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# Association between Fatigue and Job Burnout Dimensions with Job Satisfaction in Taxi Drivers in Isfahan, Iran (2022)

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Abstract

**Background:** Fatigue, depression, and job satisfaction are very important variables in job scopes that, if not managed properly, significantly impact job performance. This study aimed to investigate the association between occupational fatigue and burnout levels with job satisfaction among taxi drivers in Isfahan.

**Materials and Methods:** This descriptive study in which 399 randomly selected taxi drivers were recruited, was conducted in Isfahan, Iran, 2022. Data were collected using a demographic and job information questionnaire and Questionnaires of Minnesota Job Satisfaction(MSQ), Maslach Burnout Inventory(MBI), and Multidimensional Fatigue Inventory(MFI). Descriptive and analytical statistical tests such as Spearman and Pearson correlations were used to analyze the data. It was done with SPSS 20 with a significance level of 0.05.

**Results:** Job satisfaction score had a positive and significant association with rest hours, exercise hours, and income of taxi drivers and a negative and significant association with driving hours and education level ($p < 0.05$). According to the results, the fatigue score had no significant association with any demographic variables ($p > 0.05$).

**Conclusion:** Results showed that the fatigue and burnout scores in the studied drivers were generally high. According to the results of the present study and similar studies, it can be recommended that reducing driving hours, increasing drivers' rest hours, and encouraging drivers to do sports activities can be effective in reducing their fatigue while working.

Keywords: Fatigue, Burnout, Job Satisfaction

## Introduction

Taxi drivers play a role as one of the important elements in the transportation of people in society, and drivers' health will guarantee their optimal performance[1]. Taxi and agency drivers are considered the most important elements of the transportation of passengers within and outside the city of any country. In driving, having physical health and full consciousness, essential to prevent accidents [2]. Previous studies have shown that people whose job is to drive are more likely to be exposedto high-risk driving behaviors and are at greater risk for road accidents than general drivers. population[3].These results may be surprised when it comes to taxi driving because studies have shown that they have higher driving skills[3, 4]. Injuries caused by traffic accidents are one of the biggest forgotten public health problems; effective control and prevention require coordinated and comprehensive efforts[4]. One of these common

injuries, also known as a common experience, is the subjective feeling of weakness, lack of energy, and exhaustion, referred to as fatigue [5].

Fatigue is a state of exhaustion known as fatigue that leads to diminished mental and/or physical performance. This can decrease alertness and impair motor skills, reflexes, judgment, and decision-making. Feeling sleepy, fatigued, or tired are common definitions of weariness. One of the biggest health and safety problems the road transportation industry is currently dealing with is driving when fatigued. Driving while tired can slow reaction times and eventually cause the driver to fall asleep behind the wheel. Fatigued driving is a workplace concern since it causes hundreds of car accidents and fatalities yearly. According to research conducted worldwide, between 3% and 30% of vehicle collisions are caused by tired drivers[6]. In their study, Shokoohi et al. found that 30% of accidents are virtually always caused by fatigue [7] or a medical or mental illness [8, 9].

SzeSeenKee et al. showed that long-term driving leads to driver fatigue and impairs driver Performance [10]. Burnout syndrome is an advanced phase of work stress and is the cause of high absenteeism and workers leaving their profession. According to the European Agency and Health at Work, burnout has negative effects on the organization because it causes poor performance at the overall company level due to the increase in absenteeism and because workers come to work feeling tired and sick and are therefore not effective (presenteeism)[11].

Various factors are effective on fatigue and job burnout and, subsequently, the level of job satisfaction[12]. Job satisfaction is one of the most challenging organizational concepts that form the basis of many management policies and guidelines to increase the productivity and efficiency of organizations[12]. Definitions related to job satisfaction show that this concept includes three separate structures: job evaluation, job belief, and emotional experiences about the job[13]. Studies have shown that fatigue and burnout syndrome, which occurs in response to work stress, is defined as a process in which employees' behaviors and attitudes toward their work become negative and pessimistically, ultimately reducing job satisfaction[14]. Regarding professional drivers, a study showed that their work characteristics cause stress, leading to burnout. Stress and exhaustion in bus drivers are related to traffic collisions[11].

The predictive variables of burnout have also been extensively studied. In a study conducted. by Karimi et al. (2016) to investigate the dimensions of Occupational fatigue in drivers of heavy vehicles, the findings showed that the average daily driving of people in the study had a significant association with all dimensions of fatigue except lack of energy. Also, there was a significant association between parameters such as average rest, smoking, and sports activities with all dimensions of fatigue[8]. According to the above, fatigue is one factor that affects the driver's performance and ultimately leads to accidents along with other factors. Several studies on burnout, job satisfaction, and fatigue have been conducted inside and outside the country, but a study with this title has not been conducted in the country.

**Materials and Methods**

The present study is a cross-sectional and descriptive-analytical study conducted in 2022 to investigate the level of fatigue and burnout and its association with job satisfaction among taxi drivers in Isfahan City. The statistical population was determined from 7039 Linear and circular taxi drivers in Isfahan City. According to the preliminary studies performed at a significance level of 0.05% and test power of 80%, 364 people were estimated. Counting a 10% fall in samples, the number of people studied was 399, selected from among the linear and circular taxi drivers in different areas of Isfahan City. Sampling was done in a multi-stage manner .In this way, the city was first divided into 4 parts: North, South, East, and West (selection of clusters), and some samples were randomly selected from the existing taxi stations (selection of category) and, finally, from stations determined, individuals were selected according to the inclusion criteria. Inclusion criteria were having at least one year of work experience in job driving, expressing willingness to voluntarily participate in the study, having a minimum reading and writing to be aware of the content of the questionnaires on ethical considerations, the continuous presence of at least 8 hours in the day at work and age range 26-55 years(based on an inquiry from Isfahan taxi-driving organization ) and having general health (having a health card). People who were not interested in participating in the research, incomplete questionnaires, people with a second job, and people with a history of mental illness were excluded from the study by asking the person. The Ethics Committee approved this study IR.MUI.RESEARCH.REC.1399.717.

Data collection tools included questionnaires on job satisfaction, burnout, and fatigue dimensions. Demographic information of people including age, marital status, work experience, height, weight, level of education, driving experience, driving

hours per day, rest hours, exercise hours, health card number, and monthly income (<3, 3-6, 6> Million toman ) was collected in a questionnaire.

**Minnesota Job Satisfaction Questionnaire (Elfguist,1977) (MSQ):** Minnesota Job Satisfaction Questionnaire(Elfguist,1977) (MSQ) was used to measure job satisfaction. This questionnaire has 19 questions, and its purpose is to investigate the dimensions of job satisfaction in 6 dimensions, payment system (questions 1, 2, 3), type of job ( Questions 4, 5, 6, 7), opportunities for progress (questions 8, 9, 10), organizational climate (11, 12), leadership style (questions 13, 14, 15, 16) and physical condition (17, 18, 19) ). In this questionnaire, the answers given to each phrase in the Likert scale were given a score between 1 to 5 (score 1: dissatisfaction, score 2: low satisfaction, score 3: moderate satisfaction, score 4: high satisfaction, score 5: very high satisfaction).

To measure a person's job satisfaction, we add the scores of all dimensions together (The division was done based on previous studies)[15]. Scores between 19 to 38 are poor job satisfaction, 38 to 57 are moderate job satisfaction, and more than 57 are good job satisfaction [16]. Based on the studies conducted by Joodaki et al. (2019) and Martins, Proença, the reliability coefficient of this questionnaire was reported to be 0.75 and 0.82, respectively [16].

To measure a person's job satisfaction, we add the scores of all dimensions together (The division was done based on previous studies)[15]. Scores between 19 to 38 are poor job satisfaction, 38 to 57 are moderate, and more than 57 are good. Based on the studies conducted by Sadeghi et al. and Martins, Proença, the reliability coefficient of this questionnaire was reported as 0.8 and 0.91, respectively[17, 18]. The validity of this questionnaire was obtained by Naeimi et al. 0.63 [15].

**The Maslach Burnout Inventory (MBI) questionnaire:** The Maslach Burnout Inventory (MBI) questionnaire was used to measure job burnout. This questionnaire was developed by Maslash (1981). The questionnaire consists of 22 items that include Emotional exhaustion(9), Depersonalization(5), and Personal accomplishment(8) questions. High scores on emotional exhaustion and depersonalization and low scores on personal accomplishment indicate burnout. The subject received a score from zero (never) to six (very high) based on each question. Scoring and interpreting the scores of the dimensions of the job burnout questionnaire dimensions were as follows: in the emotional burnout dimension, a score of 30 and above indicates high emotional exhaustion, a score of 18-29 indicates moderate emotional exhaustion, and a score of 17 or less indicates low emotional exhaustion. In the depersonalization dimension, a Score of 12 or above indicates high depersonalization, a score of 6-11 indicates moderate depersonalization and a score less than 5 indicates low depersonalization. In the dimension of personal accomplishment, a score of 33 or less indicates high personal accomplishment, a score of 34-39 indicates moderate personal accomplishment, and a score of 40 or above indicates low personal accomplishment [19, 20]. Maslash and Jackson calculated the internal reliability for each of the subscales, and the questionnaire's internal reliability was reported with Cronbach's alpha coefficient of 0.71-0.9 and its retest coefficient of 0.6-0.8 [19, 20]. Also, in a study by Akbari et al., Cronbach's alpha coefficient was obtained: 0.84 for emotional exhaustion, 0.75 for depersonalization, and 0.74 for individual success[21].

**Multidimensional Fatigue Inventory:** Multidimensional Fatigue Inventory is one of the most comprehensive tools for measuring fatigue. This questionnaire was first prepared and adjusted by Smets in 1996 and can be used on the population of patients and healthy people and includes 20 items. It is scored based on a 5-point Likert scale. This questionnaire evaluates 5 dimensions of fatigue, including general fatigue, physical fatigue, reduced activity, reduced motivation, and mental fatigue, and provides a deeper and more accurate understanding of the rate of fatigue as a person feels. General fatigue is related to a person's overall performance during the day, and physical fatigue is directly related to a physical feel, Mental fatigue is related to the reduction of a person's cognitive skills, reduced activity is related to the reduction of usual and useful daily activities and Reduced motivated refers to reduce or lack of motivation to start Activities. This questionnaire has 20 questions that are scored on a 5-point Likert scale (1, yes, it is "absolutely true" and 5, "no, it is completely" false), and finally, the sum of higher scores indicates more fatigue of the person. The validity and reliability of this questionnaire have also been confirmed in previous studies (Alpha coefficient for general, physical, and mental fatigue was higher than 0.8, and for reduced activity and motivation was higher than 65%) [5].The obtained data were entered into SPSS software version 24. Kolmogorov-Smirnov test was used to determine the normality or abnormality of the distribution of the studied variables. Descriptive and analytical statistical tests such as mean, median, Spearman(qualitative data), and

Pearson(quantitative data) correlations were used to analyze the data.

## Results

In the present study, 399 linear and circular taxi drivers in different parts of Isfahan who met the inclusion criteria participated.

Descriptive statistical tests such as median, mean, standard deviation, and percentage are used In Table 1.

According to the results of Table 1 Mean age of participants in the present study was 43.87± 7.13, work experience was 17.57± 6.99, driver height was 172.63± 8.01, Mean driving experience was 17.95± 7.14, Driving hours per day 10.32± 1.95, rest hours per day 2.26± 1.73, exercise hours per week 1.53± 2.27, the amount of income 1.53 ±0.625, which is presented in Table 1.

Also, the highest number of participants in the study, including 355 people (88.97%), were married.

**Table 1**: Descriptive Indicators of drivers' demographic variables

| Variable | Mean(SD) | Variable | | Frequency | Percentage |
|---|---|---|---|---|---|
| **Age** | 43.87(7.13) | **Marital status** | Single | 44 | 11.03 |
| **Height** | 172.63(8.01) | | Married | 355 | 88.97 |
| **Driving history** | 17.95(7.41) | **Level of education** | Elementary | 74 | 18.55 |
| **Driving hours per day** | 10.32(1.95) | | Middle School | 132 | 33.08 |
| **Rest hours per day** | 2.26(1.3) | | High School | 146 | 36.59 |
| **Hours of exercise per week** | 1.53(2.27) | | Associate's Degree | 29 | 7.27 |
| **Number of childeren** | 1.89(1.16) | | Bachelor's Degree | 17 | 4.26 |
| **Monthly income (million toman)** | 1.53(0.0625) | | Master's Degree | 1 | 0.25 |

Descriptive statistical tests such as mean, standard deviation, minimum and maximum are used In Table 2.

According to the results of Table 2, the Mean score of fatigue in the defined taxi drivers in Isfahan is 58.60(7.12), and job satisfaction is 52.07 (9.78). Among the dimensions of burnout, emotional exhaustion, with a mean of 23.38(8.47), had the highest, and depersonalization, with a mean of 9.95(5.01), had the lowest frequency.

**Table 2:** Determining the score of fatigue, burnout dimensions, and job satisfaction score in defined taxi drivers in Isfahan

| Variable | Mean(SD) | Min | Max |
|---|---|---|---|
| Fatigue | 56.60(7.12) | 24 | 92 |
| Job satisfaction | 52.07(9.78) | 24 | 84 |
| Emotional exhaustion | 23.38(8.47) | 1 | 54 |
| Depersonalization | 9.95(5.01) | 0 | 25 |
| Personal accomplishment | 16.47(5.68) | 2 | 38 |

Correlation tests are used In Table 3.

Table 3 shows the association between demographic variables, job satisfaction, and burnout. Based on the results, it was found that job satisfaction score has a positive and significant association with rest hours, exercise hours, and income of taxi drivers and a negative and significant association with driving hours and education level ($p < 0.05$). According to the results of the fatigue score, there is no significant association with any of the demographic variables ($p > 0.05$). According to the results of Table 3, the emotional exhaustion dimension has a positive and significant association with driving hours ($p < 0.05$). With the increase of driving hours, the emotional exhaustion of taxi drivers increases, and there is a negative and significant association between exercise hours and emotional exhaustion ($p < 0.05$). That is, with increasing exercise hours, the emotional exhaustion score decreases. The depersonalization dimension has a positive and significant association with driving hours and the linear circular of the taxi drivers and a negative and significant association with the work experience and exercise hours($p < 0.05$). The Personal accomplishment dimension had no statistically significant association with any demographic variables ($p < 0.05$).

**Table 3:** Determining the association between demographic variables and job satisfaction score, Occupational fatigue score, and burnout dimensions in taxi drivers

| Variable | | Age | Work experience | Height | Weight | Driving history | Driving hours | Rest hours | Hours of exercise | Income | Level of education |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Job satisfaction** | r | -.03 | .02 | -.08 | -.02 | -.07 | -.23 | .16 | .13 | .22 | -.12 |
| | p | .52 | .73 | .08 | .66 | .13 | <.001 | <.001 | .009 | <.001 | .02 |
| **Fatigue** | r | -.03 | .009 | .001 | -.01 | .04 | .04 | -.05 | -.01 | -.06 | -.01 |
| | p | .62 | .86 | .99 | .99 | .40 | .48 | .30 | .78 | .23 | .83 |
| **Emotional exhaustion** | r | -.02 | -.01 | .07 | .03 | -.03 | .17 | -.04 | -.21 | -.07 | .04 |
| | p | .65 | .91 | .14 | .51 | .58 | .01 | .38 | < .001 | .14 | .44 |
| **Depersonalization** | r | -.08 | -.11 | .06 | -.03 | -.08 | .19 | -.05 | -.16 | -.05 | .05 |
| | P | .10 | .02 | .23 | .60 | .07 | <.001 | .24 | .01 | .27 | .27 |
| **Personal accomplishment** | r | .06 | .03 | -.07 | -.05 | -.01 | .07 | -.05 | -.03 | -.06 | -.03 |
| | P | .19 | .48 | .14 | .25 | .82 | .13 | .25 | .47 | .23 | .54 |

**significant at the .01 level , r = Pearson Correlation Coefficient , p = Significant level of correlation test

Correlation tests are used In Table 4. The results of the present study also showed a positive and significant association between depersonalization variables with emotional exhaustion and personal accomplishment (<.001) and a negative and significant association with job satisfaction. Fatigue score has no statistically significant association with job satisfaction and dimensions of job burnout(table 4) (p> 0.05).

**Table 4.** Association between the score of three parameters of job satisfaction, burnout, and Occupational fatigue among taxi drivers

| Variable | | Emotional exhaustion | Depersonalization | Personal accomplishment | Job satisfaction | Fatigue |
|---|---|---|---|---|---|---|
| **Emotional exhaustion** | r | 1 | .57** | .30** | -.33** | .05 |
| | P | | <.001 | <.001 | <.001 | .30 |
| **Depersonalization** | r | .57** | 1 | .35** | -.36** | .024 |
| | P | <.001 | | <.001 | <.001 | .63 |
| **Personal accomplishment** | r | .30** | .35** | 1 | -.04 | .04 |
| | P | <.001 | <.001 | | .40 | .34 |
| **Job satisfaction** | r | -.33** | -.368** | -.04 | 1 | -.01 |
| | P | <.001 | <.001 | .40 | | .90 |
| **Fatigue** | r | .05 | .02 | .04 | -.01 | 1 |
| | P | .30 | .63 | .34 | .90 | |

**Correlation is significant at the .01 level , r = Pearson Correlation Coefficient , p = Significant level of correlation test

## Discussion

This study aimed to investigate the association between the level of fatigue and burnout with job satisfaction among taxi drivers in Isfahan. According to the results of this study (Table 3), it was found that there is no significant association between job satisfaction and demographic variables such as age.

The results showed that job satisfaction increases with increasing income, rest hours, and exercise hours. Studies have shown that drivers who exercise more are less tired than other drivers, which can affect job satisfaction[8].

However, a significant inverse association existed between job satisfaction and driving hours. Fatigue in drivers is clearly related to lack of sleep and irregular and long working hours. Sleep disorders, directly and indirectly, affect the amount and quality of sleep, leading to fatigue during the day. A study conducted on heavy vehicle drivers in Australia found that 38% of drivers drive more than 14 hours per day with low job satisfaction due to extreme fatigue and less than 6 hours of sleep before driving which is consistent with the results of the present study [22]. Sergio et al. (2018) examined the operational effectiveness of public

transportation drivers and exposure to psychosocial risk in three modes of transportation, namely taxi drivers, city bus drivers, and intercity bus drivers, by looking at occupational drivers. Incentives such as earning money and gaining new experiences in the career path can motivate drivers. Instead of thinking about the problems and fatigue caused by the driving job, they can think about positive points such as income and experience [23].

780 occupational drivers from three transport companies in Bogota, Colombia, provided the study's necessary data. Indicating a fatigue factor related to the perception of work-site demand and exposure to environmental stressors (such as congested traffic, interaction with passengers, and unfavorable road conditions, among others), 78% of the participants (94.9% of city buses, 30.7% of intercity buses, and 74.1% of taxi drivers) worked more than 10 hours per day. This indicates a traffic accident and high rates of high-risk driving behavior [24].

Studies have also shown that drivers are subject to high burnout. In this regard, the risk of cardiovascular diseases and other diseases can increase [25, 26].

In the present study, no significant association was observed between the dimensions of burnout and marital status, which is consistent with the results of a study by Bahrami et al. which was conducted to determine the level of occupational stress and its relation with job burnout in locomotive drivers [26], However, married people have a higher fatigue score than single people, and this may be due to the problems and pressures of life. Also, the present study's results showed a significant association between the variables of burnout (depersonalization) and work experience. Studies have shown a significant association between work experience of more than 10 years and fatigue, and older drivers are generally more prone to fatigue. Fatigue is generally related to scheduled issues such as driving through the night and not having a proper rest schedule.In a study conducted by MehdiNia in an industrial environment, it was found that with increasing work experience, burnout also increases. It is consistent with the results of the present study [27]. In the present study, among the dimensions of burnout, the highest was related to emotional exhaustion, and the lowest was related to depersonalization.

Depersonalization is a negative and unreasonable response to people who usually receive service by the person [28]. The results in Table 3 show that the dimension of depersonalization has a positive and significant association with driving hours and linear-circular of taxi drivers, respectively, and has a negative association with work experience and exercise hours. Drivers who drive less than 8 hours a day and rest more than 7 hours have a lower fatigue score. Drivers who voluntarily or under compulsion drive more than 8 hours in the daytime get more tired, which can affect their mental and physical effects and ultimately affect their control in emergencies and even in normal driving situations.

Another reason for people's depersonalization during work is not being encouraged by the employer or the people around them .When a person in his field of work is not properly encouraged by people, does not understand his duties, and the rules and duties are not explained. Diverse and new approaches are not seen in the work environment, the person loses the view of serving the people, and suffers from depersonalization[29].

In a study conducted by Bahrami et al., which was done to evaluate the level of job stress and the association with job burnout in locomotive drivers, it was found that several locomotive drivers have a depersonalization that is consistent with the results of the present study[26]. In the present study, the statistical analysis of the data obtained showed that many drivers had a low personal accomplishment, which is consistent with the results of the study of Bahrami et al. And Khaghanizadeh et al. Payne et al. Also, Payne et al. believe that a lack of appreciation of people is one of the effective factors in the feeling of personal failure [30]. One of the limitations of this study was the information obtained in the form of self-report; in this case, the information obtained may be far from the factors under study. Therefore, this study should be investigated in different dimensions in future studies to be able to confidently speak about the results.

## Conclusion

The present study's results showed that the fatigue and burnout rate in the studied drivers was generally high. On the other hand, since fatigue and job burnout conflict with job satisfaction, drivers had low job satisfaction and the need for proper planning to increase the Job quality of urban drivers by the relevant institutions is felt. According to the results of the present study and similar studies, it can be recommended that reducing driving hours, increasing drivers' rest hours, and encouraging drivers to do sports activities can effectively reduce their fatigue while working.

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**Conflict of interest:** None declared.

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