

The Effect of Mental Workload on Subjective Well-Being: The Mediating Role of Leisure Behaviours*

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Abstract

The aim of this study is to define the role of leisure time activities in the effect of mental workload on subjective well-being. The study is of four sections. In the first, the theoretical frame for mental workload is drawn. Along with discussing mental workload approaches, mental health is touched on. In the second part, the definition of subjective well-being is done, moreover, dimensions, theories and factors affecting subjective well-being are represented. In the third, leisure time activities are explained; definition of time, time management and leisure time are done to mention the importance of recreation. The final part is the applied part of the study. In this section, the analyses data about 400 people in management in many parts of Kayseri is evaluated in accordance with hypotheses designed for our research model. Leisure time activities are defined to have a mediating role for the effect of mental workload on three of eleven sublevels of subjective well-being (exhaustion, difficulty in reaching objectives and negative feelings) Sub-hypotheses developed in accordance with the research model are partially accepted.

Keywords: Mental workload, Leisure time activities, subjective well-being.

Introduction

Happiness or subjective well-being of individuals is one of primary research subjects. The notion of positive psychology emphasizes that psychology is important not only in remedy of negative aspects in human life but also in personal development and happiness of individuals. Therefore, one of our study subjects is well-being. Subjective well-being deals with how individuals consider their lives. This consideration includes the emotional aspect and intensity of emotion they live in, their reactions against some incidents, their life satisfaction at school, at home and at work (Diener, et al, 2003). That is, it depends on how the individual sees him/herself and his/her comment on all.¹

Subjective well-being is affected by personal life and work life of the individual. As most of these individuals' time is spent at work, the effect of work life on subjective well-being is quite significant. As subjective well-being is about how individuals spend their lives, positive personal considerations such as life satisfaction, professional satisfaction and

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familial satisfaction, desires, happiness, likes, and negative ones like sadness, regrets, shyness and depression constitute the notion (Kermen, 2013). If the individual is highly satisfied with his/her own life, the level of subjective well-being is fairly high (Eryılmaz, 2010).

Today, professions depending on physical power give place to intelligence based professions. It is clear that the decrease in mental workload will cause failures in jobs and in decisions taken for that job, therefore, the efficiency and productivity of that work will be worse.

It is thought that there many factors affecting workload. Physical activities, environmental factors and incidental difficulties are the major factors oppressing the individual at work as well as affecting the workload directly (Karwowskiet al, 1986). The workload affecting the worker in the organisation may be either physical or mental; finally it will affect the health and productivity of the worker. Physical workload is with works based on physical power. Whereas, mental workload is of mental activities such as remembering, calculation, decision taking, searching and communication (Dağdevirenvd, 2005). Therefore, Factors like stress, heat, humidity, illumination and noise all affect both mental and physical workload.

In that the lack of workload affects productivity as well as the heaviness does, really desired occasion is to maintain the optimal mental workload. In order to reach this balance level, the most important notion is how individuals spent their leisure times. To prevent, or at least to decrease the degree of, the negative outcomes of work life such as fatigue, stress and weariness, to get rid of the boredom of routine work life, individuals spent their leisure time in different ways. Spend his/her leisure time efficiently, and so having a balanced workload, the subjective well-being of an individual is expected to be on the positive side. Thus, one can have a higher productivity and can support his/her work life positively.

Mental workload is defined as the level of work capacity during working (Eggemeierand et al, 1991).In other words, mental workload is the response level of mental effort demanded by the work itself (Parasuraman, 2008). Mental workload is a multi-dimensional structure including mental effort, level of stress management and attention of the individual. Therefore, assessment of this notion is the numerical expressing of data gathered from assessment of each dimension of workload. Better results would be received by performing subjective assessment along with physical and behavioural ones.

Leisure time activities are those that are not related to the profession of the individual out of work life (Demirtaşvd., 2014).On this, individuals spent time off work together with others or alone away from work stress, and if they are satisfied and happy with this, it is a leisure time activity (DemirveDemir, 2006).Therefore, the individual is away from the work life stress.

Leisure time present in any time of human history is of a different meaning today; it is a result of social and economical developments (Güçlü, 2013). Previously defined as time spent for nothing, leisure time is now a need, even a must.

Inter-variable Relationships

It is hard to keep individuals in the same rhythm and performance all along their work time. The reason is that they spend more physical and mental effort all along this period. In addition, it can be said that this situation will affect happiness and well-being of the individual. A slight decrease or disappearance of negative symptoms emerging naturally in work life will help the individual refreshment physically and mentally. That is, productive leisure times will have positive effects on work life. In that the lack of workload affects productivity as well as the heaviness does, the really desired occasion is to maintain the

optimal or ideal workload. In order to reach this balance level, the most important notion is how individuals spent their leisure times.

The Purpose and Importance of the Study

The aim of this study is to define the role of leisure time activities in the effect of mental workload on subjective well-being.

Limitations and Assumptions of the Study

Variables of the study are limited by the reliability and acceptability of assessment materials to be used in the research. Participants are assumed to supply the study with objective data. While our study covers administrators, due to limitations of time, place and financial support, sampling group of administrators is only from Kayseri.

Method of the Study

The universe of this study, which performs as a field research, is public and private institution administrators of all levels in Kayseri. Despite being unable to express a certain number for the population of the study, 384 samples in an unlimited population of social sciences is an acceptable degree (Nakip, 2006). The study conducted in Kayseri covers questionnaires on 400 people. These individuals are chosen by using convenience sampling method. The sampling aimed in the study is constituted of public and private institution administrators of all levels in Kayseri.

Model of the Study and Hypotheses

The dependent variable of this study is subjective well-being while the independent variable is mental workload. Mediating variable is leisure behaviours. While constituting the research model, we have utilized general relational approaches in the literature.

Hypotheses

H1:Leisure behaviours have a meaningful mediating effect on positive feelings of mental workload levels of individuals.

H2:Leisure behaviours have a meaningful mediating effect on effect of mental workload level of individuals on interpersonal relationships.

H3:Leisure behaviours have a meaningful mediating effect on effect of mental workload level of individuals on individual satisfaction.

H4:Leisure behaviours have a meaningful mediating effect on negative feelings of mental workload levels of individuals.

H5:Leisure behaviours have a meaningful mediating effect on effect of mental workload level of individuals on pleasure of life.

H6:Leisure behaviours have a meaningful mediating effect on effect of mental workload level of individuals on difficulty in reaching targets.

H7:Leisure behaviours have a meaningful mediating effect on effect of mental workload level of individuals on openness.

H8:Leisure behaviours have a meaningful mediating effect on effect of mental workload level of individuals on life satisfaction.

H9:Leisure behaviours have a meaningful mediating effect on effect of mental workload level of individuals on exhaustion.

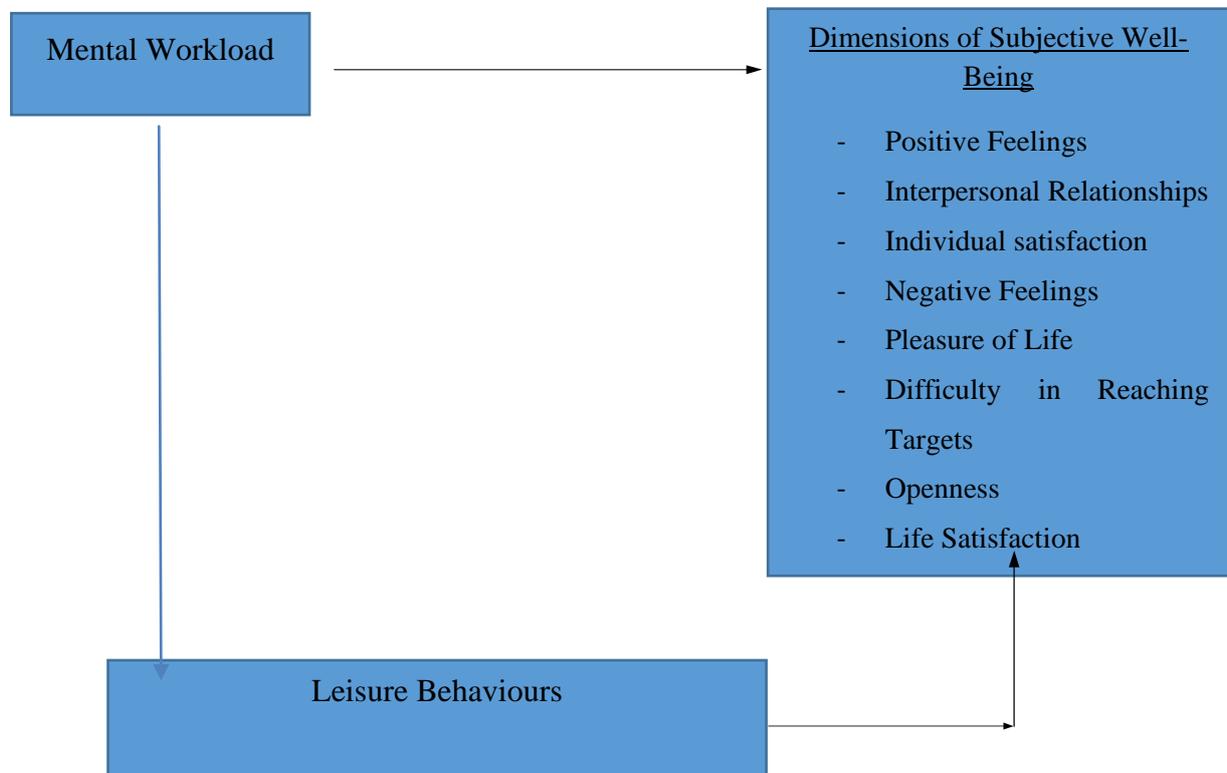


Figure :Detailed Model of the Research

Data Collection Tools and Analyses Technique

This study is a quantitative research and questionnaires are used as first hand data collection technique. The questionnaire form is made up of four parts in accordance with theoretical instructions of the study.

In the first part of our questionnaire, there are five expressions about demographical data of participants. In the second part, we have utilized NASA-TLX mental workload assessment tool. There are six workload creating factors in the first part of this tool. We have asked our participants how much they are exposed to factors creating workload while doing their jobs, and they were asked to evaluate these factors between 1 and 20. Here, '1' the least whereas '20' is the most affecting workload. In the second part of the scale, there are 15 comparative expressions. That is, participants are asked to compare two factors in each line and to express how they felt before and after the work they were doing for their jobs. We have conducted the study to find the effect of mental workload on the subjective well-being only administrators solely. Therefore, we have excluded the second part of the analyses as they were assessing the importance levels of workload types compared to each other. In the third part, the subjective well-being scale developed byTuzgöl-Dost (2004)has 46 entries; 26 positive ones and 20 negative ones. Scoring of negative expressions is done in reverse. The responding system for each expression was quinary Likert scale; (1) 'absolutely disagree' , (2) 'disagree' , (3) 'indecisive' , (4) 'agree' , (5) 'absolutely agree'.The last section was Leisure Behaviors Scale by Raymore et al. (1999). There are 12 expressions in the scale

expressing frequency in five levels (1=Never, 2=Rarely, 3=Sometimes, 4=Generally, 5=Always). In addition, one of these twelve expressions about drug use is excluded due to its absurdity for Turkish society.

Cronbach's Alpha Values of Scales

Name of the Scale	Mental Workload	Subjective Well-being	Leisure Behaviours
Cronbach's Alpha Value	0,70	0,90	0,81

The KMO coefficient for this analysis is 0,86. Therefore, the Bartlett test is meaningful. According to factor analyses results of subjective well-being, we have obtained 11 factors with eigenvalue over 1. The total of variants defined with these factors is % 59,24.

As the result of varimax rotation technique, it is found that the first factor is made up of four entries while the second of five, the third of four, the fourth of three, the fifth of two, the sixth of four, the seventh of four, the eighth of two, the ninth of two, the tenth of three and the eleventh of two. The ninth and eleventh factors are excluded from the analysis due to low factor loads they have. After evaluating these entries they are respectively given names ; 'positive feelings', 'interpersonal relations', 'individual satisfaction', 'negative feelings', 'life pleasure', 'difficulty in reaching targets', 'openness', 'life satisfaction' and 'exhaustion'.

Findings

Considering the demographic features of 400 participants of the study; 88% of participants are male, 69% of them are married, 49,8 of them are aged between 31 and 45, 53,8 of them are high school graduates, 35% of them are chief officer and 30,2 of them are managers.

The relation level between variables are given below.

Correlation Analysis Results

VARIABLES	Mean	Standard Deviation	1	2	3
1.Mental workload	12,38	2,68	1		
2. Leisure behaviours	2,38	,91	,30*	1	
3. Subjective well-being	3,08	,49	,14**	,159**	1

*p<,05 **p<,01

As it is available in the table below, the correlation coefficient between leisure behaviours and mental workload is 30 (p<0,05). As a result of this correlation analysis, it can be said that there is a positive and meaningful relation between these two variables. The correlation coefficient between subjective well-being and mental workload is 14 (p<0,01). As a result of this correlation analysis, it can be said that there is a positive and meaningful relation between these two variables. The correlation coefficient between subjective well-being and leisure behaviours is 15 (p<0,01). As a result of this correlation analysis, it can be said that there is a positive and meaningful relation between these two variables.

In order to test the effects of main variables on each other, a regression analysis is performed and the results are given below.

Effects of Main Variables on Each Other

	Variables	Corrected Beat	t	R ² Corrected	F	Sig.
1	Mental workload-Positive feelings	,09	1,83	,00	3,35	,06
2	Mental workload–interpersonal realtions	-,08	-1,7	,00	2,91	,08
3	Mental workload–individual satisfaction	,07	1,49	,00	2,23	,13
4	Mental workload–negative feelings	-,13	-2,80	,01	7,85	,00*
5	Mental workload–life pleasure	,02	,58	-,00	,34	,55
6	Mental workload- difficulty in reaching targets	-,10	-2,14	,01	4,59	,03*
7	Mental workload-openness	-,08	-1,60	,00	2,55	,11
8	Mental workload–life satisfaction	,07	1,43	,00	2,06	,15
9	Mental workload-exhaustion	-,15	-3,14	,02	9,91	,00*

**p< 0,05

As one can see in the table, when we consider mental workload is the independent variable where dimensions of subjective well-being, which are positive feelings, interpersonal relations, individual satisfaction, negative feelings, life pleasure, difficulty in reaching targets, openness, life satisfaction and exhaustion, are assumed to be dependent variables in the model, clarification levels of negative feelings, difficulty in reaching targets and exhaustion, which are dependent variables, are statistically meaningful. That is, independent variable can only define 1% of the change with negative feelings and difficulty in reaching targets while defining 2% of the change in exhaustion.

In order to test the mediating effect, we have analyzed inter-variable relationships and related ones are exposed to hierarchic regression analysis. The results are as follows.

When we add leisure behaviours to the relationship between mental workload and negative feelings (second equation), we can see that the effect of mental workload on negative feelings become meaningless while leisure behaviours hold the whole effect (std.β= -,28; p<0,05). Emerging from these data, it can be said that leisure behaviours have a full mediating effect on the relationship between mental workload and negative feelings. Therefore H4 is accepted.

When we add leisure behaviours to the relationship between mental workload and difficulty in reaching targets (second equation), we can see that the effect of mental workload difficulty in reaching targets become meaningless while leisure behaviours hold the whole effect (std.β= -,24; p<0,05). Emerging from these data, it can be said that leisure behaviours have a full mediating effect on the relationship between mental workload and difficulty in reaching targets. Therefore H6 is accepted.

When we add leisure behaviours to the relationship between mental workload and exhaustion (second equation), we can see that the effect of mental workload difficulty in exhaustion was still meaningful but it has less effect on it (std.β= -,10; p<0,05). In this

respect, mediating effect conditions are maintained in a small amount and partial mediating is found. Therefore H9 is accepted.

Aşamalı Regresyon Analizi Sonuçları

	Dependent Variable	Independent Variable	Corrected Beta	t	R ² Corrected	F	Sig.
1	Negative feelings	Mental Workload	-,13	-2,80	,01	7,85	,00
	Negative feelings	Mental Workload Leisure Behaviours	-,05 -,28	-1,03 -5,61	,08	20,02	,299 ,00
2	Difficulty in Reaching Targets	Mental Workload	-,10	-2,14	,00	4,59	,03
	Difficulty in Reaching Targets	Mental Workload Leisure Behaviours	-,03 -,24	-,61 -4,82	,06	14,07	,54 ,00
3	Exhaustion	Mental Workload	-,15	-3,14	,02	9,91	,00
	Exhaustion	Mental Workload Leisure Behaviours	-,12 -,10	-2,38 -2,03	,02	7,06	,01 ,00

* p < 0,05

Results and Implications

The perception of happiness is peculiar to each individual. This perception can be affected by the environment that the individual is in, biological, physiological and psychological characteristics, working conditions and his/her position at work. Happiness for administrators with a lot of responsibilities about modernization and updating with the developments is accepted as a valuable factor. As happiness of administrators will surely affect the happiness of workers, it is important for operations to perform researches on reasons of happiness and unhappiness. Performing researches on human factor, which is the most important source for operations to make a difference and on all types of physical and mental factors affecting them, their effects on the individual and reflections of these factors on the operation are fatally important for future worker health and operational productivity. Positive effects of purposeful activities for psychological and physical health are beyond argument. Departing from this, we have performed the research on the effect of mental workload over subjective well-being of administrators, and on whether leisure behaviours have a role on this effect. According to the research results, mental workload of administrators does not change in terms of gender, age and marital status while they are different in terms of education level and rank. Considering table 9, one can see a positive and meaningful relationship between mental workload and subjective well-being. Namely, while mental workload is not an obstacle for happiness, individuals with more workload are much happier. The higher the rank of administrator is, the more mental workload they have.

High level of mental workload does not always make workers happy. As our sample group is made up of administrators who are assumed to have higher mental workload levels, their being under stress (or not) do not cause a decrease in subjective well-being of them, rather increased them. Leisure behaviours is a partial mediator of decreasing subjective well-being.

There is no data about psychological state of samples of the study. For example, their depression levels, drug taking habits, and important diseases are not questioned. This is one of the limitations of our study. With future studies, it is important to change criteria in sampling for determining the effect of mental workload, emerging from different working conditions, on individuals. Similarly, it must be one target of future studies to consider determination of factors affecting worker happiness.

This study is the first to explain the relationship between mental workload, leisure behaviours and subjective well-being. It is expected to contribute future studies on organizational behaviours and other fields of the literature.

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