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## Burnout Levels of Academic Staff: An Investigation at a Public University in Turkey

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### Abstract

Burnout is an important problem in academic life. Burnout of academic staff affect the quality of education and the success of the students. Because, being burnout not only brings about insufficiencies and illnesses in individuals, but also damages the other staff and the foundation as a result of their underperformance, psychological destruction and resignation. The aim of this study is to identify the burnout levels of academic staff and to evaluate the relationship between some variables of burnout levels by using Proportional Odds Model differently from other burnout studies about academic staff. For this purpose, 150 academicians are selected with "Stratified Simple Sampling" method from one of the biggest Public Universities in Ankara in Turkey, then, the personal information form and Maslach Burnout Inventory (MBI) are implemented to them. This study is important for recognizing the problems of academic staff and contributing to their productivity and success in their work.

**Keywords:** Academicians, Burnout, Maslach Burnout Inventory, Proportional Odds Model (POM)

### 1. INTRODUCTION

The use of the term burnout began to appear with some regularity in the 1970s in the United States, especially among people working in the human services such as teaching, social services, medicine, mental health and law enforcement which include face to face and intensive relations [1]. The term burnout was first introduced by [2], who defined it as "to fail, to wear out, or become exhausted by making excessive demands on energy, strength, or resources". The concept of burnout was further popularized with development of the Maslach Burnout Inventory (MBI) which is the most widely used, well validated instrument for the assessment of burnout. According to the [3], burnout is a syndrome constructing of three dimensions (emotional exhaustion, depersonalization and a sense of low personal accomplishment) that is associated with decreased work that is measured with the MBI [3]. [3]

separated the consequences of stress into three dimensions of burnout: (1) Emotional exhaustion (EE). (2) Depersonalization (DP). (3) Personal accomplishment (PA). EE can be considered the core symptom of burnout. Maslach defined that EE appears first as a response to excessive work demands that drain individual's emotional resources. The individual begins to have negative and undesired attitudes towards the people he/she works with, which is defined as DP. Reduced Personal Accomplishment (RPA), the third and final construct of burnout, is believed to be result of continued depersonalization and manifests itself as a decline in one's feelings of competence and successful achievement [4, 5].

In sum, according to Maslach and Jackson's [3] model, depersonalization and decreased personal accomplishment as consequences of chronic emotional exhaustion. The final step of burnout, comes quitting the job. When not being able to cope with the consequences of burnout, the

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“victim” comes to the end of the road. To conclude, burnout may lead to many consequences including symptoms such as stress, physical and psychological illnesses, depression, fatigue, absence, low performance, lack of involvement and excitement for work, none of which can be underestimated [4]

Academic staff in universities are affected from hitches arising from burnout [6]. Since academic staff is in a relationship with a lot of students and also university members, they are potential candidates suffer from burnout [7, 8].

There are several burnout studies about academic staff in Turkey. [9] investigated the demographic factors that affect the burnout levels of 185 academic staff in faculty of Economics and Administrative Science of one public university. [10] determined the burnout of physicians and its relation to socio-demographic features in medical faculty of one university. [11] examined the relationship between demographic factors of university faculty with their burnout levels at one public university. [12] also determined the burnout situations of 108 academicians working in some public universities. [13] investigated the relationship between some demographic variables of burnout levels of academicians in one public university. [14] measured the burnout levels of academicians and determined the factors affecting burnout levels of 160 academicians working in accounting and finance sub-department in 78 public and foundation universities in Turkey. [15] also investigated the factors affecting job satisfaction, burnout levels and job satisfaction of the academicians of one university. [8] examined the burnout levels of 648 academicians working in the Universities of Turkey. [16] determined that there is a significant difference in burnout levels of the academic staff in terms of some technical demographic variables in public and foundation universities in Istanbul.

The purpose of this study is to identify the burnout levels of academic staff and to investigate the factors that affect burnout levels of academicians. None of above studies investigate the levels of burnout thoroughly. In this study, to investigate the levels of burnout, differently from other studies, Proportional Odds Model (POM) is used. The significance of this study is the first time of using POM in a Burnout study. For this target, 150

academicians, working in the biggest Public University in Ankara, are selected with “Stratified Simple Sampling” method, the personal information form and Maslach Burnout Inventory (MBI) are implemented. This study is important to recognize the problems of academic staff by examining one of the biggest and famous university of Turkey established in Ankara.

## 2. METHOD

For this study, factors which have effects on burnout levels of academic staff are investigated with Proportional Odds Models (POM). The POM is a member of the family of cumulative logit models. The aim of cumulative logit models are determining relationship between one categorical dependent variable and various independent variables. In cumulative logit models the natural logarithm of odds of ordinal dependent variable is stated as a linear function of the independent variables. Cumulative logit model is frequently-used method as it enables to ordinal variables to be modeled where the dependent variable has at least 3 categories with these categories ordinally arranged, i.e. survey analysis (whether a respondent is not satisfied, satisfied or very satisfied) or the educational level (elementary, high, university) [17, 18].

### 2.1. Cumulative Logit Models

Cumulative logit model is the most widely used model for ordinal data in terms of interpreting or applying. Similar to the other logit models, in order to obtain cumulative probabilities, odds ratios are computed in cumulative logit models. There are  $j - 1$  ways to compare  $j$  categorized dependent variable  $Y$ . Eq.1 shows cumulative logits of dependent variable  $Y$  for

$(Y \leq 1, Y > 1; Y \leq 2, Y > 2; \dots; Y \leq J-1, Y > J-1)$  [18, 19].

$$\text{logit} P(Y \leq j) = \log \frac{P(Y \leq j)}{1 - P(Y \leq j)} \quad (1)$$

Similar to the other logit models, one category is chosen as the reference category (generally the last category) in cumulative logit model. This model uses cumulative probabilities upto a threshold, therefore making the whole range of ordinal categories binary at that threshold.  $J-1$  cut-off

points are predicted by this way and the predictions give information for every successive category about cumulative probabilities. Probability of being in the chosen category or being in an upper category are considered together in cumulative probability [18, 20].

Cumulative logits across  $j-1$  response option categories. For  $j=3$ , (here,  $y= 1$  to 3) these cumulative logits can be used to make predictions for the  $j-1=2$  cumulative probabilities, given the collection of explanatory variables [21]:

$$\begin{aligned} \text{logit}[P(y \leq 1)] &= \log \left[ \frac{P(y=1)}{1-P(y=1)} \right] = \log \left[ \frac{P(y=1)}{P(y=2)+P(y=3)} \right] = \alpha_1 - \beta'x \\ \text{logit}[P(y \leq 2)] &= \log \left[ \frac{P(y=1)+P(y=2)}{1-P(y \leq 2)} \right] = \log \left[ \frac{P(y=1)+P(y=2)}{P(y=3)} \right] = \alpha_2 - \beta'x \end{aligned} \quad (2)$$

## 2.2. The Proportional Odds Model (POM)

POM is defined by [22] for ordinal logistic regression. In case where the dependent variable is ordinal and parallel lines assumption holds, POMs are commonly used [23, 24]. Parallel lines assumption expresses that the dependent variable's categories are parallel to each other. In other words, the regression slopes do not differ significantly across levels of dependent variable, therefore parameter estimations do not differ for cut-off points.

Figure. 1 shows the parallelity for  $j-1$  response categories ( $j=3$ ) [18, 19, 21, 25].

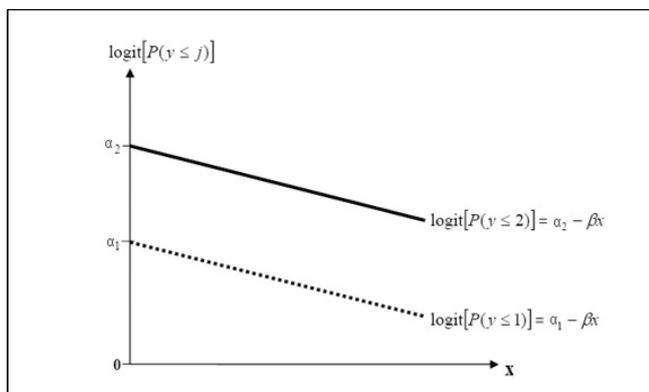


Figure 1. Parallelity for  $j-1=2$  response categories

The POM is based on cumulative distribution function. POMs can be estimated as shown in Eq. 3 using cumulative probabilities [18].

$$P(Y \leq j) = \frac{\exp(\alpha_j - \beta'x)}{1 + \exp(\alpha_j - \beta'x)}, \quad j=1,2,\dots,J-1 \quad (3)$$

where  $\alpha_j$  is the unknown parameter's estimator and index  $j=1,2,\dots,j-1$  for  $\alpha_1 \leq \alpha_2 \leq \dots \leq \alpha_{j-1}$ .  $\beta$  is the regression parameter vector of  $x$  and shown as  $\beta = (\beta_1, \dots, \beta_k)$ .  $\beta_j$  is the increase in log-odds of falling into or above any category associated with a one-unit increase in  $x_j$ , holding all the other  $x$ -variables constant. The model can be transformed to linear by calculating natural logarithms of the odds ratios as shown in Eq. 4 [18, 26].

$$\text{logit}(\gamma_j) = \alpha_j - \beta'x \quad (4)$$

The odds ratio of the event  $Y \leq j$  at  $x_k + 1$  relative to the same event at  $x_k$  is,

$$\text{OR} = \frac{P(y \leq j/x_k + 1)}{1 - P(y \leq j/x_k + 1)} \div \frac{P(y \leq j/x_k)}{1 - P(y \leq j/x_k)} = \exp(-\beta_k) \quad (5)$$

## 3. APPLICATION AND RESULTS OF ANALYSIS

[27] has translated MBI, originally developed by [3], into Turkish and [28] investigated the validity and reliability of Burnout Inventor. In this study, the Turkish version of MBI was implemented to the responders. Since the Turkish language does not respond to 7-point degree scale, 5-point Likert type scale is used [27]. MBI utilized with 22 items having subscales for 3 dimensions: emotional exhaustion, depersonalization and personal accomplishment. High scores on emotional exhaustion and depersonalization and low scores on diminished personal accomplishment are signs of burnout. The items related Emotional

exhaustion are 1,2,3,6,8,13,14,16,20 (Scores: 27 or over High/ 17-26 Moderate/ 0-16 Low). The items related Depersonalization are 5, 10, 11, 15, 22 (Scores: 13 or over High/ 7-12 Moderate/ 0-6 High). The items related Personal accomplishment: are 4,7,9,12,17,18,19,21 (Scores: 0-31 High/ 32-38 Moderate/ 39 or over

Low). Using this 22-item tool, responders rate the frequency with which they experience various feelings or emotions on a 5-point Likert scale with response options ranging from "Never" to "Always". Independent variables which could have an effect on burnout levels can be seen on Table 1.

Table 1. Independent Variables and Levels

Independent Variable	Independent Variable Levels				
X1: Gender	1. Female	2. Male			
X2: Age Group	1. Under 27	2. Between 28-35	3. Between 36-43	4. Between 44-51	5. Over 52
X3: Marital Status	1. Single	2. Married			
X4: Having a child	1. Yes	2. No			
X5: Having own room at work	1. Yes	2. No			
X6: Satisfaction of colleagues	1. Yes	2. No			
X7: Average sleep time per day	1. Equal or less than 6 Hours	2. More than 6 hours			
X8: Exhaustion of the academic work	1. None	2. Low	3. Moderate	4. High	
X9: Economic Satisfaction	1. Very satisfied	2. Somewhat satisfied	3. Not very satisfied	4. Not at all satisfied	
X10: Spending time for social activities	1. Frequently	2. Sometimes	3. Rarely	4. Never	
X11: Spending time for Personal Need	1. Frequently	2. Sometimes	3. Rarely	4. Never	
X12: Levels of Technology Usage	1. Frequently	2. Sometimes	3. Rarely	4. Never	
X13: Household Size	1. Alone	2. Two	3. Three	4. Four	

First of all, validity of the POMs must be tested by likelihood ratio test. From Table 2 it is clear that all three models are fitted ( $p=0.000 < 0,05$ ;  $p=0.042 < 0.05$ ;  $p=0.002 < 0.05$ ). After the test of models signficancy, parallel lines assumption is tested. The null hypothesis states that the location parameters (slope coefficients) are the same across response categories. For three models, the proportional odds assumption appears to have held because the significances of Chi-Square statistics

are  $> .05$  ( $p=0.446 > 0,05$ ;  $p=0.776 > 0.05$ ;  $p=0.975 > 0.05$ ).

Table 2. Model Fitting and Test of Parallel Lines for Three Levels of Burnout

Model	-2 Log Likelihood	df	Model Fitting (Sig.)	Test of Parallel Lines (Sig.)
Emotional Exhaustion	198.053	27	0.000	0.446
Depersonalization	247.010	27	0.042	0.776
Reduced Personal Accomplishment	176.774	27	0.002	0.975

Table 3. The Factors Affecting the Emotional Exhaustion Level of Academic Staff

Emotional Exhaustion Level	Variable	Coef. ( $\beta$ )	Odds Ratio ( $e^{\beta}$ )	p value
Low category vs High and Moderate category	Threshold 1	0.243		0.971
Low and Moderate category vs High category	Threshold 2	5.068		0.445
Having own room at work	Yes No*	-1.476	0.023 (4.37**)	0.024
Satisfaction of colleagues	Yes No*	-1.713	0.180 (5.55**)	0.002
Exhaustion of the academic work	None	-2.694	0.068 (14.80**) 0.090 (11.07**)	0.049
	Low	-2.404		0.001
	Moderate High*	-0.680		0.206
Household Size	Alone	1.727	5.62	0.044
	Two	0.701		0.351
	Three	0.536		0.413
	Four*			

\*Reference Categories

\*\* The odds ratios under 1 are inverted to interpret the odds ratios rationally.

The results of POM for Emotional Exhaustion Level is given in Table 3. Having own room at work, satisfaction of colleagues, exhaustion of the academic work, household size are the variables that effect emotional exhaustion. The academic staff who are not having own room are 4.37 times more likely feel emotional exhaustion than who are having own room. The academic staff who are not satisfied with their colleagues are 5.55 times more likely feel emotional exhaustion than who are satisfied. The academic staff who feel high

exhaustion of the academic work are 14.80 times more likely feel emotional exhaustion than who never feel exhaustion of the academic work. The academic staff who feel high exhaustion of the academic work are 11.07 times more likely feel emotional exhaustion than who feel low exhaustion of the academic work. The academic staff who live alone are 5.62 times more likely feel emotional exhaustion than whose household size is four.

Table 4. The Factors Affecting the Depersonalization Level of Academic Staff

Depersonalization Level	Variable	Coef. ( $\beta$ )	Odds Ratio ( $e^\beta$ )	p value
Low category vs High and Moderate category	Threshold 1	-8.433		0.070
Low and Moderate category vs High category	Threshold 2	-5.317		0.250
Average sleep time per day	Equal or Less than 6 Hours More than 6 Hours*	0.744	2.10	0.047
Exhaustion of the academic work	None	-4.163	0.015 (64.26**)	0.043
	Low	-0.583		0.363
	Moderate	-0.723		0.142
	High*			

\*Reference Categories

\*\* The odds ratios under 1 are inverted to interpret the odds ratios rationally.

The results of POM for Depersonalization Level is given in Table 4. Average sleep time per day and exhaustion of the academic work are the variables that effect depersonalization. The academic staff who sleep equal or less than 6

hours are 2.10 times more likely depersonalized than who sleep more than 6 hours. The academic staff who feel high exhaustion of the academic work are 64.26 times more likely depersonalized than who never feel exhaustion of the academic work.

Table 5. The Factors Affecting the Reduced Personal Accomplishment Level of Academic Staff

Reduced Personal Accomplishment Level	Variable	Coef. ( $\beta$ )	Odds Ratio ( $e^\beta$ )	p value
Low category vs High and Moderate category	Threshold 1	-28.347		0.000
Low and Moderate category vs High category	Threshold 2	-23.487		0.000
Average sleep time per day	Equal or Less than 6 Hours More than 6 Hours*	0.968	2.63	0.046
Age groups	Under 27	1.408		0.251
	Between 28-35	2.344	10.42	0.033
	Between 36-43	2.119	8.32	0.050
	Between 44-51	2.886	17.92	0.012
	Over 52*			

\*Reference Categories

The results of POMs for Reduced Personal Accomplishment Level is given in Table 5. Average sleep time per day and age are the variables that effect reduced personal accomplishment. Reduced in the personal accomplishment of academic staff who sleep equal or less than 6 hours is 2.63 times higher than those who sleep more than 6 hours. Reduced

in the personal accomplishment of academic staff who are between 28-35 years is 10.42 times higher than who are older than 52 years. Reduced in the personal accomplishment of academic staff who are between 36-43 years is 8.32 times higher than who are older than 52 years. Reduced in the personal accomplishment of academic staff who

are between 44-51 years is 17.92 times higher than who are older than 52 years.

#### 4. CONCLUSION

The purpose of this study is to examine the academic staff's burnout level in terms of some variables. In this study, different from other studies both in Turkey and the other countries, POM method is used to find the levels of burnout and which variables are effective for the levels of burnout. Findings indicate that %6 of the academic staff is struggling with burnout. The variables that effect emotional exhaustion are having own room at work, satisfaction of colleagues, exhaustion of the academic work and household size. The results show that academicians feel emotional exhaustion if they do not have their own room at university, they do not get along with their colleagues and they live alone. Moreover, it is clear that there is so much pressure in academic life because of academic work load. The variables that effect depersonalization are average sleep time per day and exhaustion of the academic work. The results show that academicians are in tendency to be depersonalized because of academic work load and lack of sleep. The variables that effect reduced diminished personal accomplishment are average sleep time per day and age group. The results show that the academicians who are between 44-51 years old and suffer from sleeplessness have reduced personal accomplishment.

As a conclusion, in the light of the results of this study, it could be suggested to university administrators to supply better physical conditions and avoid work overload for academic staff, hence, education life quality improves and consequently both the academic staff and students are satisfied. it must be mentioned that burnout is an important topic that needs to be investigated further in academic life. In the future studies, researchers could extend burnout studies using POM to public and private universities in Turkey and make comparisons of burnout levels of academic staff among public and private universities.

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