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Analyzing Pilots' Perceptions of Working Conditions According to Different Parameters[1]

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ABSTRACT

This study aims to determine pilots' perceptions of working conditions in civil aviation companies operating in Türkiye. In addition, it aims to increase authorities' awareness about problems encountered in relation to working conditions and provide insights about the implementation of policies to improve working conditions of pilots. A total of 7054 pilots registered to the Turkish Airline Pilots Association (TALPA) were sampled and their perceptions were measured by quantitative research methods to analyse the working conditions with the participation of 403 pilots. According to the findings obtained from the pilots' perceptions of working conditions, it was observed that the pilots' relations with their managers and the problems they experience have an important place. According to the findings of the research, it was determined that various factors negatively affect the working conditions of pilots. In addition, as a result of the analysis, it was concluded that factors such as gender, age, nature of the job, institution where pilot training was received, flight licence, position in the institution, reason for choosing the profession, seniority, type of flight, and looking to the future with confidence caused differences.

Keywords: *Pilot, Airline Companies, Working Conditions, Perception, Parameters.*

Pilotların Çalışma Koşulları Algılarının Farklı Parametrelerle Analizi

ÖZET

Bu çalışma, Türkiye'de faaliyet gösteren sivil havayolu işletmelerinde görev yapan pilotların çalışma koşulları algılarının tespitine yöneliktir. Pilotların çalışma koşullarının iyileştirilmesine dönük koruyucu politikaların hayata geçirilebilmesi ve pilotların çalışma koşullarının görevlerini nasıl etkilediği bağlamında yaşadıkları sorunlara yönelik farkındalığın arttırılabilmesi amaçlanmıştır. Türkiye Havayolu Pilotları Derneğine (TALPA) kayıtlı toplamda 7054 pilotdan, örneklem 403 pilotun katılımı ile çalışma koşullarını analiz etmek için nicel araştırma yöntemleri ile algıları ölçülmüştür. Araştırma sonuçları ile elde edilen bulgulara göre çeşitli etmenlerin pilotların çalışma koşullarını olumsuz yönde etkilediği tespit edilmiştir. Ayrıca analiz sonucunda, pilotların cinsiyet, yaş, işin niteliği, pilotluk eğitimi alınan kurum, uçuş lisansı, kurumdaki pozisyonları, mesleği tercih etme nedeni, kıdem, uçuş tipi, geleceğe güvenle bakma gibi etmenlerin farklılıklara neden olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: *Pilot, Havayolu İşletmesi, Çalışma Koşulları, Algı, Parametreler.*

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1. INTRODUCTION

Employees working in civil aviation companies can be grouped into two categories according to their work: “Air Transportation Employees” and “Ground Services Employees”. Air transportation employees, including pilots, have been excluded from 4/a of Labor Law numbered 4857 because the unique nature of the work done requires the presence of specific working conditions and regulations. Moreover, an air-labor law regulating these specific working conditions and suitable for the nature of the profession has not been enacted yet. Unfortunately, pilots as well as other air transportation employees are confined to the liberal provisions of Turkish Code of Obligations when working relations are concerned.

Due to the lack of a legislation specific to pilots, they have to work under conditions shaped by administrations’ initiatives and their collective bargaining power. It is also known that they are worried about their future after they get retired although they feel more secure while actively working due to relatively high salaries.

The expansion of the flexibilization process in the aviation sector, which has been experienced in labor relations worldwide (Ceylan, 2010), has caused pilots to start experiencing serious problems in issues such as wages, job security and professional organization. In the context of these developments, it is estimated that there are significant findings that current working conditions negatively affect the physical and psychological health of pilots. In the context of today's rapidly changing and developing conditions, the evaluation of working conditions in the aviation sector (Erdil et al., 2004, p.19) is of particular importance.

2. METHOD

The study has been designed according to the principles of comparative relational survey model (Karasar, 2000). It aims to determine the reasons affecting perceptions of pilots about their working conditions and whether these reasons differ according to certain demographic and professional variables.

Quantitative data collection technique was used to determine the perception of working conditions and demographic characteristics of the pilots included in the study.

3. POPULATION AND SAMPLE

The population of the research consists of approximately 7054 pilots working in 10 airline companies operating in civil aviation businesses in Türkiye according to the data of 2021.

The determination of the sample size is based on the number corresponding to the 95% confidence level and 5% acceptable margin of error according to the number constituting the research population (Rea & Parker, 2014). According to this number constituting the population, the number of pilots corresponding to 95% confidence level and 5% acceptable margin of error is 364.

4. PARTICIPANS

The participants of the study consist of 403 pilots who are members of TALPA and actively work for commercial airlines in Türkiye. They all participated in the study on a voluntary basis. The subject group of the research consists of a total of 403 participant pilots who are members of TALPA actively working in commercial airline companies in Türkiye, 373 of whom work in passenger transportation, 10 in air cargo and 20 as flight instructors, all on a voluntary basis. According to the data, only 32 female pilots participated in the study while the number of male ones was 371.

5. DATA COLLECTION

The research dealing with working conditions of pilots is noticeably limited. The lack of a data collection instrument aiming to explore working conditions of pilots is also an important drawback since pilots play significant roles in civil aviation sector and the quality of working conditions remarkably predict their motivation and performances. Therefore, “Pilots’ Perception of Working Conditions Scale (PPWCS)” was used so as to determine pilots’ perceptions about their working conditions (Yönt, 2022, p 112).

Within the scope of the present study, the data regarding pilots’ perceptions of working conditions were collected by administering the 40-item PPWCS. The scale consists of two parts. The first part includes 10 questions aiming

to collect demographic information about the participants and there are 40 questions in the second part about pilots' perceptions of working conditions.

The perception statements in PPWCS are related to the content and organization of the tasks fulfilled by pilots, organizational culture and climate, working life - social life balance, duration and hours of working, occupational health and safety, social security, employment security, wages and other payments, and job evaluation. PPWCS was administered on a voluntary basis to 403 pilots via the Google drive link of TALPA. The participant pilots were informed about the aim of the study and other necessary details prior to the study. The ethics committee approval of the study was obtained from Anadolu University Institute of Social Sciences and Sciences with the number 2020/71863.

5-point likert type rating was preferred for the replies to the items. The participants were asked to reply by choosing one of the five ratings for each item: "I do not agree at all – I do not agree – Undecided – I agree – I totally agree". The total score for each participant was calculated by assigning a score between 1 and 5 for each category; the maximum score 5 for the most positive one and 1 for the most negative one (Turgut, 1977, p 10, 11).

In all analyses conducted in the study, the significance level was accepted as .05, and those with a higher level of significance are indicated in the relevant tables. SPSS 21.00 (Statistical Package for the Social Sciences) statistical package programme was used to analyse the data collected from pilots working in civil aviation companies in Türkiye.

5.1. Validity and Reliability Analysis

Cronbach's alpha were conducted to test the structural validity of the scale used in the study. Cronbach alpha coefficient for the overall scale was calculated as .94, which indicates that the scale is a reliable data collection instrument.

Since the group size in this study was 403, the Kolmogorov-Simirnov test was used to determine the normality of the scores. The K-S value was found to be .000 and this value reveals that the scores deviate significantly from the normal distribution. (Büyüköztürk, 2002, p.42). The results of the Kolmogorov-Smirnov normality test applied to the data obtained from 403 pilots included in the analysis are given in Table 1

Table 1. Data Distribution Analysis of Surveys

Tests of Normality			
	Kolmogorov-Smirnov		
	Statistic	Df	Sig.
Working Conditions	.066	403	.000

In order to test construct validity of the scale, factor analysis was applied to the data obtained from 403 pilot included in the analysis. Kaiser-Meyer-Olkin (KMO) and Barlett's test were utilisedfor this purpose. Test results are given in Table .2

Table 2. KMO and Barlett's Test Results

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.916
Bartlett's Test of Sphericity	Approx. Chi-Square	8786,708
	df	666
	Sig.	.000

In the Principal Component Analysis (PCA), the Kaiser-Meyer-Olkin (KMO) value was found to be .90, which is above the acceptable limit of .50. Barlett Sphericity test technique was used to test whether the data were normally distributed.

KMO value can be between 0 and 1. As the value approaches 1, it can be said that the relationship between the variables is clear and the factor analysis will give reliable results (Field 2009). KMO value above .90 is considered excellent.

The construct validity of the scale was tested by applying factor analysis to the data gathered from 403 pilots who were included in the analysis after it was established that the data were normally distributed. The 32 items that were subjected to Principal Component Analysis were grouped under 6 factors with eigenvalues greater than 1.00. Therefore, PPWCS can be accepted as having at most 6 factors. The total variance explained by 6 factors is 64.69%.According to the PCA, the eigenvalue of the first factor is 11.39 and the variance explained by it is 35.58%; the second factor is 3.41, 10.65%; the third factor is 2.00, 6.25%; the fourth factor is 1.74, 5.44%; the fifth factor is 1.14, 3.55%; and the sixth factor is 1.03, 3.22%. PCA were performed for a total of 37 items, and 20th , 22nd, 35th, 37th and 40th items were excluded from the scale since they have factor loads lower than .30. The number of the remaining items was 32. In the factor analysis, items with factor loading values above .30 were included. When the results of the item analysis conducted to evaluate the discrimination of the items in the scale were examined, the item-total correlation coefficient ranged between .30 and .79. This finding shows that each of the 32 perception statements has discriminative features. The reliability coefficient of the whole scale was found to be Cronbach α=.94. These values are an indication that the scale is reliable. Since PPWCS has 6 factors, rotation was done by using varimax technique so that it can be easier for factors to identify the items that strongly correlate with them and these items can be interpreted more easily (Büyüköztürk, 2002, p.120). Due to the existence of a single item under the sixth factor, the number of factors was first lowered to five and then to four when the distribution of the scale's remaining thirty items was examined in accordance with the factors (MacCallum, Widaman, Zhang ve Hong, 1999). A factor must have a minimum of three items and a high factor loading in order to be considered stable. The results of the exploratory factor analysis of the items in the scale as a result of the varimax rotation applied to examine the factor structures of the PPWCS and the distribution of the loading values for the 4 factors are given in Table 3

Table 3. Exploratory Factor Analysis for The Scale

No	Item Number	Item-total Correlation	Factor Common Variation	Factor Load Value	Load Values after Rotation			
					Factor -1	Factor- 2	Factor- 3	Factor -4
1	M3	.73	.72	.79	.82	.15	.12	.00
2	M4	.78	.80	.84	.87	.08	.17	.09
3	M5	.54	.44	.64	.57	.29	.18	-.00
4	M6	.59	.66	.74	.76	.02	.07	.27
5	M7	.69	.70	.81	.80	.16	.17	.13
6	M8	.76	.72	.82	.80	.08	.22	.17
7	M9	.77	.71	.81	.81	.19	.16	.04
8	M10	.71	.66	.77	.78	.16	.17	-.00
9	M11	.75	.65	.80	.74	.17	.22	.16
10	M12	.71	.66	.78	.77	.09	.18	.17
11	M14	.75	.63	.70	.74	-.03	.02	.29
12	M15	.73	.75	.50	.24	.06	.83	.00
13	M16	.64	.59	.36	.23	-.08	.01	.73
14	M18	.47	.67	.41	.13	.23	.10	.77
15	M19	.33	.69	.47	.23	.10	.13	.78
16	M21	.40	.47	.32	.04	.66	.09	.16
17	M23	.41	.68	.37	.10	.82	.04	.01
18	M24	.31	.61	.52	.19	.42	.63	.05
19	M25	.50	.63	.42	.11	.76	.21	.03
20	M26	.41	.75	.58	.30	.14	.80	.04
21	M27	.55	.68	.48	.23	-.07	.76	.22
22	M28	.46	.65	.43	.17	.78	.09	.01
23	M33	.42	.47	.67	.64	.16	.14	.13
24	M34	.62	.67	.39	.16	.80	-.05	.02
25	M38	.37	.47	.33	.12	.68	-.01	.03

26	M39	.32	.47	.59	.56	-.01	.07	.39

Explained Variation

Factor 1 = %37,82

Factor 2 = % 12.53

Factor 3 = % 7.01

Factor 4 = % 6.45

Cronbach α = .93

Total = % 63.81

It can be concluded that the scale is valid and reliable according to these values.

5.2. Research Findings

The descriptive statistics regarding the participant PCWP are displayed in Table 4 below.

Table 4. The Pilots' Perceptions of Working Conditions

Perceptions of Working Conditions Levels	Mean	Mod	Aritmethic Mean
1. Our managers take the pilots' suggestions into account.	2	2	2.50
2. Our managers have a high opinion of the pilots.	2	1	2.40
3. Our managers do not try well enough to enhance the pilots 'organization-al commitment.	4	5	3.61
4.Our managers provide pilots with opportunities to receive extra trainings deemed necessary for their professional career.	4	4	3.32
5. There is not a good relationship between the pilots and our managers.	4	4	3.46
6. Our managers allow the pilots to voice their opinions while making job-related decisions.	2	2	2.49
7. Our managers provide a working environment where pilots can share their opinions freely.	2	2	2.45
8. Our managers provide a working environment where the pilots can play a significant role in job-related changes.	2	2	2.62
9. Our managers provide the pilots with all the opportunities to allow them to do their jobs effectively.	3	2	2.66
10. The pilots who do their job well are appreciated by the administration.	2	2	2.55
11. Our managers treat the pilots fairly.	2	1	2.38
12. Our managers do not try hard to ensure that pilots are satisfied with their job.	3	2	2.66
13. Pilots' salary is enough to lead a financially comfortable life.	4	4	3.30

14. Pilots' working hours are not suitable to allow them to lead a regular life.	5	5	4.38
15. Pilots' family life is negatively affected due to the nature of the profession.	4	4	3.91
16. Pilots' working hours do not allow them to save time for their private lives.	4	4	3.36
17. Flying a plane is fun.	4	4	3.82
18. Working as a pilot is exciting.	4	4	4.21
19. Career opportunities of the profession is satisfactory.	4	4	3.37
20. It is worth being a pilot.	4	5	4.34
21. Fringe benefits of pilots such as premium, bonus, transportation, accommodation payments etc. are satisfactory.	3	2	2.82
22. Pilots' salary is low when their long working hours and work load are considered.	4	4	3.35
23. Working as a pilot makes me happy.	5	5	4.43
24. The regulations regarding the working conditions in my company are implemented in an unbiased way.	3	2	2.88
25. It is a pleasure to be a part of aviation sector as a pilot.	4	5	4.32
26. I am proud of saying that I work as a pilot.	5	5	4.39

Table 4 shows that agreement levels of the participant pilots for the items aiming to determine their perceptions of working conditions are over the medium level, which indicates that the participants had generally positive perceptions about their working conditions.

The three items with relatively the highest agreement level for the items measuring the participants' perceptions of working conditions are as follows:

a. Working as a pilot makes me happy.
b. Pilots' working hours are not suitable to allow them to lead a regular life
c. I am proud of saying that I work as a pilot.

In addition, the three items with relatively the lowest agreement level for the items measuring the participants' perceptions of working conditions are as follows:

a. Our managers have a high opinion of the pilots.
b. Our managers treat the pilots fairly.
c. Our administrators provide a working environment where the pilots can share their opinions freely.

5.3. Analysis of The Pilots' Perceptions of Working Conditions According to Various Variables

5.3.1. Gender

The analysis of the pilots' perceptions of working conditions according to gender variable is displayed in Table 5.

Table 5. Independent Group T-Test Results Regarding The Pilots PCWP According to Gender Variable

Gender	N	$\overline{X}$	S	sd	t	p

Female	32	80.88	17.72	401	1.368	.172
Male	371	76.60	16.90			

Levene test for homogeneity of the variances F=650, p=.421 p>.05

According to Table 5, there is not a significant difference between the participant pilots' perceptions of working conditions in terms of gender ($t_{(401)}$=1.368, p>.05).

5.3.2. Age

Table 6 below presents the analysis of PCWP according to age variable.

Table 6. Analysis of the PCWP According to Age Variable

Age groups	**N**	$\overline{X}$	**S**
19-25	5	75.40	12.99
26-30	59	84.32	16.89
31-35	78	77.33	18,10
36-40	66	75.71	16.06
41-45	46	71.46	14.02
45-50	60	76.08	15.38
51-55	53	73.77	19.40
56-60	27	78.33	15.19
61 and above	9	83.11	18.38
Toplam	403	76.94	16.99

As we can see from Table 6, the highest mean score for pilots' perceptions of working conditions according to age variable is $\overline{X}$ =84.32 (for 26-30 age group) and the lowest mean $\overline{X}$ =71.46 (for 41-45 age group)

One-dimension variance analysis results of the pilots' working conditions perception levels according to age variable are given in Table 7.

Table 7. Variance Analysis Results of the PCWP Levels According to Age Variable

Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p	Significant difference
Between Groups	5692.336	8	711.542	2.542	.010*	2-3, 2-4, 2-5, 2-6 ve 2-8
Within Groups	110285.113	394	279.911			
Toplam	115977.449	402				

Levene test for homogeneity of the variances F=1.626; sd=8,394, p=.116 *p<.05

As shown in Table 7, F value was found to be significant $(F_{(8\text{-}394)}=2.542,\ p<.05^*)$. in the variance analysis performed to test whether the mean scores of the participant pilots' perceptions of working conditions significantly differ according to age variable. In other words, PPWCS differ according to age groups.

5.3.3. Type of Work

The analysis of PPWCS according to type of work variable are displayed in Table 8.

Table 8. Analysis of the PCWP Levels According to Type of Work Variable

Type of Work	N	$\overline{X}$	S
Passenger transportation	373	76.99	16.92
Air Cargo Shipping	10	81.10	13.41
Other	20	73.85	19.88
Total	403	76.94	16.99

Table 8 presents the results of one-dimension variance analysis performed to determine the presence or absence of difference in the scores of the participant pilots' regarding their perceptions of working conditions according to type of work.

Table 9. Variance Analysis Results of the PCWP Levels According to Type of Work Variable

Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p	Significant difference
Between Groups	365.023	2	182.512	.631	.532	-
Groups	115612.426	400	289.031			
Total	115977.449	402				

Levene test for homogeneity of the variances F=.827; sd=2, 400; p=.538 p<.05

Table 9 shows the results of the variance analysis performed in order to test whether there was a significant difference between the mean scores of the participant pilots' perceptions of working conditions according to "type of work" variable.

5.3.4.Flight Training Institution

The analysis of the pilots' perceptions of working conditions according to the flight training organizations where pilots got their initial pilot training are presented in Table 10.

Table 10. Analysis of the PCWP Levels According to Flight Training Institution Variable

Flight training institution	N	X	S
School/Faculty of Aviation – Department of Flight Training	156	77.67	16.05
Airline Cadet Programs/Private Flying Schools	159	76.68	16.65
Turkish Armed Forces	88	76.12	19.21
Total	403	76.94	16.99

Table 10 shows that the pilots who graduated from a flight training department at School / Faculty of Civil Aviation had the highest means for working conditions perception levels ($\overline{X}$ =77.67), and those who were trained in Turkish Air Forces had the lowest mean score ($\overline{X}$ =76.12)

The results of one-dimension variance analysis performed to determine whether pilots' working conditions perception levels differ according to flight training institution variable were presented in Table 11.

Table 11. Variance Analysis Results of the PCWP Levels According to Flight Training Institution Variable

Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p	Significant difference
Between Groups	153.277	2	76.639	2.542	.26	-
Groups	115824.172	400	289.560			
Total	115977.449	402				

Levene test for homogeneity of the variances F=3.212; sd=2, 400; p=.041 p<.05

The results presented in Table 11 did not reveal a significant F value ($F_{(2\text{-}400)}$)=.265, p>.05), which indicates the lack of difference between the pilots' perception levels of working conditions according to flight training institution.

5.3.5.Type of pilot license

The analysis of the pilots' working conditions perceptions according to type of pilot license variable are presented in Table 12.

Table 12. Analysis of the PCWP Levels According to Type of Pilot License Variable

Type of pilot license	N	$\overline{X}$	S
ATPL (Air Transport Pilot License)	366	75.70	16.46
CPL (Commercial Pilot License)	10	90.50	16.46
CPL IR (Commercial Pilot License IR)	27	88.70	18.10
Total	403	76.94	16.57

As seen in Table 12, the pilots with CPL (Commercial Pilot License) had the highest mean score ($\overline{X}$ =90.50) while the lowest mean score belonged to the pilots with ATPL (Airline Transport Pilot License).

The results of one-dimension variance analysis performed to determine whether pilots' working condition perception levels differed according to "type of pilot license" variable were presented in Table 13.

Table 13. Analysis of The PCWP Levels According to The Type Of Pilot License Variable

Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p	Significant difference
Between Groups	6138.380	2	3069.190	3069.190	.000**	1-2 ve 1-3
Within Groups	109839.070	400	274.598			
Total	115977.449	402				

Levene test for homogeneity of the variances F= .235; sd=2, 400; p=.791 **p<.01

The results of the variance analysis presented in Table 12 showed a significant F value ($F_{(2\text{-}400)}$)=11.177, p<.01**), which indicates that the perception scores of the pilots regarding their working conditions differ according to the pilot license they have. Later, LSD Post-Hoc Multiple Comparison Test was done so as to determine the groups that differ in terms of the pilot license type.

5.3.6. Job Status

The analysis of PPWCS according to job status variable are presented in Table 14.

Table 14. Analysis of The PCWP Levels According to Job Status Variable

Job status	N	$\overline{X}$	S
Commander	223	74.42	15.00
First Officer	173	79.86	18.99
Other	7	85.14	10.33
Total	403	76.94	16.99

According to Table 14, the captain pilots had the highest mean ($\overline{X}$ =74.42) while the pilots in the other category (Air Cargo pilots, Passenger and Cargo (both) and Flight Trainers) had the lowest mean ($\overline{X}$ =85.14).

The results of one-dimension variance analysis of the pilots' working condition perception levels according to job status variable are displayed in Table 15.

Table 15. Variance Analysis Results of the PCWP perception Levels According to Job Status Variable

Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p	Significant difference
Between Groups	3360.989	2	1680.495	5.969	.003*	1-2
Within Groups	112616.460	400	281.541			
Total	115977.449	402				

Levene test for homogeneity of the variances F= 7.613; sd=2, 400; p=.001**p<.05

The results of the variance analysis displayed in Table 15 revealed a significant F value ($F_{(2\text{-}400)}$)=5.969, p<.05*), which shows a difference between the pilots' perceptions of their working conditions according to their status in the company hierarchy. In other words, the pilots' working conditions perception levels change according to their ranking Later, LSD Post-Hoc Multiple Comparison Test was performed to identify the groups that differ in terms of their job status. The results showed that captain pilots and the second pilots differ and captain pilots had a more negative perception of working conditions than the second pilots.

The main reason lying behind the pilots' negative perceptions of their working conditions is employment insecurity; i.e. the fear of losing one's job. Risk perception, perceived anxiety and uncertainties are believed to be effective when working conditions are concerned. These uncertainties can be evaluated as reaction uncertainty, uncertainty of conditions and as a situation related to organizational structure (Sekban, 2019, p 5).

5.3.7. The Reason to be a Pilot

Table 16 introduces the analysis of the pilots' working conditions perceptions according to the reason to be a pilot variable.

Table 16. Analysis of The PCWP Levels According to The Variable The Reason to be a Pilot

The Reason to be a Pilot	N	$\overline{X}$	S
Passion	303	78.77	16.16
Never-ending excitement	4	75.75	9.03
Satisfactory salary	82	69.79	18.54
Failing to find another job	10	81.30	19.32
Employment Guarantee	4	74.75	9.60
Total	403	76.94	16.67

When the mean scores for working conditions perception levels of pilots according to "the reason to be a pilot" variable were examined, we can see that the pilots who stated that he/she couldn't find another job has the highest mean score ($\overline{X}$ =81.30), and the lowest mean score ($\overline{X}$ =69.79) was for the pilots who were satisfied with their salaries.

The results of one-dimension variance analysis of the pilots' working condition perception levels according to "the reason to be a pilot" variable are displayed in Table 17.

Table 17. Variance Analysis Results of the PCWP Levels According to The Reason to be a Pilot Variable

Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p	Significant difference
Between Groups	5421.086	2	1355.272	4.879	.001**	1-3 ve 3-4
Within Groups	110556.363	398	277.780			
Total	115977.449	402				

Levene test for homogeneity of the variances F= 1.560; sd=4, 398; p=.184 **p<.01

The results of the variance analysis displayed in Table 17 showed that there was a significant F value ($F_{(2-398)}$=4.879, p<.05*) between the pilots' perceptions of their working conditions according to the reason to be pilot.

5.3.8. Length of Service

The analysis of the pilots' working conditions perceptions according to length of service are displayed in Table 18.

Table 18. Analysis of PCWP Levels According to Length of Service Variable

Length of Service	N	$\overline{X}$	S
One year or less	12	86.08	23.04
1-5 years	105	82.24	17.21
6-10 years	63	73.38	16.56
11-15 years	57	73.26	16.99
16-20 years	18	69.33	12.92
21 – 25 years	38	71.44	14.96
25 years and above	110	77.96	15.80
Total	403	76.94	16.99

According to Table 18, the pilots who has worked less than 1 year had the highest mean score ($\overline{X}$ =86.08) for working conditions perception according to "length of service" variable and those with 16-20 year length of service had the lowest mean score ($\overline{X}$ =69.33).

The variance analysis results of the pilots' working condition perception levels according to length of service variable are displayed in Table 19 below.

Table 19. Variance Analysis Results of the PCWP Levels According to Length of Service Variable

Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p	Significant difference

Between Groups	7822.326	6	1303.721	4.773	.000**	1-3, 1 4, 1,5 and 3-4
Within Groups	108155.123	396	273.119			
Total	115977.449	402				

Levene test for homogeneity of the variances F= 1.327; sd=6, 396; p=.244 **p<.01

As we can see from Table 19, the variance analysis done to test whether the means scores for the perception levels of pilots regarding their working conditions differed acording to "length of service" variable revealed a significant F value ($F_{(6-396)}$)=4.773, p<.01**), which shows that the perception scores of the pilots about their working conditions significantly differ according to "length of service" variable. LSD Post-Hoc Multiple Comparison Test was later performed to determine which groups significantly differed.

5.3.9. Type of Flight

The analysis of the pilots' working conditions perceptions according to type of flight are displayed in Table 20.

Table 20. Analysis of the PCWP Levels According to Type of Flight Variable

Type of Flight	N	$\overline{X}$	S
Short-haul flight	21	82.76	20.16
Mid-haul flights	216	79.63	18.13
Long-haul flights	166	72.70	13.91
Total	403	76.94	16.99

When the pilots' mean scores of their perceptions about their working conditions according to "type of flight variable" are examined in Table 20, it is seen that the pilots who fly short distances had the highest mean score ($\overline{X}$ =82.76), and those flying long distances had the lowest mean score ($\overline{X}$ =72.70).

The variance analysis results of the pilots' working condition perception levels according to type of flight variable are displayed in Table 21 below.

Table 21. Variance Analysis Results of the PCWP Levels According to Type of Flight Variable

Source of Variance	Sum of Squares	Sd	Mean of Squares	F	p	Significant difference
Between Groups	5260.329	2	2630.165	9.502	.000**	1-3 and 2-3,
Within Groups	110717.120	400	276.793			
Total	115977,449	402				

Levene test for homogeneity of the variances F= 8.413; sd=2, 400; p=.000 **p<.01

Table 21 presents the results of the variance analysis done in order to test whether pilots' mean scores of their perception levels regarding their working conditions significantly differed according to "type of flight" variable. Ac-

cording to the results, F value was found to be significant ($F_{(2-400)}$)=9.502, which indicates a significant difference between pilots' mean scores of their perception levels regarding their working conditions.

5.3.10. Confidence about Future

The analysis of the pilots' working conditions perceptions according to confidence about future is displayed in Table 22.

Table 22. Independent T-Test Results of PCWP Levels According to Confidence About Future Variable

Confidence about Future	N	$\overline{X}$	S	sd	t	p
I am confident about my future	87	89.64	15.13	401	8.558	.000**
I am not confident about my future	316	73.44	15.77			

Levene test for homogeneity of variances F=.001, p=.973 **p>.01

According to Table 22, there is a significant difference between the participant pilots' perception score for their working conditions according to "confidence about future" variable ($t_{(401)}$=8.558, p<.01). Working conditions perception levels of the pilots who are confident about their future were higher than those of the pilots who do not have confidence about their future. Economic conditions (Bakırcı, 2020, s.57) and organizational, legal, psychological, family-based and environmental factors are considered as the factors that prevent people from being confident about their future.

6. DISCUSSION

According to the findings obtained from the perception levels of airline pilots' working conditions, it is seen that pilots' agreement rates with the perception statements regarding working conditions are above the medium level. This finding indicates that pilots generally perceive the working conditions positively.

The three statements that the participant pilots relatively agree with the most among the working conditions perception statements are as follows: Being a pilot makes me happy (4,43), working hours of pilots are not suitable for a regular life (4,38), I am proud to tell my environment that I work as a pilot (4,39).

The three perception statements that pilots relatively least agree with among the perception statements regarding working conditions are: our managers value pilots (2,40), our managers treat pilots fairly (2,38), our managers provide a working environment where pilots can easily express their opinions (2,62).

It was found that pilots had high levels of agreement with the statements regarding attitude towards the profession and working hours, whereas they had low levels of agreement with the statements under the heading of relations with managers and supervisors.

Apaydın (2019) found that the pilots participating in the study used attitude statements that supported the study in the sense that they agreed with the statements about happiness in doing their profession and the irregularity of working hours at a high rate in both studies, and that they disagreed with the statements about the fairness of the managers, expressing their opinions freely and their relations with the managers. There is a parallelism between the findings obtained in the study on the effects of working conditions on the quality of life of pilots and the findings in this study (Apaydın, 2019, pp.53-66)

Participant pilots generally responded as "disagree" to the working conditions perception statements related to relations with management and supervisors. This finding revealed the negativity of pilots' perceptions of working conditions related to management and supervisors.

In their study, Gümüştekin and Öztemiz (2004) examined the managerial attitudes that may cause the stress of the flying personnel and it is seen that the questions asked to the flying personnel such as my opinion is not taken on issues related to my job, my managers do not provide sufficient training on professional issues, I cannot communicate effectively with my managers and superiors, my manager is not fair to me, and the average of the answers

given is 2.52. The average of the answers given to similar questions in our study was 2,84. This shows that pilots' attitudes towards management and managers were perceived negatively in both studies (Gümüştekin & Öztekin, 2004, p.75).

Participant pilots responded as generally agree and strongly agree to the working conditions perception statements related to attitudes towards the profession. This finding reveals that pilots' attitudes towards the profession are positive.

A similar study to support pilots' attitudes towards the profession was conducted by Anderson and Pucel (2003). It is seen that similar perception statements are used positively.titudes towards the profession are positive. The fact that both male and female pilots had positive attitudes towards the profession in the study showed that there was a parallelism between the two studies (Anderson & Pucel, 2003, p.35).

Participant pilots responded that they generally agreed with the statements regarding the perception of working conditions in terms of career opportunities, pay and working hours. This finding reveals that pilots perceive the working conditions in terms of career opportunities, wages and working hours positively (3.28).

In a similar study conducted by Bönnemann (2019) to support the statements of pilots regarding wages and promotion opportunities (career), the mean of 3.48 regarding wages, career and additional income reveals that the attitudes of pilots regarding career and wages are positive in both studies (Bönnemann, 2019, p.35, 72-81).

One of the important findings of this study is that the participant pilots responded as "agree" to the working conditions perception statements related to work and life balance. From this finding, it can be said that pilots have a perception that the work they carry out makes their lives difficult.

As a matter of fact, in our research, pilots expressed their negative attitudes in their answers that their working hours are not suitable for a regular life (4,38), which affects their family life (3,91), and that they cannot spare enough time for their private lives and families (3,56).

A similar study to support pilots' statements about work-life balance was conducted by Malik, Shamshir, and Khan (2019). In the study, it was found that pilots could not spend enough time with their families due to long working hours, and as a result, they reflected their stress-related problems to home and work because they experienced family conflicts and sleep problems (Malik, Shamshir, & Khan, 2019, pp.998-1017). In both studies, it was observed that pilots approached the statements related to work-life balance with the same negative perceptions. In the analysis of how pilots perceive the working conditions according to gender, it was found that there was no significant difference between the working conditions perception scores of the pilots included according to gender (Female 80,88, Male 76,60).

This shows that the perception that gender equality in society is not a gender-based job, that women can do the piloting profession at least as much as men in all areas of life, and that the perspectives on working conditions among pilots reveal that the gender attitudes of male and female pilots are close to each other (Directorate General of Civil Aviation Symposium, 2018, p.23).

In addition, another important finding is that the majority of the pilots who participated in the research on the "looking to the future with confidence" aspect of the pilots' perceptions of working conditions used the perception expression "I do not look to the future with confidence". Among the reasons for this, economic conditions, organisational, legal, psychological, family and environmental factors are seen as factors that prevent pilots from looking to the future with confidence (Sekban, 2019, pp.16-21).

Among these, during the pandemic period of the perception, which can be an example of economic conditions, THY sent a salary update notification to its employees and asked them to approve it within the legal period. In the communique, it is stated that "since you did not approve the fundamental change arising from valid and force majeure reasons, your employment contract has been terminated with severance and notice pay as of 01.07.2021 in accordance with Article 22 of the Labour Law No. 4857" (https://kronos34.news/tr/thyde-2-bin-500-kokpit-ve-kabin-gorevlisi-isten-cikarildi).This situation shows how justified the pilots participating in the research are in worrying about dismissal.

From the data obtained from the research conducted to determine pilots' perceptions of working conditions, the fact that the perceptions are above the medium level shows that pilots have generally positive perceptions of working conditions.

7. CONCLUSION and SUGESSTIONS

The literature review conducted in line with the objectives of this study revealed that there is a lack of regulations regarding the working conditions of flight personnel (crew), including pilots working in aviation companies, and that there is no legal regulation on this issue. Long hours of flight and insufficient rest clearly denote pilots' challenging working conditions. One of the most important factors affecting pilots' working conditions is employment security. It can be concluded that pilots do not have employment and economic security because they are forced to sign contracts covering only a specific period and aviation companies sometimes may decide to cancel their flights to certain destinations, shrink their operations or lay-off some pilots during economic crisis.

While evaluating the working conditions of the pilots, it was observed that the relations of the pilots with the managers and the problems they experience have an important place. It has been determined that not being able to participate in decisions, favouring some people in the trainings to be taken, not giving importance to merit, limited promotion opportunities, not being appreciated, not being treated fairly among pilots, not providing working environments where they can easily express their opinions, communication problems and negative problems with their teammates also negatively affect the working conditions of pilots.

The study also reported a strong and significant correlation between pilots' working conditions and their perception levels at item level.

The analysis of how pilots perceive their working conditions according to gender variable did not reveal a significant difference between the participant pilots' perceptions of working conditions according to gender variable.

The present study found how the pilots' perceptions about their working conditions differed according to their positions in the companies they work for.

Statement of Research and Publication Ethics

In all processes of the article, the principles of research and publication ethics of the Manisa Celal Bayar Üniversitesi Journal of Social Sciences were followed.

Contribution Rates of Authors to the Article

The whole article was written by Mehmet YÖNT.

Declaration of Interest

The author has no conflict of interest with any person or organization.

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