

AŞIRI BAĞLANARAK MI TÜKENİYORUZ? GENİŞLETİLMİŞ BİR ÇABA-ÖDÜL DENGESİZLİĞİ MODELİ TESTİ

Araştırma Makalesi Research Paper Şerife ÖRS**** Orkun DEMİRBAĞ****

Abstract:

Based on the transactional stress approach, which predicts that employees' negative stress experiences will occur within the framework of their cognitive evaluations of stressors and in a dynamic process, this study evaluates the effects of role stressors on emotional exhaustion within the framework of an extended effort-reward imbalance model. Within the scope of the study, 705 participants consisting of academic staff, physicians and nurses across Turkey were included in the sample. The study aimed to reveal the moderating effects of overcommitment on the indirect effect of role stressors on emotional exhaustion through effort-reward imbalance. The findings obtained through multiple linear regression analysis show that overcommitment moderates the indirect effect of role stressors on emotional exhaustion through effort-reward imbalance, but contrary to expectations, the indirect effect is weaker at higher levels of overcommitment and stronger at lower levels. It was found that overcommitment acts as a buffer in the relationship between effort-reward imbalance and emotional exhaustion.

Keywords: Emotional Exhaustion, Role Stressors, Effort-Reward Imbalance, Overcommitment, Social Exchange.

Öz:

Çalışanların olumsuz stres deneyimlerinin stres unsurlarına yönelik bilişsel değerlendirmeleri çerçevesinde ve dinamik bir süreç içerisinde ortaya çıkacağını öngören işlemsel stres yaklaşımını temel alan bu çalışmada, rol stresörlerinin duygusal tükenme üzerindeki etkileri geliştirilen genişletilmiş bir çaba-ödül dengesizliği modeli çerçevesinde değerlendirilmektedir. Araştırma kapsamında Türkiye genelinde öğretim elemanları, hekim ve hemşirelerden oluşan 705 katılımcı örnekleme dahil edilmiştir. Araştırmada rol stresörlerinin çaba-ödül dengesizliği aracılığıyla duygusal tükenme üzerindeki endirekt etkisinde aşırı bağlılığın düzenleyici etkilerinin ortaya konulması amaçlanmıştır. Çoklu doğrusal regresyon analiziyle elde edilen bulgular, aşırı bağlılığın rol stresörlerinin çaba-ödül dengesizliği aracılığı ile duygusal tükenme üzerindeki dolaylı etkisini düzenlediği ancak beklenenin aksine endirekt etkinin aşırı bağlılığın

77

^{*} Makale Geliş Tarihi: 02.01.2024 Makale Kabul Tarihi: 23.02.2024

^{**} This study is derived from PhD dissertation no. 784894 entitled "The roles of effort-reward imbalance and work-life imbalance as parallel mediators and overcommitment as moderator in the relationship between role stressors and burnout", written by Şerife Örs and supervised by Orkun Demirbağ.

^{***} This study was presented as a conference paper at the 31. Ulusal Yönetim ve Organizasyon Kongresi (31st National Management and Organization Congress) held on September 21-23, 2023, in Turkey.

^{****} Res. Asst., PhD., Gümüşhane University, serife@gumushane.edu.tr, orcid.org/0000-0002-3055-9492.

^{*****} Assoc. Prof., Gümüşhane University, orkundemirbag@gumushane.edu.tr, orcid.org/0000-0001-9889-3406.

daha yüksek düzeylerinde daha zayıf, daha düşük düzeylerinde daha güçlü olduğunu göstermektedir. Bu duruma aşırı bağlılığın çaba-ödül dengesizliği ile duygusal tükenme arasındaki ilişkide tampon görevi görmesinin neden olduğu tespit edilmiştir.

Anahtar Kelimeler: Duygusal Tükenme, Rol Stresörleri, Çaba-Ödül Dengesizliği, Aşırı Bağlılık, Sosyal Mübadele.

INTRODUCTION

Today, the pace and changing nature of business life create pressures on employees and thus on organizations. According to the Stress in America survey published by the American Psychological Association (APA) (2020), work is the number one source of stress for individuals (66%). Similarly, research report of the European Agency for Safety and Health at Work's (EU-OSHA) 2019, covering 33 European countries and over 45,000 workplaces, highlights that psychological risk factors such as stress at work are more important than physical ones, but they are more difficult to solve because they are often lacking in awareness and solution skills and are less frequently voiced (EU-OSHA, 2019). At this point, burnout is a syndrome that occurs as a result of chronic job stress that has not been successfully managed (Burke et al., 1996; Maslach, 1982; Meier, 1983; Pines & Aronson, 1988) and was defined by Freudenberger (1974: 159) as "the loss of motivation or incentive, especially when one's commitment to a purpose or relationship fails to produce the desired results".

In terms of evaluating stress and its consequences, the cognitive stress approach provides conceptual explanations as to why one person may experience stress and its negative consequences while the other does not under the same working conditions and focuses on the cognitive processes and emotional reactions that support individuals' interactions with their environment (Peacock & Wong, 1990; Roesch et al., 2002). Transactional stress (Folkman et al., 1986; Lazarus, 1990; Lazarus & Folkman, 1984), one of the cognitive stress approaches, attributes stress neither to the environment nor to the individual (Dewe et al., 2012); on the contrary, stress reflects the relationship of a person with certain motives and convictions with the environment that creates harm, threats or difficulties depending on these characteristics (Lazarus, 1990). In other words, the interaction between individuals' perceptions of the stressors in their environment and their ways of coping with them is gaining importance in the literature (e.g., Dewe et al., 2012; Hankin & Abramson, 2001; Huang et al., 2002; Lazarus, 2020; Lazarus & Folkman, 1987; Miller & McCool, 2003; Perrewé & Zellars, 1999; Yan et al., 2021). Reflecting the contemporary time and progress in the development of stress theories, the view that individual characteristics and social exchange relationships may play a role in the relationship between work environment-work stress and burnout has also gained importance in the burnout literature (Halbesleben & Buckley, 2004).

The Effort-Reward Imbalance (ERI) Model, developed by Siegrist (1996) from the perspective of social exchange theory and the principle of reciprocity, is one of the common transactional stress models today. According to the model, lack of reciprocity between

effort (demands/obligations) and reward (self-esteem, salary/income, job security/career opportunities) and overcommitment as a maladaptive coping mechanism lead to stress and various negative health effects (Siegrist, 1996). According to the model's overcommitment interaction hypothesis, employees with both ERI and overcommitment experience the highest levels of negative health outcomes. However, studies report contradictory results regarding the interaction hypothesis of the model, and it is often even excluded in the studies conducted. Considering the perceptions of individuals and the coping process as a dynamic whole on job stress and its negative consequences from a transactional perspective and within the framework of role theory and social exchange theory, the present study aims to reveal the moderating effect of the coping mechanism overcommitment, the personal factor, in the relationship between role stressors and emotional exhaustion mediated by the organizational factor effort-reward imbalance. It is believed that the theoretical contribution to the literature on job stress and burnout will be provided with the dynamic research model that is comprehensive and interactive. Moreover, for practitioners, a better understanding of the stress process is useful in guiding efforts to increase the usefulness of stress management practices (LePine et al., 2005). Accordingly, the study is expected to provide practical contributions in problem identification, process management, and developing effective policies and strategies.

1. THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Selve (1974) underlines that negative stress is experienced when the level of stress required for people to be happy is exceeded and argues that after determining their goals in life, individuals need to find the optimal stress levels for themselves and also need a properly directed and managed stress adaptation energy (Selye, 1974). Since the first introduction of the concept of burnout as chronic work stress, the element of balance/reciprocity has been emphasized (e.g., Buunk & Schaufeli, 1993; Freudenberger & Richerlson, 1980; Goode, 1960). Burnout was first defined by psychiatrist Freudenberger (1974: 159) as the loss of motivation or incentive, especially when one's commitment fails to produce the desired results. Pines and Aronson (1988) argue that people experience burnout as a gradual erosion of their spirit and enjoyment of life as a result of the typical daily struggles and chronic stresses of life and work, involving too much pressure, conflict and demand with too little emotional reward, recognition, and achievement. At this point, the concept of burnout makes important contributions to making sense of the stress process that cannot be managed successfully. Although there are many definitions and conceptualizations of the concept Maslach's three-component structure developed through a series of studies with his colleagues Pines and Jackson (Maslach, 1982; Maslach & Jackson, 1981; Pines & Maslach, 1980) is the most widely accepted conceptualization of burnout today. According to this conceptualization, which is also accepted by the World Health Organization, an important component of burnout syndrome is the increase in emotional exhaustion; employees think that they can no longer psychologically devote themselves to their work as their emotional

resources decrease. With the second component, depersonalization, employees develop negative, cynical attitudes and feelings about the work itself and about customers/service recipients. With the third component of the syndrome, reduced personal accomplishment, employees tend to evaluate themselves negatively, especially in relation to their work, and feel unhappy about themselves and dissatisfied with their achievements (Maslach & Jackson, 1981: 99). Accordingly, burnout refers to the end point of a three-dimensional continuum of energy, involvement, and efficacy (i.e., emotional exhaustion, cynicism and decreased professional competence), while at the opposite end of this continuum is integration with work (engagement). The point between these two extremes has a direct effect on the individual's quality of life and an indirect effect on health and performance (Leiter & Maslach, 2005: 544). Emotional exhaustion, which is the dimension of burnout syndrome that has received the most attention in the literature, reflects the feelings of being emotionally overloaded and exhausted by one's job, manifested by physical fatigue, psychological and emotional exhaustion (Ito & Brotheridge, 2003; Wright & Cropanzano, 1998), and occurs as a result of occupational demands and overload and inadequate rewards (Schadenhofer et al., 2018). Meanwhile, an imbalance at the organizational level leads the employee to perceive that the psychological contract with the organization has been violated due to a lack of reciprocity, eventually leading to a depletion of one's emotional resources (Schaufeli et al., 1996). In parallel, the literature has examined the relationship between effort-reward imbalance (ERI) and burnout in the context of different variables and predominantly found a strong relationship (e.g., Bagaajav et al., 2011; Bakker et al., 2000; De Jonge et al., 2000; Feldt et al., 2013; Hasselhorn et al., 2004; Lau, 2008; Unterbrink et al., 2007). In their preliminary study, Bakker et al. (2000), for example, found that physicians' ERI can cause depletion of their emotional resources and initiate burnout syndrome. Also, Hasselhorn et al. (2004) reported that in a sample of 21,229 nurses in Europe, a much higher level of emotional exhaustion was observed in the case of high ERI in the relationship between ERI level (lowmedium-high) and burnout. Clinchamps et al. (2021) found that ERI increased the risk of burnout by 11.4 times. And last but not least, Wang et al. (2015) found that compared to low levels, high levels of ERI increased the risk 5.56 times in emotional exhaustion.

According to Goode (1960), who points to the imbalance of exchange and consequently stress in role behavior, stress in role behavior occurs when individuals devote more time/ interest to a role obligation than they think they should devote, and the tension arises when too many resources are consumed for the role or when individuals think that they are paying a price more than they are worth. Thus, it is emphasized that employees expect some kind of effort-reward balance in their evaluations and the importance of role elements in this expectation. From the perspective of organizational role theory, organizational roles, which fundamentally affect daily situations in the employee-environment relationship, constitute an important part of the daily troubles in the work life of the employee. Meanwhile, the effects of stable, repetitive, or chronic stressors on health are particularly high (Lazarus & Cohen, 1977; Lazarus & Folkman, 1984). Thus, due to the long-term nature of burnout, it is

thought that role stressors, which are sources of job stress, are likely to predict burnout. In this respect, the literature indicates that role stressors are direct (e.g., Abbas et al., 2012; Acker, 2003; Kelloway & Barling, 1991; Fogarty et al., 2000; Örtqvist & Wincent, 2006; Schwab & Iwanicki, 1982) or indirect (e.g., Bakker et al., 2000; Barnett et al., 1999; Jawahar et al., 2007) predictors of burnout. As a result, the literature implies that it is feasible to address the relationship between role stressors and emotional exhaustion from the perspective of effort and reward imbalance.

From the lenses of the transactional stress approach, the critical element of the stress process is coping strategies/mechanisms. In the ERI Model, coping with stress is addressed through overcommitment, which is a maladaptive coping strategy. The relationship between overcommitment and burnout is frequently emphasized in the prior literature (e.g., Cherniss, 1980; Cordes & Dougherty, 1993; Freudenberger 1974; 1975; Freudenberger & Richelson, 1980) and its impact on employee health and burnout is supported by various empirical studies (e.g., Bakker et al, Bakker et al., 2000; de Jonge et al., 2000; Feldt et al., 2013; Feuerhahn et al., 2012; Kunz, 2019; Lau, 2008; Rasmussen et al., 2016; Schadenhofer et al., 2018; Wang et al., 2015). In the framework of the ERI Model, over-commitment can increase the risk of negative health outcomes by creating more imbalance (Siegrist, 2008; 2001), as employees take on more tasks in the workplace and spend more of their important resources such as time and energy (van Vegchel et al., 2005) in an effort to fulfill increasing demands and/or motivation to achieve desired results with the motive to be approved and respected. These remarks suggest a dynamic structure in which the reaction to stress not only affects the outcome of stress but also the perception of stress, leading to a bidirectional change in the stress process. In the model, it is assumed that imbalance and overcommitment together define employees with the highest stress (Preckel et al. 2007; Siegrist, 1996). It is theorized by the interaction hypothesis as "an extrinsic ERI in combination with a high level of overcommitment leads to the highest risk of poor health " (van Vegchel et al., 2005: 1120). On the other hand, while overcommitment is expected to be a strong predictor of burnout (Nuebling et al., 2013) as underlined in the interaction hypothesis, studies conducted in the relevant literature (e.g., Bakker et al., 2000; Clinchamps et al., 2021; de Jonge et al., 2000; Feldt et al., 2012; Hasselhorn et al., 2004; Kinman, 2019; Kunz, 2019; Li et al, 2021; Lau, 2008; Preckel et al., 2007) contradictory results have been obtained regarding the overcommitment interaction hypothesis, and for this reason, it is seen that in many studies (e.g. Franche et al., 2006; Gorgievski et al., 2019; Hämmig et al. 2012; Häusler et al. 2018; Kan & Yu, 2016; Kinman & Jones, 2008; Kocalevent et al., 2020) it was even excluded from the research. In conclusion, in line with the theoretical framework and further research recommendations to examine the moderating role of overcommitment with different models (e.g., van Vegchel et al., 2005; Parkes, 2004; Preckel et al, 2007), the research hypothesis is developed as "overcommitment will play a moderating role in the indirect effect of role stressors on emotional exhaustion through effort-reward imbalance; this effect will be stronger at higher levels of overcommitment and weaker at lower levels."

2. RESEARCH METHOD

In this study, a conceptual model is proposed from the perspective of the transactional stress approach in order to examine the relationship between role stressors experienced by employees and their emotional exhaustion, the mediating effect of effort-reward balance in this relationship, and the moderated mediation role of their overcommitment on this effect. In the context of the research philosophy, a postpositivist stance is taken and a model that is built with hypotheses based on theoretical foundations and aims to reveal the relationships between variables for people's perceptions, attitudes and behaviors is intended to be tested. The study focuses on theory testing and adopts a deductive approach. The quantitative research method is adopted in the study where the survey strategy is preferred in data collection. Accordingly, in the first step of the data analysis process, the reliability and validity of the scales that make up the questionnaires were analyzed. Confirmatory factor analysis was used to test the construct validity of the scales, and regression analysis was used to test the hypotheses put forward within the scope of the research model developed.

2.1. Procedure and Sample

In the determination of the sample group within the scope of the research, first of all, it was taken into consideration that the conditions of the ERI model that the lack of alternatives due to high level of professionalization and the acceptance of imbalance for strategic reasons for a while advancing up the career ladder, in which the imbalance will be maintained. In addition, taking into account the intensive working conditions, interaction with people, undertaking multiple and demanding roles, and finally the convenience of survey access, the research group was determined as those working in academia and health sector. Within the scope of the study, questionnaire forms were sent to universities (without any department limitation) and provincial health directorates across Turkey to be delivered to academic staff in academia and to physicians and nurses in the health sector. As a result of the responses, analyses were carried out on 705 questionnaires with 412 academicians (116 research assistants, 107 lecturers, 97 assistant professors, 51 associate professors, and 41 professors) and 293 healthcare professionals (151 nurses and 142 physicians).

2.2. Measurement Instruments

Role stressors "role conflict", "role ambiguity" and "role overload", which constitute the independent variables of the study, were measured using the Role Hassles Index (RHI) developed by Zohar (1997). This scale was developed based on role theory to measure burnout which overlap with the variables of the current research. The scale consists of 20 situation statements in total; eight (8) statements regarding role conflict (e.g., "I have experienced arguments or conflicts over different views."), five (5) statements regarding role ambiguity (e.g., "I have experienced concerns about how to solve a problem."), and seven (7) statements regarding role overload (e.g., "I had to work too many extra hours or maintain inappropriate work schedules."). It was

evaluated whether the participants had experienced the given situations in the last one (1) month via a four-point scale ("0-I did not experience it"; "1-I experienced it: I found it slightly disturbing"; "2-I experienced it: I found it disturbing"; "3-I experienced it: I found it very disturbing"). In Zohar's (1997) study, Cronbach Alpha values were found to be .73, .77, and .65, respectively.

Emotional exhaustion levels of the participants were measured using the current short version of the Maslach Burnout Inventory-General Scale (MBI-GS) developed originally by Maslach et al. (1996), which has been adapted to describe broader occupational contexts (Maslach et al., 2008: 91). The emotional exhaustion scale includes five (5) items (e.g., "I feel emotionally detached from my work"; "I feel exhausted at the end of the workday"). A 7-point Likert-type frequency scale was used for the participants to indicate the extent to which they experienced each item (from '0=Never' to '6=Every day").

Effort-Reward Imbalance scale was used to measure the mediator variable effortreward imbalance and the moderator variable overcommitment. Developed by Siegrist (1996; 2002), the scale has three subscales used to assess the effort, reward and overcommitment. The "effort" scale has three (3) items (e.g., "Over the past few years, my job has become increasingly demanding"), and the "reward" scale, which consists of the sub-dimensions of respect/reputation, promotion/salary and job security has seven (7) items (e.g., "I get the respect I deserve from my superiors or peers"; "My chances of promotion at my job are slim"; "I have experienced or expect to experience an undesirable change in my work situation"). Each item has a 5-point scale ('1-Disagree'; '2-Agree: I do not feel stressed'; '3-Agree: I feel somewhat stressed'; '4-Agree: I feel stressed'; '5-Agree: I feel very stressed'). A higher score on the scales represents higher effort or higher reward, respectively. Since the scale is based on social exchange theory and the principle of reciprocity, the effort/reward ratio is created to determine the level of imbalance between effort and reward. Accordingly, the value approaches zero in the case of low effort and high reward, while values above 1 are obtained in the case of negative imbalance representing high effort and low reward. In order to measure the overcommitment variable, a 6-item overcommitment scale was used (e.g., "People close to me say that I sacrifice too much for my job.", "If I postpone something I need to do today, I have trouble sleeping at night."). Items in this 4-point Likert scale are scored as (from '1= Disagree' to '3= Agree'). In the study of Siegrist et al. (2009) Cronbach Alpha values of the three sub-scale were found to be .74, .79, and .79, respectively.

2.3. Research Model and Hypothesis

In this study, a conceptual model (Figure 1) is proposed from the perspective of the transactional stress approach in order to examine the relationship between role stressors experienced by employees and their emotional exhaustion, the mediating effect of effort-reward balance in this relationship, and the moderated mediation role of their overcommitment on this effect.

Yıl: 14 · Sayı: 27 · Haziran 2024 |

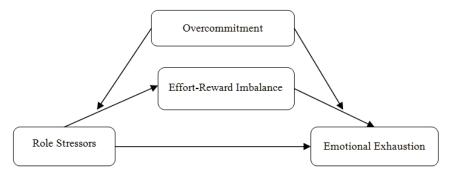


Figure 1: The Effect of Overcommitment on the Relationship between Role Stressors, Effort-Reward Imbalance and Emotional Exhaustion: Moderated Mediation Model

The hypothesis of the research is developed as:

H₁: Overcommitment will play a moderating role in the indirect effect of role stressors on emotional exhaustion through effort-reward imbalance; this effect will be stronger at higher levels of overcommitment and weaker at lower levels.

2.4. Data Analyses

In accordance with the research purpose, the survey strategy and quantitative method were adopted in this study and structured questionnaires (Table 1) were used as data collection tools. The data were analyzed using IBM AMOS version 26, IBM SPSS version 25 and Hayes Process Macro version 4.1. Confirmatory factor analysis (CFA) was conducted to test construct validity and reliability, and Cronbach's alpha (α), AVE and CR values were calculated. Pearson correlation coefficients were calculated through correlation analysis to determine the pairwise relationships between variables and the directions of these relationships. Multiple regression analyses conducted with Process Macro were used to test the relationship structures constructed as moderated mediation. In the case of firstand second-stage moderated mediation, Hayes (2015) recommends following the procedure described by Muller et al. (2005). Accordingly, in order for moderated mediation to occur, at least one of two conditions, each containing two sub-conditions, must be met (Muller et al., 2005: 655-656): Condition 1; (a) there is a significant change in the effect of the independent variable on the mediator variable at different levels of the moderator variable, and (b) there is a significant effect of the mediator variable on the dependent variable at the average level of the moderator variable. Condition 2: (a) there is a significant effect of the independent variable on the mediator variable at the average level of the moderator variable, and (b) there is a significant change in the effect of the mediator variable on the independent variable at different levels of the moderator variable.

After the conditions regarding the existence of a conditional indirect effect, Muller et al. (2005) was first followed, and relevant inferences were made, the bootstrap analysis findings were evaluated for the holistic moderated mediation test. Significance was set at

the .05 level and the bootstrap method with 5000 bootstrap samples was used to test the significance of conditional indirect effects and changes in these effects at +1 SD and -1 SD levels of the moderator. The 95% confidence intervals for the coefficients are considered statistically significant if the confidence intervals (LLCI; ULCI) do not contain zero.

3. FINDINGS

3.1. Validity and Reliability Analyses of Measurement Instruments

The scales used to obtain the variables in the study and the Cronbach's Alpha values of the scales are presented in Table 1. Regarding the scales of the research, in the "overcommitment" scale, the factor load of the item "Overcommitment 3" was below the desired level and the item was excluded from the analysis. The factor loadings of all other items are between .405 and .918. The Cronbach's Alpha value of the job security sub-dimension in the reward dimension is just below the acceptable level with α = ,681, which is at a questionable level. In addition, the average variance extracted (AVE) value of the overcommitment scale is below .5. The first possible reason for the low Cronbach's Alpha value is the low number of scale questions (Tavakol & Dennick, 2011). In the current situation, there are only 2 items related to job security.

Table 1: Validity and Reliability Analysis of Measurement Tools and Model Fit Indices

Variable	Sub Dimension	ns Items	Cronbach's Alph	a AVE	CR
Role Stressors	R. Conflict	8	,908	,55	,91
	R. Ambiguity	5	,897	,63	,89
	R. Overload	7	,885	,51	,88
Emotional		5	,926	70	.92
Exhaustion		ິນ	,920	,70	,92
Effort-Reward Imba- lance	Effort	3	,850	,65	,85
	Reward	2	,888	,80	,89
	 Esteem 	3	,	•	•
	 Promotion/sal 	arv	,748	,53	,77
	 Job Security 	2	,681	,52	,69
Overcommitment	-	5	,774	,38	,74
		CFA: Model Fit	Indices		
Index	χ²/df C	FI RMSE	A IFI	TLI	SRMR
Value	2,87 ,9	93 ,05	.93	.92	.05

Note. AVE: Average Variance Extracted; CR: Composite Reliability; CFI: Comparative Fit Index; RMSEA: Approximate Root Mean Square Error; IFI: Incremental Fit Index; TLI: Tucker-Lewis Index; SRMR: Standardized Root Mean Square Residual

On the other hand, since the composite reliability (CR) of the construct was higher than .7, the convergent validity of both scales was considered acceptable (Fornell & Larcker, 1981) without any modification. Also, the square root of AVE of each variable is greater

Yıl: 14 • Sayı: 27 • Haziran 2024

than its highest correlation with any other construct (Table 2). Therefore, the discriminant and convergent validity criteria are met by the proposed measurement model. When the fit indices of the model are examined, it can be said that there is a good fit in the model.

3.2. Descriptive Statistics and Correlation Analysis of Variables

Descriptive statistics of variables and Pearson correlation coefficients between variables are presented via the Table 2. The fact that the correlation coefficient between the variables is less than .800 indicates that the variables are not overly correlated with each other and that there is no multicollinearity problem between them. Accordingly, it is seen that the Pearson correlation coefficients of the variables in the study are statistically significant.

Table 2: Descriptive Statistics of Variables and Pearson Correlation Coefficients between Variables

Variables	1	2	3	4
1- RS	(,751)			
2- EE	,599**	(,836)		
3- ERI	,676**	,605**	(,791)	
4- OVC	,455**	,495**	,439**	(,616)
Χ	1,156	2,857	,970	2,673
SD	,775	1,827	,813	,794

Note. Values in parentheses represent the square root of the average variance extracted (AVE). **p<.01; RS: Role Stressors; EE: Emotional Exhaustion; ERI: Effort Reword Imbalance; OVC: Overcommitment; X: Sample Mean; SD: Standard Deviation

3.3. Regression Analyses

To investigate the conditional indirect mechanisms between the variables, moderated mediation analyses were conducted with IBM-SPSS PROCESS 4.1 using Model 58 (Hayes, 2013; Hayes 2022) to examine the moderating effect of overcommitment on: (1) the relationship between role stressors and effort-reward imbalance, (2) the relationship between effort-reward imbalance and emotional exhaustion, (3) the indirect relationship between role stressors and emotional exhaustion through effort-reward imbalance.

The findings summarized in Table 3 show that the effect of role stressors on ERI is significant (b=,6111; p<.01) and moderated by overcommitment (b=,1321; p<.01). When the findings regarding the mediator and dependent variable relationship predicted to be moderated by overcommitment are examined, it is seen that the effect of ERI on emotional exhaustion is significant (b=,9005; p<,01) and moderated by overcommitment (b=-,3605; p<,01). On the other hand, for different values of the moderator (-1 SD and/or +1 SD), the conditional effect is different from zero and significant for both paths. Therefore, the conditions for moderated mediation specified by Muller et al. (2005) are met in paths a and b. According to the findings, positive moderating effect of overcommitment on the relationship between role stressors and ERI (path a) was found. Accordingly, as employees'

overcommitment increases, the existing positive effect on path a becomes stronger (Figure 2). On the other hand, regarding the moderating effect of overcommitment on the relationship between ERI and emotional exhaustion (path b), it is found that overcommitment moderates the relationship negatively; the positive effect of ERI on emotional exhaustion weakens as employees' overcommitment increases (Figure 2).

Table 3: The Effect of Overcommitment on the Relationship between Role Stressors, Effort-Reward Imbalance and Emotional Exhaustion

	Mediator \	/ariable: Effort Rewa	ed Imbalance	
	b	SE	t	р
Constant	-,0369	,0240	-1,5357	,1251
RS	,6111	,0322	18,9536	,0000
OVC	,1674	,0310	5,3960	,0000
RS*OVC	,1321	,0354	3,7337	,0002
	Conditional Effects	at Different Values o	f the Moderator (path	a)
	b	SE	t	р
OVC -1 SD	,5062	,0461	10,9835	,0000
OVC +1 SD	,7160	,0391	18,2894	,0000
	Depender	t Variable: Emotion	al Exhaustion	
	b	SE	t	р
Constant	2,9593	,0540	54,8509	,0000
RS	,6159	,0899	6,8513	,0000
ERI	,9005	,0941	9,5709	,0000
OVC	,4920	,0717	6,8646	,0000
ERI*OVC	-,3605	,0770	-4,6807	,0000
	Conditional Effects	at Different Values o	f the Moderator (path	b)
	b	SE	t	р
OVC -1 SD	1,1866	,1331	8,9151	,0000
OVC+1 SD	,6143	,0864	7,1117	,0000
	Conditional Indirect	Effects at Different	Values of the Moderate	o r
	b	SE	LLCI	ULCI
OVC -1 SD	,6007	,0947	,4240	,7975
OVC	,5503	,0779	,4110	,7152
OVC +1 SD	,4398	,0674	,3165	,5801

Note. b: unstandardized coefficient; SE: standard error; LLCI: Lower limit confidence interval; ULCI: upper limit confidence interval; p: statistical significance level of the b coefficient

According to the bootstrapping analysis summarized in Table 3, regarding the moderation of both the relationship between role stressors and ERI and the relationship between ERI and emotional exhaustion by overcommitment (path a and path b together), it has been found that the indirect effect is moderated by overcommitment at a statistically significant level

Yıl: 14 • Sayı: 27 • Haziran 2024 ■

(b=,5503; LLCI=,4110; ULCI=,7152). But, at low level of overcommitment, the indirect effect of role stressors on emotional exhaustion through ERI (-1 SD; b=,6007; LLCI=,4240; ULCI=,7975) increases contrary to expectations. For high overcommitment level, although the indirect effect is significant (+1 SD; b=,4398; LLCI=,3165; ULCI=,5801), it weakens contrary to expectations. This is due to the fact that overcommitment is a negative moderator in the relationship between ERI and emotional exhaustion (path b) as mentioned above. As a result, although a statistically significant moderating effect was detected, the hypothesis was not supported as contrary evidence was provided in terms of the direction of the relationship.

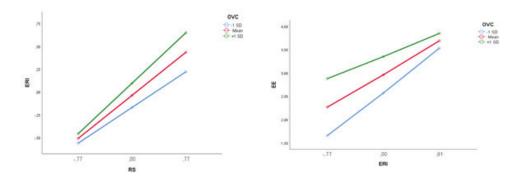


Figure 2: Moderating Effects of Overcommitment on the Relationship between Role Stressors→Effort Reward Imbalance, and Effort Reward Imbalance→Emotional Exhaustion

4. DISCUSSION

The results obtained through regression analyses reveal that overcommitment has a positive moderating effect on the relationship between role stressors and ERI. According to these results, as role stressors increase, highly overcommitted employees are more affected by this situation and experience a greater increase in ERI than less overcommitted employees. In other words, highly engaged employees are more sensitive to the increase in role stressors. This supports the findings of Feldt et al. (2016) in their longitudinal study regarding the increasing effect of overcommitment on ERI. On the other hand, according to the results, in the relationship between ERI and emotional exhaustion, in the case of increasing ERI, employees with higher levels of overcommitment are less affected and their emotional exhaustion levels increase less compared to less overcommitted employees. This situation shows that the interaction hypothesis predicted for path b of the ERI Model, similar to the literature (Lau, 2008; Li et al., 2021; Preckel et al., 2007; Steptoe et al., 2004), is not met in the current study. Assessing the moderated mediation model proposed in the current study as a whole, it is seen that overcommitment creates a partial buffer effect while it is expected to exacerbate the positive effect of role stressors on emotional exhaustion through

ERI. At this point, it is seen that the negative moderating effect of path b is strengthened and dominated in the change in overcommitment levels.

From a social exchange theory perspective, it can also be argued that in this case, employees do not perceive an asymmetry of reciprocity due to role stressors, but only perceive the increase in their efforts as a challenge, and in this context, they increase their efforts and successfully overcome the potential negative consequences of the current imbalance. For example, Ben-Zur and Michael (2007) observed that employees' perceptions of high levels of challenge/control towards their work reduced the occurrence of burnout in all dimensions. Furthermore, Hall and Richter (1988) state that employees strive to achieve career success and fulfill their needs for achievement, power and prestige. For such intrinsic motivation, du Prel et al. (2018) argue that overcommitment, which du Prel et al. (2018) treat as a learned behavior, is triggered by high motivation and energy of employees (especially early in their careers), and if positive returns are obtained, they tend to continue overcommitment by revealing positive effects. In this case, it can be interpreted that overcommitment may not always be justified by the assumption that employees have unrealistic expectations of exaggerated rewards for their increased efforts. Thus, although overcommitment increases imbalance, this is not undesirable and therefore overcommitment may serve as an effective coping factor that positively modifies the negative consequences of imbalance. At this point, an argument for the lack of the expected moderating effects of overcommitment is that emotional exhaustion may be highly sensitive to participants' levels of ERI and overcommitment (e.g., Felth, 2013; Hasselhom et al., 2004; Lau, 2008; Li et al., 2021; Wang et al., 2015).

In addition, it is also possible that different personal elements of employees may have the effect of changing the direction of the possible relationship. For example, the literature emphasizes that employees who attribute a lot of meaning to their work may have difficulty in withholding from work, but they may also perceive the negative effects of withholding less due to the high meaning attributed to work (du Purel, 2018; Sonnentag & Fritz, 2007). Schadenhofer et al. (2018) found that job meaningfulness moderates the relationship between overcommitment and the emotional exhaustion dimension of burnout Similarly, Van Yperen and his colleagues in a series of studies (Van Yperen et al., 1992, Van Yperen, 1996; Buunk et al., 2001) found significant results on the effects of communal orientation, which is defined as the desire to give something to society for the good of others and receive something in return, on the relationship between employees' ERI and burnout experiences. Accordingly, employees who are both in a state of imbalance and have a low level of communal orientation experience the highest level of burnout, while a high level of communal orientation reduces burnout. Therefore, it seems possible that the regulatory role of overcommitment in the case of different personal motivation factors can be neutralized or even turned into a positive effect in the case of overcommitment and this may provide some clarification to the findings of this research.

CONCLUSION

In the transactional stress approach, it is stated that employees put coping mechanisms into practice when a situation is perceived as a threat, i.e. a source of stress. In the ERI Model, overcommitment is characterized as a maladaptive coping method and is associated with negative stress outcomes. With the current research model in which ERI is considered as a mediating variable in the relationship between role stressors and emotional exhaustion, it is aimed to evaluate not only the moderating effect of overcommitment on the negative consequences of stress but also its effect on the level of stress perception. Therefore, with this unique model, it is thought that the theoretical contribution to the literature has been made by making an effort to evaluate different mechanisms for the emergence of job stress and the functioning of the ERI Model. The results show that overcommitment positively moderates the effects of role stressors on ERI. Hence, it is thought that it is useful to consider the overcommitment interaction hypothesis as moderating the relationship between stressors and ERI beyond moderating the negative consequences of ERI.

In addition, although the hypothesis was not supported in line with the results that overcommitment moderates the effects of effort-reward imbalance on emotional exhaustion in the opposite direction than expected, these results indicate that overcommitment may have not only negative effects but also potential positive effects. Considering the model extension purpose of the current study, it is considered to be an important result for the study that it points to inferences for potential different model components.

In this respect, it should be investigated under which conditions overcommitment will trigger positive or negative outcomes. Since the effectiveness of the coping mechanism may vary depending on the type of stressor, characteristics of the situation and occupation (Lazarus et al., 1986), evaluating overcommitment with different stressors and stress outcomes in future studies may contribute to our understanding of the subject. In addition, in future studies, it may be useful to include factors such as occupation, gender, working years, working hours, and various potential moderating factors such as job satisfaction, importance attributed to work, and communal orientation in the research models. Finally, further studies with group-based analyses, longitudinal data and qualitative research designs may contribute to our understanding of the nature of the phenomenon.

Araştırma ve Yayın Etiği Beyanı

Makalenin yayın süreçlerinde Karadeniz Teknik Üniversitesi Sosyal Bilimler Enstitüsü Sosyal Bilimler Dergisi'nin "Etik Kurallara Uygunluk" başlığı altında belirtilen esaslara uygun olarak hareket edilmiştir. Çalışmanın araştırma kısmı Gümüşhane Üniversitesi Bilimsel Araştırma ve Yayın Etiği Kurulu'nun 23.02.2022 tarih ve 2022/1 sayılı Kararı ile alınan izin doğrultusunda gerçekleştirilmiştir.

Araştırmacıların Katkı Beyanı

Çalışmanın literatür çalışması ve teorik incelemesi, iki yazar tarafından eşit oranda katkı sağlanarak üretilmiştir.

Çıkar Çatışması Beyanı

Makalede yazarlar tarafından beyan edilmis herhangi bir olası çıkar çatısması bulunmamaktadır.

REFERENCES

- Abbas, S. G., Roger, A., & Asadullah, M. A. (2012). *Impact of organizational role stressors on faculty stress and burnout (An exploratory analysis of a public sector university of Pakistan)*. 4ème colloque inter- national (ISEOR AOM), 5-6 June 2012, Lyon, France, ss. 1-18.
- Acker, G. M. (2003). Role conflict and ambiguity: Do they predict burnout among mental health service providers?. *Social Work in Mental Health*, *1*(3), 63-80.
- American Psychological Association (APA) (2020). *Stress in America*TM 2020: A National Mental Health Crisis. Retrieved March 13, 2021, from https://www.apa.org/news/press/releases/stress/2020/sia-mental-health-crisis.pdf.
- Bagaajav, A., Myagmarjav, S., Nanjid, K., Otgon, S., & Chae, Y. M. (2011). Burnout and Job Stress among Mongolian Doctors and Nurses. *Industrial Health*, 49(5), 582–588.
- Bakker, A. B., Killmer, C. H., Siegrist, J., & Schaufeli, W. B. (2000). Effort-reward imbalance and burnout among nurses. *Journal of Advanced Nursing*, *31*(4), 884–891. https://doi.org/10.1046/j.1365-2648.2000.01361.x
- Barnett, R. C., Brennan, R. T., & Gareis, K. C. (1999). A closer look at the measurement of burnout. *Journal of Applied Biobehavioral Research*, 4(2), 65–78. https://doi.org/10.1111/j.1751-9861.1999.tb00055.x
- Burke, R. J., Greenglass, E. R., & Schwarzer, R. (1996). Predicting teacher burnout over time: Effects of work stress, social support, and self-doubts on burnout and its consequences. *Anxiety, Stress and Coping, 9*(3), 261–275.
- Buunk, B. P. & Schaufeli, W. B. (1993). *Burnout: A Perspective from Social Comparison Theory*. In W. B. Schaufeli, C, Maslach and T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 53–69). London: Taylor & Francis.
- Buunk, B. P., Van der Zee, K., & Van Yperen, N. W. (2001). Neuroticism and social comparison orientation as moderators of affective responses to social comparison at work. *Journal of Personality*, 69(5), 745-762.
- Cherniss, C. (1980). Staff burnout: Job stress in the human services. London: Sage Publications
- Clinchamps, M., Auclair, C., Prunet, D., Pfabigan, D., Lesage, F. X., Baker, J. S., ... Dutheil, F. (2021). Burnout among hospital non-healthcare staff: influence of job Demand-Control-Support, and Effort-Reward imbalance. *Journal of Occupational and Environmental Medicine*, 63(1), 13-20.
- Cordes, C. L. & Dougherty, T. (1993). A review and an integration of research on job burnout. *The Academy of Management Review, 18*(4), 621–656.
- De Jonge, J., Bosma, H., Peter, R., & Siegrist, J. (2000). Job strain, effort-reward imbalance and employee well-being: A large- scale cross-sectional study. Social Science and Medicine, 50(9), 1317–1327. https://doi.org/10.1016/S0277-9536(99)00388-3
- Dewe, P. J., O'Driscoll, M. P., & Cooper, C. L. (2012). *Theories of Psychological Stress at Work*. In R. J. Gatchel and I. Z. Schultz (Eds.), *Handbook of Occupational Health and Wellness* (pp. 23–38). Berlin: Springer Science+Business Media.
- du Prel, J. B., Runeson-Broberg, R., Westerholm, P., Alfredsson, L., Fahlén, G., Knutsson, A., ...Peter, R. (2018). Work overcommitment: Is it a trait or a state? *International Archives of Occupational And Environmental Health*, *91*(1), 1-11.

Yıl: 14 • Sayı: 27 • Haziran 2024

- European Agency for Safety and Health at Work (EU-OSHA). (2019). *Third European Survey of Enterprises on New and Emerging Risks (ESENER-3)*. Luxembourg: Publications Office of the European Union.
- Feldt, T., Huhtala, M., Kinnunen, U., Hyvönen, K., Mäkikangas, A., & Sonnentag, S. (2013). Long-term patterns of effort-reward imbalance and over-commitment: Investigating occupational well-being and recovery experiences as outcomes. *Work and Stress*, *27*(1), 64–87.
- Feldt, T., Hyvönen, K., Mäkikangas, A., Rantanen, J., Huhtala, M., & Kinnunen, U. (2016). Overcommitment as a predictor of effort—reward imbalance: evidence from an 8-year follow-up study. *Scandinavian Journal of Work, Environment & Health*, 42(4), 309-319.
- Feuerhahn, N., Kühnel, J., & Kudielka, B. M. (2012). Interaction effects of effort–reward imbalance and overcommitment on emotional exhaustion and job performance. *International Journal of Stress Management*, 19(2), 105-131.
- Fogarty, T. J., Singh, J., Rhoads, G. K., & Moore, R. K. (2000). Antecedents and consequences of burnout in accounting: Beyond the role stress model. *Behavioral Research in Accounting*, 12, 31-68.
- Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology, 50*(3), 571–579.
- Franche, R. L., Williams, A., Ibrahim, S., Grace, S. L., Mustard, C., Minore, B., & Stewart, D. E. (2006). Path analysis of work conditions and work-family spillover as modifiable workplace factors associated with depressive symptomatology. *Stress and Health*, 22(2), 91–103. https://doi.org/10.1002/smi.1087
- Freudenberger, H. J. (1974). Staff burn-out. Journal of Social Issues, 30(1), 159–165.
- Freudenberger, H. J. (1975). The staffburn out syndrome in alternative institutions. *Psychotherapy*, *12*(1), 73–82. https://doi.org/10.1037/h0086411
- Freudenberger, H. J. & Richelson, G. (1980). *Burn-out: The High Cost of High Achievement*. Garden City, N.Y.: Anchor Press.
- Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
- Goode, W. J. (1960). A Theory of Role Strain. American Sociological Review, 25(4), 483-496.
- Gorgievski, M. J., Van der Heijden, B. I. J. M., & Bakker, A. B. (2019). Effort-reward imbalance and work-home interference: a two-wave study among European male nurses. *Work and Stress*, *33*(4), 315–333. https://doi.org/10.1080/02678373.2018.1503358
- Halbesleben, J. R. B. & Buckley, M. R. (2004). Burnout in organizational life. *Journal of Management*, 30(6), 859–879.
- Hall, D. T. & Richter, J. (1988). Balancing work life and home life: What can organizations do to help?. *Academy of Management Perspectives*, 2(3), 213-223.
- Hämmig, O., Brauchli, R., & Bauer, G. F. (2012). Effort-reward and work-life imbalance, general stress and burnout among employees of a large public hospital in Switzerland. *Swiss Medical Weekly*, *142*, 1–11.
- Hankin, B. L. & Abramson, L. Y. (2001). Development of gender differences in depression: An elaborated cognitive vulnerability–transactional stress theory. *Psychological Bulletin*, 127(6), 773.

- Hasselhorn, H.-M., Tackenberg, P., & Peter, R. (2004). Effort–Reward Imbalance among Nurses in Stable Countries and in Countries in Transition. *International Journal of Occupational and Environmental Health*, 10(4), 401–408.
- Häusler, N., Bopp, M., & Hämmig, O. (2018). Effort-Reward Imbalance, work-privacy conflict, and burnout among hospital employees. *Journal of Occupational and Environmental Medicine*, 60(4), 183–187.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press
- Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research*, 50(1), 1-22.
- Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3. Baskı). New York: Guilford Publications.
- Ito, J. K. & Brotheridge, C. M. (2003). Resources, coping strategies, and emotional exhaustion: A conservation of resources perspective. *Journal of Vocational Behavior*, 63(3), 490-509.
- Jawahar, I. M., Stone, T. H., & Kisamore, J. L. (2007). Role conflict and burnout: The direct and moderating effects of political skill and perceived organizational support on burnout dimensions. *International Journal of Stress Management*, 14(2), 142-159.
- Kelloway, E. K. & Barling, J. (1991). Job characteristics, role stress and mental health. *Journal of Occupational Psychology*, *64*, 291–304.
- Kinman, G. (2019). Effort-reward imbalance in academic employees: Examining different reward systems. *International Journal of Stress Management*, 26(2), 184–192. https://doi.org/10.1037/str0000128
- Kinman, G. & Jones, F. (2008). Effort-reward imbalance, over-commitment and work-life conflict: Testing an expanded model. *Journal of Managerial Psychology, 23*(3), 236–251. https://doi.org/10.1108/02683940810861365
- Kocalevent, R., Pinnschmidt, H., Selch, S., Nehls, S., Meyer, J., Boczor, S., ..., & van den Bussche, H. (2020). Burnout is associated with work-family conflict and gratification crisis among German resident physicians. *BMC Medical Education*, 20(1), 1-8.
- Kunz, C. (2019). The influence of working conditions on health satisfaction, physical and mental health: testing the effort-reward imbalance (ERI) model and its moderation with over-commitment using a representative sample of German employees (GSOEP). *BMC Public Health*, 19(1), 1-11.
- Lau, B. (2008). Effort-reward imbalance and overcommitment in employees in a Norwegian municipality: A cross sectional study. *Journal of Occupational Medicine and Toxicology*, 3(1), 1-11. https://doi.org/10.1186/1745-6673-3-9
- Lazarus, R. S. (2020). Psychological stress in the workplace. Florida: CRC Press.
- Lazarus, R. S. & Cohen, J. B. (1977). *Environmental Stress*. In I. Altman and J. F. Wohlwill (Eds.), *Human Behavior and Environment Advances in Theory and Research* (pp. 89–126). New York: Plenum Press.
- Lazarus, R. S. (1990). Theory-Based Stress Measurement. *Psychological Inquiry*, 1(1), 3–13.
- Lazarus, R. S. & Folkman, S. (1984). Stress, appraisal, and coping. Berlin: Springer.
- Lazarus, R. S. & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality, 1*(3), 141-169.

- Lease, S. H. (1999). Occupational role stressors, coping, support, and hardiness as predictors of strain in academic faculty: An emphasis on new and female faculty. *Research in Higher Education*, 40(3), 285–307.
- LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge Stressor-hindrance stressor framework: An explanation for inconsistent relationships among Stressors and performance. *Academy of Management Journal*, 48(5), 764–775. https://doi.org/10.5465/AMJ.2005.18803921
- Li, N., Zhang, L., Li, X., & Lu, Q. (2021). The influence of operating room nurses' job stress on burnout and organizational commitment: The moderating effect of over_commitment. *Journal of Advanced Nursing*, 77(4), 1772-1782.
- Maslach, C. (1982). Understanding Burnout: Definitional Issues in Analyzing a Complex Phenomenon. In W.S. Paine (Ed.). Job Stress and Burnout: Research, Theory and Intervention Perspectives (pp. 29-40). Beverly Hills: Sage Focus Editions.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory manual*. Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Leiter, M. P., & Schaufeli, W.B. (2008). Measuring burnout. S. Cartwright and C.L. Cooper (Eds.), In the Oxford handbook of organizational well being (pp. 86-108). Oxford: Oxford University Press.
- Meier, S. T. (1983). Toward a theory of burnout. *Human Relations*, *36*(10), 899–910. https://doi.org/10.1177/001872678303601003
- Miller, T. A. & McCool, S. F. (2003). Coping with stress in outdoor recreational settings: An application of transactional stress theory. *Leisure Sciences*, 25(2-3), 257-275.
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89(6), 852-863.
- Nuebling, M., Seidler, A., Garthus-Niegel, S., Latza, U., Wagner, M., Hegewald, J., ... Liebers, F. (2013). The Gutenberg Health Study: measuring psychosocial factors at work and predicting health and work-related outcomes with the ERI and the COPSOQ questionnaire. *BMC Public Health*, *13*, 1–13.
- Örtqvist, D. & Wincent, J. (2006). Prominent consequences of role stress: A meta-analytic review. International Journal of Stress Management, 13(4), 399–422. https://doi.org/10.1037/1072-5245.13.4.399
- Parkes, K. R. (1994). Personality and coping as moderators of work stress processes: Models, methods, and measures. *Work and Stress*, 8(2), 110–129. https://doi.org/10.1080/02678379408259984
- Peacock, E. J. & Wong, P. T. (1990). The stress appraisal measure (SAM): A multidimensional approach to cognitive appraisal. *Stress Medicine*, *6*(3), 227-236.
- Perrewé, P. L. & Zellars, K. L. (1999). An examination of attributions and emotions in the transactional approach to the organizational stress process. *Journal of Organizational Behavior*, 20(5), 739-752.
- Pines, A. & Aronson, E. (1988). Career burnout: Causes and cures. Detroit: Free Press.
- Preckel, D., Meinel, M., Kudielka, B. M., Haug, H. J., & Fischer, J. E. (2007). Effort-reward-imbalance, overcommitment and self-reported health: Is it the interaction that matters? *Journal of Occupational and Organizational Psychology*, 80(1), 91–107. https://doi.org/10.1348/096317905X80183.

- Rasmussen, V., Turnell, A., Butow, P., Juraskova, I., Kirsten, L., Wiener, L., ... IPOS Research Committee. (2016). Burnout among psychosocial oncologists: an application and extension of the effort–reward imbalance model. *Psycho* Oncology, 25(2), 194-202.
- Schadenhofer, P., Kundi, M., Abrahamian, H., Blasche, G., Stummer, H., & Kautzky-Willer, A. (2018). Job-related meaningfulness moderates the association between over-commitment and emotional exhaustion in nurses. *Journal of Nursing Management*, 26(7), 820–832. https://doi.org/10.1111/jonm.12602
- Schaufeli, W. B., Dierendonck, D. Van & Gorp, K. Van. (1996). Burnout and reciprocity: Towards a dual-level social exchange model. *Work and Stress*, 10(3), 225–237.
- Schwab, R. L. & Iwanicki, E. F. (1982). Perceived Role Conflict, Role Ambiguity, and Teacher Burnout. *Educational Administration Quarterly*, 18(1), 60–74. https://doi.org/10.1177/0013161X82018001005
- Siegrist, J. (1996). Adverse Health Effects of High-Effort/Low-Reward Conditions. *Journal of Occupational Health Psychology, 1*(1), 27–41.
- Siegrist, J. (2001). *A theory of occupational stress*. In J. Dunham (Eds.), *Stress in the workplace: Past, present and future* (pp. 52–66). London: Whurr Publishers.
- Siegrist, J. (2002). Effort-Reward Imbalance at Work and Health. *Historical and Current Perspectives on Stress and Health*, 2, 261–291.
- Siegrist, J. (2008). Effort-reward imbalance and health in a globalized economy. *SJWEH Suppl*, 6, 163–168.
- Siegrist, J., Wege, N., Pühlhofer, F., & Wahrendorf, M. (2009). A short generic measure of work stress in the era of globalization: Effort-reward imbalance. International Archives of Occupational and Environmental Health, 82(8), 1005-1013.
- Sonnentag, S. & Fritz, C. (2007). The Recovery Experience Questionnaire: development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology*, 12(3), 204.
- Steptoe, A., Siegrist, J., Kirschbaum, C., & Marmot, M. (2004). Effort–reward imbalance, overcommitment, and measures of cortisol and blood pressure over the working day. *Psychosomatic Medicine*, 66(3), 323-329.
- Tavakol, M. & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.
- Unterbrink, T., Hack, A., Pfeifer, R., Buhl-Griehaber, V., Müller, U., Wesche, H., ... Frommhold, M. (2007). Burnout and effort-reward-imbalance in a sample of 949 German teachers. *International Archives of Occupational and Environmental Health*, 80(5), 433–441. https://doi.org/10.1007/s00420-007-0169-0
- Van Vegchel, N., de Jonge, J., Bosma, H., & Schaufeli, W. B. (2005). Reviewing the effort-reward imbalance model: drawing up the balance of 45 empirical studies. *Social Science and Medicine*, 60, 1117–1131.
- Van Yperen, N. W., Buunk, B. P., & Schaufeli, W. B. (1992). Communal orientation and the burnout syndrome among nurses. *Journal of Applied Social Psychology*, 22(3), 173-189.
- Van Yperen, N. W. (1996). Communal orientation and the burnout syndrome among nurses: A replication and extension. *Journal of Applied Social Psychology*, 26(4), 338-354.
- Wang, Y., Ramos, A., Wu, H., Liu, L., Yang, X., Wang, J., & Wang, L. (2015). Relationship between occupational stress and burnout among Chinese teachers: a cross-sectional survey

- in Liaoning, China. *International Archives of Occupational and Environmental Health*, 88(5), 589-597.
- Wright, T. A. & Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology*, *83*, 486–493.
- Yan, J., Kim, S., Zhang, S. X., Foo, M. D., Alvarez-Risco, A., Del-Aguila-Arcentales, S., & Yáñez, J. A. (2021). Hospitality workers' COVID-19 risk perception and depression: A contingent model based on transactional theory of stress model. *International Journal of Hospitality Management*, 95, 102935.
- Zohar, D. (1997). Predicting burnout with a hassle based measure of role demands. Journal of Organizational Behavior: *The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 18*(2), 101-115.