



## Determination of the Burnout Factor Due to Working Conditions in Some Fish Processing Facilities in the Black Sea Region

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**Abstract:** In this research, aquaculture products operating in the Black Sea Region the aim was to determine the burnout levels of the employees working in the facilities. The provinces in the Black Sea Region (Rize, Trabzon, Sinop, Samsun) and the processing facility to be studied in these provinces were determined by the "Cascade sampling method". Face-to-face interviews were conducted with 102 employees, who were determined by calculations based on the total number of employees of the processing facility. The primary data of the research were obtained by applying the questionnaire forms prepared in accordance with the purpose of the research to the employees in the fishery processing facilities. The research was completed by examining the Maslach burnout scale and three sub-dimensions: emotional exhaustion, depersonalization and personal achievement. In the research, it has been determined that the employees have a high level of satisfaction with their working environment and working conditions, although their working time in the sector is short. As a result, it has been understood that similar situations such as the satisfaction of the employees with their jobs and salaries are factors in the low level of burnout of the employees.

**Keywords:** Black Sea region, Burnout factor, Fish processing plant

## Karadeniz Bölgesi'ndeki Bazı Su Ürünleri İşleme Tesislerinde Çalışma Şartlarına Bağlı Tükenmişlik Faktörünün Belirlenmesi

**Öz:** Araştırmada, Karadeniz Bölgesi'nde faaliyet gösteren su ürünleri işleme tesislerinde çalışanların tükenmişlik düzeylerinin belirlenmesi amaçlanmıştır. Karadeniz Bölgesindeki iller (Rize, Trabzon, Sinop ve Samsun) ve bu illerdeki çalışma yapılacak işleme tesisleri "kademeli örnekleme yöntemi" ile belirlenmiştir. İşleme tesisi çalışanlarının toplam sayıları esas alınarak yapılan hesaplarla tespit edilen 102 çalışan ile yüz yüze görüşme gerçekleştirilmiştir. Araştırmanın amacına uygun hazırlanan anket formları, su ürünleri işleme tesislerinde çalışanlara uygulanarak araştırmanın birincil verileri elde edilmiştir. Maslach tükenmişlik ölçeği ile duygusal tükenme, duyarsızlaşma ve kişisel başarı olmak üzere üç alt boyut incelenerek araştırma tamamlanmıştır. Araştırmada çalışanların sektörde çalışmışlık sürelerinin az olmasına karşılık, çalışma ortamları ve çalışma şartlarından genel olarak memnuniyet düzeylerinin yüksek olduğu tespit edilmiştir. Sonuç olarak çalışanların, işlerinden ve maaşlarından memnun olmaları gibi benzer durumların, çalışanların tükenmişlik düzeyinin düşük olmasına etken olduğu anlaşılmıştır.

**Anahtar Kelimeler:** Karadeniz Bölgesi, Su ürünleri işleme tesisi, Tükenmişlik faktörü.

### 1. Introduction

Today, aquaculture, which constitutes one of the most important parts of animal protein sources, is one of the important sectors that provide continuous in put to the economy of all countries. As a sector. The report published by the Organization for Economic Development and Cooperation (OECD) in 2016 stated that aquaculture production showed the fastest growth in food agricultural products production. Likewise, in its 2018 report, the United Nations Food and Agriculture Organization (FAO) announced that the most developing sector in the agricultural sector in recent years is the aquaculture sector (FAO, 2018; Çöteli, 2020).

Since the term first appeared in the 1970s, burnout

has become increasingly popular. Occupational health concern is raised not only by the academic and medical communities, but also by used more and more by the general public (Beer et al., 2020). Burnout is defined as a decrease in energy as a result of stresses that they encounter at different periods during the work life process (Torun, 1997). In other words, burnout is the inability of people to cope with stress elements and the continuity of this situation can bring some negatives. One of the elements that is effective in people's inequity not being able to cope with stress elements is the lack of resources they have (Bee & Honey, 2008). Many researchers are of the opinion that burnout is an internal psychological experience with expectations, attitudes, and perceptions, emerging on a personal level and is the

result of chronic stress related to work (Avşaroğlu *et al.*, 2005, Karsavuran, 2014).

Today, it is seen that people working in many areas, especially in the service sector, show symptoms of burnout sub-dimensions and convey this problem to the social environment. Factors such as the including of employees in the decisions made in the workplace, the importance of their opinions and the establishment of effective communication channels increase the satisfaction of people towards their work and workplaces. Some factors such as intensive working conditions, inability to rise in duty, and the inactivity of the reward-punishment system can also cause employee satisfaction levels for workplaces to decrease and the resulting increase in burnout (Maslach *et al.*, 2012).

With this study, survey jerseys were presented to the employees in some processing facilities in the Black Sea Region and it was aimed to determine the degree of burnout with the white and analyses that revealed the satisfaction or dissatisfaction with the field of work in which they work. Thus, it is aimed to provide managers or managers with the opportunity to work more efficiently in a more peaceful environment by communicating the problems of the employees in the workplace. In the study, it was aimed to determine the burnout status of the employees of the processing plant.

## 2. Material and Methods

In this part of the research, information about the study group, data collection tool, data collection and evaluation are given. The descriptive survey model, which is one of the quantitative research methods, was used in the study. The research is planned to be carried out in aquaculture processing facilities operating in the Black Sea Region (Sinop, Samsun, Trabzon, Rize, Artvin, Gümüşhane, Bayburt, Amasya, Giresun, Gümüşhane, Amasya, Ordu, Kastamonu, Tokat, Zonguldak, Karabuk, Duzce, Bartın and Bolu). There are 28 fish processing plants in the Black Sea Region (Altun, 2018). Among these processing facilities, research was conducted in the provinces and enterprises determined by the gradual sampling method.

The study was approved by the Animal Experiments Local Ethics Committee of Sinop University (08.11.2021-2021/21).

### 2.1. Sampling methods

It is aimed to reach 25% of the processing plant in the research area and a total of 102 face-to-face interviews were conducted at 7 (seven) facilities determined by the sampling method applied for this

purpose. The survey was conducted between January and March 2020, and the forms were filled in by face-to-face interviews with the employees in the companies where permission was obtained.

In order to determine the number of subjects in the research, the employees working in the fishery processing facilities in the research area were accepted as the target group, and by aiming to reach the employee randomly;

$$n = \frac{Npq\alpha^2}{(N-1)d^2 + pq\alpha^2} \quad (1)$$

[N:Total number of units; n:Sample diameter; p:positive probability; q: Negative probability; d: margin of error (eg 5%);  $\alpha$ :table value (Baş, 2008; Çiçek & Erkan, 1996).

Survey forms prepared in accordance with the purpose of the research were applied to the facilities in different positions (except for day employees). By asking 21 questions in the surveys and questions aimed at determining the overall burnout level of the participants; Maslach burnout scale and three sub-dimensions were examined: emotional exhaustion, desensitization and personal success. Burnout scale is likert type 5-1 *definitely agree, 4-agree, 3-moderately, 2-disagree and 1-definitely disagree*. While the items related to the emotional exhaustion and insensitivity sub-dimensions in the scale were conveyed with negative expressions, the items in the personal achievement sub-dimension were conveyed with positive statements. For this reason, the increase in the scores of the personal achievement sub-dimension indicates that the burnout levels of the employees are low.

### 2.2. Statistical analysis

SPSS 22.0 and OFFICE 2010 package program were used in the analysis of data as well as descriptive analyses, frequency, percentage, arithmetic mean and standard deviation values, t-test and ANOVA (one-way variance analysis) tests. The level of meaningfulness in the comparison of the results was accepted as  $P < 0.05$ .

## 3. Results and Discussions

Although long working hours and fatigue lead to serious injury and illness in the aquaculture industry, there are few studies on the effects of these on worker health, particularly during their lifetime (Elliott *et al.* 2022). The work was carried out in processing plants located in the Black Sea Region. The processing

facilities where the surveys are applied, and the number of participants is given in Table 1.

**Table 1.** Processing facilities and number of participants where the study was conducted

**Çizelge 1.** İşleme tesisleri ve çalışmaya katılımcı sayıları

Business Name	Province in which it is located	Number of Surveys
Sadıklar Aquaculture	Trabzon	15
Sagun Aquaculture	Samsun	8
Baysun Aquaculture	Sinop	17
Yakakent Aquaculture	Samsun	19
Dalyan Aquaculture	Sinop	16
Susan Aquaculture	Rize	7
Sibal Aquaculture	Sinop	20
<b>Total</b>		<b>102</b>

During the research process, it was determined that 24% of the subjects who participated in the field study were female and 71.6% were married. It was determined that the business with the highest number of female employees was Yakakent with 36.8%, and the company with the highest number of male employees was 100% of the case. It is seen that the number of male employees in the Black Sea region is about 3 times the number of female employees. In a similar study by Çağlak *et al.* (2012), they found that female employees were 79% in Balıkesir province. In addition, Altun (2018) found that 73.5% of the participants were married and 67.8% of the subjects were married in the study of Doğan and Yıldız (2008).

It has been determined that the ages of the people working in the operating e facilities operating in the Black Sea Region vary between the ages of 18-60 (Table 2).

**Table 2.** Distribution of participants by age variable

**Çizelge 2.** Çalışmaya katılanların yaş dağılımları

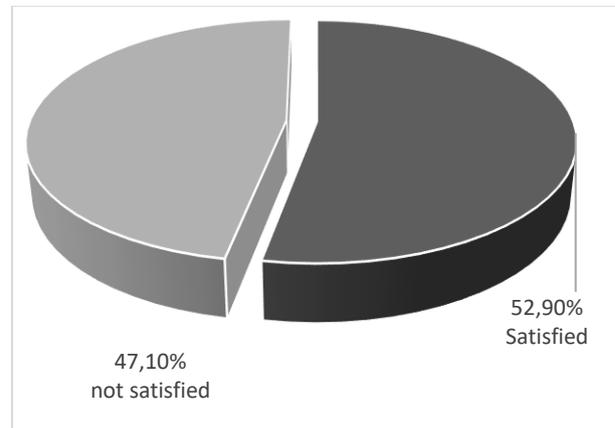
Age group	Frequency	%
18-30	30	29.4
31-40	32	31.4
41-50	31	30.4
51-60	9	8.8
<b>Total</b>	<b>102</b>	<b>100.0</b>

It was determined that 91.2% of the participants working in the facilities in the region were also 50 years of age or younger and there were no employees over 60 years of age (Table 2). Similar studies conducted in the aquaculture sector show that employees are usually young employees in the 18-40 age range (Yücel & Acar, 2018; Doğan & Yıldız, 2008; Çapkın *et al.*, 2008).

When the participants' distribution of the salary satisfaction variable is examined; more than half

(52.9%) of the employees were satisfied with their salaries (Figure 1).

In the study, it can be said that situations such as the fact that a large part of the individuals working in processing facilities are workers, their employment areas are limited, and unemployment rates are high today have an impact on the satisfaction of individuals with their jobs and the wages they receive. Factors such as high inflation, population growth and rising living standards can cause individuals to be without meeting their expectations and this can create dissatisfaction with wages. Çağlak *et al.* (2012), 76.3% of the participants in the study carried out at aquaculture processing plants in Balıkesir, Altun (2018) determined that 54.5% of the participants expressed satisfaction with their salaries and jobs in their work in the processing facilities in the Black Sea Region.



**Figure 1.** Salary Satisfaction Status (%)

**Şekil 1.** Maaş Memnuniyet Durumu (%)

According to 2019-year data, participants answered the question about monthly health care expenses; It was determined that 22.3% were 0-50 TL, 24.5% were 51-100 TL, 18.1% were 101-150 TL, 17.0% were 151-200 TL and 18.1% were 201 TL and above. The frequent sickness of married participants themselves, their spouses and especially their children increase the health expenditures of the participants in this group. In a similar study, they found that the monthly health expense expenditures of marine fisheries in Tekirdağ province were in the range of 100-150 TL on average (Özen, 2006), while in Antalya, the health expenditures of individuals working in rainbow trout farming enterprises were in the range of 50-100 TL (Gümüüş *et al.*, 2013). On the other hand, it has been determined that 30.4% of employees in aquaculture processing plants are members of non-governmental organizations.

When asked about participants' views on the job they

work for and the industry; *It is seen that the participants expressed an opinion at the level of "I absolutely agree" ( $\bar{X}=4.22$ ) to the question "I started this job willingly". According to this finding, it can be said that the participants adopted their work and did it with pleasure.*

Again, it is seen that the participants expressed an opinion at the level of "I'm moderate" in the opinion article "I started this job because I couldn't find another job because of unemployment" (Table 3).

**Table 3.** General opinions of participants for their work  
*Çizelge 3. Katılımcıların çalışmalarıyla ilgili genel görüşleri*

General opinions of participants for their business	Degrees of Participation (%)					$\bar{X}$	Ss
	ADA	DA	M	A	DEA		
I started this job willingly.	2.9	4.9	7.8	35.3	49.0	4.22	0.99
I started because I couldn't find another job.	11.8	24.8	15.8	23.8	23.8	3.22	1.37
I do my job because it's mandatory.	11.9	32.7	13.9	27.7	13.9	2.99	1.28
I'm respected for owning a job.	6.1	7.1	18.2	40.4	28.3	3.77	1.12
Thanks to this job, I have a profession.	5.9	17.6	14.7	46.1	15.7	3.46	1.13
I'm getting enough out of social security	8.8	4.9	8.8	41.2	36.3	3.91	1.20
The decline of the fish generation and species worries me about continuing my profession.	8.8	20.6	17.6	30.4	22.5	3.37	1.28
The weight of the working conditions makes me cannot do this job anymore.	12.0	35.5	20.8	13.9	17.8	2.90	1.30

ADA: I absolutely disagree, DA: I disagree, M: I'm moderate, A: I agree, DEA: I definitely agree

Being one of the important business lines of fishing activities in the region is effective for the local people to turn to the aquaculture sector. It has determined that the employees of the aquaculture processing facilities located in Black Sea region love their profession, think that they have high levels of satisfaction for their work

and that they benefit from social security adequately (Altun, 2018).

The distribution of participants according to their opinions on the level of psychological comfort in the workplace where they work is given in Table 4.

**Table 4.** Distribution of participants according to their psychological comfort level  
*Çizelge 4. Katılımcıların psikolojik rahatlık düzeylerinin dağılımı*

Participants' general views on psychological comfort levels	Degrees of Participation (%)					$\bar{X}$	Ss
	ADA	DA	M	A	DEA		
If you make a mistake working here, all employees can use it against you.	12.1	0.3	24.2	24.2	9.2	2.87	1.18
Those who work here clearly tell us the problems they face and the difficulties they experience.	10.9	14.9	26.7	35.6	11.9	3.22	1.17
Those who work here take risks to make things work, and even if the result is bad, they are not harmed.	13.7	20.6	26.5	28.4	10.8	3.01	1.21
Those who work here do not intentionally hinder or be mean to my efforts.	11.8	11.8	20.6	41.2	14.7	3.35	1.21
When I work here, they take advantage of my abilities and care about me.	8.8	5.9	13.7	53.9	17.6	3.65	1.11

ADA: I absolutely disagree, DA: I disagree, M: I'm moderate, A: I agree, DEA: I definitely agree

When Table 4 is examined; *"If you make a mistake while working here, all employees can use it against you"*, at the "I am moderate" level of the ( $\bar{X}=2.87$ ) participants, *"Those who work here clearly tell the problems and difficulties they face"*, at the "I am undecided" level of the participants, *"Those who work here take risks ( $\bar{X}=3.22$ ) for things to work, the result is not harmed, even if the result is bad"*, ( $\bar{X}=3.01$ ) *the participants said, "Those who work here do not intentionally hinder or behave my efforts"*, "I agree" and ( $\bar{X}=3.35$ ) *"They benefit from my abilities while*

*working here and value me" ( $\bar{X}=3.65$ ).* It is believed that the fact that many of the workers working in the sector are workers and that their working time is intensified between 1-5 years causes the employees to not be able to predict the reactions of other employees because they do not fully recognize each other. Maslach burnout scale consists of three sub-dimensions: emotional exhaustion, desensitization and personal success. Participants' general views on scale and sub-dimensions are given in Table 5.

**Table 5.** General participation levels of employees in Maslach burnout scale sub-dimensions**Çizelge 5.** Çalışanların Maslach tükenmişlik ölçeği alt boyutlarına genel katılım düzeyleri

Dimensions	N	$\bar{X}$	Ss
Emotional exhaustion	102	2.68	0.71
Personal depersonalization	102	2.66	0.79
Personal success	102	3.34	0.57
Burnout Total Score	102	2.90	0.53

According to Table 5. it was determined that the employees who participated in the study responded to the burnout scale sub-dimensions at different levels. It was determined that the emotional exhaustion sub-dimension scores of the employee ( $\bar{X}=2.68\pm0.71$ ) burnout scale were the scores of the depersonalization ( $\bar{X}=2.66\pm0.79$ ) sub-dimension accordingly. It is seen that employees respond to the sub-dimensions of emotional exhaustion and depersonalization of the scale at the level of "I'm moderate". It was determined that the average score of the employees from the personal success sub-dimension of the scale ( $\bar{X}=3.34\pm0.92$ ) was. According to these findings, it can be said that the participants' overall burnout levels were low. In a study carried out with the participation of teachers, it was determined that the general burnout levels of the students were low (Mete & Serin, 2015). In their studies aiming to determine the mobbing and burnout levels of nurses. Dikmetaş *et al.* (2011) found that the participants' overall burnout levels were low. In his study which aimed to determine the burnout levels of individuals working in the health sector he determined that the score averages for the burnout scale and sub-dimensions of the participants were low (Helvacı & Turan, 2013). In a study in which individuals working in organizations operating in different sectors examined the relationship between mobbing perceptions and burnout levels they determined that there was a positive relationship between the mobbing perceptions of the participants and the levels of burnout and found that the mobbing levels of the participants were high (Ay & Filizöz, 2011). In their study; employees' burnout levels and organizational commitment levels As a result of the regression analyzes to determine the relationships between emotional exhaustion states the emotional commitment of employees by 17% declared has been determined. However, in the correlation analysis, emotional there is a 41% negative relationship between burnout and emotional commitment found (Tekin *et al.*, 2014).

When Table 6 of the opinions of individuals working in aquaculture processing plants operating in the Black Sea Region on the gender scale and sub-dimensions of

the individuals working in the Black Sea region was examined; it was determined that the score averages of the participants' burnout scale for desensitization sub-dimensions differed significantly according to the gender variable ( $P<0.05$ ). It was determined that the score averages for other sub-dimensions and burnout scale did not differ statistically depending on the gender variable. It can be said that men being less emotional than women influence this finding. Çakroğlu and Tengilimoğlu (2014) determined that the score averages of male participants on burnout scale and desensitization sub-size were higher than those of female participants in their research. in which medical secretaries examined the effect of mobbing perceptions on burnout levels. It found that there was no statistically significant difference between the participants' genders and the score averages for burnout scale and sub-dimensions (Ay & Filizöz, 2011).

**Table 6.** Participation levels of the sub-dimensions of the Maslach burnout scale related to the gender variable of the participants**Çizelge 6.** Katılımcıların cinsiyet farklılığına ilişkin Maslach tükenmişlik ölçeği alt boyutlarına katılım düzeyleri

Sub Dimensions	Grups	N	$\bar{X}$	ss	t	P value
Emotional Exhaustion	Woman	24	2.48	0.49	-1.588	0.115
	Male	78	2.75	0.46		
Personal Depersonalization	Woman	24	2.37	0.66	-2.050	0.043*
	Male	78	2.75	0.81		
Personal Success	Woman	24	3.42	0.56	0.770	0.443
	Male	78	3.32	0.57		
Burnout Total Score	Woman	24	2.77	0.34	-1.321	0.189
	Male	78	2.94	0.47		

As a result of variant analysis conducted according to the working time variable in the sector. it is seen that the individuals working in aquaculture processing facilities operating in the Black Sea Region have significant differentness because of variance analysis according to the working time variable of the participants in the research on the personal success sub-dimension of the burnout scale. ( $F=4.493$ ;  $P<0.05$ ) Personal success sub-dimension is seen because of ( $\bar{X}=3.57$ ) the Scheffe ( $\bar{X}=3.37$ ) test. which is more adopted by ( $\bar{X}=3.21$ ) employees between 1-5 years in the sector than participants with a working time of 1 year under ( $\bar{X}=3.00$ ) 6-10 years and 16 years or more. As the professional seniority of employees increases. it can be said that the average score for the sub-dimension of personal success has fallen. It can be said that the monotony of the work done influences this finding. They determined that there is a directly proportional

relationship between burnout levels and service times and that there is a negative directional relationship between the score averages and working times related to the sub-dimension of personal success (Ertürk & Keçecioglu, 2012). In the study conducted on doctors, 33.1% were in the 23-28 age group, 49.8% were women. 31.4% of the physicians had sleep problems. The emotional exhaustion sub-dimension mean score of the physicians participating in the study was 18.6±5.3 (Köylü & Korkut, 2022). In their studies carried out with the participation of nurses and midwives they determined that there is a positive-directional personal success sub-dimension and negative-directional relationship between the service periods of the employees and the levels of burnout (Kulakçı et al., 2015). This finding in the study is like the findings of other studies in the literature.

#### 4. Conclusion

Attention is paid to the results obtained in the research; it has been determined that the opinions of the employees of the Black Sea Region Aquaculture Treatment Facilities for the work they work for are generally positive. Today it can be said that the high unemployment rate, the increase of life standards due to inflation and technological changes. As well as the fact that fishing activities in the region are one of the important lines of business are effective in having positive opinions about the work of employees.

As the working time of the employees in the sector increases, the recognition of the employees will increase mutual trust. In addition, the more sensitive and emotional nature of female employees will be more emotional than men and will be able to pay close attention to many problems they face in working life. The coat of arms of the number of female employees will contribute to employment as it will provide significant returns to family budgets economically and improve the quality of life.

As the working time increases in the sector, the ability of individuals to realize their mistakes in the process and predict the consequences of the actions they have taken will increase and positively affect individual success.

The satisfaction of employees with their salaries and jobs will also ensure that participants are happy in their working life and therefore have a low level of burnout and rial. Since improving the economic situation of employees depends on the financial opportunities of the employer, it is thought that the incentives to be carried out for the sector may have an impact on increasing the

financial opportunities of the workers.

Scientific studies should be carried out to determine the working conditions and burnout factors of employees in different business lines of the aquaculture sector and contribute to strengthening the working peace by eliminating the deficiencies to be determined in line with the results obtained.

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