

Manuscript 1875

---

## Prioritization of Voluntary Silence Criteria in Military Aviation for The Sustainability or Safety Superiority

Vildan DURMAZ

Cüneyt CEYRAN

Ebru YAZGAN

Follow this and additional works at: <https://commons.erau.edu/ijaaa>



Part of the [Aviation Safety and Security Commons](#)

---

This Article is brought to you for free and open access by the Journals at Scholarly Commons. It has been accepted for inclusion in International Journal of Aviation, Aeronautics, and Aerospace by an authorized administrator of Scholarly Commons. For more information, please contact [commons@erau.edu](mailto:commons@erau.edu).

Whether it is military or civil, the benefits of aviation organizations for society and humanity cannot be denied (Gerede, 2015). To sustain these benefits, it is inevitable for authorities to ensure aviation safety and operate safe flights. Therefore, many institutions and organizations now require aviation organizations to apply certain standards to guarantee effective aviation safety (ICAO, 2013).

Aviation is one of the best-regulated and most complex organizations in the world. Despite the rapid developments since its emergence, the organization has witnessed a considerable number of tragic accidents, serious financial losses, and even lost lives throughout its history. As a result, safety is now considered a significant factor by aviation employees to minimize the incident of these negative consequences. Bienefeld and Grote (2012) emphasized the importance of ensuring safety in aviation and claimed that terrible accidents and disasters might take place when safety is not or cannot be ensured.

Administrators have sought ways to improve their safety performances to minimize the incidents of such situations as well as material damage and death toll, which has eventually instigated them to develop a safety management system. A safety culture established in an organization allows all employees to adopt a reporting culture and just culture and work in a safer environment by following safety policies and procedures regarding maintenance and operations. In this respect, an effective reporting culture and just culture provide employees with an opportunity to express safety-related issues freely (Chatzi, 2018).

### **Purpose**

The purpose of this study was to investigate the reasons for the non-reporting behavior of military aviation line maintenance staff and offer suggestions to encourage voluntary reporting behavior that might contribute to creating an effective flight and ground safety culture and create a model.

### **Literature Review**

Safety has always been a basic concern in aviation organizations, which involves considerably high risks. Aviation employees need to work in a safe environment, especially in terms of flight operations and maintenance. The ability to create such an environment requires being knowledgeable about potential dangers and unsafe situations (Dillman et al., 2011).

Reason (1998) claimed that safety is an intangible concept, and some employees continue to display risky behaviors although they are aware of the problems that occur and are likely to occur when they make routine mistakes and prefer shortcuts while performing a job-related task.

According to the safety culture model developed by Reason (1998), the main components of a positive safety culture are just culture, reporting culture, informed culture, learning culture, and flexible culture, which need to operate and be applied in harmony with each other so that ultimate safety target can be achieved.

One of the ways to develop a real safety culture is the presence of a reporting culture. An effective and systematic reporting system is a significant element in identifying weaknesses and drawbacks of the organization before an accident occurs. Such reported information has an important role in preventing potential accidents and enhancing safety by adopting a proactive approach. However, some employees have some concerns and feel anxious while displaying reporting behavior. As a result, they prefer not to report a potentially risky situation by displaying non-reporting behavior although they know the importance of safety in aviation. Therefore, it is essential to assure employees that they will not receive any negative feedback and punishment when they report an event (Wiegmann et al., 2004).

Reporting in aviation is crucial since it provides administrators with opportunities to understand risks and dangers as well as the relationships between employees and these risks and dangers, and later develop necessary strategies accordingly.

In complex and high-risk organizations like aviation, reporting allows safety managers to collect information about a lot of cases and situations (accidents, incidents, maintenance failure, human factors, organizational mistakes, failures while following the procedures, near-misses, violations, working place and organizational culture, etc.) and improve safety. The early information collection will enable managers to take precautions against incidents, take actions to make early warnings and prevent the incident of unsafe cases, accidents, injuries, and even deaths (Wu et al., 2002).

A considerable number of studies revealed a correlation between near-misses and incidents and accidents. As shown in the Iceberg Model in Aviation in Figure 1, near-misses and incidents provide a basis for many accidents.

**Figure 1**

*Iceberg Model in Aviation (Jones, 1999)*



Although the number of near-misses, incidents, and material damages changes from situation to situation, the most important point here is that they give some sort of clues and signs before an accident occurs. Feedback from employees, i.e. reporting, might minimize the number of accidents and incidents. In short, the higher the number of near-misses, the higher the possibility for accidents is according to the Iceberg Model (Jones, 1999).

Bienefeld and Grote, in their 2012 study, found that a large number of accidents in aviation organizations occurred because crew members did not talk, failed to report using aviation jargon, or displayed non-reporting behavior.

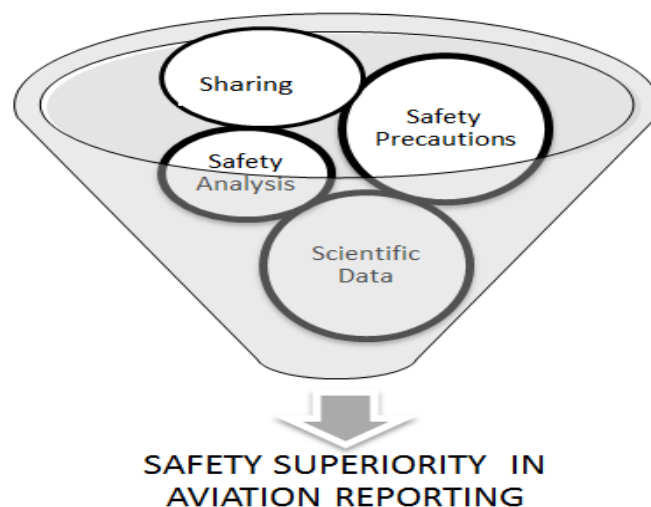
Voluntary reporting of safety-related cases might be an important component of safety risk management in an organization. Voluntary reporting enables administrators to be aware of potential risks in the working environment and take necessary precautions accordingly (McMurtrie & Molesworth, 2018).

Organizations need feedback from their employees so that they can continue their operations. As for the aviation organization, this feedback is often provided by the flight crew and maintenance crew to create a safe environment as well as to improve and sustain safety (Morrison, 2011).

In conclusion, reporting plays a significant role in aviation safety since reports provide critical information to analyze important incidents in aviation organizations and prevent similar ones from taking place in the future. Figure 2 below displays the importance of reporting in aviation safety. It is called the 4S Model in voluntary reporting and consists of sharing, safety precautions, safety analysis, and scientific data.

**Figure 2**

*4S Model in Voluntary Reporting*



*In this respect, voluntary reporting in aviation is a voluntary-based channel that provides an organization with an advantage of competition and information collection in terms of ensuring and improving safety through the provision of data and information about an accident, incident near-miss and all other information somehow affecting aviation safety.*

In 1974, Trans World Airlines Flight 514 crashed at the summit of Virginia Mountain because it descended below the minimum safe altitude specified for this specific location. Only 6 weeks before this accident, a United Airlines crew had experienced a narrow escape by using the same approach and altitude. Such problems related to the descending procedures and differences between pilots and air traffic controllers in terms of how they comment on certain situations led to the establishment of a reporting system called The United States of America Flight Safety Awareness Program. It is clear that if incident reports had been shared beforehand, the Flight 514 accident could have been avoided. After this fatal accident, the Federal Aviation Administration (FAA) realized the significance of reporting for aviation safety. It developed the Aviation Safety Reporting System (ASRS), which is a voluntary reporting system, to determine deficiencies in the operations and create a safer organization on April 30th, 1974, in the USA (Chen, 2010).

As the example showed, non-reporting often results in negative consequences such as loss of life and property, financial loss, waste of time, increased workload and procedures, and erodes trust in the organization.

The academic studies focusing on non-reporting in aviation are briefly presented below:

According to the study by Chen (2010), the reasons for non-reporting behavior are maintenance personnel's reluctance to report since they do not receive any feedback about the reported incidents and are afraid of being punished for their reports. Another reason reported by the participants for their non-reporting behaviors was the administration's attitude towards the reporting policy as well as vague points and drawbacks of this policy.

Tani (2010), in his dissertation, found that there is a growing need for guidelines about how to submit a safety report. He also found that maintenance personnel do not report an incident that might contribute to improved aviation safety due to their lack of knowledge. Finally, pilots do not display reporting behavior because they do not trust their institutions and are afraid of experiencing a loss of prestige.

Katherine and Daniel (2017) conducted a study on what prevents aviation employees from voluntary reporting as well as on some practices that might eliminate such obstacles. According to the results of the study, the reasons for not reporting incidents or accidents and other situations that might contribute to improved safety are personnel's not considering reporting as a job-related task

they are responsible for, fear of being punished for reporting and seeing these situations as the nature of the job.

Jausan et al. (2017), in their study on what hinders safety reporting performance, found the following factors that negatively affect reporting behavior in aviation: inconsistencies of organization with regards to safety (Law, Rules, Regulations), increased workload, group/peer pressure, complex procedures, lack of trust in the organization and employee's lack of self-confidence.

According to the dissertation written by Norman (2022) on voluntary reporting behaviors of professionals in American commercial aviation organizations, among the reasons for non-reporting behaviors are previous reporting experiences, time pressure, the presence of a difficult and complex reporting system, and too many bureaucratic systems.

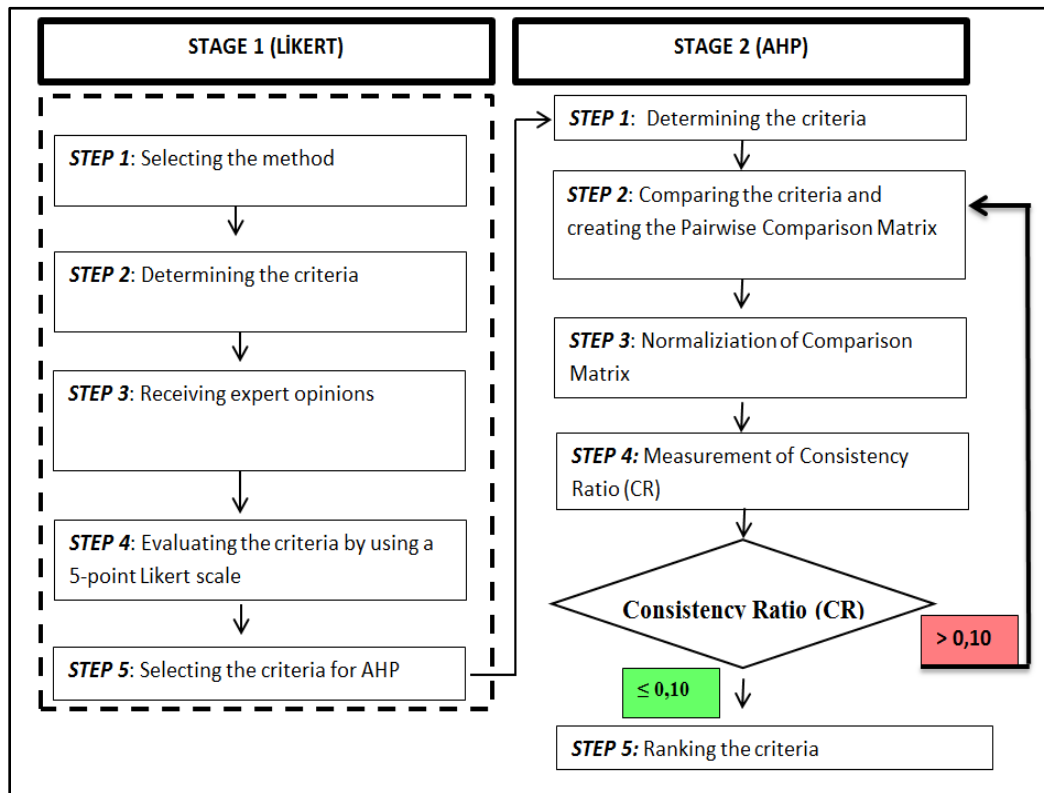
Similarly, Ünder and Gereke (2022) concluded that aviation employees do not report since they want to protect their teams and do not want to be labeled as snitches. In addition, the participants listed increased workload, waste of time, and fear of losing one's job as the other factors affecting non-reporting behavior.

Finally, Alataş (2022) found that non-reporting behavior is displayed due to the following reasons: Lack of sense of organizational belonging, peer pressure, fear of being criticized, not inconveniencing the administrators and not being motivated and appreciated.

### **Methodology**

This study used a two-stage hybrid method. In the 1st stage, the criteria determined through expert opinions and literature review were measured by using a 5-point Likert scale. 2nd stage involves the use of the AHP method to measure criteria weights. The methods adopted are displayed in Figure 3 below.

**Figure 3**  
*Research Method Stages*



### STAGE 1: Likert Scale

Likert Scale was introduced in 1932 by Rensis Likert, and it has been used frequently in social sciences and other fields due to its user-friendliness both in terms of administration and measurement (Turan et al., 2015). It is also possible to use the data obtained through the Likert scale in many statistical calculations (Gürbüz & Şahin, 2014). In this study, the reasons for non-reporting behaviors measured by using the Likert scale were the input of the AHP method.

#### Step 1: Selecting the Method

The study employed a hybrid research method involving both qualitative (unstructured interviews) and quantitative (5-point Likert and AHP) research methods, which allowed research to benefit from the advantages of both methods.

#### Step 2: Determining the Criteria

There are different factors leading to non-reporting behavior. The basic factors causing non-reporting behaviors of military aviation line maintenance personnel were determined after a detailed literature review.

#### Step 3: Receiving Expert Opinions

To understand why non-reporting behavior is preferred and confirm how accurately it is performed, unstructured interviews –which is a qualitative data collection technique- were conducted first to ask military aviation line maintenance personnel why they prefer voluntary silence behavior (non-reporting) based on the criteria determined after a detailed literature review. The reasons displayed in Table 1 were not specified in these interviews. Later, they were asked which factors affected the accuracy and reasons for preferring non-reporting behavior more and they were given a 5-point Likert scale to fill out.

The study-specific experts consist of 20 experienced military aircraft maintenance technicians. They are experts in their respective fields and possess an average of 17.6 years of experience as military aircraft maintenance technicians engaged in line maintenance within military aviation organizations, actively involved in the physical maintenance of aircraft.

#### **Step 4: Evaluating the Criteria by using a 5-point Likert Scale**

The criteria, which were determined both through the literature review and expert opinions, were introduced to experienced 20 military aircraft maintenance technicians by using a 5-point Likert scale (1- I do not agree at all, 2- I do not agree, 3- Undecided, 4- I agree, 5- I agree) and the means were calculated for each item. The results obtained are displayed in Table 1 below.



**Table 1**  
*Reasons for Non-Reporting and Criteria Means*

CRITERIA NO.	REASONS FOR NON-REPORTING	CRITERIA MEANS
1	Lack of Trust Managers/Chiefs	3,3
2	Workload	3
3	Waste of time	2,85
4	Bureaucratic Procedures	3,4
5	Not being motivated	3,2
6	Financial Loss (Being Fired etc.)	1,9
7	Lack of Feedback	3,15
8	Not Considering it as a Job-related Responsibility	2,1
9	Previous Reporting Experiences (Nothing has changed)	3,45
10	Complex Reporting System	3,55
11	Manager's / Chief's Resistance to New Ideas	3,55
12	Lack of Communication	3,45
13	Lack of Knowledge (Not knowing what, how and where to report)	3
14	Lack of Sense of Institutional/Organizational Belonging	1,65
15	Not Inconvening Managers/Chiefs	2,1
16	Group/Peer/Social Pressure (Mocking, Criticism, Isolation etc.)	2,25
17	Manager's / Chief's Attitude and Behaviors with regards to Reporting	3,6
18	Fear of Being Punished	3,25
19	Inconsistencies of Institution/Organization (Laws, Rules, Regulations etc.)	3,7
20	Loss of Prestige	2,9
21	Seeing the Mistake as a part of the Job	2,45
22	Finding it (reporting) trivial / unnecessary	2,9
23	Being Labeled as a Snitch	2,3
24	Protecting the Team	3,3

### **Step 5: Selecting the Criteria for AHP**

Those with a criterion mean of 3 or above were selected for the AHP method.

### **STAGE 2: AHP (Analytic Hierarchy Process) Method**

AHP is one of the methods aiming to make decisions between variables. Introduced by Myers and Albert in 1968, the method was later developed by Prof. Thomas L. Saaty in 1977 and started to be employed in multiple-criteria decision-making techniques (Yazgan, 2022).

AHP is a mathematical method that might be used in both qualitative and quantitative research by taking into consideration the priorities of individuals and groups in decision-making processes while finding solutions to existing problems. This method can be employed in many fields in a way integrated with other

methods. In other words, the AHP method is adopted by decision-makers to make more effective decisions by evaluating between criteria and sub-criteria or between alternatives according to criteria weights of these criteria or alternatives (Dağdeviren et al., 2004).

Yazgan and Yılmaz (2018) suggested that a lot of group members can be asked to give their opinions, which means the results can be calculated to determine criteria and create comparison matrices. By doing so, researchers are not confined to only one person's comments and prejudices.

### **Step 1: Determining the Criteria**

The reasons for non-reporting behaviors whose means are 3 or above according to Likert scale measurements were selected for the AHP method.

**Table 2**  
*AHP Criteria*

REASONS FOR NON-REPORTING	
C1	Inconsistencies of Institution/Organization (Laws, Rules, Regulations etc.)
C2	Lack of Trust Managers/Chiefs
	Not Being Motivated
	Manager's / Chief's Resistance to New Ideas
	Manager's / Chief's Attitude and Behaviors with regards to Reporting
C3	Lack of Feedback
C4	Protecting the Team
C5	Previous Reporting Experiences (Nothing has changed)
	Lack of Communication
C6	Fear of Being Punished
C7	Complex Reporting System
C8	Bureaucratic Procedures
C9	Workload
C10	Lack of Knowledge (Not knowing what, how and where to report)

### **Step 2: Comparing the Criteria and Creating Pairwise Comparison Matrix**

At this stage, the criteria obtained in the first stage were compared together with a team of 7 experts who have demonstrated extensive experience within the quality assurance department of the Turkish Air Force by reaching a consensus, and the comparison matrix was created accordingly. These 7 experts were asked to rank these criteria in the order of importance. Later, the pairwise comparison matrix displayed in Table 3 was created according to the comparisons made between the criteria.

**Table 3**  
*Pairwise Comparison Matrix*

REASONS FOR NON-REPORTING	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
C1	1,00	1,00	0,50	3,00	2,00	0,25	3,00	3,00	3,00	2,00
C2	1,00	1,00	0,50	3,00	2,00	0,25	3,00	3,00	3,00	2,00
C3	2,00	2,00	1,00	5,00	0,25	0,25	3,00	3,00	3,00	2,00
C4	0,33	0,33	0,20	1,00	0,17	0,20	1,00	1,00	1,00	0,50
C5	0,50	0,50	4,00	6,00	1,00	1,00	4,00	4,00	4,00	3,00
C6	4,00	4,00	4,00	5,00	1,00	1,00	5,00	5,00	5,00	4,00
C7	0,33	0,33	0,33	1,00	0,25	0,20	1,00	1,00	1,00	3,00
C8	0,33	0,33	0,33	1,00	0,25	0,20	1,00	1,00	1,00	3,00
C9	0,33	0,33	0,33	1,00	0,25	0,20	1,00	1,00	1,00	3,00
C10	0,50	0,50	0,50	2,00	0,33	0,25	0,33	0,33	0,33	1,00
CLOUMN SUM	10,33	10,33	11,70	28,00	7,50	3,80	22,33	22,33	22,33	23,50

**Step 3: Normalization of Comparison Matrix**

Each column in the comparison matrix was normalized by dividing the values in the columns by the sum of each column (See Table 4).

**Table 4**  
*Normalization of Comparison Matrices*

Na	REASONS FOR NON-REPORTING	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	Eigenvector
	C1	0,10	0,10	0,04	0,11	0,27	0,07	0,13	0,13	0,13	0,09	<b>0,12</b>
	C2	0,10	0,10	0,04	0,11	0,27	0,07	0,13	0,13	0,13	0,09	<b>0,12</b>
	C3	0,19	0,19	0,09	0,18	0,03	0,07	0,13	0,13	0,13	0,09	<b>0,12</b>
	C4	0,03	0,03	0,02	0,04	0,02	0,05	0,04	0,04	0,04	0,02	<b>0,03</b>
	C5	0,05	0,05	0,34	0,21	0,13	0,26	0,18	0,18	0,18	0,13	<b>0,17</b>
	C6	0,39	0,39	0,34	0,18	0,13	0,26	0,22	0,22	0,22	0,17	<b>0,25</b>
	C7	0,03	0,03	0,03	0,04	0,03	0,05	0,04	0,04	0,04	0,13	<b>0,05</b>
	C8	0,03	0,03	0,03	0,04	0,03	0,05	0,04	0,04	0,04	0,13	<b>0,05</b>
	C9	0,03	0,03	0,03	0,04	0,03	0,05	0,04	0,04	0,04	0,13	<b>0,05</b>
	C10	0,05	0,05	0,04	0,07	0,04	0,07	0,01	0,01	0,01	0,04	<b>0,04</b>

REASONS FOR NON-REPORTING	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	Eigenvalue
C1	0,12	0,12	0,06	0,10	0,34	0,06	0,14	0,14	0,14	0,08	<b>1,32</b>
C2	0,12	0,12	0,06	0,10	0,34	0,06	0,14	0,14	0,14	0,08	<b>1,32</b>
C3	0,23	0,23	0,12	0,17	0,04	0,06	0,14	0,14	0,14	0,08	<b>1,38</b>
C4	0,04	0,04	0,02	0,03	0,03	0,05	0,05	0,05	0,05	0,02	<b>0,38</b>
C5	0,06	0,06	0,50	0,21	0,17	0,25	0,19	0,19	0,19	0,12	<b>1,94</b>
C6	0,47	0,47	0,50	0,17	0,17	0,25	0,24	0,24	0,24	0,16	<b>2,90</b>
C7	0,04	0,04	0,04	0,03	0,04	0,05	0,05	0,05	0,05	0,12	<b>0,51</b>
C8	0,04	0,04	0,04	0,03	0,04	0,05	0,05	0,05	0,05	0,12	<b>0,51</b>
C9	0,04	0,04	0,04	0,03	0,04	0,05	0,05	0,05	0,05	0,12	<b>0,51</b>
C10	0,06	0,06	0,06	0,07	0,06	0,06	0,02	0,02	0,02	0,04	<b>0,46</b>

#### Step 4: Measurement of Consistency Ratio (CR)

Table 5 presents the consistency ratio performed to learn whether the method was reliable or valid following the normalization procedures and criteria weighing.

**Table 5**  
*Consistency Ratio*

	Eigenvalue ( $w^4$ )	Eigenvector ( $w$ )	$w^4/w$	Lamda Max.	Consis.Index	CR
C1	1,32	0,12	11,31	11,09	0,12	0,08
C2	1,32	0,12	11,31			
C3	1,38	0,12	11,15			
C4	0,38	0,03	10,92			
C5	1,94	0,17	11,31			
C6	2,90	0,25	11,46			
C7	0,51	0,05	10,76			
C8	0,51	0,05	10,76			
C9	0,51	0,05	10,76			
C10	0,46	0,04	11,18			

The calculations revealed a Consistency Ratio of 0.08. When a consistency ratio is 0, the matrix is entirely consistent. However, since it is not possible to obtain entire consistency in practice, the matrix is accepted as consistent and valid if  $CR < 0.10$ ; that is if the calculated value is lower than 0.10 (Dağdeviren et al., 2004).

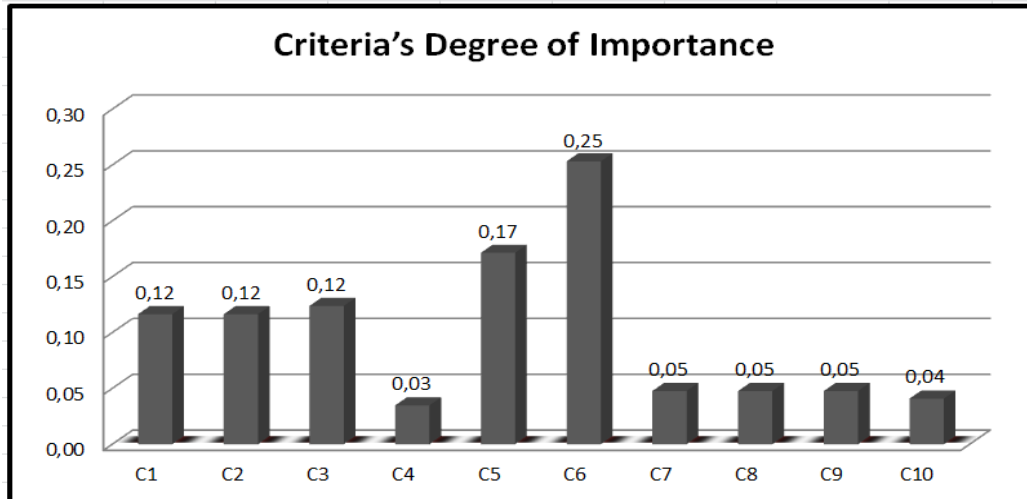
#### Step 5: Ranking the criteria

As a result of the calculations, CR is 0,08, and the validity of the measurement is confirmed. Figure 4 and Table 6 below display the ranking and degrees of importance for the criteria.

**Table 6**  
*Criteria's Degree of Importance*

	REASONS FOR NON-REPORTING	MEANS
C6	Fear of Being Punished	25%
C5	Previous Reporting Experiences (Nothing has changed)	17%
	Lack of Communication	
C1	Inconsistencies of Institution/Organization (Laws, Rules, Regulations etc.)	12%
C2	Lack of Trust Managers/Chiefs	12%
	Not Being Motivated	
	Manager's / Chief's Resistance to New Ideas	
	Manager's / Chief's Attitude and Behaviors with regards to Reporting	
C3	Lack of Feedback	12%
C7	Complex Reporting System	5%
C8	Bureaucratic Procedures	5%
C9	Workload	5%
C10	Lack of Knowledge (Not knowing what, how and where to report)	4%

**Figure 4**  
*Criteria's Degree of Importance*



### Recommendations

As a result of the study, not a military aviation-specific criterion was determined here. In aviation organizations, decision-makers need to know about employees' feelings and opinions regarding safety issues to ensure aviation safety. The studies showed that organizations had to pay high costs for safety when their employees preferred not to report. Therefore, collecting data about the reasons why aviation employees prefer non-reporting behavior is crucial in terms of aviation safety and risk management. In this study, the reasons why employees do not prefer reporting in an aviation organization were determined and the weights of these reasons were calculated and ranked according to their importance.

Bienefeld and Grote (2012), in their study on the non-reporting behavior of flight personnel, listed fear as the first reason for non-reporting. Similarly, the present study also found fear as the most common reason for non-reporting by military aircraft maintenance staff.

This study also showed that the organizational structure -vertical hierarchical- in military aircraft maintenance organizations might affect reporting behavior as well. In organizations with vertical hierarchical structure, fear and communication problems are the two most common reasons for non-reporting behavior. It is essential in such structures with high power distances to take certain precautions to eliminate such power distances (safety leader, Aircraft Maintenance Unit [AMU] chief, etc.), enforce stricter rules, and create a more flexible and tolerant environment for relationships so that effective aviation safety can be achieved. In addition, punishment procedures and the distinction between violation and mistake should be specified clearly by administrations in

organizations. Those making mistakes only in safety issues can be entitled to limited privilege so that fear of getting punishment can be avoided.

Terzioğlu (2007), in his study, highlighted the significance of team resource management in aviation. At this point, it is believed that planning training sessions to increase aviation employees' awareness about the importance of team resource management might have a positive effect on safety and reporting behavior. Besides, holding open-door meetings and creating suitable environments for social activities are likely to provide opportunities for employees to express themselves. It is also important to make these activities a part of the organization's culture.

Other criteria weighting voluntary reporting are increased workload, the presence of too many procedures, and complexity. Increasing the number of reporting channels might play a significant role in collecting a larger amount of information and data flow, which is likely to lead to improved safety.

In addition, developing a clear and user-friendly reporting system that conforms with the employees' culture the best to provide data and information flow and designing this system through collaborations with employees in a way to protect their rights and not leave a question mark on their heads will be more effective in terms of safety. Similarly, O'Leary and Chappel (1996) emphasized that an effective and successful reporting system should have certain features.

The study's limitations pertain to its exclusive focus on line-level maintenance employees within Türkiye, potentially diverging from the experiences of depot-level employees engaged in aircraft maintenance. Consequently, future research endeavors could explore applicability across diverse cultural contexts outside Türkiye or within different departments of aircraft maintenance. Moreover, comparative studies within the realm of civil aviation could be conducted, facilitating comparisons between findings and allowing for insights into the differences observed in depot-level employees' experiences across various countries.

## References

- Alataş, A. (2022). *Ekip çalışması ve liderlik*. İstanbul: Remzi Kitapevi.
- Bienefeld, N., & Grote, G. (2012). Silence that may kill: When aircrew members don't speak up and why. *Aviation Psychology and Applied Human Factors*, 2(1), 1-10.
- Chatzi, A. V. (2018). Safety management systems: an opportunity and a challenge for military aviation organisations. *Aircraft Engineering and Aerospace Technology*, 91(1), 190-196.
- Chen, Y. F. T. (2010). The Taiwan civil aviation safety reporting (TACARE) system in aircraft maintenance: An evaluation of the acceptance of voluntary incident reporting programs for maintenance personnel in Taiwan. <https://commons.erau.edu/cgi/viewcontent.cgi?article=1037&context=db-theses>
- Dağdeviren, M., Akay, D., & Kurt, M. (2004). İş değerlendirme sürecinde analitik hiyerarşi prosesi ve uygulaması. *Gazi Üniversitesi Mühendislik Mimarlık Fakültesi Dergisi*, 19(2), 131-138.
- Darveau, K., & Hannon, D. (2017). Barriers and facilitators to voluntary reporting and their impact on safety culture. *The International Journal of Aerospace*. <https://doi.org/10.1080/24721840.2018.1442221>
- Dillman, B. G., Voges, J., & Robertson, M. (2011). Safety occurrences student perceptions regarding failures to report. *Journal of Aviation Management and Education*. <https://www.aabri.com/manuscripts/09261.pdf>
- Gerede, E. (2015). A qualitative study on the exploration of challenges to the implementation of the safety management system in aircraft maintenance organizations in Turkey. *Journal of Air Transport Management*, 47, 230-240.
- Gürbüz, S., & Şahin, F. (2014). *Sosyal bilimlerde araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.
- ICAO. (2013). *Safety management manual, Doc 9859 AN/474 (3. b.)*. Montréal: Author.
- Jausan, M., Silva, J., & Sabatini, R. (2017). A holistic approach to evaluating the effect of safety barriers on the performance of safety reporting systems in aviation organisations. *Journal of Air Transport Management*, 63, 95-107.
- Jones S., K. C. (1999). The importance of near miss reporting to further improve safety performance. *Journal of Loss Prevention In The Process Industries*, 59-67.
- McMurtrie, K. J., & Molesworth, B. R. (2018). Australian flight crews' trust in voluntary reporting systems and jus culture policies. *Aviation Psychology and Applied Human Faktors*, 8(1).
- Morrison, E. W. (2011). Employee voice behavior: Integration and directions for future research. *Academy of Management Annals*, 5(1), 373-412.

- Norman, J. E. (2022). *A cross-sectional exploratory study on voluntary reporting of professional groups in US commercial aviation* (Doctoral dissertation, The University of North Dakota).
- O'leary, M. & Chappell, S. (1996). Confidential incident reporting systems create vital awareness of safety problems. *ICAO Journal*, 51, 11-13.
- Reason, J. (1998). Achieving a safe culture: Theory and practice. *Work and Stress*, 12, 293-306.
- Tani, K. (2010). *Under-reporting in aviation: An investigation of factors that affect reporting of safety concerns*. A thesis presented in partial fulfilment of the requirements for the degree of Doctorate of Philosophy in Aviation at Massey University, Manawatu, New Zealand (Doctoral dissertation, Massey University).
- Terzioğlu, M. (2007). *Uçak kazalarının nedeni olarak insan hatalarını azaltmada ekip kaynak yönetimi* (Doctoral dissertation, DEÜ Sosyal Bilimleri Enstitüsü).
- Turan, İ., Şimşek, Ü., & Aslan, H. (2015). Eğitim araştırmalarında likert ölçeği ve likert-tipi soruların kullanımı ve analizi. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 186-203.
- Ünder, İ., & Gerede, E. (2022). Havacılıkta gönüllü raporlama davranışının mesleki farklılıklar açısından değerlendirilmesi. *Anadolu Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 23(4), 148-176.
- Wiegmann, D. A., Zhang, H., Thaden, T. L., Sharma, G., & Gibbons, M. (2004). Safety culture: An integrative review. *The International Journal of Aviation Psychology*, 14(2), 117-134.
- Wu, A., Pronovost, P., & Morlock, L. (2002). ICU incident reporting systems. *Journal of Critical Care*, 86-94.
- Yazgan, E. (2022). Analitik Hiyerarşi Süreci (AHS) Yöntemini kullanarak havacılık sektöründe kalite süreçlerindeki insan faktörleri risklerin değerlendirilmesi. *Avrupa Bilim ve Teknoloji Dergisi*, 14-18.
- Yazgan, E., & Küçük Yılmaz, A. (2018). Prioritisation of factors contributing to human error for airworthiness management strategy with ANP. *Aircraft Engineering and Aerospace Technology*, (91), 78-93.