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Reflections of The Strategies Applied in the Boeing 737-Max Crisis Management on Passenger Perception

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ABSTRACT

Purpose – Following the two crashes in Indonesia in 2018 and Ethiopia in 2019, resulting in 346 casualties, Boeing 737-Maxs became a global safety crisis. Boeing has pursued crisis strategies to restore brand trust. This study aims to ascertain whether Turkish passengers are concerned about the safety of Boeing 737-Maxs following two deadly plane crashes and whether they favor airlines that continue to use 737-Maxs.

Methodology – In this study, the structured interview research method is adopted to reveal the participants' perceptions of Boeing 737-Maxs. The research sample comprised "Turkish passengers who had no fear of flying" and "who had heard about Boeing 737-Max accidents". A total of 14 interview questions were extracted by reviewing the literature. In this study, interviews were conducted with 32 people. The data collected were subjected to content analysis.

Findings – The Boeing 737-Max is considered unsafe by 10 out of 20 men and 11 out of 12 women (or 50% and 92%, respectively). 66% of the participants believe that the Boeing 737-Max is an unsafe airplane. The participants, who had not previously heeded the type of aircraft they flew or heard about Boeing, started to pay attention to the type of aircraft type or identified Boeing with these accidents.

Discussions – Even though Boeing fixed the issue and resumed flying its aircraft, it is concluded that unfavorable opinions of passengers, who are one of its key stakeholders, persisted.

1. Introduction

Air transportation has become to be an essential part of the transportation industry as it allows people to travel fast, economically, safely, and reliably. The air transportation sector has a very advantageous position compared to other transportation models in terms of safety, security, comfort, speed and quality both in passenger and freight transportation (Türk, 2022). Air transport has made the world more accessible today. Due to their capacity to travel great distances in a shorter amount of time, efficiency, and safety, airlines have been quickly embraced by passengers compared to land, sea, and railways, and as a result, demand has risen dramatically (Çoban and İpek, 2020; IATA, 2019).

Due to Turkiye's advantageous geopolitical position, the aviation and space industries are considered to be a strategic sector for the country's economic development (Sarıbaş and Tekiner, 2015). The Turkish aviation industry has actively contributed to the establishment of institutions and support centers that promote the advancement of proper technological activities. Private sectors entered the sector, particularly with the law numbered 2920 which entered into force in 1983 and flourished rapidly with the regulations made in 2003. However, it has been impacted occasionally by terrorist attacks, political unrest, and global crises.

Today, crises can occur in different ways in the business world. These crises need to be analyzed and prepared accordingly. Otherwise, they may occur again often due to insufficient preparation. Safety and security are two of the main priorities of air transport. According to Blokland and Reniers (2020), safety and security are closely related to sustainability. Basically, they are almost synonymous. Safety and security are about acquiring, maintaining, and protecting what is precious and important. Something unsustainable cannot be expected to be safe and secure, or something unsafe and insecure cannot be expected to be

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sustainable. The risk, safety, security, and performance of even the tiniest subsystems must be addressed concurrently, continuously enhanced, and built sustainably in order to create an atmosphere where people can individually feel safe. This is why for the aviation industry, which has experienced many crises in the past, perception assessment of past events or cases will be a crucial resource to use in future crisis strategies (Imad et al., 2021).

About 90% of aircraft production is held by the American company Boeing and the European company Airbus (Vargas-Hernández & Hernández Martnez, 2019). Both manufacturers compete in the market to produce aircraft that fly further on less fuel, emit fewer pollutants and noise at airports, and offer comfort to passengers.

Boeing is the world's largest aerospace company and America's largest exporter. It has a long tradition of aviation leadership. The Boeing 737NG and the Airbus A320, which were released in 1997 and 1988, respectively, were the two primary competitors in this race until 2010. However, in 2010, the A320neo, which Airbus offered as a "new engine option," boosted competition. As a result, Airbus sold more orders in a single week than Boeing sold 737s in the entire year of 2010. (Shvindina, 2019). To compete for market control, Boeing planned to design a brand-new aircraft to replace its 737 fleet. As the next generation of commercial aircraft, the 737-Max was originally introduced to the aerospace industry in 2011 and started flying in 2017. However, serious concerns started to surface following two fatal crashes involving the plane in a span of five months, in which everyone on board died, serious concerns started to surface (Imad et al., 2021). Even though Boeing is a market leader in its industry, it entered a period of crisis due to the design of the Boeing 737-Max aircraft model. Following the two consecutive accidents (October 2018 and March 2019) that claimed 189 and 157 lives respectively, the 737-Max has seen many airlines cancel their orders, and aviation regulators have grounded this model.

Although studies on the technical aspects of the Boeing Max crisis have been published in Turkish literature, no research has been done to ascertain how Turkish passengers perceive this incident. A study similar to the research topic was identified as a result of the English literature review. In order to determine whether North American individuals who had an unconscious fear of flying change their choices depending on ticket parameters, Boeing 737 Max aircraft types are randomly assigned to their airline tickets. The results indicated that, upon its return to service, Boeing products continue to inspire a sense of safety and confidence despite passenger preference for this aircraft being low compared to competing modern aircraft available to North American consumers (Bravo et al., 2021).

In the Turkish literature, no study has been found investigating Turkish passengers' perspectives on aircraft types, particularly the Boeing Max. Hence, this research is expected to reveal the reflections of Boeing's decisions taken in the face of the current crisis in the international market on Turkish passengers.

The study aims to answer the following research questions:

RQ1. *What are the demographic characteristics of the passengers participating in the study?*

RQ2. *Are passengers aware that they are in a 737-Max?*

RQ3. *How do passengers feel when they are aware that they are in a 737-Max?*

RQ4. *What do Boeing's strategies that will help restore public trust in airlines and convince* ***passe****ngers that the company's most popular aircraft is safe mean to passengers?*

RQ5. *Are these strategies effective for the passenger?*

RQ6. *What data does passenger perception provide for post-crisis management?*

The following sections that follow will first provide an overview of the crisis literature, air travel, its context in Turkey, and the global crisis brought on by the Boeing 737-Max accidents. Then the research's findings will be discussed.

2. Theoretical Background

2.1. The Concept of Crisis and Crisis Management in the Airport Transport Industry

According to Sellnow and Seeger (2013), a crisis is an incident that requires some immediate action or response by organizations to limit and control the harm. Crises are often unpredictable events and are multifaceted. It threatens significant stakeholder expectations, jeopardizes the company's credibility, and seriously affects an organization's performance.

They are unexpected and non-routine occurrences that disrupt an organization's daily operations (Seeger, Sellnow, & Ulmer 2003; Coombs, 2007; Coombs, 2012). On the other hand, crisis management is a process designed to prevent or diminish the harm a crisis can cause an organization and its stakeholders (Coombs 2007).

Different sources present different perspectives on the crisis. Four categories could be used to group the most typical and common aviation crises:

- Natural disaster-related crises (flood, earthquake, etc.).
- Mechanical problems that cause crises (plane crashes, product failures, etc.).
- Crisis caused by human activity (terrorism, political instability, sabotage, etc.).
- The crisis (wrong decisions, decision-making, etc.) is brought on by management's decision/indecision (Chris, 1999, Yılmaz and Flouris, 2019).

The history of air transport is full of crises, all having their particular features. Among them are; the Gulf Crisis in 1991, the Turkish Economic Crisis in 1994, the South East Asian Economic Crisis in 1997, the Russian Economic Crisis in 1998, the 1999 economic events in Turkiye brought on by the PKK terrorist organization, Turkish Economic Crisis of November 2000, Turkish Economic Crisis of February 2001, 9/11 2001 US World Trade Center terrorist attacks, the Global Economic Crisis in 2008, and the COVID-19 pandemic in 2019 (Franke and John, 2011; Gönen and Yamamoto, 2012).

The aviation industry is accustomed to handling crises and developing persuasive messages to restore the brand reputation they cause. Air crashes, though infrequent, are devastating for this industry since they involve multiple casualties, injuries, and property damage. Due to the media's extensive coverage, the dramatization level rises. The loss of loved ones may directly affect people's trust in this transportation system, or indirectly by the ease with which news spreads quickly in the media. Safety and security are the most important aspects of airline service. The perception of insecurity can temporarily affect the flight behavior of passengers and the number of passengers in general (Wong and Yeh 2003 p. 471). The market's reaction to the Sioux City DC-10 crash on July 19, 1989, was studied by Barnett et al. in 1992. They concluded that bookings drastically decreased following the crash, but avoidance subsided after six months. Gigerenzer (2004) reported a 16 percent decrease in passenger counts in the three months following the 9/11 twin tower catastrophe after analyzing data from the US Department of Transportation data. According to Winter et al. (2017), within 12 weeks of the flight of Germanwings Flight 9525, the passengers' attitudes had returned to their pre-crash level.

Ray (1999) argued that an accident could pose a threat to the airline's reputation and financial condition. So much so that when a single crisis strikes a company, the subsequent inquiry could spark a crisis affecting the entire industry. According to Grimmelt (2017), one of the most critical issues of a crisis management plan is the philosophy of the manager to manage crises. Benoit (2018) reviewed United Airlines' image restoration efforts after a passenger was brutally removed from Flight 3411 in April 2017. The study demonstrated the significance of responsiveness in the era of digital media and how, when appropriately utilized properly, corrective action can be a powerful crisis communication tool. Benoit and Czerwinski produced an early piece on the theory of image repair (1997). The authors examined a Times editorial denouncing the airline industry and the fatal jet disaster that occurred on September 8, 1994, just outside Pittsburgh, Pennsylvania, which claimed 132 lives. They concluded that airlines should address allegations directly and offer clear solutions future crises.

2.2. Global Crisis Caused by Boeing 737-Max Accidents

William Edward Boeing established the Boeing firm in July 1916, making it a pioneering name in the aviation industry. The company was founded in Seattle and initially operated as The Pacific Aero Product Co (Boeing, 2020). To honor the founder's name, the name was subsequently changed to Boeing to honor the founder. The company's first aircraft, a two-seat Model C training seaplane, was introduced in November 1916. The largest aviation company in the world, Boeing is also the leading producer and supplier of commercial jet aircraft, defense, space, and safety technologies (Imad et al., 2021). Things changed in 2010 with the introduction of the A320neo, a cutting-edge, fuel-efficient short-haul aircraft from the company's primary rival, Airbus. Boeing knew that one of its largest customers, American Airlines, was negotiating with Airbus to replace its short-haul fleet with the A320neo. Boeing's sales would have suffered significantly as a result of the A320neo. As a result, the corporation was under pressure to quickly develop a competing aircraft that was 15% more fuel-efficient and 15% less expensive (Naor et al., 2020). The 737 model is the most popular airplane in the world.

To have control over the 21st-century market, the Boeing 737-Max was built with more sophisticated and powerful engines, sensors, and associated software with various functions.

With this revolutionary aircraft, a significant reduction in production cost and time was envisioned. The complexity of operations for pilots would be greatly reduced, and the aircraft would have a longer range at cheaper operating costs (Slotnick, 2019). The 737-Max variant was initially presented by Boeing in 2011 and went into service in 2017.

In October 2018, Lion Air Flight 610 crashed minutes after taking off from Jakarta, killing all 189 passengers. In response to this first accident, the manufacturer put the onus of responsibility on the flight crew. Just a few months later, in March 2019, a second 737-Max aircraft, of Ethiopian Airlines Flight 302 this time, crashed. Data from the flight data logs of the black boxes of both crashes immediately revealed a number of similarities between the two crashes. The anti-stalling system used in the new Boeing 737 Max appears to be faulty, pushing the aircraft's nose toward the ground. The Maneuvering Characteristics Augmentation System (MCAS) is a new automated safety feature on the 737 Max. Most pilots were unfamiliar with the system and had no training in how to handle the situation (Naor et al., 2020; Glanz, Beech, and Suhartono, 2018; National Transportation Safety Board, 2019). Worldwide airspace bans have been placed on 737-Max models, and many airlines have suspended fleet operations till further notice (Laris, Aratani, Dawsey, and Olorunnipa, 2019). The Federal Aviation Administration (FAA) issued a statement insisting that the aircraft was airworthy (Samuels, 2019). Soon after, Boeing announced its decision to support the international flight of the 737-Max aircraft (Boeing, March 2019).

Although Boeing was in severe chaos, the company attempted to employ a number of effective strategies and methods to address the crisis. The media widely covered two devastating catastrophes were widely covered by the media as the corporation began its quest to restore its damaged brand and image. Boeing eventually suffered significant losses in legal, administrative, and public relations losses (Imad et al., 2021).

Before two horrific accidents, Boeing had a reputation for being of the highest quality and safety. Their focus on safety measures and engineering was the main reason customers in the business trusted Boeing more than any other manufacturer. With a long history of success over the years, the company's focus has steadily shifted from quality and safety to financial return. When Calhoun took over the leadership in January 2020, getting back to safety became his top priority. He made an effort to banish the catastrophic vibe (Imad et al., 2021).

It may well be concluded from an analysis of Boeing's 737-Max crisis management strategy that its challenges are a result of the lack of a designed crisis management framework. As a result of the business's ineffective crisis management, the 737-Max model was banned by several major customers, causing the company's stock price to fall by 11% (Bloomberg, 2019). However, the crisis's long-term effects may have exposed the corporation to far bigger risks. Financial risk could further escalate if integrity and reliability are lost (Imad et al., 2021).

Not only in the short term but also in the long term both airlines and other stakeholders significantly rely on the aviation leader's performance and management as it affects their reputation. This being the case, Boeing

accidents have an impact on airlines and their passengers in Turkiye (Vargas-Hernández and Hernández Martínez, 2019). Air transportation is highly reliant on passenger compliance to ensure the safe and secure transport of millions of passengers (Adey, 2010). Safety and security issues can significantly impact passenger confidence, reducing the profitability and sustainability of the airline industry (Barry and Suliman, 2019). The first three months of 2019 had seen a 21 percent decline in Boeing's earnings, and in April 2019, there were no 737-Max preorders, according to Reuters (Shvindina, 2019).

The most popular aircraft in commercial aviation, the Boeing 737, ended up being the root of the crisis that gripped the whole sector. All the airlines in the supply chain, not just Boeing, suffered damage. The suspension of flights, delayed deliveries of new Max planes, uncertainty surrounding whether the planes can enter service, and the drop-in demand have led airlines to reschedule and cancel months-long flights, resulting in a loss of profits. Airlines worldwide agreed to seek compensation from Boeing due to delayed deliveries, replacement of orders, loss of passenger confidence, etc. (Shvindina, 2019).

Marx et al (2021) gathered tweets mentioning Boeing, along with original replies and posts from the company, and examined media coverage, general attitude, and their development over time. They found that negative emotions such as "*fear*," "*anger*," "*humiliation*," and "*depression*" were predominant against Boeing. Boeing has started to adopt image restoration strategies. Boeing's image-restoration strategies primarily employ the following strategies: empowerment, corrective action, humiliation, shifting of blame, and compensation (Heine, 2019).

- Boeing highlighted the company's history and explained how the brand will make air travel safer.
- Following the initial findings, Muilenbergn (CEO) pledged in a video apology to restore customer confidence by taking corrective action in a video apology. In his efforts to reassure customers about the safety issues, the CEO said, "It is our responsibility to eliminate this risk." He constantly stressed the importance of safety and provided updates on improvements to aircraft recertification processes. He aimed to make passengers feel more comfortable while booking 737-Max once the flying ban was lifted.
- As the 737-Max crisis persisted, Boeing progressively accepted the responsibility for negligence and casualties. Boeing authorities made statements expressing their regret over the tragic accidents.
- In an effort to share responsibility and divert some of the negative attention, Boeing tried to shift the blame to harsh working conditions based on the pilot's workload.
- Boeing offered compensation to the communities affected by the disasters and the families of 737-Max passengers.

In early 2021, almost two years after the crashes that grounded its fleet, Boeing completed Max's recertification procedure. Software improvements for the 737-Max enhanced the aircraft's safety, allowed the model to get recertified, and led the company to claim that it is one of the safest aircraft to fly (Heine, 2019). When conflicting statements of aircraft safety, reiterations of safety, and evidence from the second crash say otherwise, it is still a matter of debate whether Boeing's crisis history in the 737-Max crisis reinforces stakeholders' negative assessments. (Wouter and Broekmen, 2021) Waymer (2013) asserts that the adage that "time cures all wounds" may be deceptive. All stakeholders cannot be treated equally. The way victims, relatives, and other stakeholders experience the concept of "history of crisis" requires more in-depth research. This being the case, we believe that a study on the perceptions of the general public in Turkiye regarding the perceived flight risk arising from the Boeing 737-Max crisis history will make an essential contribution to the aviation crisis literature.

3. Method

When accidents occurred on the 737-Max, passengers were uneasy, and 70% hesitated to book the Max (Josephs, 2019). According to a Business Insider survey, 53% of American adults would never want to fly a 737-Max even if it was certified safe. (Common, 2019) Airlines are resuming the use of Max aircraft as Boeing seeks to rebuild brand trust. Gaining the confidence of the passengers is crucial since it allows passengers to use the same services again and the airline makes a profit from it. As a result, despite the underlying truth, the first Boeing 737-Max crash may not have altered the perception of risk associated with flying Boeing 737-

Maxs. Despite the extensive media coverage of the Boeing 737-Max aircraft's accidents and the flight control problem that seems to have caused them, we would like to learn Turkish passengers' opinions on using the aircraft once the errors have been repaired and discuss the study's findings. This study aims to explore whether it can provide some evidence of whether Turkish passengers are worried about the safety of Boeing 737-Max aircraft in the wake of two deadly jet crashes. It is also to comprehend whether they prefer airlines that continue to use 737-Max aircraft.

This study's objective is to determine whether, in the wake of two deadly jet crashes, it can provide some evidence that Turkish passengers are concerned about the safety of Boeing 737-Max aircraft. It is also to understand whether Turkish passengers prefer airlines that continue to use 737-Max aircraft.

In this study, qualitative research methodology was employed. One of the strengths of qualitative research is that it allows us to interpret and better understand the complex reality of how people experience a particular situation (Mack et al., 2005). As one of the qualitative research methods, we preferred the interview method in this study to elucidate the participants' viewpoints, experiences, feelings, and perceptions. The semi-structured interview technique, which allows for the asking of sub-questions, was used to acquire more in-depth responses to the questions posed by the interview techniques, and thus the data obtained was further expanded. (Yıldırım and Şimşek, 2011; Bogdan and Biklen, 1992; Ekiz, 2003). The study was carried out with the approval of the ethics committee with the decision of the Istanbul Gelişim University Ethics Committee, dated 26.11.2021 and numbered 2021-36.

Passengers without a fear of flying and those who are aware of Boeing Max crashes were chosen as the study's population. "Passengers who had no fear of flying and had heard of Boeing 737-Max accidents" were preferred as the research sample because our goal was not to identify the causes and circumstances associated with travel fear and because people who experience fear when flying exhibit less desire to travel by plane.

Within the scope of the research, the sample size was decided in line with the theoretical sampling approach. During each interview, the data were written down and at the point where the concepts that could meet the purpose of the research were repeated —when the answers were given over and over again— it was decided that enough data sources were reached and thus the data collection process was terminated. (Yıldırım and Şimşek, 2011; Guba ve Lincoln, 1982). Moreover, the ideal sample size for qualitative studies should be between 5-35 for theory development and between 4-30 for a case study (Sim et al., 2018).

Within the scope of the research, interview questions were obtained through an in-depth literature review since similar field studies were not found in the literature. At the same time, easy to understand, clear, one-dimensional and unbiased questions were chosen. The participants were asked to answer a total of 14 questions. The following are the questions that were used in the research form:

1. Gender
2. Education
3. Age
4. Prior to the pandemic, how many flights did you have annually?
5. Do you travel on holiday? Do you travel for business?
6. Do you have a phobia of flying?
7. Do you think flying is the best way to travel? Why?
8. Do you check the aircraft type you fly? When do you do this?
9. Do you think all types of aircraft are safe for passengers? Why?
10. What do you know about Boeing?
11. Do you think it is safe to travel on Boeing planes? Why?
12. As a passenger, are you sure that the 737 MAX is as safe as any proven aircraft that has ever been to the skies? Why?

13. If you notice that you will go on the board of a Boeing MAX, would you change your plane, if you had the option?
14. If you have to fly on the Boeing 737 Max, would you feel safe during the time you get from point A to point B?

In this context, 64 randomly chosen individuals were asked to take part in the study. 32 of the invited passengers voluntarily decided to take part in the interview. The personal information of the participants is kept confidential. The research conducted interviews with 32 of the sample group's members. Due to the pandemic conditions, data were obtained by making phone calls with 15 participants. Face-to-face interviews were conducted with 17 participants. Interviews with 17 women and 2 males were not possible since they were unaware of the Boeing 737-Max accidents.

The data was analyzed using a content analysis approach. Similar data were gathered together within the framework of specific concepts and themes and coded in the content analysis done on the text produced with the answers to the open-ended questions. Once the codes were determined, themes were created and findings were interpreted (Yıldırım and Şimşek, 2011). The next section lists the research's codes, themes, and findings.

4. Findings and Discussion

Before all else, the 32 research participants' demographic details were examined. As given in Table 1, there are 62.5% men and 37.7% women among the participants. 25% of the participants in the research are in the age range of 18-25, 34.37% of them are in the age range of 26-35, 18.75% are in the age range of 36-45 and 46-55, and 3.12% are in the age range of >55. Additionally, the largest group in terms of participants' educational levels is secondary education, with 31.25%, followed by doctoral level with 21.8%.

Table 1. Participants' Demographic Information

Demographic Variable	**n**	**%**
Gender		
Woman	12	37,5
Male	20	62,5
Age		
18-25	8	25
26-35	11	34,37
36-45	6	18,75
46-55	6	18,75
>55	1	3,12
Education		
Secondary Education	10	31,25
Associate Degree	3	9,37
License	6	18,75
Postgraduate	6	18,75
Doctorate	7	21,87

High quality, safety precautions, risk responsibility, aircraft risk, fear, desire to fly, the feeling of safety, and trust are brought together under 2 main themes. Table 2 lists the themes and codes.

Table 2. Generated Codes and Themes

Themes	Sub Themes	Codes
Manufacturer's crisis strategy	High Quality	Brand Recognition, İmage, aircraft appearance, sustainability, giant motor production, Giant motor production, well-established company, knowledge,
	Safety Precautions	Max soft updates have a warranty, Problem-solving, doubt, commercial concern
	Risk Liability	Sharing updates, wrong confirmation, manufacturing defects, being transparent, detailing
Passenger Compliance to Customer Strategy	Flight Risk	A feeling of setback, high, lack of control, crisis history, pilot control, digital aircraft features, doubt Aircraft lifespan, negative media coverage, aircraft accident history, abnormal situation, concern
	Fear	Fear of aircraft type, fear of manufacturer, change aircraft type, aircraft type check
	Request to Fly	Comfortable travel, travel time, accessibility, quality, long journey, pleasant journey, economical, fast, practical, safe, vacation time
	Sense of Security	Sourced from the industry, sourced from the airline, appearance, new generation aircraft, modernity, seat spacing, the attitude of flight personnel, the feeling of doubt, old generation aircraft, well-maintained aircraft, large aircraft, large aircraft, tested aircraft, accident rate, training of the crew, small aircraft, the feeling of unease, chronic error, technological aircraft, continuous control
	Source of Confidence	To the: Manufacturer, aircraft type, industry, carrier, number of flights, The long period of flying, authority, rules, pilot

The responses are outlined in Table 3 to help explain the respondents' perspectives.

Table 3. Responses of Participants

Participants	Q1.	Q2.	Q3	Q4.	Q5.	Q6.	Q7.	Q8.	Q9.	Q10.	Q11.	Q12.	Q13.	Q14
1. Participant	Woman	Doctorate	40	10	H&B	x	✓	x	✓	✓	✓	x	x	✓
2. Participant	Male	High School	47	200	B	x	✓	✓	x	✓	✓	x	✓	x
3. Participant	Male	High School	22	7-8	B	x	✓	✓	✓	✓	✓	x	✓	✓
4. Participant	Woman	Doctorate	31	5	H&B	x	x	x	x	✓	x	x	✓	x
5. Participant	Male	High School	37	2	H	x	✓	x	✓	✓	x	x	✓	x
6. Participant	Male	Doctorate	62	12-15	H	x	✓	x	x	✓	✓	✓	x	✓
7. Participant	Woman	License	52	8-10	H	x	✓	✓	x	✓	✓	✓	x	✓
8. Participant	Male	Doctorate	47	6-8	H&B	x	✓	✓	✓	✓	✓	✓	x	✓
9. Participant	Male	Doctorate	52	8-10	H&B	x	✓	x	x	✓	x	x	✓	x
10. Participant	Woman	P.raduate	30	5-6	H	x	✓	✓	x	✓	x	x	✓	x
11. Participant	Male	P.graduate	29	10-15	H	x	✓	✓	✓	✓	✓	✓	✓	✓
12. Participant	Woman	License	27	10	H&B	x	✓	✓	✓	✓	✓	x	✓	✓
13. Participant	Male	P.graduate	30	6	H	x	x	x	x	✓	✓	✓	x	✓
14. Participant	Male	Doctorate	39	10-12	H&B	x	✓	✓	✓	✓	✓	✓	x	✓
15. Participant	Male	P.graduate	29	8	H	x	✓	✓	x	✓	✓	✓	x	✓
16. Participant	Male	Doctorate	40	10-12	B	x	x	x	x	✓	x	x	x	x
17. Participant	Male	Assoc. degree	55	40-50	B	x	✓	x	✓	✓	✓	x	✓	x
18. Participant	Male	Assoc. degree	44	40-50	H&B	x	✓	✓	✓	✓	✓	x	✓	x
19. Participant	Male	Ass. degree	38	100	H&B	x	✓	✓	x	✓	✓	x	✓	x

20. Participant	Male	High School	55	40	H&B	x	x	✓	✓	✓	✓	✓	x	✓
21. Participant	Woman	P.graduate	27	4	H	x	✓	✓	x	✓	✓	x	✓	x
22. Participant	Woman	P.graduate	28	16	H	x	✓	✓	✓	✓	x	x	✓	x
23. Participant	Woman	Doctorate	33	40	H&B	x	✓	✓	x	✓	x	x	✓	x
24. Participant	Male	License	34	10-11	H&B	x	x	x	✓	✓	x	x	x	x
25. Participant	Woman	License	31	4	H	x	✓	✓	x	x	✓	x	✓	x
26. Participant	Male	License	25	3	H	x	x	✓	x	✓	✓	x	✓	x
27. Participant	Male	High School	21	8-10	H	x	x	x	x	✓	✓	✓	x	✓
28. Participant	Woman	High School	20	5-6	H	x	✓	✓	✓	✓	✓	x	✓	x
29. Participant	Woman	High School	21	2	H	x	✓	✓	✓	x	x	x	✓	x
30. Participant	Male	High School	20	2-3	H	x	x	x	✓	x	✓	✓	x	✓
31. Participant	Male	High School	20	4	H	x	✓	x	✓	x	✓	✓	x	✓
32. Participant	Woman	High School	20	4	H	x	✓	✓	x	x	✓	x	✓	x

When the responses to the question concerning flying Boeing 737-Maxs based on the number of participants' annual flights are reviewed, it becomes clear that passengers with more annual flights have less confidence in the safety of 737 Boeing-Max aircraft. Again, if these passengers realize that the plane is Boeing MAX, their willingness to alter their plane increases. Hence, organizing campaigns to strengthen the sense of safety for frequent flyers can enhance the perception of aircraft type.

According to 75% of the participants, flying is the best way to travel. In some countries, participants think that air transport is fast, practical, comfortable, safe and even economical in some countries. However, according to the destination, ticket price, length of stay, and distance, 28% of respondents said they use other forms of transportation. In compliance with the literature, these results have once again revealed why passengers have a demand for air transportation since it has become available.

The participants' opinions about the types of aircraft they flew and their views regarding the Boeing 737-Max did not significantly correlate. From the responses of Participant 5 and Participant 9, we can conclude that although passengers are generally concerned about Maxs, they do not check the type of aircraft before boarding.

(Responses of Participant 5: "*I don't look at the type of plane I fly", "I normally think of every type as safe. After the Boeing Max crashes, I became more concerned about the Boeings. Before the Boeing crash, I had no interest in aircraft types. I didn't know the distinction either."*

Responses of Participant 9: *"I don't look at the type of plane I fly", "If I had an option, I would prefer Airbus." Boeing experienced lots of issues. There was anxiety after Max*.")

Participants, who mostly think all types of aircraft are not safe for passengers, stated that they would change the Boeing 737-Max if they had the option to do so, and they would not feel safe otherwise. 21 out of 32 participants (66%) do not see Max planes as safe for passengers; although 19 (59%) of them think they want to change their plane and 12 (37%) think that Boeing aircraft are safe, they do not find the Max model safe. According to Coombs (2010), the speed and ease of digital communication enable stakeholders to manage crises and diminish their harmful effects on an organization's reputation. Despite the manufacturer's crisis strategies, the negative situation caused by the Boeing 737-Max model aircraft accidents continues to hinder passenger compliance. 11 out of 12 women (92%) and 10 out of 20 men (50%) believe Max's are unsafe. Even though it is recognized that women typically are not informed of these accidents, given that 92% of the responses from female participants and 50% from male participants are unfavorable, it is imperative to conduct campaigns that promote a sense of safety, especially for this target group. Most of the participants invited to the interview were either unaware of Max or that Max was grounded. The presence of people unaware of Max can reduce overall avoidance of Max. On the other hand, those who don't know anything about Max maybe those who rarely fly.

Participants made the following statements:

Participant 2: "*I believe that a contemporary, comfortable-looking airplane is safer. The plane with tight seat gaps is unreliable because there is a commercial concern there. It makes you think that the maintenance will be affected",*

Participant 9: "*I prefer new planes*",

Participant 10: "I don't believe really old aircraft are properly maintained. If I had an option, I would choose the new one",

Participant 13: "If the plane looks new, I feel safe", and

Participant 24: "*I feel safer when traveling with large-bodied airplanes. I don't feel safe when flying an old-style airplane. Big planes look more comfortable and newer*."

Hence, they stated that new, modern-looking and wide planes inspire them a sense of safety, assuming that their parts can also be new. They also stated that after the Maxs had flown without being involved in any more accidents or crashes, they would be assured that they were safe. Meanwhile, other participants stated the following:

Participants 21-26 and 32: "*It needs to take several more flights before we can confidently say with certainty that it is safe. It needs to prove itself*."

Participant 19: "*Airbus and Boeing 737 models have been in operation for many years. But Maxs are so new and they have been involved in so many accidents. Even the old models did not get involved in so many accidents*."

In their study, Wouter and Broekmen (2021) concluded that Boeing's crisis history in the 737-Max problem strengthened stakeholders' negative views of the corporation and created a more negative reputation as a whole. They contend that businesses should proceed cautiously while deciding on and developing crisis responses. When the investigations revealed that Boeing was indeed responsible, it could be argued that this not only damaged the reputation of the 737-Max as a product, but also the reputation of Boeing as an aircraft manufacturer. Similar results were also obtained in this study. Since they heard about the manufacturer's long-term news in the media, the participants, who had never looked at the aircraft type or heard of Boeing before, have been paying attention to the aircraft type or remembering Boeing with these accidents.

(Participant 5: "*I wasn't interested in types of aircraft until the Boeing crashes. I wasn't aware of the distinction*.", Participant 24: "*What do you know about Boeing*? – *I only know about the Boeing-737 Max accidents.*") Boeing is a market leader in the manufacture of aircraft and has been around for more than 100 years. However, given that clients were not provided a conclusive response and solution during the crisis, it might be argued that this demonstrates a lack of efficiency in crisis management (Vargas-Hernández and Hernández Martnez, 2019).

Another striking finding of the study is that positive safety opinions about Boeing 737-Maxs stem from trust in airline companies, pilots, and aviation authorities rather than the aircraft manufacturer. The statements of the following participants support this finding:

Participant 14: "*Maxs made it very apparent that there are rules. Authorities do not leave the decision to the airline companies*."

Participant 15: *"My trust is related to the airline company; (after all) they have allowed its operations, which means they have put their trust (in the aircraft)."*

Participant 16: *"I think on an airline basis. The money they spend on maintenance matters. If planes go through a proper maintenance, they are safe."*

Participant 23: "*You trust the pilot and the airline's brand value*."

Customer loyalty and trust in the airline is an important element of competitiveness. We observe that passengers' intentions to utilize a certain airline brand notwithstanding the Boeing 737-Max crashes are influenced by their opinions of the airline's crisis management skills and brand dependability. A finding comparable to those of Bravo et al. (2021), was reported in this study: The Turkish passengers' preference for the Boeing 737-Max will be lower after it resumes service compared to similar contemporary aircraft. Nevertheless, according to the assessments of 23 people, Boeing products continue to offer a 72% sense of safety and confidence.

5. Conclusion

The demand for the aviation industry, which offers passengers a fast, comfortable, economical, safe, and reliable means of transportation, has grown over time. In recent years, this sector in Turkiye has developed rapidly, keeping pace with the global increase in aviation traffic. The complexity of technologies, the industry's vulnerability to external threats, and the presence of human factors all contribute to the periodic crises that the aviation sector experiences. Safety and security is the most important factor in passenger demand and is a global concern. It may damage the reputation of the aviation business and cause financial losses. Only with effective crisis management will a company be able to survive in case of a crisis.

Due to the enormous demand for aircraft production, two internationally recognized businesses, Boeing and Airbus, have a wide value chain that is expanding worldwide (Vargas-Hernández and Hernández Martínez, 2019). Despite the Covid-19 Pandemic crisis, academics are still primarily focused on the crisis Boeing 737-Max, which was grounded in 2019 after two catastrophic crashes. In this study, we sought to find out to what extent passengers avoid using Max in the long term. Even though Boeing fixed the issue and resumed flying its aircraft, we concluded that unfavorable opinions of passengers, who are one of its key stakeholders, persisted.

Based on the results of the analysis of the data collected in the research, it was concluded that the Boeing 737-Max crisis affected passenger safety perceptions:

1. Passengers with a high number of annual flights have lower safety perceptions of 737 Boeing-Max aircraft and are more willing to change aircraft if they realize it is a Boeing MAX.
2. 21 out of 32 participants do not consider Max planes to be safe for passengers;

   while 19 believe they want to change their planes and 12 believe Boeing planes are safe, they do not believe the Max model is safe.
3. Participants generally think that Maxs will be safe after flying for some time without getting involved in a crash.
4. Since having seen the media coverage of the manufacturer, some participants who have not previously looked at the aircraft type or heard of Boeing have been paying attention to the aircraft type or remembering Boeing with these accidents.
5. It has been concluded that the positive safety opinions towards Boeing 737-Maxs are mostly due to the trust in the airline, pilot and aviation authorities rather than the aircraft manufacturer.
6. 59%, the rate of willingness to change planes, indicates that the Boeing 737-Max crisis still affects passengers' intentions to use that airline brand. It was determined, however, that Boeing products continue to instill a 72% sense of safety and security.

The Boeing 737-MAX crisis has had negative effects on airlines, one of the important stakeholders of this industry, which were caught unprepared for the first crash but gradually realized the wider industry consequences after the second disaster. Crises in the industry are a potential source of errors that spread across airlines in connection with the internal practices and decision-making processes of the relevant company (Collings et al., 2022). The result of the research conducted on Lion Air Company after the accidents showed that the aviation industry should have a special foresight program to eliminate the loss of reputation caused by accidents. Similar programs should be organized and managed as emergency training in airline companies (Mudiardjo et al., 2022).

Limitations of the Study and Recommendations

Due to the Covid-19 Pandemic conditions, the majority of the data in this study was collected over the phone. Further research can compare the findings of this study by conducting more face-to-face interviews. Future research on the subject may also reveal whether there is a change in the passengers' perception over time. Furthermore, this study considered the preference of passengers who are not afraid to fly for the Boeing 737-Max aircraft. Future research can incorporate and compare other variants for the Boeing 737-Max aircraft.

In aviation safety and security management, analysis of past accidents and crises is used in aviation safety and security management. This study adds to practitioners' understanding of how the Boeing 737-Max crisis and its aftermath can be managed in domestic airlines. Future research could use real-world flight data to examine passengers' preferences with varying booking habits on flights, including the Boeing 737-Max. In fact, the quantitative data collected in the field can be analyzed, and fleet planning can be made for destinations to distinguish between leisure and business travelers on Max flights of airlines on different routes.

The internal practices and decision-making processes of a stakeholder in the air transport industry also affect other stakeholders (Collings et al., 2022). When examining the latent conditions of failure associated with the human and organizational factors involved in this crisis, erroneous decisions made at higher levels of the system are striking. Therefore, the identification of hidden factors in aviation organizations and the production of precautions should be perceived as an ongoing challenge for both system safety researchers and system safety application areas (Appicharla, 2023) and measures should be taken in this direction.

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