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The Impact of Leadership Styles on Performance and Mediating Effect of Organizational Culture: A Study in Flight Schools

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Abstract

Nowadays, the aviation sector is growing rapidly and the need for human resources in the airline industry is increasing. In order to meet the increasing pilot need, the number of flight schools and universities that provide pilot training with the support of relevant authorities is also increasing. This increase in the number of student pilots is accompanied by questions about how to ensure the continuity of quality and safety in flight training. In this context, it is very important for the flight schools to evaluate the variables that may affect the student pilot performance and to take the necessary precautions. In our study teacher leadership and organizational culture are assessed as important variables and examined. In aviation literature, there is a very small number of explanatory studies on flight performance and leadership. Additionally, no study has been found on teacher leadership of student pilots. In this context, how leadership styles affect student pilots' performances positively and negatively was investigated in our research. Organizational culture is considered as an important predictor of performance in today's organizations. In this context, it has emerged that studies have been carried out that the organizational culture is an important variable in improving organizational and individual performance. Leadership styles of teacher pilots and organizational culture have been explored in the student pilots' performance process. In this context, our work has included performance, leadership styles and organizational culture. Regarding the methodology part of this study, 151 student pilots in the flight training organizations formed the universe and a survey was conducted, analysed and explained. Considering the effect of dynamic leadership, the present study analysed the impact of leadership and culture on flight performance. It is assumed that the most effective leadership styles can be found within group dynamics consisting of members who have diverse and individual cultural orientations. Individual differences that are caused by cultural norms can be considered as the outcomes of leadership behaviour. It was concluded that flight crew leadership cannot be analysed without considering the culture variable since behaviour is influenced by both individual and environmental factors. Moreover, since the performance outcomes of the crew resource management were evaluated, the cultural attitude of the crew and leader was considered.

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1. Introduction

The present study investigated the impact of leadership and organizational culture on pilots' performance. Based on the research on leadership behaviours of pilots, it was concluded that the organizational culture variable should be considered in the study. Pilot performance is a major factor in aviation because there has been an increase in the number of aviation accidents despite the advanced technology in aviation. Studies have revealed that human factors have been the most common causes of aviation accidents and incidents (Klinec, J. 2005). While analysing the human factor issues, it has been found that personality characteristics have become one of the most important variables. In their research on pilots' personality characteristics, Musson, Sandal and Helmreich (2004) have demonstrated that personality and attitude are related with pilots' unsafe behaviour and acts. Another study on human factors that was carried out on the increase of self-efficacy in pilot training programs has revealed that while training performance and self-esteem are important factors for post-training flight performance, self-efficacy is significant for training performance (Hunter, 2005). As human factors are significant in this context, training programs that are the foundation of flight safety were analysed in the present study. Furthermore, the relationship between the instructor pilot and student pilot and the success of the student pilot was assessed.

It is assumed that the outcomes of the current study will contribute to the development of a “synergetic cockpit” in aviation training organizations and provide support to the crew management resource. In the following part of our study, the literature review on studies on leadership styles in the context of flight crew performance will be presented and the relationship between pilot training programs and leadership styles will be analysed.

2. Theoretical Framework

2.1. *The Relationship between Leadership and Pilot Performance*

There are various definitions of leadership within the literature. According to Scandure and Schriesheim (1994), a leader is a person who exerts influence over group members in order to guide them towards a set goal.

In another study, a leader is defined as a person who guides group members to complete necessary tasks and manage organizations or who takes the initiative to fulfil this duty when the person assigned for this task is absent (Danielson, 2007). There are many modern approaches to leadership that have been developed so far.

Among these different leadership styles, the present study focused on transactional leadership, transformational leadership and laissez-faire leadership.

The transactional leadership style was introduced and developed by Burns (1978) who argues that there is a reciprocal relationship between the leader and the followers. This relationship is based on action-reaction, exchange and benefit-cost (Burns, 1978). Transactional leadership consists of two dimensions: contingent reward and management-by-exception (active) (Goncu, Aycan & Johnson, 2014). Since the transactional leadership style is not based on a modern approach, it is argued to be a traditional leadership style in some sources. While this style is effective to achieve short-term goals, it fails to support the professional and personal development of followers (Ercan, 2010).

Transformational leadership, which is known as a modern version of the transactional leadership style in the literature, is based on two components: idealized influence and inspirational motivation. The most important factor of this leadership style is the high level of moral motivation (Goncu, Aycan & Johnson, 2014). This type of leadership is effective in dynamic contexts where frequent changes occur. Thus, transformational leadership style is considered to be more effective in crisis situations and in unstable and complex businesses. Other factors that contribute to the effectiveness of this leadership style are society and organizational culture (Ercan, 2010).

In the laissez-faire leadership style, the leader allows subordinates to complete their work on their own without any intervention. There are some situations in which this type of leadership seems to be effective and successful. It can be effective when the employees are talented and experienced, have a high level motivation to succeed, are self-disciplined and prioritize team success over personal success (Ercan, 2010).

2.2. The Relationship between Culture and Pilot Performance

Culture is considered to be the most effective one of the environmental factors that impacts the existence and sustainability of organizations (Hofstede, 1994). Culture has various features and sub-dimensions. Trice and Byer (1993, as cited in Sırrı & Gürbüz, 2015) identified six main features of organizational culture. These are collectivism, emotions, history, symbolism, dynamism, and ambiguity. The Hofstede's Cultural Dimensions Theory model, developed by the Dutch psychologist Geert Hofstede as a result of his studies between the years 1967 -1973 is still a valid model. Hofstede identified five main cultural dimensions: power distance, individualism/collectivism, uncertainty avoidance, long-term orientation and masculinity/femininity (Hofstede, 2001). The present study considered two of these cultural dimensions, which are individualism-collectivism and tightness-looseness. Individualism-collectivism, which is one of the most important cultural dimensions, forms the basis for the concept of cooperation in organizations. Generally, individualism-collectivism reflects the degree to which individuals of a society work together to attain shared goals (Bozkurt, 1996).

Individualism-collectivism refers to dual cultural worldviews. In individualistic societies, individuals have loose ties with others and they tend to isolate and withdraw themselves from the others. In contrast, collectivism involves group norms, integrated societies and interpersonal openness and unity. In other words, the community's interests are prioritized over personal and individual interests. The reason why the individualism-collectivism cultural dimension was used in the present study is that individuals' level of individualism-collectivism plays an important role in individuals' performances.

In the context of organizational culture, tightness-looseness is a new dimension. Based on Pelto's (1968) studies, this dimension has become the focus of many studies recently (Gelfand, Nishii & Raver, 2006). The concept of tightness-looseness indicates the importance and power of the norms, rules and restrictions that exist in a society. In other words, it refers to the degree to which individuals of a society adhere to rules and which sanctions are given when the rules are not followed (Gelfand et al., 2006). According to Gelfand et al. (2006), the main differences between tightness and looseness is that tight societies have strong norms and strict rules. Furthermore, the tolerance level for deviant behaviour is low in such societies. In contrast, loose societies have weak norms and rules and deviations from norms are tolerated (Gelfand et al., 2003).

2.3. Performance and Pilot Performance

The concept of performance involves both qualitative and quantitative outcomes. If the obtained outcomes are the data of the organization, they are related to the organizational performance. If they are the data of individuals, they are related to the individual's performance. The present study focused on individual performance. Regarding pilot performance, not only task performance but also contextual performance was considered.

Task performance refers to employees' ability to complete given tasks. It includes the task and job responsibility that distinguishes one job from another and basic behaviours (Jawahar & Carr, 2007). Task performance differs for different jobs and is related to the individual's talent, knowledge and skill (Borman, 2004).

Contextual performance is not included in the job description and is related to the behaviours that contribute to the psychological, social and organizational effectiveness of an organization. Contextual performance is not related to the task itself but to the work environment, social and psychological context. It plays a crucial role in organizations where success depends on the success of the team. However, the purpose of flight training programs is to provide students with flight skills. Since this skill is personal, students' achievements will be evaluated separately. Thus, task performance was important in the present study. While evaluating the students' performances, the task performance determined by the Directorate General of Civil Aviation was considered.

The main focus of this study was on the aviation sector and flight performance because the aviation sector is rapidly growing and flight performance is gaining more importance. Thus, the causes of aviation accidents were investigated

and the statistical researches indicated that human factors, cabin crew communication and other reasons related to these factors are among the most common causes for aviation accidents.

Aiming to reduce the number of aviation accidents, this study investigated how the relationship between leadership styles of the captain and co-pilot in the cockpit affects flight performance and what role culture plays in this relationship.

3. Methodology

This part presents the research model, participants, data collection tools, data analysis methods and explanations regarding statistical techniques.

3.1. Research Model

The effect of leadership styles of flight instructors working at flight training schools in Istanbul, Turkey on flight performance was analysed and the impact of organizational culture on this relationship was investigated. In this context, the relationship between the current situation and variables were identified in the study. In this way, the research model is in line with the “descriptive research” model that defines certain variables and the relationships between the variables.

Descriptive studies aim to reveal the characteristics of variables related to a familiar situation or event. The conceptual framework of the research model that was formed to reveal the relationship between the variables discussed in the previous section is presented below (fig.1).

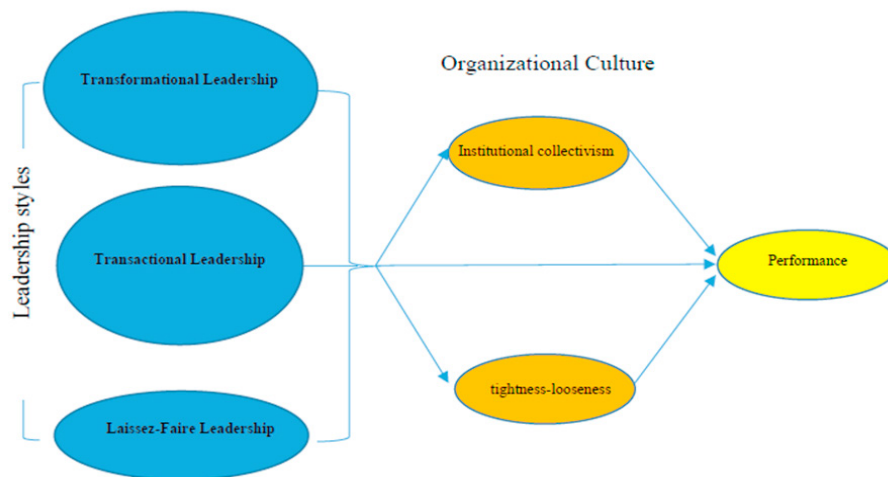


Fig. 1. Framework of the model.

The model basically consisted of three variables. One of the variables was related to the flight performance which was the dependent variable of the model. Student pilots’ flight performance grades were considered as the data. The leadership styles were selected as the first independent variable. The independent variable, leadership styles, was divided into three sub-variables: transformational leadership, transactional leadership and laissez-faire leadership. Organizational culture was selected as the second independent variable and the mediating variable. The organizational culture variable consisted of two sub-dimensions: individualism-collectivism and tightness-looseness. The research hypotheses that were formed are below.

Hypothesis 1: There is a positive relationship between leadership and performance.

Hypothesis 2: There is a positive relationship between organizational culture flight performance.

Hypothesis 3: There is a positive relationship between leadership and organizational culture.

Hypothesis 4: Organizational culture has a mediating effect between leadership and performance.

3.2. Population and Sample

The population of this study consisted of student pilots and flight instructors working at flight training schools in Istanbul, Turkey. The sample of the study consisted of participants selected from various flight training schools. A questionnaire was used to collect data from 151 student pilots studying at 3 flight training schools and their flight instructors. Online and paper-based questionnaires were used to collect data. The statistical analysis indicated a sampling error of 0,05 with a confidence level of 0.95 and the population size was 249. At the time when the research was conducted, the average number of the students at the flight training schools in Istanbul was 235. As it can be seen, the sample of 151 participants represented the population.

Out of 151 participants, 23 (15.3%) were women and 128 (84.7 %) were men. The reason for the unequal representation of women and men in the sample is because of the fact that there is a high number of male pilots in Turkey and worldwide due to social-cultural-economic factors.

The age of 64 participants (42,6%) of the study ranged from 18 to 22 years, 37 participants (24,5%) were between 23 to 26 years of age, 20 participants (13,2%) were between 27 to 31 years of age, 21 participants (13,9%) were between 32 to 36 years old and 9 participants (5,8%) were between 37 to 40 years old.

The findings of the study are statistically analysed in four sections. The first section includes the descriptive statistics. In the second section, the relations between the variables are analysed and the dependent variables of the study and the total variances are presented. In the final section, the mediating variables are analysed.

3.3. Data Collection

In the data analysis part of the study, the data collected from the questionnaire method was analysed. Flight instructors working at flight training schools in Istanbul and student pilots were selected as the population of the study. The survey consisted of three parts. The first part included questions about participants' demographic information. The second part was related to the leadership scale. The third part included questions related to the organizational culture scale. Student pilots' performances were assessed by considering the grades that they received for their flight performance during their training. A 5-point Likert scale was used. The data collected to assess the validity of the research instrument was examined by confirmatory factor analysis (N=151).

3.3.1. Leadership Style Scale

The leadership style scale was developed by Bass and Avolio (1993). The Turkish adaptation of the scale was developed by Canbaş (2004). The scale measures the effectiveness of the three leadership styles: transactional leadership, transformational leadership and laissez-faire leadership.

3.3.1.1. Transformational Leadership

The transformational leadership style dimension consists of five factors or behaviours: Idealized influence (attribute), idealized influence (behaviour), inspirational motivation, intellectual stimulation, individualized consideration. Out of these factors, this study included idealized influence (behaviour) and inspirational motivation and assessed them with 8 items (I explain the most important values and beliefs I have to my subordinates).

3.3.1.2. Transactional Leadership

The transactional leadership style dimension consists of three factors or behaviours: Contingent reward, management-by-exception (active) and management-by-exception (passive). This study focused on contingent reward and management-by-exception (active) and assessed them with 8 items (I state clearly who is responsible for meeting performance goals).

3.3.1.3. Laissez-Faire Leadership

The laissez-faire leadership style dimension was assessed with four items (I am available when needed).

3.3.2. Organizational Culture

Institutional collectivism, presented in the first section, was measured by using four items taken from the research program GLOBE (Global Leadership and Organizational Behaviour Effectiveness) developed by House (2004). The culture dimension tightness-looseness, introduced in the second section, was measured with the six items developed by Gelfand et al. (2011).

3.3.3. Performance Evaluations

Student pilots' performances were evaluated by using the grades that they received during their training from flight instructors. They were assessed on a 5-point Likert scale ranging from 1 (no success) to 5 (very successful).

3.4. Reliability and Validity of Measurement

The survey consisted of three parts. The first part included questions about participants' demographic information. The second part was related to the leadership scale. The third part included questions related to the organizational culture scale. Student pilots' performances were assessed by considering the grades that they received for their flight performance during their training. A 5-point Likert scale was used. The data collected to assess the validity of the research instrument was examined by confirmatory factor analysis (N=151).

3.4.1. The Reliability and Validity Results of the Leadership Style Scale

The leadership style scale was developed by Bass and Avolio (1993). The Turkish adaptation of the scale was developed by Canbaş (2004). The scale measures the effectiveness of the three leadership styles: transactional leadership, transformational leadership and laissez-faire leadership. The leadership style scale was measured for reliability by Cronbach Alpha (α). The results indicated that the scale had an acceptable reliability with a Cronbach's Alpha score of 0,926.

Table-1 presents the sub dimensions of the leadership scale and the numbers for the items used to assess the sub-dimensions.

Table 1. The Sub factors of the Leadership Scale and the Item Numbers for Assessing the Factors

Factor Number	Main Factor	Sub-factors
1	Transformational Leadership	Idealized Influence
		Inspirational Motivation
2	Transactional Leadership	Contingent Reward
		Management-By-Exception (Active)
3	Laissez-Faire Leadership	Laissez-Faire Leadership

Prior to the factor analysis, Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin Test (KMO) were conducted to examine whether the data was suitable for the factor analysis. The Kaiser-Meyer-Olkin Test (KMO) demonstrated a value of 0.875 and Bartlett's Test of Sphericity indicated an acceptable value ($p < 0.05$). In other words, the results showed that the data was suitable for the factor analysis. Furthermore, both tests confirmed that the population size was sufficient and had a normal distribution.

As a result of the factor analysis of the leadership characteristics, five factors were confirmed. The total variance was 74,562 %. Regarding the scale factors, it was found that the factor "laissez-faire leadership" was 7,215%; the factor "inspirational motivation" was 17,196%; the factor "idealized influence" was 13,889%; the factor "contingent reward" was 13,481% and the factor "management-by-exception (active)" was 12,781%. The Kaiser-Meyer-Olkin

(KMO) sampling adequacy was 0,875. The Cronbach Alpha reliability values of the scale dimensions are presented in Table 2.

Table 2. The Cronbach Alpha Reliability Values of the Leadership Style Scale Dimensions

No	Sub-factors	Cronbach Alpha
1	Laissez-Faire Leadership	0,933
2	Inspirational Motivation	0,914
3	Idealized Influence (Behaviour)	0,821
4	Contingent Reward	0,849
5	Management-By-Exception (Active)	0,783

The Cronbach's Alpha results indicated that the dimensions of the leadership style scale had an acceptable reliability: the factor "laissez-faire leadership" was 0,933, the factor "inspirational motivation" was 0,914, the factor "idealized influence" was 0,821, the factor "contingent reward" was 0,849 and the factor "management-by-exception (active)" was 0,783.

3.4.2. The Reliability and Validity Results of the Organizational Culture Dimension

Institutional collectivism, presented in the first section, was measured by using four items taken from the research program GLOBE (Global Leadership and Organizational Behaviour Effectiveness) developed by House (2004). The culture dimension tightness-looseness, introduced in the second section, was measured with the six items developed by Gelfand et al. (2011).

The single factor analysis of both dimensions was confirmed. The Cronbach Alpha value of the dimension institutional collectivism was 0,899 (high reliability) and the one of the dimension tightness-looseness was 0,935 (high reliability).

Table 3. The Descriptive Statistics of the Variables

Variable	Total	Min	Max	Average	ss
Management-By-Exception (Active)	151	1	5	4,1862	,61386
Inspirational Leadership	151	1	5	3,9520	,68051
Tightness-Looseness	151	1	5	3,8967	,67794
Collectivism	151	1	5	3,8818	,68911
Idealized Influence	151	1	5	3,8517	,69821
Laissez-Faire Leadership	151	1	5	3,8024	,86615
Contingent Reward	151	1	5	3,7566	,70235
Performance	151	1	5	3,7409	,75391

When the sub-factors of leadership are analysed, it can be seen that "management-by-exception" had the highest mean score (M=4,18; ss.=0,61) followed by "inspirational leadership" (M.=3,95; ss.=0,68), "idealized influence" (M=3,85; ss.=0,69), "laissez-faire leadership" (M=3,80; ss.=0,86) and "contingent reward" (M=3,75; ss.=0,70). The mean score of the other variables were in the following order (from the highest to the lowest): looseness (M=3,89; ss.=0,67); collectivism (M=3,88; ss.=0,68) and performance (M.=3,74; ss.=0,75). In general, the mean scores of the variables were high.

3.5. Inter-Correlation between Variables

Correlation analysis was performed to investigate the correlation between the dependent-independent variables. The results of the correlation analysis are presented in Table 4.

Furthermore, the item mean scores of the scales were evaluated.

Table 4. Correlation between Variables

Variables	Idealized Influence	Inspirational Leadership	Contingent Rewards	Management-By-Exception	Laissez-Faire Leadership	Collectivism	Looseness	Performance
Idealized Influence	1							
Inspirational Leadership	,457**	1						
Contingent Rewards	,532**	,548**	1					
Management-By-Exception	,423**	,415**	,482**	1				
Laissez-Faire Leadership	,406**	,520**	,452**	,530**	1			
Collectivism	,540**	,597**	,683**	,609**	,578**	1		
Looseness	,565**	,588**	,700**	,598**	,546**	,853**	1	
Performance	,517**	,549**	,621**	,428**	,457**	,687**	,638**	1

*p<0,10 **p<0,05 ***p<0,01

When the correlation between the sub-dimensions are analysed, it can be concluded that the correlation between all leadership dimensions was moderately positive. Furthermore, all leadership dimensions correlated positively with collectivism, looseness and performance. Similarly, there was a positive correlation between collectivism, looseness and performance.

3.6. Results of Regression Analysis

A regression analysis was performed in order to examine the correlation between variables, the explained variance and the mediating roles. The impact of demographic and leadership styles on performance was examined. Then, it was examined whether organizational culture has a mediating role in the relationship between performance and leadership. Demographic characteristics were included in the first stage of the regression analysis and the impact of the independent variables on the dependent variables was revealed. Prior to the regression analysis, it was examined whether multicollinearity was present or not. A normal distribution graph that displays the observed and expected values on a graph and the Kolmogorov-Smirnov normality test were applied to examine if the variables were normally distributed. It was seen that in the probability distribution graph the data values clustered on or around a line and that the Kolmogorov-Smirnov test values were significant at p<0,05. Thus, it can be concluded that all data was normally distributed. Regression analysis was carried out between performance and demographic variables and leadership characteristics. The results of the analysis are presented in Table 5.

Table 5. Multiple Regression Analysis between Variables

Independent Variables	PERFORMANCE
	β
Model 1	
(Constant)	3,414
GENDER	,062
AGE	,071
ΔF	0,757
ΔR^2	0,003
Independent Variables	PERFORMANCE
	β
Model 2	
GENDER	,011
AGE	,096
IDEALIZED INFLUENCE	,187**
INSPIRATIONAL LEADERSHIP	,214**
CONTINGENT REWARD	,343***
MANAGEMENT-BY-EXCEPTION	,056
LAISSEZ-FAIRE LEADERSHIP	,081
ΔF	19,598
ΔR^2	0,477

When the results in the table are analysed, it can be seen that performance as the dependent variable could not predict gender and age which were included as the demographic variable into the model. This is most probably because of the HR policy of the airlines which do not employ pilots over the age of 40 years.

In the second stage, the leadership dimensions “contingent reward” ($\beta=0,343$, $p<0,01$), “inspirational leadership” ($\beta=0,214$, $p<0,05$) and “idealized influence” ($\beta=0,187$, $p<0,05$) were good predictors and the leadership characteristics accounted for 47,7% of total variance on performance.

Regression analysis was conducted between organizational culture and demographic characteristics as well as leadership characteristics. The results of this analysis are reported in Table 6.

Table 6. Results of Regression Analysis Results of Organizational Culture-Leadership

Independent Variables	Collectivism	Tightness-Looseness
	β	β
Model 1		
(Constant)	,076	3,768
GENDER	,26	0,32
AGE	,76	0,42
ΔF	0,530	0,216
ΔR^2	0,06	0,11
Independent Variables	Collectivism	Tightness-Looseness
	β	β
Model 2		
GENDER	,043	-,001
AGE	,055	,068
IDEALIZED INFLUENCE	-,001	,147**
INSPIRATIONAL LEADERSHIP	,081**	,224**
CONTINGENT REWARD	,097***	,348***
MANAGEMENT-BY-EXCEPTION (ACTIVE)	,188**	,217**
LAISSEZ-FAIRE LEADERSHIP	,362**	,107
ΔF	35,276	37,567
ΔR^2	0,627	0,640

* $p < 0,10$ ** $p < 0,05$ *** $p < 0,01$

When Table 6 is analysed, it can be seen that except for the leadership style “idealized influence”, the sub-factors affected collectivism and that they accounted for 62,7% of the total variance significantly ($p < 0,01$).

Regarding “tightness-looseness”, it can be concluded that except for laissez-faire leadership, the sub-dimensions of leadership styles impacted “tightness-looseness” and that they accounted for 64% of the total variance ($p < 0,01$).

Regression analysis was conducted between organizational culture and demographic characteristics as well as performance. The results of this analysis are reported in Table 7.

Table 7. Regression Analysis Results of Organizational Culture-Performance

Independent Variables	PERFORMANCE
	β
Model 1	
(Constant)	3,395
GENDER	0,061
AGE	0,080
ΔF	0,785
ΔR^2	0,003
Independent Variables	PERFORMANCE
	β
Model 2	
GENDER	,046
AGE	,040
COLLECTIVISM	,509***
TIGHTNESS-LOOSENESS	,204**
ΔF	33,188
ΔR^2	0,472

Table 7 indicates that collectivism and tightness-looseness, which are considered as the sub-dimensions of organizational culture, affected performance and that they accounted for 47,2% of the total variance significantly ($p < 0,01$).

3.7. Results of the Mediating Effect

In the classical regression analysis, it was stated that some conditions need to be fulfilled for the evidence of a mediating relationship and what these conditions would be.

Firstly, it was examined whether leadership predicted performance. Then, it was determined whether organizational culture had a mediating effect.

Four conditions for a mediating effect have been identified:

- The independent variable needs to have an effect on the dependent variable (Table-5).
- The independent variable needs to have an effect on the mediating variable (Table-6).
- The mediating variable needs to have an effect on the dependent variable (Table-7).
- When both the mediating variable and the independent variable are included into the regression analysis, the effect of the independent variable on the dependent variable needs to decrease and the mediating variable needs to affect the independent variable significantly (Table-8).

Table 8. Analysis of the Mediating Effect of Organizational Culture

Independent Variables	PERFORMANCE	PERFORMANCE
	β	β
Model 1		
(Constant)	3,767	3,767
GENDER	0,062	0,062
AGE	0,080	0,080
ΔF	0,786	0,786
ΔR^2	-0,003	-0,003
Independent Variables	PERFORMANCE	PERFORMANCE
	β	β
Model 2		
GENDER	-,011	,012
AGE	,099	,088
IDEALIZED INFLUENCE	-	,203**
INSPIRATIONAL LEADERSHIP	,298***	,251**
CONTINGENT REWARD	,459***	,367***
ΔF	30,064	25,960
ΔR^2	0,445	0,461
Independent Variables	PERFORMANCE	PERFORMANCE
	β	β
Model 3		
GENDER	,011	,023
AGE	,064	,074
IDEALIZED INFLUENCE	-	,148**
INSPIRATIONAL LEADERSHIP	,154**	,176**
CONTINGENT REWARD	,259**	,249**
COLLECTIVISM	,411***	-
TIGHTNESS-LOOSENESS	-	,273**
ΔF	32,386	
ΔR^2	0,519	

By analysing the tables, the mediating effect of the sub-dimensions that met the first three conditions was analysed.

In Table-8, the effect of the mediating variable “collectivism” on the relationship between performance and the sub-dimensions “inspirational leadership” and “contingent reward” was tested. It was seen that collectivism decreased the predictive effect of the two leadership styles on the dependent variable performance and that the effect of collectivism continued. This finding indicates that collectivism had a partial mediating effect on the relationship between performance and the leadership styles “inspirational leadership” and “contingent reward”.

In Table-8, the mediating effect of the variable “tightness-looseness” on the relationship between performance and the sub-dimensions “idealized influence”, “inspirational leadership” and “contingent reward” was tested. It was

observed that “tightness-looseness” reduced the predictive effect of the three leadership styles on the dependent variable performance and that the effect of “tightness-looseness” continued. This result shows that “tightness-looseness” had a partial mediating effect on the relationship between performance and the leadership styles “idealized influence”, “inspirational leadership” and “contingent reward”.

4. Conclusion and recommendations

This study investigated how flight instructors’ leadership styles impacted the flight performance of student pilots who attend flight schools in Turkey. Furthermore, the study aimed to examine whether the dimensions of organizational culture, collectivism and tightness-looseness, had an effect on this relationship. In order to achieve this aim, data from 151 student pilots attending flight schools was collected.

First of all, descriptive statistics related to the variables were performed and correlation analysis was implemented for the relationship between the variables and their sub-dimensions. Regression analysis was applied to assess the relationship between the variables. It was examined whether the dimensions of organizational culture had an effect on the dependent and independent variables and whether this effect had a mediating role.

Based on all the analyses and findings, this section will analyse the results based on the variables, answer the research questions and test the introduced hypotheses. Finally, recommendations will be made for the conduct of future studies.

When the correlations of the concept of flight performance and the sub-dimensions of leadership styles and organizational culture were assessed, it was observed that the correlations among the dimensions were positive and significant. It was observed that while the dependent variable performance was not affected by the demographic characteristics, “contingent reward”, “inspirational leadership” and “idealized impact” affected performance significantly.

When the leadership styles affecting performance were analysed, it was seen that flight instructors who assisted their students but expected hard work from them in return, communicated the expected responsibilities to their students, explained what rewards students could receive in return for their success and showed their appreciation when their expectations were met increased students’ flight performance.

Furthermore, it was observed that instructors who were optimistic about the future, gave positive feedback, had a clear vision and gave confidence enhanced their students’ flight performance.

Instructors who could express themselves clearly, communicated their values and beliefs, were target-oriented and ethical were good role models for their students and increased their performance.

As a result, it was concluded that flight instructors’ leadership styles, especially positive ones, had a positive impact on students’ flight performance.

In the regression analysis, the effect of the mediating variable “collectivism” on the relationship between performance and the sub-dimensions “inspirational leadership” and “contingent reward” was tested. It was seen that collectivism decreased the predictive effect of the two leadership styles on the dependent variable performance and that the effect of collectivism continued. Furthermore, it was observed that collectivism had a partial mediating effect on the relationship between performance and the leadership styles “inspirational leadership” and “contingent reward”. In the regression analysis, the mediating effect of the variable “tightness-looseness” on the relationship between performance and the sub-dimensions “idealized influence”, “inspirational leadership” and “contingent reward” was tested. It was observed that “tightness-looseness” reduced the predictive effect of the three leadership styles on the dependent variable performance and that the effect of “tightness-looseness” continued. The results also indicated that “tightness-looseness” had a partial mediating effect on the relationship between performance and the leadership styles “idealized influence”, “inspirational leadership” and “contingent reward”.

The results of the mediation analysis demonstrated that the leadership styles of flight instructors had a strong influence on students’ flight performance. However, the organizational culture established at flight schools had a more profound effect on performance.

Based on the findings, it has been concluded that flight schools can have a positive impact on student pilots’ flight performance and enhance their loyalty towards the schools by establishing an innovative organizational structure, being open to innovations and demonstrating consistent behaviour towards their students. Thus, flight schools can develop standard application procedures and treat each student consistently. This consistency will establish a sense of

justice and fairness and create the impression that each student is treated fairly. Furthermore, this consistency will make students feel proud of their school, adhere to the rules and it will increase students' loyalty. In addition to loyalty, it will lead to success and higher performance. If flight schools provide financial and moral support for students experiencing personal and family problems, they can affect students' performance positively. If social norms are communicated clearly to students, students' performance will increase.

As a result, positive leader behaviours and social norms and rules of flight schools have a positive impact on students' flight performance. If flight schools provide these conditions, they will enhance students' flight performance.

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