

# **PARTICIPATIVE MANAGEMENT IN CIVIL AVIATION: DIRECTORATE GENERAL OF CIVIL AVIATION (DGCA) IMPLEMENTATION<sup>1</sup>**

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## **Introduction**

To provide the promised advantages from an existing civil aviation management system, the system must be properly managed by managers and the institution must build a strong culture of safety.

SMS (Safety Management System) has an indisputable importance in civil aviation activities. It is thought that participatory management approach together with SMS will contribute to increasing safety in civil aviation activities in Turkey. It is considered that the safety management system in civil aviation organizations can successfully manage safety in the institution in line with the desired and committed safety policies, if the

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participatory management approach is adopted by the corporate senior management. For the reasons mentioned above, it is recommended that all systems, processes and applications be designed with the understanding of "participatory management" in the new model proposed within the scope of this research.

“Positive Safety Culture”, which is the second important component of the safety management system applied in today's civil aviation activities, is a managerial understanding based on the principle that everyone should consciously and voluntarily perform all procedures on safety, suggesting that employees can think and implement all measures, rules and practices related to safety on their own.

The very last step of safety management in today's aviation firms is that knowledge that is based on organization, people, technology, the style of management and the culture in safety management. For this reason, in aviation institutions, it is extremely important that employees adopt a positive safety culture, achieve the main goals and objectives of the maintained safety management system, and increase safety efficiency. It is also very important to ensure the voluntary participation of employees towards the practices determined through SMS and to develop expected safety-oriented behaviors.

This day, the major goal is to produce a safe, secure, comfortable, high quality and fast air transportation service, and to minimize the risks in terms of life and property safety of first passengers and then all employees. For this reason, it is necessary to develop a positive safety culture in aviation organizations first. As a result, the formation and development of a positive safety culture in civil aviation will only be possible with a “pro-active” safety management system that enables employees to participate in safety practices that are consciously and voluntarily and in managerial decisions taken in this regard.

When we look at the SMS models and safety practices applied in the world and developed by ICAO, it is seen that even the smallest safety application is easily planned at the desk, both with written procedures and technical applications; however, when it comes to the implementation phase, it is seen that the planned safety practices are not given enough importance. In fact, in some aviation organizations where a positive safety culture has not yet developed, it can be seen from time to time that many safety procedures are carried out just because they are a necessity or as a formality.

## Literature

When we consider the domestic and foreign literature, there is no previous research or a designed managerial model on developing a "theoretical model that prioritizes employee participation in management and positive safety culture in aviation organizations". In the literature, there are studies on aviation management, organizational culture and structures, as well as more specifically on topics such as leadership, management and teamwork. In addition to academic studies on safety culture and safety management in aviation, there are models that are also used in the sector. With this study, it has been tried to develop a different perspective in the literature.

The organizational and management structure of airports must be closely investigated so that they can better know the production processes of the services offered to 21st century citizens at airports, develop a management safety system that prioritizes a positive safety culture for employees and above all attain universal quality standards in the present series of services. (Yağmur, 2010). Airports are highly dynamic, innovative and strategically competitive service delivery areas that reflect the entire economy. In addition, due to this dynamic feature of airports, it is difficult to achieve a stable balance in management and production processes (Barry, 2001; Dursun, 2020).

In addition to competitive service with features deemed an airport with well-structured organizational structures and units, a good management model is able to develop employees who have embraced a positive safety culture (Sumwalt, 2007). The International Civil Aviation Organization (ICAO) has divided the airports into 6 categories according to their sizes, and each category is represented by a reference code and made a grouping consisting of numeric and alphabetic letters. According to this grouping, "airport code numbers (1-4) indicate the length of the aircraft runway constructed or existing at the airports. It is possible to say that the airports, which are named by ICAO with the code letters (A-F), show the wing width of the planes, which are mostly used in the sector (Wikipedia, 2016).

On the other hand, he names the services produced at airports as operational services, ground services, aviation services and other non-aviation commercial services (Kaya, 2002; Wells and Young, 2004; Yılmaz, 2011). In addition, basic airport services are often provided by the relevant government units or directly by the airport authority due to their importance in terms of safety (Öztürk and Afacan, 2011).

The International Civil Aviation Organization (ICAO), established by the states party to the treaty foreseen in the said convention, is to ensure the safe and orderly growth of international civil aviation; was established to meet the needs of airlines, airports and the international community for safe, regular, efficient and economical air transport for civil aviation (ICAO, 2016; ICAO, 2013; ICAO, 2009).

*According to ICAO Annex 19, all the activities of the SMS, which should be at an airport, should be in accordance with a predetermined plan, should be implemented systematically and consistently within the organization, and the safety risks of the consequences of the hazards should be constantly developed and operated with a long-term plan ( Root, 2014). In addition, the implemented SMS activities and, accordingly, the organization's safety management knowledge should be accessible to everyone and formally recorded in official documents (ICAO, 2013).*

In the aviation industry, it is vital to support safety processes with technology and to manage them systematically (Karimbocus, 2009). Based on this necessity, safety management systems and practices, which have become widespread both at the international and national level, have developed day by day and have become more effective in maintaining aviation activities in a safe and secure manner. One of the concepts used close to the concept of safety in aviation is the concept of "incident". The concept of incident means encountering risks that are closer to the accident (Wright & Schaaf, 2004). Unsafe events according to ICAO; They are events that occur related to the activities of an aircraft and affect a safe flight operation (Öktem, 2007).

In the frame of the research, the employees of the Ministry of Transport and Infrastructure Directorate General of Civil Aviation (DGCA), the safety management system and applications in the public sector aviation services, the safety-related behaviors of all employees who provide services in this system and the issues that constitute participatory management were examined. In this study, the following hypotheses were developed by the researchers.

### **Research Hypotheses**

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#### **Participative management approach (participation)**

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Public sector civil aviation employees with different working hours have similar views on participative management.

Public sector civil aviation employees of different genders have similar views on participative management.

Public sector civil aviation employees with different education

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3. levels have similar views on participative management approach.

4. Public sector civil aviation employees working in managerial positions have similar views on participative management.

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### **Positive safety culture**

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1. Public sector civil aviation employees with different working hours have similar views on positive safety culture.

2. Public sector civil aviation employees of different genders have similar views on positive safety culture.

3. Public sector civil aviation employees with different education levels have similar views on positive safety culture.

4. Public sector civil aviation employees working in managerial positions have similar views on positive safety culture.

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### **Safety management system**

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1. Public sector civil aviation employees with different working hours have similar views on SMS.

2. Public sector civil aviation employees of different genders have similar views on SMS.

3. Public sector civil aviation employees with different education levels have similar views on the SMS.

4. Public sector civil aviation employees working in managerial positions have similar views on SMS.

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### **Method**

Quantitative research method was used in this study. Data were collected through a survey conducted within the scope of quantitative research. The population of the research consists of personnel working at the Ministry of Transport and Infrastructure, Directorate General of Civil Aviation (DGCA). 105 people working in all units in the Directorate General of Civil Aviation (DGCA), including Head of Department, Branch Manager, Coordinator, Expert, Assistant Specialist, Pilot, Engineer, Flight Technician, Data Preparation Control Operator and Officer status, were

included in the study using the easy sampling method. Although 315 personnel work in the universe in question, 105 employees who were actually working at the time of the survey were asked to fill out the questionnaire. Approximately 30% of the sample population has been reached.

### Demographical findings

First of all, in order to determine the personal and professional characteristics of the sample participating in the survey, the answers given by the participants to the questions in the first part of the questionnaire were analyzed. The findings obtained as a result of the analysis are shown in the table below with the number of people:

**Table 1.** *Demographical Characteristics of Participants*

/N	Demographical Characteristics	Choices	Number of Person
	Gender	Male	81
		Female	19
	Marital Status	Single	20
		Married	76
		Other	4
		High School	6
	Education Status	Associate Degree	10
		Bachelor	59
		Master Degree	21
		Doctorate	4
	Age	18-25	1
		26-35	42
		36-50	37
		51 years old and over	20
	Total working time within the scope of civil aviation activities	1 month- 1 year	1
		2-4 years	18
		5-10 years	43
		11 years and above	38
	Duty	I am not a manager	81
		I am a manager	19

It may be said that majority of the staff at the Directorate General of Civil Aviation (DGCA) are middle aged members. According to the determined age group, it can be said that the employees participating in the research can make meaningful evaluations about the cultural structure of the institution and its safety practices.

The respondents can be stated to be mainly university graduates. Given the need for undergraduate education for workers who work in the flight safety, navigation, management and other technical divisions of the institution, the high-school and associate-level (vocational-school) workers often work as civil servants. Generally, a high level of education can be welcomed, but it should not be forgotten that the issue should be approached with effective strategies in order to adopt a positive safety culture and participation in management practices to such highly educated personnel.

The poll points out that 43 percent of the 100 people who work at the Directorate General of Civil Aviation (DGCA) work for over 5 years and so know thoroughly the institution's procedures and procedures for producing public services. According to the findings, it has been understood that the participants are in a position to provide accurate guiding information about the aviation sector service production processes and applications and SMS applications in order to reach reliable results in sample selection.

### **Hypothesis tests**

Firstly: the replies supplied to each declaration with options "strongly disagree disagree, undecided, agree, strongly agree" are posted for the measuring of "participation," "SMS" and "positive security culture." The survey was recorded with a database of questions. Due to the existence of variables with a sample size of less than 30 during the hypothesis testing phase, non-parametric tests were determined as the most appropriate test technique. Among the non-parametric tests, the Kruskal Wallis and Mann Whitney U tests, which are used for testing independent samples, were used to test the relevant hypothesis.

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### **Participative management approach, positive safety culture, safety management system**

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Public sector civil aviation employees with different working hours have similar views on participatory management, positive safety culture, and safety management system.

Public sector civil aviation employees of different genders have similar views on participatory management, positive safety culture,

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and safety management system.

3. Public sector civil aviation employees with different education levels have similar views on participatory management, positive safety culture, and safety management system.

4. Public sector civil aviation employees working in managerial positions have similar views on participatory management, positive safety culture, and safety management system.

**H<sub>1</sub>:** Public sector civil aviation employees with different working hours have similar opinions about “x / y / z”.

x: Participation

y: SMS

<b>Ranks</b>			
<b>x, y, z</b>	<b>How many years have you worked in total within the scope of civil aviation activities?</b>	<b>N</b>	<b>Mean Rank</b>
Participation	< 5 years	19	48,87
	5-10 years	43	44,19
	11 yıl ve üstü	38	58,46
	<b>Total</b>	100	
SMS	< 5 years	19	48,13
	5-10 years	43	49,95
	11 years and above	38	52,30
	<b>Total</b>	100	
Positive Safety Culture	< 5 years	19	45,66
	5-10 years	43	51,16
	11 years and above	38	52,17
	<b>Total</b>	100	
<b>Test Statistics<sup>a,b</sup></b>			

	<b>Participation</b>	<b>SMS</b>	<b>Positive Culture</b>	<b>Safety</b>
Chi-Square	4,959	,289	,678	
Df	2	2	2	
Asymp. Sig.	,084	,866	,713	

*a. Kruskal Wallis Test*



*b. Grouping Variable: 5. How many years have you worked in total within the scope of civil aviation activities?*

z: Positive Safety Culture

**Result for H<sub>1</sub>:**

**Participation:**  $p=0,084$ ; **SMS:**  $p=0,866$  and **Positive Safety Culture:**  $p=0,713$

Since the above values are  $p>0.05$ , we can confirm the hypothesis at the 0.05 significance level.

In this case, public sector civil aviation employees with different working hours; their views on participation, positive safety culture and SMS are similar.

**H<sub>2</sub>:** Public sector civil aviation employees of different genders have similar views on “x / y / z”.

x: Participation

y: SMS

z: Positive Safety Culture

<b>Ranks</b>				
<b>x, y, z</b>	<b>Gender</b>	<b>N</b>	<b>Mean Rank</b>	<b>Sum of Ranks</b>
Participation	Male	81	51,12	4141,00
	Female	19	47,84	909,00
	<b>Total</b>	100		
SMS	Male	81	50,95	4127,00
	Female	19	48,58	923,00
	<b>Total</b>	100		
Positive Safety Culture	Male	81	51,95	4208,00
	Female	19	44,32	842,00
	<b>Total</b>	100		

**Test Statistics<sup>a</sup>**

	<b>Participation</b>	<b>SMS</b>	<b>Positive Safety Culture</b>
Mann-Whitney U	719,000	733,000	652,000
Wilcoxon W	909,000	923,000	842,000
Z	-,444	-,321	-1,032
Asymp. Sig. (2-tailed)	,657	,748	,302

*a. Grouping Variable: Gender*

**Result for H<sub>2</sub>:**

**Participation:**  $p=0,657$ ; **SMS:** 0,748 and **Positive Safety Management:**  $p=0,302$

Since the above values are  $p>0.05$ , we can confirm the hypothesis at the 0.05 significance level.

In this case, public sector civil aviation employees of different genders; their views on participation, positive safety culture and SMS are similar.

**H<sub>3</sub>:** Public sector civil aviation employees with different education levels have similar views on “x / y / z”.

x: Participation

y: SMS

z: Positive Safety Culture

<b>Ranks</b>			
<b>x, y, z</b>	<b>Education Status</b>	<b>N</b>	<b>Mean Rank</b>
Participation	Associate Degree	16	55,09
	Bachelor	59	50,75
	Master Degree	25	46,96
	<b>Total</b>	100	
SMS	Associate Degree	16	47,66
	Bachelor	59	51,60
	Master Degree	25	49,72
	<b>Total</b>	100	
Positive Safety Culture	Associate Degree	16	45,16
	Bachelor	59	50,72
	Master Degree	25	53,40
	<b>Total</b>	100	

<b>Test Statistics<sup>a,b</sup></b>				
	Participation	SMS	Positive Culture	Safety
Chi-Square	,778	,257	,796	
Df	2	2	2	
Asymp. Sig.	,678	,879	,672	
<i>a. Kruskal Wallis Test</i>				
<i>b. Grouping Variable: 3. Education Status</i>				

**Result for H<sub>3</sub>:**

**Participation:  $p=0,678$ ; SMS:  $0,879$  and Positive Safety Culture  $p=0,672$**

Since the above values are  $p>0.05$ , we can confirm the hypothesis at the 0.05 significance level.

In this case, public sector civil aviation employees with different education levels; their views on participation, positive safety culture and SMS are similar.

**H<sub>4</sub>:** Public sector civil aviation employees working in managerial positions have similar views on “x / y / z”.

x: Participation

y: SMS

z: Positive Safety Culture

<b>Ranks</b>				
<b>x, y, z</b>	<b>Are you a manager at your workplace?</b>	<b>N</b>	<b>Mean Rank</b>	<b>Sum of Ranks</b>
Participation	I am not a manager	81	46,54	3769,50
	I am a manager	19	67,39	1280,50
	<b>Total</b>	100		
SMS	I am not a manager	81	48,92	3962,50
	I am a manager	19	57,24	1087,50
	<b>Total</b>	100		
Positive Safety Culture	I am not a manager	81	50,72	4108,50
	I am a manager	19	49,55	941,50
	<b>Total</b>	100		

<b>Test Statistics<sup>a</sup></b>				
	<b>Participation</b>	<b>SMS</b>	<b>Positive Culture</b>	<b>Safety</b>
Mann-Whitney U	448,500	641,500	751,500	
Wilcoxon W	3769,500	3962,500	941,500	
Z	-2,821	-1,125	-,158	
Asymp. Sig. (2-tailed)	,005	,261	,874	

*a. Grouping Variable: Are you a manager at your workplace?*

**Result for H<sub>4</sub>:**

**Participation:  $p=0,05$ ; SMS:  $0,261$  and Positive Safety Culture:  $p=0.874$**

Since the p value of SMS and Positive Safety Culture is  $>0.05$ , we can confirm the hypothesis at the 0.05 significance level. Since the p value for participation is not  $>0.05$ , the hypothesis is rejected.

In this case, civil aviation employees working in managerial positions; While their views on SMS and positive safety culture are similar, their views on participation are not.

When the mean values (mean rank) of the answers given to the statements are examined, it can be said that those who work in managerial positions give more positive responses to the dimension of participation than those who are not managers.

**Table 7.9. Test Results of Research Hypotheses**

<b>Participative management approach (participation)</b>		
1.	Public sector civil aviation employees with different working hours have similar views on participative management.	<i>Acceptance</i>
2.	Public sector civil aviation employees of different genders have similar views on participative management.	<i>Acceptance</i>
3.	Public sector civil aviation employees with different education levels have similar views on participative management approach.	<i>Acceptance</i>
4.	Public sector civil aviation employees working in managerial positions have similar views on participative management.	<i>Rejection</i>
<b>Positive safety culture</b>		
1.	Public sector civil aviation employees with different working hours have similar views on positive safety culture.	<i>Acceptance</i>
2.	Public sector civil aviation employees of different genders have similar views on positive safety culture.	<i>Acceptance</i>
3.	Public sector civil aviation employees with different education levels have similar views on	<i>Acceptance</i>

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positive safety culture.

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| 4. | Public sector civil aviation employees working in managerial positions have similar views on positive safety culture. | <i>Acceptance</i> |
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### **Safety management system**

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|----|--|-------------------|
| 1. | Public sector civil aviation employees with different working hours have similar opinions about SMS. | <i>Acceptance</i> |
| 2. | Public sector civil aviation employees of different genders have similar views on SMS.               | <i>Acceptance</i> |
| 3. | Public sector civil aviation employees with different education levels have similar views on SMS.    | <i>Acceptance</i> |
| 4. | Public sector civil aviation employees working in managerial positions have similar views on SMS.    | <i>Acceptance</i> |
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### **The Effect of Positive Safety Culture on the Safety Management System**

Research showed that a good culture of safety has a direct and beneficial impact on the management of SMS, on the structure of SMS organizations, the behavior of employees of the SMS and on SMS in the Directorate General of Civil Aviation (DGCA). In this direction, as the positive safety culture shaped according to the organizational attitudes, behaviors and beliefs of the employees and managers develops, SMS applications and processes in the public sector aviation institutions will be positively affected and more effective safety management will be achieved.

After the research, it was understood that positive safety culture most strongly affects SMS employee behaviors among the sub-dimensions of SMS, followed by SMS management processes and SMS organizational structure, respectively. According to the results, it can be said that the positive contribution of the positive safety culture on the attitudes and behaviors of the employees towards safety is higher.

As a result of the research, it has been seen that the effectiveness of SMS in the organization will increase as employees increase their behaviors in accordance with the positive safety culture, such as

immediately reporting the errors and violations they encounter, with the awareness of what are the safety errors and violations within the scope of SMS.

It is also possible to say that the ability of employees to think spontaneously and easily about the measures to increase safety in the unit they are affiliated with and to automatically implement the measures to increase safety will pave the way for both the development of a positive safety culture in the organization and the effectiveness and success of SMS.

Actually, the vital priority of those working in the aviation industry is to ensure safety. In this respect, it is very important for employees in all organizational processes to adapt quickly to innovations to increase safety in the institution, to develop creative ideas and applications in this direction and most importantly, to constantly evaluate the effects of their behavior in the workplace on SMS processes and applications.

Within the scope of SMS, all risks and hazards in the institution are pre-defined, all SMS rules and standards are followed in all organizational processes, and the performance of employees' compliance with SMS rules and regulations will be measured according to realistic criteria, only with the development of a positive safety culture in the institution.

In addition, establishing appropriate channels for controlled SMS organizational structure at the institution will only take impact via the building of a strong safety culture inside the institution by providing suitable organizational resources and feedback on risks and breaches to safety. Considering that although most of them seem to depend on technology, the importance of culture-oriented approaches to safety for the success of the SMS will be better understood when it is considered that the organizational requirements of the type listed will develop directly with the behavior of the employees in accordance with the positive safety culture.

### **The Impact of Participatory Management on the Safety Management System**

In the context of SMS management processes, the SMS structure and employee behaviors and the overall SMS, the participative management method has been tested. This research has shown that understanding and practices of participation management make a good contribution to the SMS management process, the organization's structure of SMS, SMS employee behaviors, and SMS in general. It has been understood from the findings obtained as a result of the research that participatory management

practices affect SMS employee behaviors in the strongest way. In addition, when we look at which of the positive safety culture and participatory

management approach has a stronger effect on the SMS; As a result of this research, it has been understood that a positive safety culture contributes to SMS processes and practices more positively than participatory management.

Depending on the findings acquired as a result of the research, it can be said that the existence of a democratic management approach regarding safety in the public sector aviation institutions and organizations, the ability of employees at all levels to easily report their safety suggestions to the management, and the immediate measures to increase safety by the management according to the recommendations, affect the effectiveness of the SMS managed in the institution will make important contributions.

Participative management practices suggesting the establishment of effective communication between safety employees and managers in public sector aviation institutions and organizations, the adoption of the corporate vision for increasing safety by employees, the fair and voluntary sharing of responsibilities for ensuring and increasing safety among employees at all levels have a positive effect on the success of SMS management. will contribute.

Being sure from the participation of all employees in the process in determining the safety decisions, plans and practices suggested by the participatory management, encouraging safety practices in the institution by the managers at all times, and frequently auditing all SMS practices by the managers and the employees themselves will provide important gains in terms of SMS effectiveness. In particular, the widespread use of these and similar practices of participatory management when determining SMS safety policies and targets, planning responsible/responsible human resources, sharing corporate information about safety among employees, and determining the content of safety training will contribute to the success of SMS more.

Hence, the SMS managed in the institution will be able to eliminate all safety hazards and risks, and employees will become more willing, resourceful and courageous in safety reporting. Thanks to the participatory management, employees will try to improve themselves in safety, on the one hand, and on the other hand, they will always exhibit behaviors and attitudes in accordance with all safety rules, practices and procedures aimed at improving safety management.

### **The Effect of Participative Management on a Positive Safety Culture**

It was attempted to establish if participatory management approaches had a good impact on the safety culture and this research recognized that the knowledge and practices of participatory management help to the establishment of a good security culture in the aviation organizations.

If safety reports are constantly evaluated in public sector institutions and organizations and these reports are used only to establish safety, not to punish someone, it means that a positive safety culture has developed in that institution. As a result of this research, it has been understood that in order to achieve a safety culture in the style described, a management approach suitable for the participatory management style should be dominant in safety management. Because in institutions managed with a participatory management approach, full participation of employees in safety management is allowed, continuous voluntary participation of employees in all safety practices is supported, and employees are employed only in tasks appropriate to their skills. As a result of this research, it has been determined that the above-mentioned practices also allow the development of a positive safety culture in the institution.

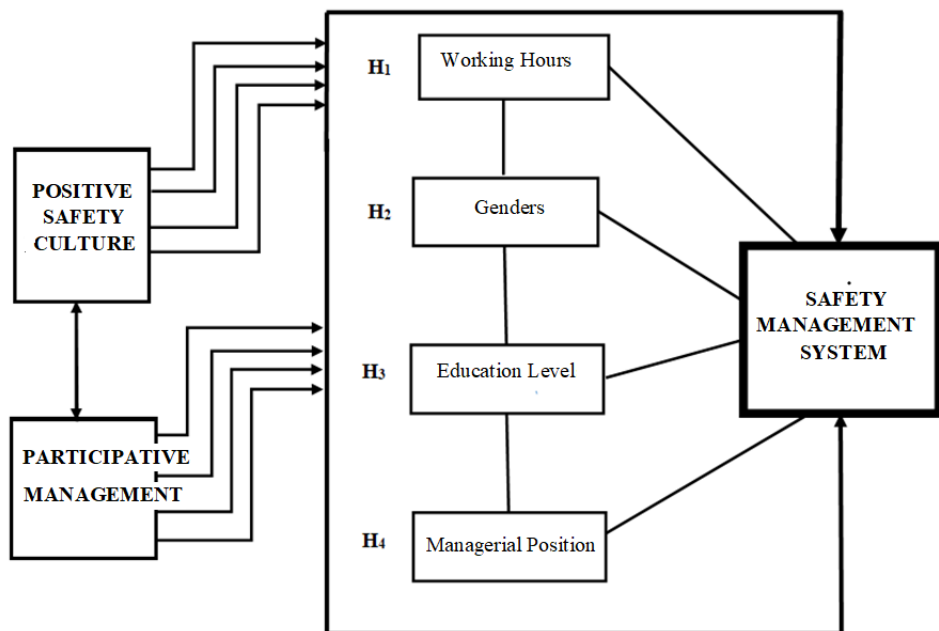
Again, as a result of the research, it was seen that the establishment of trust and respect between the safety employees and the management in the public sector aviation institutions and organizations, the aim of increasing the continuous motivation of the employees, the determination of the safety policy of the institution with a participatory understanding, and all of these, the managerial decisions related to safety in the institution are a process in which employees at all levels participate. Mechanism is of great significance for the development of a positive safety culture in the institution.

Eventually, after all, it has been understood that when participatory management practices are not frequently included in the institution, the “accusation culture”, which is also known as a negative safety culture, will begin to develop instead of a positive safety culture. As a result of the research, it has been understood as a result of the research that events such as polarizations between employees and managers, and efforts to immediately cover up situations that endanger safety with favoritism, especially in a negative situation in the institution, will often be seen in organizations where participatory management approach is not dominant.



### The New Management Model Proposed As a Result of the Research

One of the prioritized results of the research, to be used in public sector civil aviation organizations in particular, and in institutions and organizations in the aviation sector in general; is to propose a new proactive management model that prioritizes a positive safety culture and participatory management approach.



The steps for the establishment and operation of the new management model proposed as a result of the research can be briefly summarized as follows:

Participative management, positive safety culture and a pro-active security strategy are the major building components of the suggested new management paradigm. As a result of this research there has now been valuable proof of the good influence on security management in aviation businesses in today's SMS management model, which is formed by practicalities relevant to these understandings.

While determining the purpose, target and plan of the implementation of the proposed new model, participation and culture orientation should be taken as a basis. In particular, it should be ensured that employees at all levels are involved in decision-making mechanisms in determining how safety requirements will be fulfilled in the organization, how they will be integrated into the organization's work activities, and key responsibilities for ensuring safety.

The suggested study model should have specific blueprints, allowing the present state of all safety management procedures inside the institution to be determined. In addition, these plans should be based on the participation of employees at all levels, the required SMS requirements should be shaped not only to meet the expectations of regulatory and supervisory international civil aviation organizations such as ICAO, EUROCONTROL, EASA, but also to take into account the expectations and suggestions of employees.

As a result of this research, the opinions and suggestions of employees will be included in the context of the model proposed as a result of the research while determining the safety accountability responsibilities of the system and application management, and those in charge of an effective SMS process in the organization will be included.

In the selection of the staff scheduled to engage in training and certification schemes, a sub-systems will be set up to accept the suggested new model by international authorities, in which workers' comments, proposals and views, their qualities and credentials, shall be assessed.

In the model suggested as a result of the research, it is envisaged that an evaluation will be made by taking the opinions of the employees in order to determine whether all physical and human resources of the institution are capable of meeting the requirements stipulated by the international authorities in terms of establishing an SMS process with increased efficiency and productivity.

In the development of the implementation plan within the scope of the proposed model, it is recommended to collect the opinions and suggestions of the employees based on their operational experience and knowledge, and to document the safety policy and objectives of the institution in the light of this information. This activity, which is proposed within the scope of the SMS process, which has increased its effectiveness and efficiency, will be valid for the development of formal / informal safety communication in the institution and the establishment of an effective internal communication network.

In order to enable pro-active oriented safety management, it is foreseen that the proposed model will be established in a way that will cover the threats and dangers that are likely to arise in the future; rather than eliminating the current safety errors and violations. In the proposed model, risk, threat and danger analyzes will be made focused on "near miss" events, not focused on errors and violations, as well as intensifying the steps to develop positive safety culture behaviors of employees in the proposed model. In addition, it is recommended to establish a voluntary and informal reporting subsystem, which is enriched and strengthened with the participation of employees in the detection of "near miss" events.

In the context of the proposed model, it is planned to use the reporting system within the period and content determined with the direct participation of the employees in order to eliminate the safety risks, threats and dangers that are included in the safety implementation plan and that can be described as reactive. In such reactive safety practices, in-service training is recommended according to the demands and expectations of the participants. Similarly, the documentation prepared for the "safety risk management" in the model is expected to be determined through the meetings of the Departments with the participation of the employees.

In the frame of the proposed model, it is recommended that all employees make arrangements specific to their responsibilities and duties in structuring the future safety management process. In this sense, it is planned to share all kinds of safety information and data required for SMS management with increased effectiveness and efficiency, after collecting them through methods suitable for participatory management approach. In this context, processes such as information sharing, storage, classification and storage for effective safety will be structured with a participatory approach.

In the proposed model, the information management environment, effective information management behaviors and information management processes will be defined in advance in the processes of transforming all kinds of safety-related data into information and then into information, and all the processes will be taught through training. Thus, it is expected that both a safety culture and an advanced technology-oriented approach will be developed in the management of safety-related information, in the analysis and sharing of risks.

In the proposed new model, while creating the "safety assurance" of the institution, all periodic monitoring, feedback and continuous correction

actions, especially safety performance criteria, will be determined in line with the thoughts of employees at all levels within the framework of participatory management approach.

At the end of these processes to be carried out through unit representatives, safety information management and analytical processes, safe operational processes over time, and change times in the operational environment will also be determined according to employee ideas.

In the suggested new model, attention will be paid to ensure that the safety performance indicators, which are planned to be designed to cover all the views and activities of the employees, will continuously improve the safety performance targeted by the model. In addition, it is planned to provide not only participatory management practices, but also in-service trainings that will develop a positive safety culture for the institution and establishing a communication network.

As a result of this research, in the proposed model; The gains that emerge as a result of participatory management and positive safety culture-oriented approaches, more precisely, whether this practice is successful or not, will be measured by focusing on both outputs and processes. It is because only a small part of the contributions of participatory management and positive safety culture to SMS processes and practices can be identified based on results (eg reduction of disruptions, delays, complaints, etc.).

Besides, the influence of this model on the institution's organizational environment, staff performance and task motivation, the quality of work life, and similar factors, as safety performance is measured with a focus both on outcomes and processes in the proposed new model. It is assumed that both SMS and aviation services process production applications and personnel safety and performance are favorably influenced.

### **Disclosure statement**

No potential conflict of interest was reported by the authors.

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## XÜLASƏ

### **Mülki Aviasiyada iştirakçı idarəetmə: Mülki Aviasiya Baş Müdirliyinin (MABI) tətbiqi**

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Bu tədqiqatın əsas məqsədi Türkiyədə, xüsusən də mülki aviasiya ictimai sektoru təşkilatlarında yaxşı mülki aviasiya təhlükəsizliyi mədəniyyətini təşviq etmək üçün iştirakçı idarəetmə metodunu nəzərə alaraq model təklifi təqdim etməkdir.

Bu araşdırmada “təhlükəsizliyin idarə edilməsi ilə bağlı anlayışlar, təhlükəsizlik düşüncəsinin təkamülünün son nöqtəsini təmsil edən “müsbət təhlükəsizlik mədəniyyəti” və post-modern dövrün idarəetmə anlayışının əksi olaraq ortaya çıxan “iştirakçı idarəetmə” nəzəri səviyyədə araşdırılıb.

Türkiyə Nəqliyyat və İnfrastruktur Nazirliyinin Mülki Aviasiya Baş Müdirliyinin əməkdaşları tərəfindən 105 nəfərin iştirakı ilə sorğu tətbiqi həyata keçirilmişdir.

***Açar sözlər:** Mülki Aviasiya, İştirakçı İdarəetmə, Müsbət Təhlükəsizlik Mədəniyyəti, Risklərin İdarə Edilməsi*

## РЕЗЮМЕ

### **Совместное управление в гражданской авиации: применение Главного Управления Гражданской Авиации (ГУГИ)**

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Основная цель этого исследования - представить модельное предложение с учетом метода совместного управления для продвижения хорошей культуры безопасности гражданской авиации в Турции, особенно в организациях государственного сектора гражданской авиации. В этом исследовании рассматриваются концепции управления безопасностью на теоретическом уровне, «позитивная культура безопасности», которая представляет собой конечную точку эволюции мышления в области безопасности, и «совместное управление», которое является противоположностью постмодернистской концепции управления. Сотрудники Главного управления гражданской авиации Министерства транспорта и инфраструктуры Турции провели опрос с участием 105 человек.

*Ключевые слова:* гражданская авиация, совместное управление, позитивная культура безопасности, управление рисками.

ELM VƏ İNNOVATİV  
TEKNOLOGİYALAR  
JURNALI