs Characteristics

The current economy is based on services rather than goods; which has been called post-industrial age. The most important aspect of post-industrial age returns to service-centric organisations and their revenues. The service-oriented systems in comparison with good-oriented systems are Act-oriented and are highly Labor-intensive. Labor-intensive refers to organisations consideration to labors rather than facilities and equipment. These systems are highly customer contact and their performance attained in consumption point (Botta- Genoulaz and millet, 2006). In the other hand, customer appraisal of such systems don't attain before completing of services (Redman and mathews, 1998).

Albrecht and zemke (1985) emphasized that service, people and system are three important elements of service organisation. Considering of cited characteristics of service organisation; the HR role and position have been considered as Axis and center of any service organisation. Among service organisations, the Governmental service organisations (GSOs) inherit HR's crucial role beside of other characteristics. Nonetheless, there are some differences between GSOs and service organisations. They are less flexible and more under controlled. They face with two important issues. One returns to changing demand and needs which enforce them to offer new service and existing service in new ways. The criteria of quality and proposition time are crucial in this issue. The second once, returns to contextual area including legislation, up hand policy-making and strategic goal-settings. This issue limits Governmental service organisations and may be led to lower flexibility and social responsibility. It causes GSOs couldn't propose full or mass-customization service.

Another characteristic of GSOs is uncompetitive context and environment, which led to less agile process. Because of uncompetitive environment for GSOs, There aren't enough pressures which force them for innovating and Risky tasks (Rosacker and olson, 2008).

2. Methodology

2.1 Sample and Procedure

We used MBI questionnaire for acquiring of HRs' burnout. The Validity of questionnaire has been approved by many Researches. We apply it to Agricultural Jihad organisation. This organisation has distinctive characteristics in comparison of other governmental service organisations. The gap between Line and office in this organisation rarely, is high. It, because of several mission areas, can be led to organisation units from process view and content of their tasks; it included 14 varied areas from land, animals, agricultural industries, agricultural promotions and so on. It uses different information system

such as land development and improvement system, milk's monitoring and management system, plant quarantine system, animal and poultry productions system, office automation system And so on.

This organisation is largest organisation in Qazvin province and has up to 600 employees. The high vertical and horizontal differentiations, varied process proposition's area and seamless between Line and office in this organisation, may be direct our research in better manner rather than other organisation. In the other hand, the cited characteristics led to a meaningful gap between planning and execution areas and can bring organisation in problematic and challenging situation. Hence, the organisation may need to different HRs' readiness and improvement programs based on different HRs' burnout.

The questionnaire has been distributed in organisation according to categorical sampling. It applied based on human resource scatter in provinces organisation, relative cities units and service centers as last sub-units of organisation. The 300 questionnaires have been distributed and 243 have been collected (up to 40 % of population size with return rate: 81 %). The sample was characterized by a relatively equal proportion of males (92.6%) and females (7.4%). Note, since only 6% (36 employees) of population size has been composited of females; it has been considered as good sample. The respondents varied in age from 25 years to 71 years, with the majority in the 33-52 year range. The sample was highly educated group (84.6% have completed college and 71% of them have license certification or higher). The 55% of respondents have expert and relative position in the organisation and others have managerial position. The 37.6% of participants are working in province's organisation, 30.2% of them in cities' management and 32.2% in service centers.

2.2 Instrumentation (Measures)

Such as has been described previously, In order to assess burnout, Maslach and Jackson (1981) developed the Maslach Burnout Inventory (MBI), which consists of 22 items that load onto the three factor structure mentioned above: emotional exhaustion (EE; nine items), depersonalization (DP; five items), and personal accomplishment (PA; eight items). The questions have been assessed and scored based on seven Point Likert-type scales in terms of both frequency and intensity.

The results of this inventory consist of three separate scores, one for each factor. A combination of high scores on EE and DP, and a low score on PA, correspond to a high level of burnout. Table 1 has showed the different levels of burnout's dimensions. The MBI is the most widely used instrument internationally, as it has been translated into several languages and has been used in many context and different workspace and hence it is highly valid. The distributed questionnaire consisted of two sections: first, demographic section which was including personal, educational and occupational questions; and second, burnout section which was including all of three respective dimensions (EE, DP and PA). The validity of MBI has been proved by human resource and governmental management specialists. It translated to Persian and has been used in different contexts and occupations.

2.3 Reliability analysis

The reliability of research has been approved for all dimensions of MBI in both frequency and intensity scales. The reliability's values were 76.2%, 77.3% and 82.4% for them in frequency scale and were 79.5%, 77.7% and 76.9% for them in intensity scale. Such as described previously, we have focused on emotional exhaustion as most important core/component of burnout according to frequent researches which have proposed it (Maslach, 1982; Shirom, 1989; Cordes and Dougherty, 1993; Schaufeli and Enzmann, 1998; Brotheridge and Grandey, 2002; Shirom, 2003).

2.4 Statistical and fuzzy analysis

We used some of primary analysis such as quarter analysis which can be useful for finding and eliminating of extreme points (data) from research's analysis. Besides, we used descriptive statistics for describing and explaining of sample and characteristics of triple dimensions of burnout between employees. Due to the fuzzy nature of the research and the aims of this research for acquiring and determination of probability of each events or rules (DOS), hypotheses of the study do not follow the conventional statistical analyses (null hypothesis test). These fuzzy-based analyses try to calculate attainable probability of each states which composited of different level of understudied variables.

Table 1: The characteristics of different levels of burnout's dimensions

Level Dimension	Low	Medium	High
EE	0-17	18-29	> 30
DP	0-6	7-11	> 12
LPA ¹	> 40	34-39	0-33

This probability of a state has been generated from fuzzy combination of premises (if section of a hypothesis) and conclusion (then section of a hypothesis) which have been trained by real data. The real data has been extracted from collected questionnaires and trains the existing model and determines final probability of each state. Inasmuch the "probability" term may be delusive, the term "degree of support" (DOS) have been used. If we call and presume each state as a rule, then DOS provides the weight of each rule which can be fired. The most distinctive aspect of neural-fuzzy analysis in comparison with statistical analysis referees to this note that in statistical analysis, we are commonly face with two adverse and contradictory hypothesis and after analysis if we accept null hypothesis the we should reject other hypothesis and so on. In statistical analysis, if we reject null hypothesis (for example $\mu \geq 12$), we accept second hypothesis but we haven't extra information about existing states (for example does $\mu = 10$ or $\mu = 9$ or $\mu \geq 8$?) but in neural-fuzzy analysis, we acquire the probability of each state by determining of DOS.

The respective analysis of current study tries to answer to the questions including:

- **Question 1:** What are the levels of burnout's dimensions between employees? Is primarily, the employees' burnout high or low?
- **Question 2:** What are the most probable triple burnout's dimensions level based on different age levels, educational levels and different area (line/official)?

2.5 Data analysis

For quarter analysis and descriptive statistics Data were analyzed with "IBM SPSS" version 19. The modeling and simulation process of the current study is performed with neural-learning process with "FuzzyTech" software version 5.72. The neural-learning process refers to identification of each rule's weight (such as previously described, it has been called DOS) in knowledge base from real data to form and tune the neural-fuzzy expert system. All of the premises for this research such as fuzzification and other have been performed within FuzzyTech software. After quarter analysis base on emotional

¹ - Reversion of personal accomplishment (PA).

exhaustion (EE), two extreme points has been recognized and eliminated from research's analysis, so we have continued by sample size which was equal to 241.

3. Findings and results

3.1 Overview

Table 2 shows the descriptive statistics for burnout's dimensions. As it is shown in table 2, the employees have been experienced the low frequency levels in emotional exhaustion and depersonalization dimensions and medium frequency level of personal accomplishment dimension. Also the employees have been experienced the medium intensity level in emotional exhaustion dimension and low intensity levels in depersonalization and personal accomplishment dimensions. Considering of primary analyzed data showed that burnout's levels among employees of understudied organisation were low to medium (lower frequencies with higher intensities). Hence, the answer of question 1 has been determined.

3.2 neuro-fuzzy analysis

For answering question 2 and presentation's limitations of more than 3 variables, we categorized main model to three sub-models based on varied age ranges (young, median and grand). The respective fuzzificated/fuzzified values for age and emotional exhaustion frequency (EE) have been presented respectively in tables 3 and 4 and figures 1 and 2. We have transformed values to lingual variables according to expert opinions and validated ranges which have been introduced in varied international papers.

Table 2: Demographics of respondents

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
EE_freq_scale	241	.00	57.00	15.1245	11.74952	1.408	.157
EE_inten_scale	241	.00	71.00	18.9336	15.03065	1.317	.157
DP_freq_scale	241	.00	18.00	3.1452	3.85352	1.866	.157
DP_inten_scale	241	.00	33.00	3.8465	5.00971	2.314	.157
LPA_freq_scale	241	7.00	48.00	36.3900	9.07454	-.929	.157
LPA_inten_scale	241	11.00	56.00	41.2863	8.88427	-.595	.157
Valid N (listwise)	241						

We designed model within FuzzyTech software and segmented data to three cited categorized. Figures 3-6 depict the effects of educational level and work Area on emotional exhaustion. The work area variable referees to degree of specialized and skilled tasks and work nature. In the higher levels of work area, employees are faced with specialized tasks and they located in organisation units which have been set in outlying locations from center organisation (province's organisation) such as cities management and services centers. These plots have been illustrated after the learning process occurred and have been affected by adjusted degree of support (DOS).

Table 3: The lingual variables for age and their respective fuzzified values

Term Name	Shape/Par.	Definition Points (x, y)		
Young	linear	(18, 1) (80, 0)	(28, 1)	(35, 0)
Median	linear	(18, 0) (55, 1)	(28, 0) (62, 0)	(35, 1) (80, 0)
grand	linear	(18, 0) (80, 1)	(55, 0)	(62, 1)

Table 4: The lingual variables for emotional exhaustion frequency and their respective fuzzified values

Term Name	Shape/Par.	Definition Points (x, y)		
low	linear	(0, 1) (54, 0)	(17, 1)	(18, 0)
medium	linear	(0, 0) (29, 1)	(17, 0) (30, 0)	(18, 1) (54, 0)
high	linear	(0, 0) (54, 1)	(29, 0)	(30, 1)

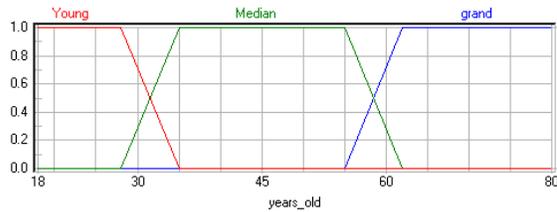


Figure 1: The fuzzy diagram for age variable

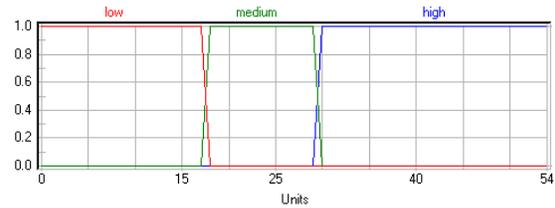


Figure 2: The fuzzy diagram for emotional exhaustion (frequency scale) variable

3.2.1 Young employees

According to figures 3 and 4 at same levels of age (young employees); higher skilled and specialized tasks nature led to higher emotional exhaustion. Another result that can be inferred is: in the same work area (tasks nature), the employees with medium educational levels (such as under graduated) faced with higher emotional exhaustion. In the other words, within same age and specialized task nature, the burnout levels have been increased among employees whose have medium degree of academic educations. Note that, the black areas show the empty segmentations among understudied population; for example figure 3 shows, the higher educated employees have localized in center organisation units (more in province's organisation units and less in outlying organisation sub-units). It returns to centralization phenomena as managerial issue.

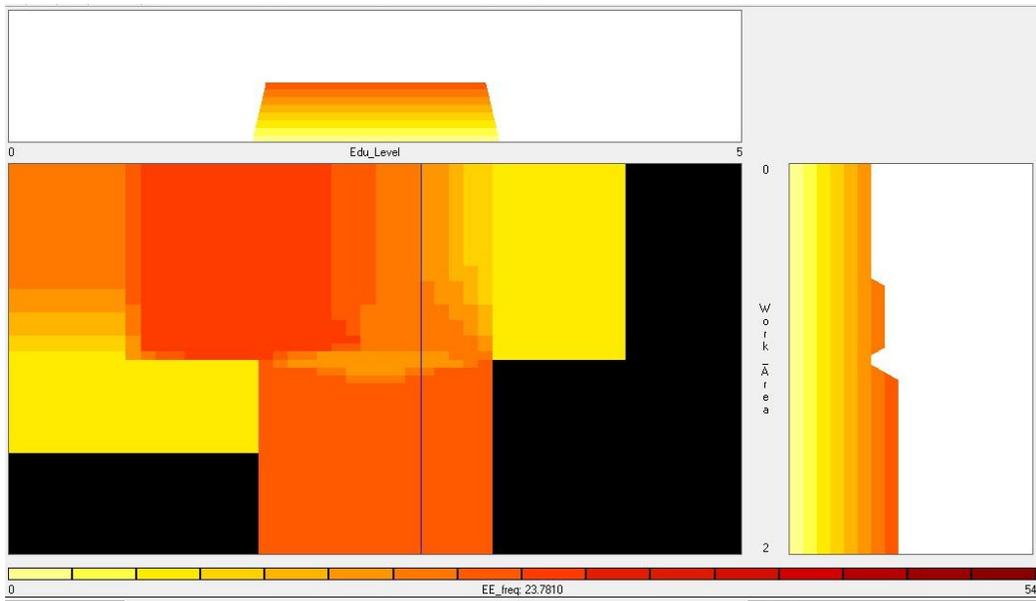


Figure 3: The 2D plot for analysis 1: The effect of age, educational level and work area on employees' emotional exhaustion (sub-analysis 1: young employees)

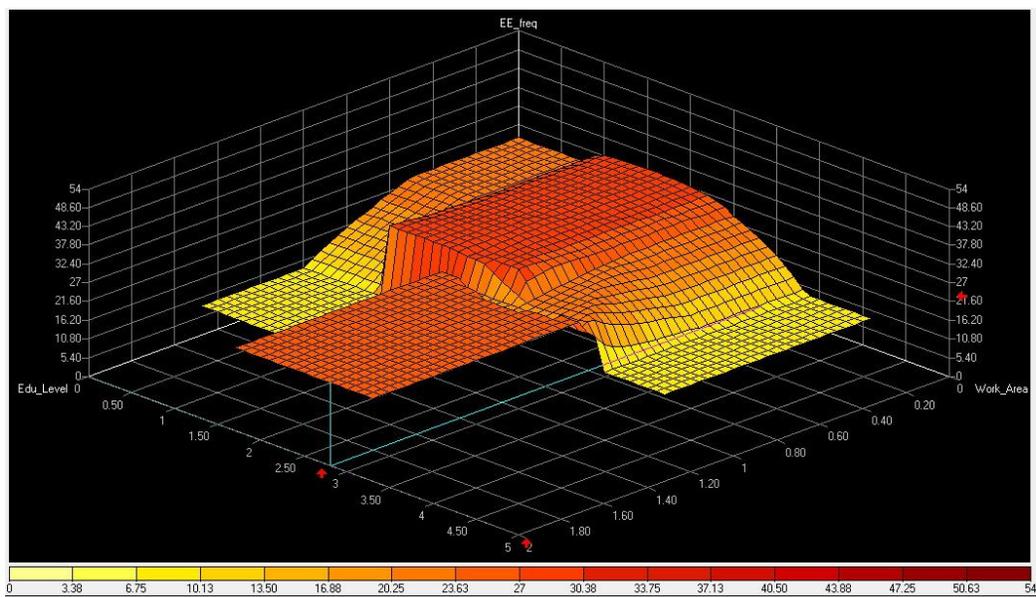


Figure 4: The 3'D plot for analysis 1: The effect of age, educational level and work area on employees' emotional exhaustion (sub-analysis 1: young employees)

The table 5 depicts respective rules which are in relation with figures 3 and 4. According to input or premises section (if section including two main variable: educational level and work domain) we faced with 45 states (5 probable states for educational levels * 3 probable states for work domain * 3 probable states for emotional exhaustion levels). Hence, there are 45 rules and their respective degree of support (DOSs). In table 5, we presented the rules which respective DOSs are higher than 0. In the other words, the only rules which have been tuned are useful for inferring rather than default primary states which all DOS have been assumed equal to zero.

Table 5: The DOSs for respective rules for Decision Making (young employee)

Rule no.	IF			THEN	
	Age	Education_level	Work_domain	DOS *	EE_level
4	Young	Diploma	Cities management	0.04	Low
10	Young	Under graduated	Organisation	0.66	Low
12	Young	Under graduated	Organisation	0.46	High
16	Young	Under graduated	Service centers	0.07	Low
19	Young	Graduated (license)	Organisation	0.10	High
20	Young	Graduated (license)	Organisation	0.09	medium
27	Young	Graduated (license)	Service centers	0.13	Low
34	Young	Masters	Service centers	0.08	Low

- Degrees of support (DOSs) which have been tuned and not equal to zero (default primary states).

There isn't any evidence for firing of rules that haven't been presented in table 5. Hence, they haven't any possibility for realization in understudied organisation. Comparison of rules 19, 20 and 27 indicate within same age level (young level) employees with medium educational level have higher emotional exhaustion in less specialized sub-units and provinces' organisation (assume other rules that haven't presented as null rules or non-probable rules). These results have proved finding within figure 4. Considering them shows by increasing of educational level in common-organisation, the employees' burnout has been decreased (for example, DOS=0.66 in comparison with DOS=0). Considering all of fired rules indicate that highest level in employees' burnout return to under graduated employee in central organisation (DOS=0.46 in comparison with DOS=0.10).

On the other hand, among DOSs of rules which have been calculated, some rules have higher firing degree or have more attainable probability. These rules can be confirmed as prominent and stabilized hypotheses. The main difference between statistical hypothesis analysis and fuzzy hypothesis analysis belongs to this area- P-value and DOS. For example, rule 10 has been as prominent rule among young employees. In the other words, young employees have low burnout level (see rules 10, 19 and 34). We inferred best results which are related to young employees briefly as below:

Result 1: Within young employees, at same levels of educational levels by increasing of specialized and skilled task nature (outlying work area), the employees' emotional exhaustion (as basic core of job burnout) has been decreased.

Result 2: Within young employees, at same levels of organisation sub-units by increasing of educational level, the employees' emotional exhaustion has been followed reverse U-shape. *The results have been adapted with analysis of other burnout's dimensions in both frequency and intensity scales.*

3.2.2 medium-age employees

We have calculated the rules' DOS for medium-age employees. They have been presented in table 6. Such as shown based on different situations, the results have been varied. Considering rules 46, 48, 49, 50, 51, 52 and 54 show the employees' burnout have been increased by specialization's increasing of tasks nature (specialized work areas). The rule 46 as most prominent and effective rule among diploma

educated employees of organisation in comparisons of rule 51 and 54 as most effective rule among diploma educated employees of cities management and service centers, depict the employees' burnout have been increased by transition from organisation (province's organisation unit) to cities management and service centers (as more subsidiary and accessory organisation unit). Considering rules 57, 60 and 61 indicate that the respective results to under graduated employees are different from previous employees (diploma educated employees). The curve of burnout among these employees has a reverse U shape. Even, the results for graduated employees were different from both previous sets of rules. Considering rules 65, 66 and 67 indicate employees' burnout have been decreased by specialization's increasing of tasks nature. This result is opposite of employees with diploma-education level.

The other result which have been inferred is in different organisation units by increasing of educational levels, the employees' burnout have been decreased. Unlike previous result which has been varied between different educational levels, this result is consistent among different work areas. Considering rules 48 and 66 and rules 54 and 61 indicate the employees' burnout has been decreased by increasing educational level. Comparing rules 51 with null rule (DOS=0) for high level of emotional exhaustion in cities management, the result have been adopted and supported. The respective results have been presented below briefly:

Result 3: Within median-age employees, at same levels of educational levels by increasing of specialized and skilled task nature (outlying work area), the employees' emotional exhaustion has different, varied and contradictory behaviors. In the other words, the results aren't consistent. Hence, we have brought the results separately by educational levels.

Result 4: Within median-age employees, at same work area, the employees' burnout has been decreased with increasing of educational level.

Table 6: The DOSs for respective rules for Decision Making (Median-age employee)

Rule no.	IF			THEN	
	Age	Education_level	Work_domain	DOS *	EE_level
46	Median	Diploma	Organisation	0.13	Low
48	Median	Diploma	Organisation	0.08	High
49	Median	Diploma	Cities management	0.06	Low
50	Median	Diploma	Cities management	0.05	Medium
51	Median	Diploma	Cities management	0.08	High
52	Median	Diploma	Service centers	0.09	Low
54	Median	Diploma	Service centers	0.09	High
55	Median	Under graduate	Organisation	0.06	Low
56	Median	Under graduate	Organisation	0.03	Medium
57	Median	Under graduate	Organisation	0.07	High
58	Median	Under graduate	Cities management	0.02	Low
59	Median	Under graduate	Cities management	0.17	Medium

	IF			THEN	
60	Median	Under graduate	Cities management	0.27	High
61	Median	Under graduate	Service centers	0.09	Low
63	Median	Under graduate	Service centers	0.05	High
65	Median	Graduate (license)	Organisation	0.04	Medium
66	Median	Graduate (license)	Organisation	0.02	High
67	Median	Graduate (license)	Cities management	0.55	Low

- Degrees of support (DOSS) which have been tuned and not equal to zero (default primary states).

3.2.3 Grand employees

Figures 5 and 6 indicate grand employees' burnout based on educational levels and work areas (tasks' specialization level). They depict at same levels of age (grand employees); higher skilled and specialized tasks nature led to higher emotional exhaustion. These figures show, the grand employees haven't higher educational levels and they experienced lower burnout at un-specialized work areas. By decreasing skills level of tasks nature and shifting them to central province's organisation (official section), we expect to diminish employee burnout. Unlikeness young employees which their burnout have been increased by increasing of specialization level of tasks, the grand employees' burnout have been decreased by increasing of specialization level of tasks (higher work areas). The results have been adapted with analysis of other burnout's dimensions in both frequency and intensity scales.

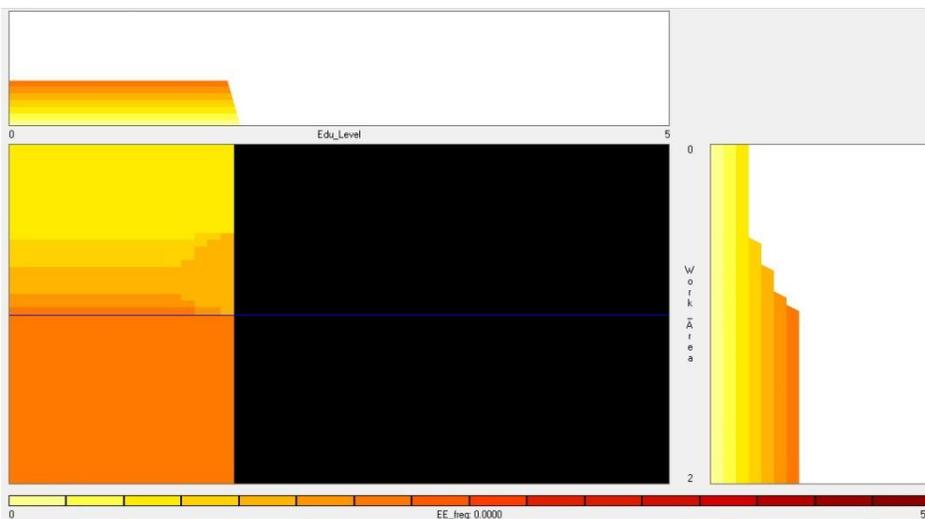


Figure 5: The 2D plot for analysis 1: The effect of age, educational level and work area on employees' emotional exhaustion (sub-analysis 1: grand employees)

The table 7 depicts respective rules which are in relation with figures 5 and 6. There isn't any evidence for firing of rules that haven't been presented in table 7. Comparison of rules 95 and 97 indicate within same age level (grand level) employees with very low educational level have higher emotional exhaustion in more specialized sub-units and provinces' organisation (assume other rules that haven't presented as null rules or non-probable rules). These results have proved finding within figure 6.

In the other hand, among DOSs of rules which have been calculated, the rule 95 has been considered as prominent rule among grand employees. In the other words, grand employees have medium burnout level. We inferred best results which are related to grand employees briefly as below:

Result 5: Within grand employees, at same levels of educational levels by increasing of specialized and skilled task nature (outlying work area), the employees' emotional exhaustion (as basic core of job burnout) has been increased. It indicates, the organisation need to contingency policy or decision making for its employees' improvement and readiness programs. We have collected our proposed suggestions in next section.

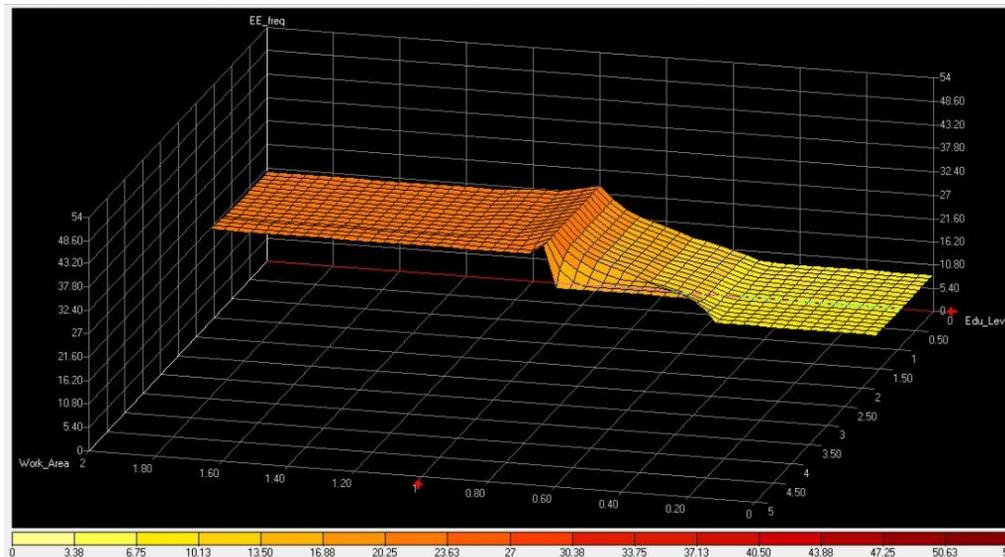


Figure 6: The 3'D plot for analysis 1: The effect of age, educational level and work area on employees' emotional exhaustion (sub-analysis 1: grand employees)

Table 7: The DOSs for respective rules for Decision Making (grand employees)

Rule no.	IF			THEN	
	Age	Education_level	Work_domain	DOS *	EE_level
95	Grand	Diploma	Cities management	0.04	Medium
97	Grand	Diploma	Organisation	0.02	Low

- Degrees of support (DOSs) which have been tuned and not equal to zero (default primary states).

4. Conclusions and discussion

With regard to what has been explained in the previous sections, we determined the probability of fuzzy combinations of understudied system's components (called rules' DOS). This technique led to better understanding and analyzing of understudied organisation. It helps to determining of complexity and contradictory system's behavior. The questionnaires were distributed among offices, cities' management, groups, services' centers and other dependent organisations of Agricultural Jihad Organisation of Qazvin's Province.

According to this research, the burnout younger employees have different behavior in comparison with older employees. While the job burnout of younger employees has been decreased by increasing of specialized and skilled tasks, it has been increased for older employees. Hence, the organisation should be transfer younger employees to line or specialized work areas and older employees to province's or unskilled work areas. Concentrating on centralization issue of HRs' distribution among different organisation units can be recommended as managerial implication. The study of organisation indicates HRs' distribution among different organisation units is nonsymmetrical and need to modify by HRM. Referring to Parkinson Theory can be explains current situation. While the official (province's organisation) have more HRs with less skilled tasks, the line (outlying organisation sub-units such as cities management and service centers) has less HRs with more specialized tasks. The density of HRs in official, led to more HRs and less tasks so more emotional exhaustion and burnout.

The results were contradictory and varied among median-age employees. While in lower educational levels, the job burnout has been increased by specializing of task natures, it has been decreased in higher educational levels. In the other words, similar to younger employees, transferring of high educated employees to skilled work areas can be improve job burnout for them. Then, it's recommended the organisation to encourage employees for enhancing their educational levels in each work areas.

This paper is a case study conducted in a service-based company. The questions were the most probable burnout level based on different age levels, educational levels and different specialized and skilled work areas (tasks' nature). In such situations rather than production-based company, the other implicit and hidden factors may be effective. For instance, employees' burnout may be influenced by job satisfaction, employee evaluation, varying and tolerance of demands' shape, customer expectations, the authorities of employees for balancing of these expectations and their replies and so on. This paper and the kind of analysis can be a template for analyzing existence situations and decision-making about respective contingency strategies for enhancing of employees' readiness and development. It can be cover all of human resource management (HRM).

Acknowledgements

The authors would like to thank to the human resources (HR) manager and the other participants of Qazvin province agricultural jahad organisation for their collaborative participation which have led to an improvement in both the quality and clarity of the paper. Peyman Mohammady wants to acknowledge the dariush rezaeenejad for their intimately efforts on the coordinating of sessions and assessment processes.

References

Aiken, L.H. and Sloane, D.M. (1997). Effects of organisational innovations in AIDS care on burnout among hospital nurses. *Work and Occupations*, 24(4), 455–477.

Aiken, L.H., Clarke, S.P., Sloane, D.M., Sochalski, J. and Silber J.H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *The Journal of the American Medical Association*, 288(16), 1987–1993.

Albrecht, K. and Zemke, R. (1985). *Service America!: doing business in the new economy*. Dow Jones Irwin.

Allen, J. and Mellor, D. (2002). Work Context, Personal Control, and Burnout amongst Nurses. *Western Journal of Nursing Research*, 24(8), 905 - 917.

Botta-Genoulaz, V and Millet, P-A (2006). An Investigation into the Use of ERP Systems in the Service Sector. *International Journal of Production Economics*, 99, 202–221.

Brenninkmeijer, V. and VanYperen, N. (2003). How to conduct research on burnout: Advantages and disadvantages of a unidimensional approach in burnout. *Occupational and Environmental Medicine*, 60(1), 16–20.

Brotheridge, C.M. and Grandey, A.A. (2002). Emotional Labor and Burnout: Comparing Two Perspectives of People Work. *Journal of Vocational Behavior*, 60, 17–39.

Burke, R. (1992). Occupational Stress, Psychological Burnout And Anxiety. *anxiety, stress and coping*, 5, 3-5.

Byrne, B. M. (1994). Burnout-Testing for the validity, replication, and invariance of causal-structure across elementary, intermediate, and secondary teachers. *American Educational Research Journal*, 31(3), 645–673.

Cordes, C. L. and Dougherty, T. W. (1993). A review and an integration of research on job burnout. *Academy of Management Review*, 18, 621-656.

Cox, T., Tisserand, M. and Taris, T. (2005). Editorial: the conceptualization and measurement of burnout: questions and directions. *Work and Stress*, 19, 187–191.

Evans, B.K. and Fischer, D.G. (1993). The nature of burnout: A study of the three-factor model of burnout in human service and non-human service samples. *Journal of Occupational and Organisational Psychology*, 66, 29–38.

Evers, W. J. G., Brouwers, A., and Tomic, W. (2002). Burnout and self-efficacy: A study on teachers' beliefs when implementing an innovative educational system in the Netherlands. *British Journal of Educational Psychology*, 72, 227–243.

Federici, R.A. and Skaalvik, E.M. (2012). Principal self-efficacy: relations with burnout, job satisfaction and motivation to quit. *Social psychology of education*, DOI: 10.1007/s11218-012-9183-5.

Freudenberger, H.J. (1974). Staff burnout. *Journal of Social*, 30, 159–165.

Freudenberger, H.J., Richelson, G.I. (1980). *Burn-out: The High Cost of High Achievement*. Anchor Press, Doubleday & Company, Inc., New York.

García-Campayo, J., Montero-Marín, J., Mosquera Mera, D. and López del Hoyo, Y. (2009). A new definition of burnout syndrome based on Farber's proposal. *Journal of Occupational Medicine and Toxicology*, 4(31), doi:10.1186/1745-6673-4-31.

Gerstein, L., Topp, C. and Correll, G. (1987). The role of the environment and person when predicting burnout among correctional personnel. *Journal of Criminal Justice*, 14(3), 352-369.

Golembiewski, R. T., and Munzenrider, R. (1981). Efficacy of three versions of one burn-out measure: MBI as total score, sub-scale scores, or phases?. *Journal of Health and Human Resources Administration*, 4, 228-246.

Golembiewski, R., and Munzenrider, R. (1988). *Phases of Burnout: Developments in Concepts and Applications*. New York: Praeger.

Greenglass, E.R., Burke, R.J. And Fiksenbaum, L. (2001). Workload and burnout in nurses. *Journal of Community and Applied Social Psychology*, 11, 211–215.

Halbesleben, J. R. B. and Buckley M. R. (2004). Burnout in organisational life. *Journal of management*, 30(6), 859–879.

Hastings, R.P., Horne, S. and Mitchell, G. (2004). Burnout in direct care staff in intellectual disability services: A factor analytic study of the Maslach Burnout Inventory. *Journal of Intellectual Disability Research*, 48(3), 268–273.

Iwanicki, E. F., and Schwab, R. L. (1981). A cross-validation study of the Maslach Burnout Inventory. *Educational and Psychological Measurement*, 41, 1167-1174.

Jackson, S.E. and Maslach, C. (1982). After-effects of job-related stress: families as victims. *Journal of Occupational Behavior*, 3, 63-77.

Kahill, S. (1988). Symptoms of professional burnout: a review of the empirical evidence. *Canadian Psychology*, 29, 284-97.

Kalliath, T., O'Driscoll M.P., Gillespie, D. and Bluedorn, A. (2000). A test of the Maslach Burnout Inventory in three samples of healthcare professionals. *Work and Stress*, 14(1), 35–50.

LeCompte, M. D., and Dworkin, A. G. (1991). *Giving up on school: Student dropouts and teacher burnouts*. Calif: Corwin Press, Newbury Park.

Lee, R.T. and Ashforth, B.E. (1996), A Further Examination of Managerial Burnout: Toward an Integrated Model, *Journal of Organisational Behavior*, 14, 3-20.

Leiter, M. (1993). Burnout as a developmental process: Consideration of models, In W. Schaufeli, C. Maslach, & T. Marek (Eds.), *Professional Burnout: Recent Developments in Theory and Research* (pp. 237–250). Washington, DC: Taylor and Francis.

Liang, Y-W. (2012). The relationships among work values, burnout, and organisational citizenship behaviors: A study from hotel front-line service employees in Taiwan. *International Journal of Contemporary Hospitality Management*, 24(2), 251 – 268.

Maslach, C. (1982a). *Burnout: The Cost of Caring*. Prentice Hall, Englewood Cliffs, NJ.

Maslach, C. (1982b). Understanding burnout: definitional issues in analyzing a complex Phenomenon. In Pine, W.S. (Ed.), *Job Stress and Burnout: Research, Theory, and Intervention Perspectives* (pp. 29–40). Sage Publications, Beverly Hills, CA.

- Maslach, C. (1993). Burnout: A multidimensional perspective. In W. Schaufeli, C. Maslach, and T. Marek (Eds.), *Professional Burnout: Recent Developments in Theory and Research* (pp. 19-32). Washington, DC: Taylor & Francis.
- Maslach, C. (1998). A multidimensional theory of burnout. In C. L. Cooper (Ed.), *Theories of organisational stress* (pp. 68–85). USA, Oxford University Press.
- Maslach, C. and Jackson, S.E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior*, 2, 99-113.
- Maslach, C. and Leiter, M. P. (1997). *The Truth About Burnout: How Organisations Cause Personal Stress and What to Do About It*. San Francisco, CA: Jossey-Bass.
- Maslach, C. and Leiter, M. P. (2005). Stress and burnout: The critical research. In C. L. Cooper (Ed.), *Handbook of stress medicine and health* (2nd ed., pp. 153–170). London: CRC Press.
- Maslach, C., Jackson, S. E., and Leiter, M. P. (1996). *Maslach Burnout Inventory Manual*, (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Schaufeli, W. B. and Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.
- Meier, S.T. (1984). The construct validity of burnout. *Journal of Occupational Psychology*, 57, 211-219.
- Pines, A. and Aronson, E. (1988), *Career burnout: Causes and cures*, New York: The Free Press.
- Pines, A. and Kafry, D. (1978). Occupational Tedium in the Social Services. *Social Work*, 23(6), 499-507.
- Pines, A., and Aronson, E. (with Kafry, D.) (1981). *Burnout: From tedium to personal growth*. New York: Free Press.
- Redman, T. and Mathews, B.R. (1998). Service quality and human resource management: a review and research agenda. *Personnel Review*, 27(1), 57-77.
- Rosacker, K.M. and Olson, D.L. (2008). Public sector information system critical success factors. *Transforming Government: people. Process and Policy*, 2(1), 60-70.
- Sari, H. (2005). How do principals and teachers in special schools in Turkey rate themselves on levels of burnout, job satisfaction, and locus of control?. *Alberta Journal of Educational Research*, 51(2), 172–192.
- Schaufeli, W. B., Enzmann, D., and Girault, N. (1993). The measurement of burnout: A review. In W. B. Schaufeli, C. Maslach, and T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 199–215). Washington, DC: Taylor & Francis.
- Schaufeli, W.B. and Enzmann, D. (1998). *The burnout companion to study & practice: A critical analysis*. London: Taylor & Francis.
- Schaufeli, W.B. and Bakker, A.B. (2004). Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study. *Journal of Organisational Behavior*, 25, 293–315.

Shirom, A. (1989). Burnout in work organisations. In C.L. Cooper and I. Robertson (Eds.), *International review of industrial-organisational psychology* (pp. 25-48). New York, Wiley.

Shirom, A. (2003). Job-related burnout. In J. C. Quick and L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 245–265). Washington, DC: American Psychological Association.

Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education*, 26(4), 1059–1069.

Skaalvik, E. M., and Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology*, 99(3), 611–625.

Skaalvik, E. M., and Skaalvik, S. (2009). Does school context matter? Relations with teacher burnout and job satisfaction. *Teaching and Teacher Education*, 25(3), 518–524.

Stohr, M. K., Lovrich, N. P., and Wilson, G. L. (1994). Staff stress in contemporary jails: assessing problem severity and the payoff of progressive personnel practices. *Journal of Criminal Justice*, 22(4), 313–327.

Tomic, W., and Tomic, E. (2008). Existential fulfillment and burnout among principals and teachers. *Journal of Beliefs and Values*, 29(1), 11–27.

Wallace, J.E. and Brinkerhoff, N.M.B. (1991). The measurement of burnout revisited. *Journal of Social Service Research*, 14 (1/2), 85-109.

Weber A. and Jaekel-Reinhard, A. (2000). Burnout syndrome: a disease of modern societies?. *Occupational medicine*, 50(7), 512-517.

Wright, T. A., and Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology*, 83, 486-493.