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1.Introduction

1.1. Relevance

Commercial flying has never been safer. The International Civil Aviation Organization releases an annual safety report, stating that accidents have been decreasing over time. While the accident rate per million departures was over 4% from 2006-2010, it has been lower than 3% since 2015. (ICAO, 2013-2023)

In 2022, austrian airports counted 26,5 Mio. passengers. (Statistik Austria, 2022) The passenger volume is still not back to pre-pandemic circumstances (-26,9%) but has recovered in comparison to 2021 (+137,4 %). (Statistik Austria, 2022) In the years leading up to the pandemic air travel has increased continuously. (Statistik Austria, 2021) Despite of this trend major airplane accidents are extremely rare.(IATA, 2022)

Yet fear of flying and Aviophobia are common in the general public. According to Van Gerwen, Spinhoven, Diekstra & Van Dyck (1997) it is estimated that 10% to 40% of the population in industrialised countries experience varying degrees of fear of flying. However, it is difficult to determine whether the numbers are still valid, due to a lack of recent studies or data (Van Gerwen et al., 2004). Despite commercial aviation becoming more secure, there does not seem to be an influence on the prevalence of fear of flying (Schindler, 2020) In 2003 the German Institut für Demoskopie Allensbach released a report, stating that 16% of Germans are afraid when flying, while 20% do not feel well / save when doing so (Institut für Demoskopie Allensbach, 2003). Statistics regarding the Austrian population are scarce, but it can be assumed that the figures are similar to those in Germany and other countries European Countries.

When the media report on aircraft accidents, there are a variety of reactions from recipients. In addition to comments that deal with the circumstances of the accident and safety precautions, there are also comments of people expressing their fear regarding flying. For example, the following comments can be found on an Instagram posting from zeitimbild from January 21st, 2022, reporting on the Eastern Airlines crash in China (zeitimbild, 2022):

„Hab selbst Flugangst und bei sowas stellts mir immer alle Nackenhaare auf. Bleibt nur zu hoffen, dass die Passagiere/Crew nicht allzu lange mit ihrer Todesangst konfrontiert waren und

das alles schnell ging.“ (the_holy_no, 2022) (translation: I have fear of flying myself and things like this always make the hairs on the back of my neck stand up. Let's just hope that the passengers/crew didn't have to wait too long with their fear of death and that everything went quickly.)

“Deswegen hab ich flugangst” (silvijan_ceca, 2022) (translation: That's why I have fear of flying)

With regard to Boeing's recent past, the saying "If it's Boeing, I'm not going" is becoming more and more common and is often stated on social media platforms, but also in daily newspaper forums. (e.g. Small Axe, 2024; ben_s, 2024). Similarly, comments like „Ich mag vorerst in keine 737-800 mehr einsteigen“ (Fitzpatrik O'Brian, 2019) (translation: “I don't want to get on any more 737-800s for the time being”) under an online article concerning the Ethiopian Airlines crash in Addis Abeba in 2019 (Dieterich, 2019) demonstrate that media recipient express fear or unwellbeing after reading online articles on airplane crashes.

Apart from that research supports the assumption that media reporting does have an impact on fear of flying. McNally and Louro (1992) questioned people with fear of flying about their etiological attributions. Aviophobia patients reported often (71%) that verbal or media information (e.g., about crashes) played a role in development of their flight phobia. Adding another example, Schindler et. al (2016) concluded that 70% of people with aviophobia felt influenced by media information about airplane accidents or crashes.

1.2 Problem Statement and Research Objectives

People's reactions to news reporting on airplane accidents and past research raise the question of the extent to which reporting on aircraft accidents has an effect on the perceived fear of recipients. As mentioned, fear of flying, not necessarily clinically diagnosed, affects a large group of people (Van Gerwen et al., 2004) and whenever airplane incidents or crashes occur, extensive media coverage can be expected.

Thus, the aim of this study is to determine whether exposure to media coverage on airplane crashes has an immediate effect on people's fear level regarding flying, while also taking into consideration an individual's prevailing predisposition.

While it has been established that continuous exposure to media coverage on plane crashes through media consumption influences people's health and anxiety (Vasterman et al., 2005; Van der Meer et al. 2022), this study focuses on whether consuming content that covers air disasters has immediate effects on the participants' fear of flying and if the outcome varies according to basic level of fear of flying.

The objectives are defined as stated:

Objective 1:

The main objective focuses on how exposure to media coverage on airplane accidents influences people's fear level regarding flying and whether the study's participants' basic level of fear of flying has an impact on the outcome.

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The following research questions will be evaluated:

Research Question 1 (RQ1): To what extent is there an effect on perceived fear of flying after exposure to media content about airplane crashes?

Based on literature research in chapter 2 and 3, the following hypotheses are proposed.

Hypothesis 1a (H1a): After being exposed to media content that deal with airplane crashes, crashes, there is an increase of perceived fear of flying.

Hypothesis 1b (H1b): The measured fear level is higher for people that received articles on airplane crashes, than for people who received articles on aviation related topics, that do not involve incidents or crashes.

Research Question 2 (RQ2): How is the result different for people who have more fear of flying before exposure than other people?

The following hypothesis is assumed for RQ2:

Hypothesis 2 (H2): The effect of media exposure to content on airplane crashes, is stronger for study participants, who rate their anxiety levels higher pre-exposure than other respondents with lower pre-exposure anxiety.

Objective 2:

Sensationalism can be linked to media hypes (Walters et al., 2016) and disasters can be predetermined as sensational (Grabe et al., 2001). Emotionally charged and sensational reporting, particularly when focused on speculation, can negatively impact public health after a disaster. (Vasterman et. al, 2005). It is also established, that sensationalism in media coverage of airplane crashes can negatively impacting public perception of aviation safety (Huff & Lederer, 1992). Therefore, second objective of this study is to determine whether the effect media content addressing airplane accidents has on the respondents' anxiety levels (assuming that there is one) differs depending on the media content used for exposure

It shall be examined whether content that is classified as sensational and emotional has a stronger effect on the participants than content that is classified as neutral and serious.

Criteria the classification is based on are explained in further detail in chapter 3.3.1.

The following research question is adopted:

Research Question 3 (RQ3): To what degree do people's fear levels alter depending on whether they were exposed to sensational and emotional reports on airplane crashes or serious reports on airplane crashes?

For RQ3 the following hypotheses are assumed:

Hypothesis 3a (H3a): The effect that media content addressing airplane crashes has on the respondents' anxiety levels is more pronounced for people who are confronted with content that is classified as sensational and emotional than for people who are confronted with an article that is classified as serious.

Hypothesis 3b (H3b): The effect on the participants' anxiety levels is strongest for people who have a high base level regarding fear of flying and are confronted with content that is classified as sensational and emotional.

The hypotheses are visually presented in the chart below.

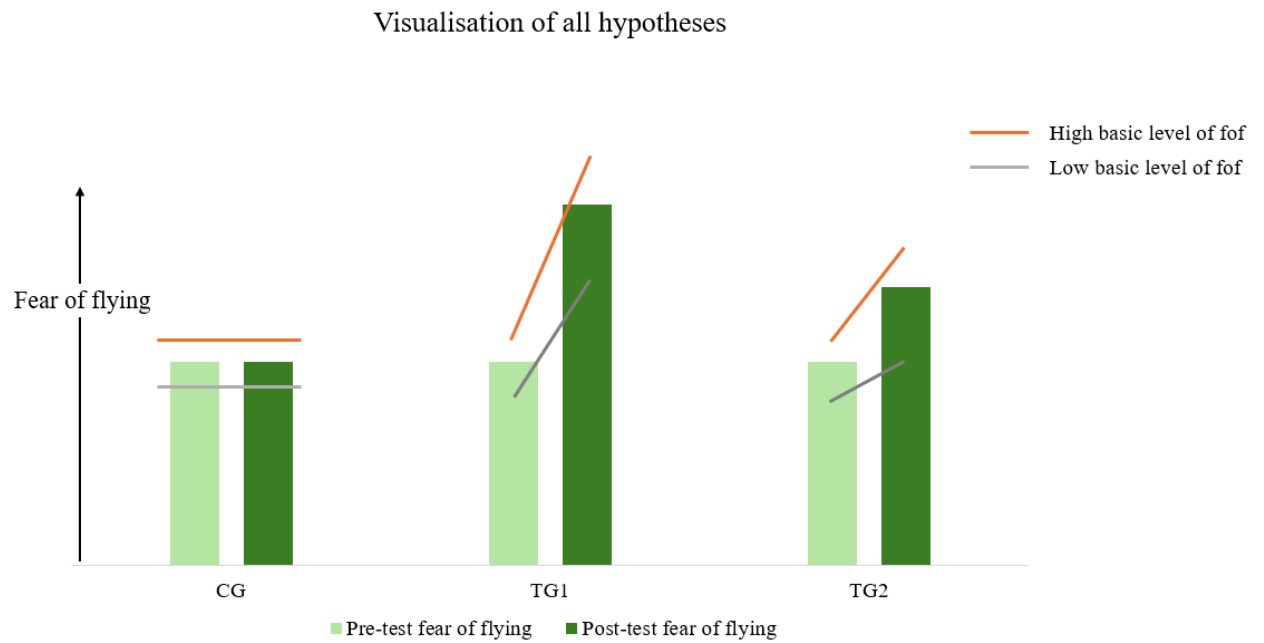


Figure 1: Visualisation of Hypotheses

2. Fear of Flying and Aviophobia

As mentioned earlier, it is estimated that 10% to 40% of the population in industrialised countries experience varying degrees of fear of flying (Van Gerwen et al., 1997), while at the same time there is no recent data on verifying the numbers (Van Gerwen et al., 2004). Oakes and Bor (2010) reviewed different studies and found a wide variation in estimates, ranging from 2 – 40%. The range of prevalence may be explained by a higher amount of people saying, that they themselves have fear of flying versus a lower amount of people who have been diagnosed with clinically significant phobia (Oakes and Bor, 2010)

From a historical point of view, early mentions of fear of flying include Henry Graeme Anderson's "The medical and surgical aspects of aviation" in 1919. The author uses the term Aero-Neuroses to describe "various types of nervous breakdown that may arise in those engaged in flying." (Anderson, 1919, p. 96) For commercial aviation was in its infancy, individuals affected by Aero-Neuroses belonged to two main groups: 1) aviation pupils (student pilots) 2) qualified aviators who engaged in war flying. (Anderson, 1919)

Fear of flying refers to a general and often temporary anxiety related to flying. It includes a wide range of fears people experience in different situations when it comes to flying e.g., in the airplane, during take-off / landing, or when thinking of flying. (Schindler, 2020)

Van Gerwen et al. (1999) state that the population affected by fear of flying can be clustered into the following subgroups:

"(a) those who do not fly at all, (b) those who restrict flying to an absolute minimum and experience considerable discomfort on each flight, and (c) those who have continuous mild or moderate apprehension about flying but who do not avoid it." (Van Gerwen et. Al, 1999, p.45)

On the contrary to fear of flying in general, Aviophobia involves a persistent, excessive, and unrealistic fear of flying that leads to avoidance and significant distress or impairment in life. It poses as a complex clinical picture, based on the fulfillment of diagnostic criteria according to e.g., ICD-10 or DSM-5. While clinical practice is based on the ICD-10 due to legal requirements, research mostly uses the DSM-5. (Schindler, 2020)

The two classification scales have differences but share most criteria, such as (Schindler 2020):

- The phobic object situation evokes significant amount of fear which is disproportionate to the actual danger posed by flying
- Avoidance behaviour
- Considerable stress caused by symptoms / impact on social and, or professional spheres of life

In addition, ICD-10 lists vegetative and psychological symptoms in detail, such as sweating, breathing difficulties, Feeling of dizziness, insecurity, weakness or light-headedness. (Dilling, Mombour, Schmidt, & Schulte-Markwort., 2011)

Aviophobia (fear of flying) is classified accordingly to ICD-10:

40.2 Specific (isolated) phobias (BMSGPK, 2022, p. 18)

Phobias restricted to highly specific situations such as proximity to particular animals, heights, thunder, darkness, flying, closed spaces, urinating or defecating in public toilets, eating certain foods, dentistry, or the sight of blood or injury. Though the triggering situation is discrete, contact with it can evoke panic as in agoraphobia or social phobia.

In DSM-5 aviophobia is assigned following sub-type: F40.248 Specific phobia (situative type) (Falkai et al., 2018)

Aviophobia itself cannot be classified as a unitary phenomenon and appears to be heterogenous, occurring under the influence of complex psychological, social and physiological factors and manifest differently in affected individuals (Howard et al., 1983) According to Van Gerwen Spinhoven, Diekstra & Van Dyck (1999) fear of flying can be conceptualised as a situational phobia as well as an expression of other non-situational phobias. For example, fear of flying can be an implication of other phobias such as fear of heights or agoraphobia. (Van Gerwen et al., 1999) For example, McNally and Louro (1992) reviewed the motivation for flight avoidance in flying phobics. People with simple phobia (aviophobia) avoided flying because of fear of crashing, while people suffering from panic disorder with agoraphobia avoided flying because they were afraid of experiencing panic or even panic attacks.

This study focuses on self-perceived anxiety towards flying and not diagnosed phobias.

2.1 Etiology and the role of media

Schindler (2016; 2020) mentions that classical conditioning the most influential explanatory model for the development of specific phobias. She refers to works of Pavlov's Conditioned Reflexes (1927) and Watson and Rayner's Conditioned Emotional Reactions (1920). For example, if someone experiences severe turbulence (unconditioned stimulus, UCS) during a flight and feels intense fear (unconditioned response, UCR), the act of flying itself can subsequently become a CS. Even without further turbulence (UCS), simply boarding a plane or taking off can trigger the fear response (conditioned response, CR). The act of flying becomes a signal for potential danger, even though the original danger (turbulence) is no longer present. (Schindler, 2020) In 1977 Rachmann challenged the traditional conditioning theory of fear acquisition, arguing it's incomplete and doesn't explain why people do not develop fears in many dangerous situations. While acknowledging conditioning plays a role, Rachmann proposes three pathways to fear: 1) Classical Conditioning 2) Vicarious Learning (observing others' fear), and 3) Transmission of Information / Instruction. The latter is especially important, as it can (like vicarious learning) explain why people are afraid towards things they have not experienced. Looking at Transmission of Information of information in this context does also indicate that media reports can induce fear or reinforce it. According to Schindler (2020) several factors contribute to aviophobia. Negative flight experiences, such as severe turbulence, are a common trigger in about half of the cases. Other contributing factors include heightened stress levels, anxiety sensitivity, physiological factors (like sensitivity to changes in air pressure) but also the reinforcing effect of media reports on plane crashes. (Rachman, 1977)

To what extent media plays a role in the development of aviophobia has not been thoroughly researched, yet there are some studies that include aspects regarding the question. In a study mentioned earlier, by McNally and Louro (1992) the flying phobics were questioned about their etiological attributions. Simple phobia (aviophobia) patients reported more often (71%) that verbal or media information (e.g., about crashes) played a role in development of their flight phobia than panic disorder with agoraphobia patients (18%). When the participants were asked about their primary etiological factor contributing to their fear, 47% of people with simple phobia and 6% of people with panic disorder and agoraphobia selected media and verbal information. In a similar study by Wilhelm and Roth (1997) only 8% of people with aviophobia said that media information about flight incidents was the most important reason for their

phobia. The authors also stated that they did not expect the number to be this low and that in interviews they conducted with the participants, they said media only reinforced their fear of flying. (Wilhelm & Roth, 1997) In 2016 Schindler et. al. released *Ways of Acquiring Flying Phobia*. As a result, they concluded that 70% of people with aviophobia felt influenced by media information about airplane accidents or crashes. In comparison, in the control group, which consisted of people who do not suffer from aviophobia, only 37% felt this way. However, this may indicate that also people who do not experience fear flying might have a reaction to media coverage on airplane crashes. Schindler (2020) compared this to study on the etiology of acrophobia (fear of heights) (Menzies & Clarke, 1995) where only 4% of people with acrophobia attributed the onset of their phobia to the factor Information / instruction. There could be several reasons for this difference, for example the Schindler et. al (2016) asked their sample whether they were influenced by media information, while Menzies & Clarke (1995) asked what triggered the onset of the phobia. Apart from that it is likely that the way media report on aviation and airplane incidents / crashes differs from reporting on heights or accidents where height plays a role.

3. Why disasters make headlines

In this chapter the status of research regarding the relevant issues and theoretical concepts is presented. At the beginning, focus is placed on why disasters are relevant to the news to better understand the news value of aviation accidents. Sensationalism in general and in the context of airplane crashes is also discussed. After that, media effects in general and the status of research regarding the effects of disaster media coverage focused on.

3.1 Disasters and their value as news

According to Scanlon (2011) crisis and disaster management reveals two key takeaways regarding the media's role. First, its importance is undeniable throughout the entire lifecycle of an incident, from pre-emptive warnings to post-event information dissemination. The media can be the public's primary, and sometimes sole, information source during a disaster. Second, this power necessitates careful management and monitoring. Media narratives can distort events, fostering public misunderstandings and even hindering official responses, such as the issuance of warnings. Airplane crashes and incidents are rare, but when they happen, they make news. The following chapter focuses on why disasters are prominent in news reporting and often overrepresented. (Van der Meer et al., 2019; Altheide, 1997; Scanlon, 2011)

A disaster is defined as any natural or human-generated calamitous event that produces great loss of human life or destruction of the natural environment, private property, or public infrastructure. (Britannica, 2024)

Cottle (2024, p.8) states that the idea of a “disaster” being any event that has negative consequences loses “analytical traction when applied to such diverse phenomena as unexpected events in the natural environment (floods, fires, hurricanes, droughts, earthquakes, volcanic eruptions); technological and industrial failings (aviation crashes, train derailments, industrial accidents, toxic releases); politically precipitated crises and conflicts involving mass death, violence or attrition (wars, acts of terror, civil disobedience); and longer term and systemic failings (poverty, human rights abuses, environmental collapse)”

According Eilders (2024) Walter Lippmann is considered a pioneer of news value research. Lippmann's work *Public Opinion* which was released in 1922 (Lippmann, 2017) suggests that news values are not inherently tied to objective truth, but are shaped by factors sensationalism,

proximity, relevance, unambiguity and facticity. Overt acts and easily recognizable narratives are prioritized, while complex and nuanced realities are often simplified or ignored. The need to engage readers quickly favors the sensational and the familiar, often reinforcing existing stereotypes.

A later important milestone in research is Galtung and Ruge's *The Structure of foreign news* (1965), where it is analysed how global events become news, focusing on the Congo, Cuba, and Cyprus crises as reported in four Norwegian newspapers. They propose 12 factors influencing "newsworthiness," arguing that the more factors an event satisfies, the more likely it is to be reported. These factors include frequency, threshold, unambiguity, meaningfulness, consonance, unexpectedness, continuity, composition, and references to elite nations, elite people, persons, and negativity. They hypothesize that these factors have additive and complementary effects, meaning a lack in one area can be compensated for by strength in another. Their analysis supports these hypotheses, revealing how news selection and distortion create a biased image of the world, particularly of peripheral nations. (Galtung & Ruge, 1965)

This publication has been thoroughly reviewed and revisited by Harcup and O'Neill (2001) who identified 10 factors by analysing 1,276 lead news stories from three major UK newspapers (Daily Telegraph, Sun, and DailyMail): 1. The power elite, 2. Celebrity, 3. Entertainment, 4. Surprise, 5. Bad news, 6. Good news, 7. Magnitude, 8. Relevance, 9. Follow-ups, 10. Newspaper agenda. Furthermore, the study highlights the prevalence of stories unrelated to actual events, including pseudo-events and promotional material. (Harcup & O'Neill, 2001)

Among the aspects, the studies have in common is that they point out the newsworthiness of negative, unexpected occurrences. Commercial airplane crashes or incidents do fulfill the criteria of newsworthiness in many ways. As Joseph Scanlon wrote (2011, n.p):

The media not only cover dramatic events, they cover them in a massive way. Within 24 hours, there were 325 media personnel in the isolated Newfoundland community of Gander after an air crash involving the 101st Airborne, several thousand media in Lockerbie, Scotland after the crash of Pam Am 103.

3.2 Sensationalism in Disasters and Aviation accidents

The concept of sensationalism can be traced back to the late 16th century and has later been revisited in discussions about the penny press and yellow journalism. (Grabe et. al, 2001). Walters, Mair and Lim (2016, p.5) provide the following definition: “Media sensationalism, often seen during disastrous events, is a type of editorial bias in mass media in which such events are overhyped to increase readership numbers. “

In recent research, sensationalism in journalism is often classified by content or formal features (Grabe et al., 2001) This concept has most notably been used to analyse television news (eg. Kleemans and Vettehen, 2009) as it is suggested, that this medium provides strong sensational effects (Kononova & Bailey, 2015). Burgers (2013, p. 5) takes up on this definition and summarises: “The definition of sensationalism states a duality in message features that can be called sensationalistic: they can be either related to the content or to the form of the news message. ”

Because of their content, certain topics are predetermined as sensational, for example topics of sex, scandal, crime, and disaster (Grabe et al., 2001).

Many scholars mention the use of language when it comes to classifying media content as sensational. (eg. Burgers, 2013) Metaphors and hyperboles (Tierney, Bevc & Kuligowski, 2006), as well as emotional storytelling (Davis & McLeod, 2003) are possible stylistic tools. Burgers (2013) further states that an indicator of sensationalistic news can also be described as the extent of deviation from using neutral language.

Apart from the body text, also headlines can be an indicator of sensationalism, as Molek-Kozakowska (2013) states. The author analysed the headlines of the ‘most read’ articles in the online outlet of the British tabloid Daily Mail and defined five sensationalist illocutions for news article headlines: Exposing, Speculating, Generalizing and Extolling. Further it was observed “that almost half of the sensationalizing news headlines are perceived as aiming to reveal information ostensibly hidden from the public eye.” (p. 184) It was also revealed that 75% of the headlines analysed could be classified as negative (75%), which according to Kozakowska (2013) could indicate a correlation between negativity and sensationalism. The most common themes that were rated as sensational included: celebrity, children, crime, death, disaster, finance, health/safety, morals, public policy and sex.

Walters et al. (2016) point out that Sensationalism can be linked to media hypes (Vasterman et. Al, 2005), a concept describing a perceived disconnect between the event's impact and the level of media attention it receives. Kepplinger and Habermaier (1995) found out that events, like major earthquakes or celebrity illnesses, can skew media coverage, creating the illusion of increased frequency of similar events even when the actual number hasn't changed. This happens because key events shift news selection criteria, prompting coverage of past similar events and thematically related events, while highlighting aspects of new events that resemble the key event. Their study analysed German news coverage of AIDS, earthquakes, and traffic accidents before and after designated key events, demonstrating this phenomenon and challenging the assumption that news coverage accurately reflects the frequency of real-world occurrences. They also point out that sensationalism makes an event more likely to become a "key event" in the first place and then exacerbates its distorting effect on subsequent news coverage. (Kepplinger & Habermaier, 1995)

In their study Greenberg, Sachsman, Sandman, & Salomone (1989) determined that the scientifically calculated risk of events does not correlate with the extent of media coverage, when it comes to evening TV news broadcast. Instead, the traditional journalistic determinants of news and the visual effect are more likely to impact the level of coverage of risk issues. It was established that an airplane crash is a typical TV sensation, and the issue of aircraft safety and accidents received far more coverage than any other environmental risk and almost as much as all man-made environmental risks combined, during the 26-month trial period. (Greenberg et. al, 1989)

In 1989 Vincent, Crow and Davis released a study analyzing U.S. air crashes to assess the use of visual devices and narrative structure. They transcribed almost four hours of videotape material, including visual information. Their analysis revealed that “the stories provide compelling accounts of highly dramatic events” (Vincent et al., Discussion section)

Furthermore, they identified three overall themes: “a) tragic intervention of fate into everyday life; b) mystery of what caused the crash; and c) the work of legitimate authority to restore normalcy.” (Vincent et al., Discussion section) While each narrative develops over the period of a few days, the first one is the most dramatic one. Especially in this narrative scheme, powerful images are used to accentuate the extent of the disaster. (Vincent et al., 2001)

Furthermore, it was determined that framing (Entman, 1993) is used media coverage of airline crashes, promote salient angles or storylines about the crash (Vincent et al., 2001)

Huff and Lederer (1992) researched sensationalism and inaccuracies in media coverage of aviation accidents. They point out that especially the time pressure and the different aims of accident investigators and the media lead to inaccuracies. While the media plays a crucial role in disseminating information, its focus on immediate answers and sensationalism can lead to distortions, hindering the investigation process and negatively impacting public perception of aviation safety. The article examines specific examples of misleading headlines and biased reporting, highlighting the importance of factual accuracy and responsible journalism.

4. Media effects and disaster media coverage

The aim of this study is to determine whether media content regarding airplane crashes has an immediate influence on the recipient's self-perceived anxiety. Thus, media effects will be further elaborated in the following chapter. In the first part of chapter the focus is on the general aspects of media effects in general and the relevant concepts for this thesis. Then, media effects in relation to disaster reporting and fear are examined in more detail.

Media effects are described as changes in the recipient's knowledge, opinion, attitude and behaviour caused by exposure to media content. (Kepplinger, 2010) Media effects are measured by the changes regarding the categories mentioned above between a certain point in time and another. The extent of changes provides information on the distinction of the effects. If no changes can be observed, the media content has had no effects in this manner. (Kepplinger, 2010) Mass media effects can be examined on different levels regarding different manifestations. On a psychological level, media effects can operate cognitive, affective and have an impact on attitudes and behaviour. Other than that, it can be ascertain whether media effects are intentional or unintentional. Media effects can also be interpreted as functional, meaning that the media coverage serves society, or dysfunctional in terms of being contra productive for society. (Schweiger, 2013)

In general, this study examines immediate media effects, more specifically, immediate media effects of disaster news coverage. For the aim is to determine whether news coverage of a specific issue has an effect on the participant's reported anxiety we are particularly looking at cognitive media effects. These effects occur, when a person's mental processes and the product of these are influenced by media content. (Potter, 2012)

The focus of emotional media effects is on the influence of individual levels of arousal, feelings or subjectively perceived feelings (appraisal) and longer-term moods. (Schweiger, 2012) According to Wirth (2013) research on emotional effects can be divided into two approaches: dimensional and emotion specific. The dimensional approach focuses on physiological arousal and positive or negative affect, while the emotion-specific approach focuses on discrete emotions like anger, disgust, or fear. He further elaborates that research on fear and anxiety resulting from media consumption is diverse and can be categorized into at least three main areas: fear and anxiety responses in children and adolescents, fear of crime within the context of cultivation research, and fear appeals in persuasion research. (Wirth, 2013)

4.1 Priming & Framing

The present study examines the immediate effects of media coverage. Therefore, the theoretical framework revolves around priming, but also framing effects which are described in the following section. Priming is relevant, as the study design (chapter 5.1) involves media content of airplane crashes that is expected to prime fear. The concept of framing is also relevant for this study as does have an impact, when it comes to classifying the media content for TG1 and TG2 (see chapter 5.3.), therefore also having somewhat of an impact on the outcome of the research.

The process of communication has three different stages: the pre-communicative phase, the communicative phase and the post-communicative phase. The cognitive media effects that will be discussed more particularly in the course of this paper (priming and framing) can be assigned to the post-communicative phase. (Bonfadelli, 2009)

Generally, priming describes the reaction to stimulus that was caused by a preceding stimulus or event. In terms of media effect research, priming refers to the effects that occur when media content is processed, like changes in behaviour and judgments. Even though this definition implies, that all media effects qualify as media priming, this is not the case. It is important to note, that priming effects are time bound. (Roskos-Ewoldsen & Roskos-Ewoldsen, 2009) The effect depends on how long ago the stimulus was presented (recent priming) and how often (frequent priming). (Peter, 2002) The concept of recent priming provides that a stored knowledge unit (node) can be made temporarily more accessible when primed beforehand. Recent priming also increases the likelihood that the primed knowledge unit will be used to process a subsequent stimulus. (Higgins, 1996) Roskos-Ewoldsen et al. (2009) are quoting J. Anderson's *The architecture of cognition* (1983) as an example that priming was first used in cognitive psychology to research the structure and representation of information within memory. According to Scheufele and Tewksbury (2007) priming can have an impact on the considerations people take into account when adjudicating on an issue.

Priming can be clustered into subcategories, such as semantic priming (word associations) (Foss, 1982; Wauters, 2013), feature priming (prime is linked to a certain feature, like eg. Size, colour) (Yi, 1990) and affective priming (Yi, 1990; Klauer, 1997). In addition, priming effects can also be divided according to the respective thematic focus: political, entertainment-related, violence-related and persuasive priming.

Regarding violence-related priming effects several studies came to the conclusion that violent media content can make semantically similar cognitions more accessible. (Peter, 2002; Kunczik & Zipfel, 2006) For example, Malamuth, Haber and Feshbach (1980) exposed participants to a violent sex scene and presented them a story involving rape afterwards. It was discovered that male participants reacted far more punitive towards the rapist and showed lower fear of aggression than participants who were not exposed to the violent content before.

For it is not based on accessibility, framing differs from this approach. Framing is based on the assumption that the way an issue is characterised can have an influence on people's perception of it. After all, the implications and content of a frame are most pervasive if the recipient is paying attention to the ne (Scheufele & Tewksbury, 2007)

The most prominent definition of framing is the one by Entman (1993, p. 52):

To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described.

According to Entman, Matthes and Pellicano (2009) elements of congruent schemas that were stored in memory in the past can be called into mind. If frames are repeated over and over and appear in multiple contexts it is easier for recipients to notice, understand, store and recall the association. Entman (1993) states that a frame has four main functions. Frames define problems, with the costs and benefits measured through cultural values. In addition to that, the problem's causes are diagnosed, and moral judgements are made. Within a frame, remedies are suggested, such as solutions and likely effects of a problem. Even a single sentence can have more than these functions, on the other hand not all these functions have to occur. A frame has at least four places of communication process. Communicators make conscious or unconscious decisions on what to say in which way, they are influenced by their own beliefs. The next important aspect is the text, since using certain words that have a certain connotation in a cultural environment and the use of language in general can have an impact on how the information is received. Leading on to the receiver who interprets the received information according to their own resources, it is not certain that the (un)intended framing of an information will be received as expected. The last location listed is culture, which is anchored in most people's thinking and consequently present in interpersonal discourse of people of a social group. In all four places, framing has the functions of selection and highlighting. (Entman, 1993)

Framing has to be distinguished from simple assertions and persuasive messages. Entman, Matthes and Pellicano (2009, p. 177) propose following differentiation: "A frame repeatedly invokes the same objects and traits, using identical or synonymous words and symbols in a series of similar communications that are concentrated in time. These frames function to promote an interpretation of a problematic situation or actor and (implicit or explicit) support of a desirable response, often along with a moral judgment that provides an emotional charge." According to this definition framing can be differentiated due to its diachronic nature and cultural resonance. Elements of congruent schemas that were stored in memory in the past can be called into mind. If frames are repeated over and over and appear in multiple contexts it is easier for recipients to notice, understand, store and recall the association. The diachronic aspect consists insofar as exposure to a specific period of time increases the probability of a certain response in a future period. The probability of thinking about other potentially relevant aspects is decreased. After a frame has been repeated often enough, it is manifested in people's minds and does not need further repeating in order to be recalled. (Entman, Matthes & Pellicano, 2009)

Apart from that they imply that there are three postulates that are obligatory for a framing effect to occur: availability, accessibility, and applicability. Availability refers to the requirement that a consideration must have been stored in memory before, so that an individual can comprehend what is presented to them. If that is not the case, emphasizing certain considerations and therefore framing an issue would have no effect. A consideration must be accessible, which can be achieved by frequent exposure to a frame in communication that emphasises a particular consideration. Consequently, the consideration can be used in the process of forming an opinion. The impact of a consideration, that is already available and accessible, depends on its applicability. The applicability of a frame can be enhanced by its strength, relevance, and persuasiveness. If a consideration is not compatible with a person's beliefs, framing it will also have no impact. (Entman et al., 2009)

Lecheler, Schuck and de Vreese (2013) summarise that framing effects are often described as being driven by underlying cognitive processes. In their literature review they state that under this aspect it can either be described as an accessibility effect or a combination of several cognitive processes. A third model they mention, is framing forming new beliefs. Among other studies, they also reference an earlier study of Lecheler and de Vreese (2012) on framing effects on political attitudes they conclude that next to intermediary effects, also direct effects can play a role when it comes to framing. (Lecheler et al., 2013)

Their study (Lecheler et al., 2013) examines how specific emotions (positive: enthusiasm, contentment; negative: anger, fear) mediate the effects of news framing on political opinions. Results show that while anger and enthusiasm mediate framing effects, contentment and fear do not. This suggests that emotions influencing information processing (anger, enthusiasm) also drive opinion change, while emotions that don't (contentment, fear) have no impact on opinions. (Lecheler et al., 2013)

How the media frame fear has been researched in the past. Altheide (1997) argues that news media, particularly television, cultivate fear in American society. He proposes a "problem frame," where news is presented as a narrative of problems, dangers, and solutions, mirroring a morality play. This frame, amplified by entertainment formats and commercial pressures, creates a discourse of fear. Altheide uses content analysis of the *Los Angeles Times* and ABC News to demonstrate how "fear" is increasingly used in news reports, especially headlines, and how it becomes associated with various topics like crime, drugs, and violence over time. He concludes that this problem frame, coupled with information technology, contributes to a pervasive sense of fear and influences public discourse and policy leads to a distorted perception of risk.

Altheide and Michalowski's (1999) examined news articles in *The Arizona Republic* over several decades, focusing on how fear was presented and framed across different topics. The researchers looked for recurring themes, keywords, and narrative structures related to fear and analysed how these elements shaped the article's message. This involved examining not just the explicit mention of fear, but also the implicit ways in which fear was expressed through language, imagery, and the selection and presentation of stories. Fear is seldomly addressed directly, but is used in discourse meaning the fear-inducing aspects of news are highlighted (Altheide & Michalowski, 1999)

Cantor (2010) conducted a meta-analysis on studies about viewer's fear reactions to the mass media and emphasises that this kind of research often comes with methodological difficulties. She points out that putting study participants into the emotional state of fear, but also possibly causing long-term effects poses an ethical dilemma.

4.2 The effects of disaster media coverage

At beginning of this chapter, it should be noted that not all media effects of disaster media coverage are negative. For example, extensive reporting on the tsunami disaster in December 2004 triggered an unprecedented willingness to donate worldwide. (Schramm, 2006) However regarding this paper, the negative impacts are more relevant and therefore discussed with greater detail.

The power of media to shape public perception, particularly surrounding disasters, is a recurring theme in research. Studies consistently demonstrate that media coverage, often characterized by sensationalism and negativity, can significantly influence public attitudes and behaviours. For instance, Walters et al. (2016) researched sensationalist media reporting of disastrous events. Specifically, they examined the impact sensational media reporting on a bush fire in the The Blue Mountains in Australia had on tourism. To determine the number of sensational media reporting they looked at print headlines that used metaphors, hyperboles and emotional connotations. They concluded that, next to other aspects, the highly sensational and negative reporting might have contributed to the decline in visitor numbers. (Walters et al., 2016)

The psychological impact of disaster media coverage is also well-documented. Pfefferbaum, Newman, Nelson, Nitiéma, Pfefferbaum, & Rahman (2014) reviewed 36 studies that researched the psychological effects of disaster media coverage, for both natural and man-made events. The meta-analysis showed that the effects of disaster television viewing in the context of terrorism are researched the most. In the course of the analysis, it has also been ascertained that posttraumatic stress disorder (PTSD) cases and posttraumatic stress (PTS), depression, anxiety, stress reactions, and substance use were the main psychological outcomes included. According to the researchers there were too few studies to draw definitive conclusions about the other media formats— newspapers, radio, and internet (including social media). (Pfefferbaum et al., 2014)

To give an example of the studies that were reviewed in the meta-analysis, Ben-Zur et al.'s study (2012) on secondary traumatization among Israeli students after media exposure on terrorist attacks may be mentioned. One of their hypotheses assumed that high levels of media exposure will be associated with high levels of posttraumatic symptoms and distress. The

students were given questionnaires on media exposure during terror attacks, posttraumatic and distress symptoms. The researchers were able to validate their hypothesis, as it was determined that higher media exposure during terror attacks was related positively to higher levels of distress and posttraumatic symptoms. (Ben-Zur et al., 2012)

Another study that was examined by Pfefferbaum et. al (2014) was released by Ahern et al. (2002) regarding the September 11th terrorist attacks. This 2002 study examined the impact of television viewing of the September 11th terrorist attacks on the mental health of Manhattan residents. Researchers found that repeated exposure to images of the attacks, particularly those of people falling or jumping from the World Trade Center towers, was associated with increased prevalence of PTSD and depression. This effect was significantly stronger among those directly affected by the attacks, suggesting that media exposure can exacerbate psychological symptoms in individuals already experiencing trauma. While the study acknowledges limitations regarding causality, it highlights the potential negative impact of graphic media coverage following disasters. (Ahern et al., 2002)

In 1993 Iyengar and Simon released a study that examined how TV news coverage of the Persian Gulf War had an impact on public opinion regarding agenda setting, priming and framing. For priming they exposed different groups of participants to news broadcasts that emphasized different topics (e.g., the Gulf War, the economy, unemployment) Participants exposed to greater amounts of news coverage about the Persian Gulf War were significantly more likely to evaluate President Bush's performance based on his foreign policy handling of the war. Those exposed to more news about other topics, like the economy, were more likely to judge him based on his domestic policy performance. For framing, they manipulated the way the Gulf War was presented in news broadcasts. Some participants saw episodic frames, focusing on specific events, battles, and human-interest stories. Others saw thematic frames, which provided more background information, analysis of policy decisions, and exploration of alternative solutions. The study found that participants exposed to episodic framing of the Gulf War were more likely to support military intervention and less likely to support diplomatic solutions. Those who were exposed to thematic framing, which provided more context and explored alternative approaches, showed less support for military action and greater openness to diplomatic options. (Iyengar & Simon, 1993)

An important research aspect when it comes to disaster media coverage is the perception of risk. While the media do not invent risks, they tend to overemphasize dramatic and unusual risks, while downplaying more mundane but statistically significant risks. (Wahlberg & Sjoberg, 2000)

Garfin et. al. (2022) released a study to understand how media exposure during the 2014 Ebola crisis influenced public responses, specifically focusing on the interplay between fear, risk perception, and protective behaviours. The study found that exposure to Ebola-related media, especially graphic images, significantly increased both fear/worry and perceived risk. However, these two emotional and cognitive responses had different effects on behaviour. Increased fear/worry strongly predicted the adoption of protective behaviours, suggesting an immediate, emotionally driven response. While increased risk perception also predicted intentions to engage in protective behaviours, it had a weaker relationship with actual reported behaviours. This suggests that risk perception, being more cognitive, plays a larger role in planning for future threats rather than prompting immediate action. Essentially, fear motivated people to act immediately, while risk perception influenced their future. (Garfin et al., 2022)

Recent studies on how media consumption fear address the Corona Virus pandemic. It was established that online media consumption increased fear, while fear decreased mental wellbeing but increased compliance with COVID-19 measures.(Chan et al., 2024) During the pandemic especially problematic social media use is mentioned to have had negative effects on individuals' well-being. (Lin et al., 2020)

4.2.1 Media effects of aviation disasters

As mentioned earlier, research on how exposure to media coverage on air travel disasters affects people is scarce, yet there are a few studies that deal with this topic.

Van der Meer et. al (2019) examined how media attention to airplane crashes evolves over time and its impact on public perception and behavior. The study sought to determine whether media attention to negative events (crashes) increased despite improving aviation safety, and if this disproportionate coverage influenced people's willingness to fly. The researchers analysed Dutch newspaper coverage of aviation incidents from 1991-2015 and found that while the number of actual crashes decreased, media attention to them increased. This disproportionate coverage correlated with a decline in air travel, even though air travel statistically became safer. The study suggests that media, driven by "media logic" (emphasis on negativity, human interest, etc.), increasingly construct a distorted reality that influences public behaviour more than real-world statistics. They link this trend to the concept of "mediatization," where media's influence on society grows, potentially amplifying the impact of negative news. (Van der Meer et al, 2019)

Another study was conducted by Van der Meer et al. (2022) on how the overrepresentation of aviation accidents in comparison to road traffic accidents can lead to a distorted view on reality. For most news are dominated by fear and risk, their aim was to examine people's irrational fear perceptions as a result of exposure to negative news. As part of the study Van der Meer et al. explored if news media disproportionally portray negative incidents and if news attention for rare and vivid aviation accidents can overshadow real-world risks. They analysed US media attention (1996–2017) for aviation and road accidents related to real-world data on travel behavior and fatal accidents. This has proved that overrepresentation can lead to the population conceiving air travel as riskier and thus avoiding it leading to more road traffic and therefore, more road traffic accidents. (Van der Meer et al., 2022) An example would be Gigerenzer's (2006) study on how the 9/11 attacks rose the mediated death toll for road accidents.

To mention another study that focuses on airplane crashes, Vasterman, et. al (2005) used the case of the Bijlmermeer plane crash that occurred in 1992, as an example of how media hypes can create what they call a second disaster. They were able to reveal that after the accident, a growing number of people attributed their health problems to the disaster. By analyzing media

coverage of the Bijlmermeer crash undertaken in 1998 and 1999 they were able to show that media hypes developed each time new information was released. There had been many speculations and conspiracy theories surrounding the crash, which led to extensive media coverage, even years later. One of Vasterman et al.'s main findings is that after each media hype, new groups of people reported suffering from health problems related to the crash. The researchers were also able to detect that especially repeating media hypes based on the "cover-up/toxic agent" frame had a significant impact. (Vasterman et al., 2005)

While framing is attributed an important role in Vasterman et al.'s study (2005), Van der Meer et al.'s (2022) study was based on the concepts of cultivation theory and the theory of mediatization. Both examples focused on the effect of media coverage over a long time period, rather than immediate media effects.

Li et al.'s (2015) study on the impact of aviation accidents on public perception, using the 2014 TransAsia Airways GE222 crash as a case study, found a strong correlation between media coverage and public reactions. Their event study methodology and pre- and post-crash surveys of Taiwanese citizens revealed that experiencing a recent accident significantly diminishes public trust, perceived safety, and willingness to fly with the affected airline. Furthermore, the impact of recent accidents was found to be more pronounced than that of older incidents, highlighting the importance of effective crisis management strategies.

A relevant study regarding this thesis was released by Wang & Cole in 2013. The aim of the study was to investigate the impact of media exposure, specifically exposure to negative news reports about plane crashes, on public anxiety. The researchers used a quasi-experimental design, dividing 260 college students into two groups. The experimental group watched a five-minute news report detailing a recent plane crash. The control group watched five minutes of airline commercials. Participants completed questionnaires both before and after being exposed to the stimuli. The questionnaires measured pre-existing flight anxiety levels, media consumption habits, and post-test anxiety related to flying, including physiological symptoms like rapid heartbeat and shortness of breath. The study then analysed the differences in reported anxiety and physiological symptoms between the two groups after exposure to the media. Further analysis explored the relationship between media consumption habits and pre-existing flight anxiety levels, considering two dimensions of flight anxiety: fear related to safety threats and concerns about convenience. statistically significant increase in air travel anxiety and

related physiological stress symptoms. While the study found no significant overall difference in media consumption habits between participants with high and low pre-existing flight anxiety, it did reveal that participants with higher pre-existing flight anxiety reported significantly higher usage of newspapers and mobile phones. This suggests that while general media consumption is not a predictor of flight anxiety, specific media choices might be linked to pre-existing anxieties. In summary, the study demonstrated that exposure to negative media coverage of air travel can negatively impact perceptions and increase anxiety towards flying. (Wang & Cole, 2013)

5. Methodology

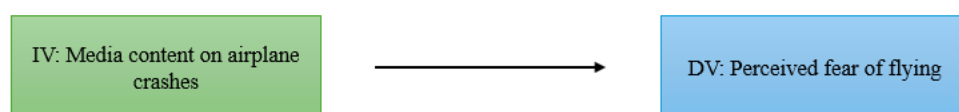
The methodological approach used in the research work is explained in this chapter. In order to find an answer to the research questions and to test the hypotheses, an experimental study design is used. The subjects are randomly assigned to two experimental groups and a control group. A statistically significant difference between the means of relevant groups results in the causal effect of the independent variable. While such a difference may suggest an association, it's crucial to account for potential confounders. (Stein, 2019)

5.1. Study design

The study is conducted via online survey, which is a common survey method for quantitative experimental designs, to statistically assess and evaluate psychological and/or physiological changes across one or more dimensions of change towards a defined goal. (Föhl & Friedrich, 2022) Precisely, a pretest-posttest design with randomised groups is used for this study. ('Pretest–Posttest Design', 2010) This design is often used to statistically assess and evaluate psychological and/or physiological changes across one or more dimensions of change towards a defined goal. (Lander, 2010) In this case the pretest-posttest design measures the outcome before and after media exposure, allowing for comparison to assess the effect. This is also done to evaluate the participants' basic fear level of fear of flying, which is crucial to this study. A disadvantage of this method is the interaction of pre-testing and the outcome. (Dimitrov & Rumrill, 2003)

How the study design is applied to the research questions is demonstrated here:

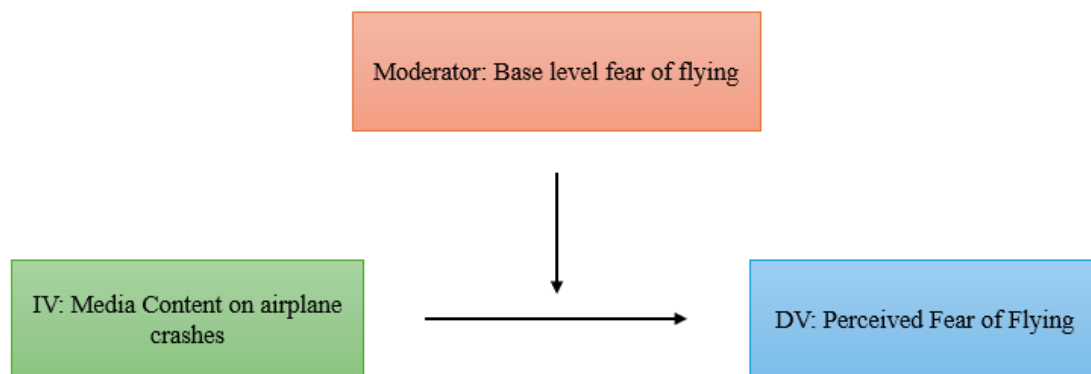
RQ1: To what extent is there an effect on perceived fear of flying after exposure to media content about airplane crashes?



H1a: After being exposed to media content that deal with airplane crashes, there is an increase of perceived fear of flying.

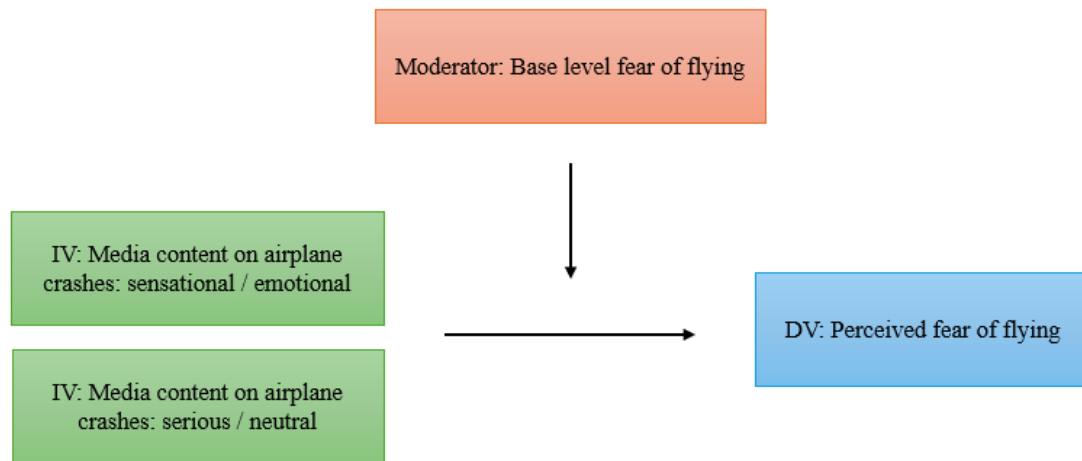
H1b: The measured fear level is higher for people that received articles on airplane crashes, than for people who received articles on aviation related topics, that do not involve incidents or crashes.

RQ2: How is the result different for people who have more fear of flying before exposure than other people?



H2: The effect of media exposure to content on airplane crashes, is stronger for respondents, who rate their anxiety levels higher pre-exposure than other respondents with lower pre-exposure anxiety

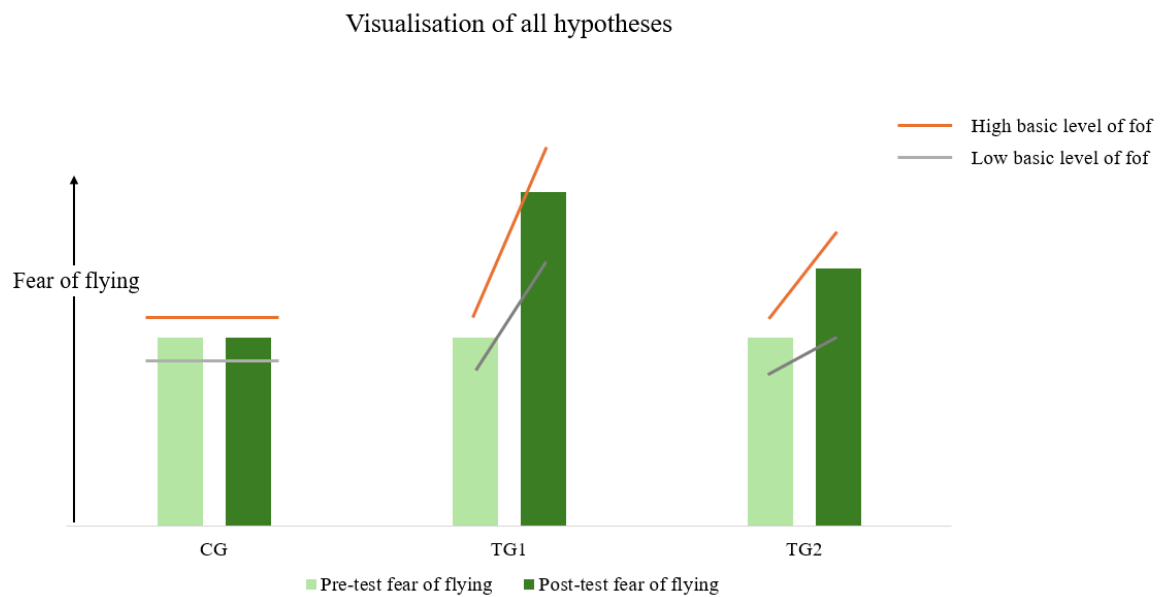
RQ3: To what degree do people's fear levels alter depending on whether they were exposed to sensational and emotional reports on airplane crashes or serious reports on airplane crashes?



H3a: The effect that media content addressing airplane crashes has on the respondents' anxiety levels is more pronounced for people who are confronted with content that is classified as sensational and emotional than for people who are confronted with an article that is classified as serious.

H3b: The effect on the participants' anxiety levels is strongest for people who have a high base level regarding fear of flying and are confronted with content that is classified as sensational and emotional.

The hypotheses are summarized in this graph:



5.1.1 Sample and data collection

The sample method used is convenience sampling, meaning the survey participants that were accessible due to personal environments, work related environments and social media. (Rahi, 2017).

The study is aimed at people who are at least 18 years old and currently living and / or working in Vienna. The place of residency is not important, but the questionnaire is distributed among people who meet these criteria. The target number of respondents is estimated to be 250-300 people. Samples of participants that do not meet the criteria are removed during data collection.

5.2 Operationalisation: FAS & FAM

Items are based on the Flight Anxiety Situations (FAS) Questionnaire and the Flight Anxiety Modality Questionnaire (FAM). Both questionnaires were first established in 1999 by Van Gerwen, Spinhoven, Van Dyck and Diekstra in their publication "*Construction and psychometric characteristics of two self-report questionnaires for the assessment of fear of flying*". The development was based on interviews with patients experiencing flight phobia, experts, a study on cognitions and physiological sensations and by reviewing previously published scales.

The first study on developing the questionnaires and generating items started in 1986.

The questionnaires have been refined in follow-up studies by Van Gerwen et al. (1999) over a 10-year time period. The questionnaires were developed as Van Gerwen et al (1999) elaborated that pre-existing measures "have serious shortcomings, of which the most significant are unknown or poor psychometric properties, lack of specificity, and coverage of only certain aspects or modalities of fear of flying" (Van Gerwen et al., 1999, p. 46) The predominant reason for developing a validated fear of flying assessment questionnaire is providing a tool to measure the efficacy of cognitive- behavioural interventions for people that suffer from fear of flying or aviophobia. (Van Gerwen et al., 1999)

The authors describe the questionnaires as stated:

The domain of a **FAS** questionnaire should include situations relevant to a journey by plane and generally connected with airplanes that can provoke anxiety. It should exclude situations that are extraordinary on a normal flight. The intended function of the instrument is to make a diagnostic self-report that is fast and easy to administer and can be used for designing intervention programs and evaluating treatment effects. The instrument should be a diagnostic tool for referring patients to the most appropriate treatment program. (Van Gerwen et al., 1999, p. 49)

In its latest version the FAS questionnaire consists of 32 items with three sub-scales: Pre-Flight, During Flight, General Connection with airplanes.

Flight Anxiety Situations Questionnaire (FAS)

Quantification of Fear in Various Flight Situations

Name:		Sex:			
Date:		Research number:			

Circle the number which corresponds to your level of anxiety in the situations mentioned. The numbers range from 1 to 5, where 1 = *no anxiety*, 2 = *slight anxiety*, 3 = *moderate anxiety*, 4 = *considerable anxiety* and 5 = *overwhelming anxiety*.

Item	No anxiety	Slight anxiety	Moderate anxiety	Considerable anxiety	Overwhelming anxiety
1 You see an airplane	1	2	3	4	5
2 You hear the sounds of planes	1	2	3	4	5
3 You read a report about a flight	1	2	3	4	5
4 You bring someone to the airport	1	2	3	4	5
5 Friends tell you about a flight	1	2	3	4	5
6 You decide to take a plane	1	2	3	4	5
7 You buy a ticket	1	2	3	4	5
8 You are on the way to the airport	1	2	3	4	5
9 You enter the departure hall	1	2	3	4	5
10 You are going through customs for a passport check	1	2	3	4	5
11 You are waiting for the boarding call	1	2	3	4	5
12 You see planes taking off and landing	1	2	3	4	5
13 You hear the sound/noises of jet engines	1	2	3	4	5
14 You are walking in the direction of the gate	1	2	3	4	5
15 You are going through the security check	1	2	3	4	5
16 You are going through the gate	1	2	3	4	5
17 You enter the flight cabin	1	2	3	4	5
18 The doors are being closed	1	2	3	4	5
19 You are informed of the flight safety regulations by the cabin crew	1	2	3	4	5

Figure 2: Flight Anxiety Situations Questionnaire (FAS) (1)

Flight Anxiety Situations Questionnaire (FAS) (cont'd)					
Item	No anxiety	Slight anxiety	Moderate anxiety	Considerable anxiety	Overwhelming anxiety
20 The take-off is announced	1	2	3	4	5
21 The engines give full power before take-off	1	2	3	4	5
22 You are pushed back into your seat	1	2	3	4	5
23 You hear some noises during the flight	1	2	3	4	5
24 The airplane banks left or right	1	2	3	4	5
25 The wings of the plane are moving, shaking	1	2	3	4	5
26 The cockpit informs you of the actual altitude or flight-level	1	2	3	4	5
27 The sound of the engines decreases	1	2	3	4	5
28 The plane starts the descent	1	2	3	4	5
29 Air turbulence is announced	1	2	3	4	5
30 You are shaken	1	2	3	4	5
31 The sound of the engine gets louder again	1	2	3	4	5
32 The landing is announced	1	2	3	4	5
© 1998 by Lucas J. van Gerwen.					

Figure 3: Flight Anxiety Situations Questionnaire (FAS) (2)

The domain of a **FAM** questionnaire is to assess different distressing thoughts and symptoms of anxiety or anticipatory anxiety in flight situations. The intended function is to make a diagnostic self-report instrument that is fast and easy to score for designing intervention programs and evaluating treatment effects. The instrument should be a diagnostic tool for referring patients to the most appropriate treatment program. It should to (sic!) indicate whether patients are more aware of their cognitions or whether they pay more attention to their somatic complaints. (Van Gerwen et al., 1999, p. 49)

In its final version the FAM questionnaire consists of 18 items, measuring Somatic Modality and Cognitive Modality.

APPENDIX CHAPTER 3B

Flight Anxiety Modality Questionnaire (FAM)

How Do I Express My Fear?

Circle the number which corresponds to the intensity of your reaction during a flight or what you think the intensity of your reaction will be. The numbers range from 1 to 5, where 1 = *no reaction*, 2 = *a little reaction*, 3 = *moderate reaction*, 4 = *intense reaction*, and 5 = *very intense reaction*.

Item	Not at all	A little bit	Moderately	Intensely	Very intensely
1 I notice numbness in my limbs	1	2	3	4	5
2 I have a fear of dying	1	2	3	4	5
3 I feel pain in the region of my chest	1	2	3	4	5
4 I can't tell what is going to happen and that makes me feel very anxious	1	2	3	4	5
5 I feel palpitations of the heart or a quicker heartbeat	1	2	3	4	5
6 The idea that something will go wrong is constantly in my mind	1	2	3	4	5
7 The tension makes me clumsy and things fall out of my hands	1	2	3	4	5
8 I can't concentrate because I am preoccupied with thoughts about horrible flight situations	1	2	3	4	5
9 I attend to every sound or movement of the plane and wonder whether everything is fine	1	2	3	4	5
10 I continuously pay attention to the faces and behaviour of the cabin crew	1	2	3	4	5
11 I feel dizzy or I have the feeling that I'm going to faint	1	2	3	4	5
12 My limbs are tense and cramped, so I feel the urge to move or walk	1	2	3	4	5
13 I am short of breath	1	2	3	4	5
14 I have the feeling that I am going to choke	1	2	3	4	5
15 I have a dry mouth	1	2	3	4	5

Figure: 4 Flight Anxiety Modality Questionnaire (FAM) (1)

Flight Anxiety Modality Questionnaire (FAM) (cont'd)					
Item	Not at all	A little bit	Moder- ately	Intensely	Very intensely
16 I think the particular plane I am on will crash	1	2	3	4	5
17 I feel suddenly warm or cold	1	2	3	4	5
18 I think that I will faint from fear	1	2	3	4	5
© 1998 by Lucas J. van Gerwen.					

Figure 5: Flight Anxiety Modality Questionnaire (FAM) (2)

5.2.1 Structuring the questionnaires

In the follow-up studies conducted by Van Gerwen et al. (1999) the FAS was structured into three sub-scales: (Van Gerwen et al., 1999, p.56)

(a) Anticipation Flight Anxiety scale (12 items) – Items 6 through 11, Items 14 through 18, and Item 20. Anticipation flight anxiety (preflight) is experienced when anticipating a flight. The items refer to anticipation anxiety up to just before the flight actually starts (takeoff is announced).

(b) In-Flight Anxiety scale (10 items) – Items 22 through 25 and Items 27 through 32. Inflight anxiety is experienced during a flight (from the start of the engines and subsequent events until landing).

(c) Generalized Flight Anxiety scale (7 items) -Items 1 through 5 and Items 12 and 13. Generalized flight anxiety is generally experienced in connection with airplanes and when seeing or hearing planes, regardless of personal involvement in a flight. It reflects the extent to which anxiety is generalized.

Some items were dismissed from the initial 32-item FAS during the studies. Item 6, "You decide to take a plane," and Item 21, "The engines roar at high speed before the start," had low item-total correlations, indicating they didn't strongly relate to the core constructs being measured. They fell somewhere between generalized flight anxiety, anticipatory anxiety, and in-flight anxiety, making them less useful for differentiating these dimensions. Item 12 did not meet the criteria of loading at least .40 on their corresponding factor and a difference in loading of at least .15 with dissimilar factors and was not included in the FAS subscale.

Item 19, "You are informed of the flight safety regulations by the cabin crew," did not load sufficiently on any of the three identified factors (Generalized, Anticipatory, or In-Flight anxiety) nor did it show a sufficient difference in loading between factors. This suggests it didn't consistently measure any specific aspect of flight anxiety. After asking experts who work with fear of flying patients to review the items and their fit to the domains, they decided on keeping the 32 items for the FAS and 18 items for the FAM.

The FAM was structured into two sub-scales (Van Gerwen et al., 1999, p. 56):

- (a) The FAM Somatic Modality scale consists of 11 items assessing the extent to which anxiety is expressed somatically.
- (b) The FAM Cognitive Modality scale consists of seven items related to the cognitive aspects of flight anxiety. The content of this scale is considered to reflect the extent to which anxious cognitions occur in flight situations.

5.2.2 FAS and FAM norms

In 2008 Nousi, Van Gerwen and Spinhoven released "The Flight Anxiety Situations Questionnaire and the Flight Anxiety Modality Questionnaire: Norms for people with fear of flying", providing normative data for people suffering from fear of flying completing the FAS and FAM.

The results provided are used as benchmarks for the outcome of this study.

The authors first displayed the raw scores for the samples:

Table 1 FAS and FAM raw score means and standard deviations for flying phobics sample and non-patient sample				
	Flying phobics sample (N = 2072)		Non-patient sample (N = 1012)	
	Mean	SD	Mean	SD
FAS				
Anticipatory anxiety	41.37	10.83	14.07	4.71
In-flight anxiety	37.68	8.66	14.51	5.77
Generalized flight anxiety	12.78	4.95	7.48	1.25
Sum score	102.42	22.48	39.84	11.92
FAM				
Somatic complaints	26.15	9.72	12.18	2.59
Cognitive complaints	25.15	7.05	8.44	2.66

Figure 6: Norms for FAS and FAM

When creating the norms, all 32 FAS items were included, regardless factor loading they discussed in their earlier research (see chapter before): (p 307):

- a) an anticipatory flight anxiety scale, containing 14 items that pertain to anxiety experienced when anticipating a flight
- (b) an in-flight anxiety scale, containing 11 items pertaining to anxiety experienced during a flight, and
- (c) a generalized flight anxiety scale, containing 7 items referring to anxiety experienced in connection with airplanes in general, regardless of personal involvement in a flight situation.

In the present study, FAS and FAM are used to measure fear of flying in the pre-test and in the post-test.

For this study the same clustering is used for FAS:

Generalized flight anxiety scale: 1, 2, 3, 4, 5, 12, 13

Anticipatory flight anxiety scale: 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21

In-flight anxiety scale: 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32

The clustering used for FAM is as follows:

Somatic modality: 1, 3, 5, 7, 11, 12, 13, 14, 15, 17, 18

Cognitive modality: 2, 4, 6, 8, 9, 10, 16

5.3 Media Exposure – Selecting Content

The test groups TG1 and TG2 receive different pieces of media coverage on air crash disasters. TG1 is assigned three online articles that are previously classified as sensational and emotional. TG2 is presented three online articles that are previously classified as serious and rational. The articles used for TG 1 resemble articles released by tabloids, while the articles used for TG2 resemble (or in fact are) articles released by quality online-media.

The articles are, to some extent, manipulated. Parts from existing online articles are used to build the articles presented in the study. In addition, the pictures that are used in the articles are used in existing online articles but are adapted from other articles to fit each manipulated article better.

In this chapter it is explained how the process of selecting content and building the exposure material was conducted.

The swiss research institution fög (Forschungszentrum Öffentlichkeit und der Gesellschaft der Universität Zürich) frequently releases the report *Qualität der Medien*, which, among other aspects, analyses content quality of media coverage by news broadcasts. (fög, 2022) The quality scoring is aimed at the following criteria: relevance, classification performance, professionalism, and diversity. The criteria that is relevant for this analysis is professionalism. According to fög (2022) professionalism consists of the indicators factuality, source transparency and personal performance / contribution. Seethaler (2015) used this concept in a cross-media analysis regarding the quality of media in Austria and split it in two aspects: style and content. (Seethaler, 2015, p. 32)

Profes- siona- lität	Stil	Sachlichkeit	Respektvoller Dialog (nicht untersucht)	Responsiveness
	Inhalt	Deskriptive Qualität: Unparteilichkeit (Stil + Inhalt: 5-stufiger „Objektivitätsindex“)	Analytische Qualität: Framing (7-stufiger „Diskursindex“)	Entspricht prinzipiell dem deliberativen Modell

Figure 7: Professionalism (Seethaler, 2015, p. 32)

Arnold (2008) states that three different perspectives are relevant for the discourse on quality in communication science: a functional-system-orientated perspective, a normative-democratic

perspective and an audience-oriented perspective. The functional-system-orientated perspective focuses on the societal relevance and the subject matter itself. (Pöttker, 2000)

The normative-democracy orientated is based fundamental values of a democratic-pluralistic society. (Arnold, 2008) In addition journalistic offerings must meet the audiences' interest and needs, enabling the audience-oriented perspective. (Arnold, 2008) Pöttker (2000) divides quality criteria in 1) related to the subject matter and 2) audience orientated.

Qualities related to the subject matter (Pöttker, 2000):

- Correctness
- Completeness (relevance)
- truthfulness
- Diversity

Audience orientated qualities:

- Independence
- Actuality
- Comprehensibility
- Entertainingness

Media coverage of airplane crashes often exhibits sensationalist tendencies, driven by factors like the dramatic nature of the events and the media's pursuit of audience engagement. Sensationalism, characterized by overhyping events and prioritizing emotional appeal over factual accuracy (Walters et al., 2016), can be identified through both content and formal features (Burgers, 2013; Grabe et al., 2001). Content-wise, crashes inherently fall under "sensational" topics (Grabe et al., 2001). The use of emotionally charged language, including metaphors, hyperboles, and dramatic storytelling (Burgers, 2013; Davis & McLeod, 2003; Tierney et al., 2006), further contributes to sensationalism. Headlines, often employing exposing, speculating, or extolling illocutions (Molek-Kozakowska, 2013), also play a key role. The tendency towards negativity in headlines (Molek-Kozakowska, 2013) further amplifies the sensationalist effect.

Formal features contributing to sensationalism include the overuse of visual devices and specific narrative structures that emphasize drama and mystery (Vincent et al., 1989). Framing techniques (Entman, 1993; Vincent et al., 2001) are also employed to highlight specific angles and shape public perception.

Therefore, classifying media coverage of airplane crashes requires analysing both content (language, themes, headlines) and formal features (visuals, narrative structure, framing).

To determine whether the material used for exposure is used for TG1 or TG2, the following aspects are taken into account:

1. Style (emotional – factual)
2. Frame (eg. Fear, trauma, tragedy, personal fate)
3. Objectivity e.g. contains personal opinion and or conclusions – explicitly impartial / objective)

In the following passages the process for each test group is discussed in further detail. All the exposure material can be viewed in the appendix.

Regarding the test groups articles about the same airplane crashes were used. To not only feature Boeing crashes, also a crash involving an Airbus was featured. For more insight, the crashes are described briefly:

Lion Air Flight 610

The Boeing 737 MAX 8 crashed on the 28th of October 2018 in Jakarta, Indonesia. All 189 people on board died in the crash. The cause of the crash was a concatenation of multiple events, the main factor being a malfunctioning angle of attack sensor that triggered MCAS, a newly implemented automatic trimming system. The pilots not trained for the new system and thus not aware of the system interfering with the controls, leading them to lose control of the aircraft.

Indonesia AirAsia Flight 8501

The airplane crashed on the 28th of December in 2014 in the Java Sea near Indonesia. All 162 people on board of the Airbus 320-216 died during the crash. There was a malfunction of the aircraft's rudder, that could have been corrected but led the pilots to ultimately lose control and the airplane to stall.

Ethiopian Airlines Flight 302

The new Boeing 737 MAX 8 crashed on March 10th, 2019, near Addis Ababa, Ethiopia. The 157 people on board died during the crash. Due to a flight control problem, the MCAS was

activated and the pilots lost control of the aircraft. It was the second crash involving the MCAS system, leading to a grounding of all Boeings 737 MAX 8 planes.

Test group 1 (TG1)

The articles that were built for exposure use snippets and pictures from the following online articles:

Lion Air Crash

All text passages are taken from the following article:

Die letzten Sekunden im Cockpit der Boeing 737 (bild.de, 2019) Translation: The last seconds in the cockpit of the Boeing 737

Snippets from article were chosen due to the sensational headline and reporting style. The crash is described in figurative language and reinforcing elements such as exclamation marks are used. The last moments before the crash are described in detail and resemble an adventure story. The frames that are used in the article are tragedy and fear.

An additional image and image description (Resmi, 2018) is used.

The image was chosen as they show the crash site, parts of the crashed airplane and body bags that are prepared for usage.

AirAsia Crash

All snippets used for the exposure material were taken from the following article: Sohn (8) des Piloten glaubt, Papa müsse noch arbeiten. (bild.de, 2014) Translation: The pilot's son (8) thinks dad still has to work

They were selected because the article is again written in figurative language. Additionally, the article focuses on the emotional aspects of the event, specifically the personal experiences of relatives. The article also mentions bodies, that were recovered. The article uses an emotional frame but also aspects of fear.

An additional image (Ibrahim, 2018), depicting the airplanes broken tail wing was added.

Ethiopian Airlines Crash

The parts used for the exposure material regarding this crash were taken from: Neues Schock-Detail um Abstürze der Todes-Boeing (oe24, 2019a) Translation: New shocking detail about Boeing of Death crashes and Todes-Flieger: Diese 4 Opfer klagen an (oe24, 2019b) Plane of Death: These 4 victims are accusing

The first article focuses on the crash itself while the accident is narrated vividly. Expressions like “Todesflieger” (plane of death) are used. The articles were combined to add an emotional aspect, as the second article addresses personal tragedies of the victims, like mentioning that an Austrian doctor on board had a pregnant wife at home. The article uses an emotional frame but also aspects of fear.

An additional image (Negeri, 2019) was used to show the crash site and items that belonged to the passengers.

Test group 2 (TG2)

For test group 2 the following articles were used:

Lion Air crash

The following article and the included image were selected: Maschine des Billigfliegers Lion Air mit 189 Menschen ins Meer gestürzt.(handelsblatt.com, 2018) (Translation: Indonesia - A Lion Air plane carrying 189 people crashed into the sea.)

The article uses neutral language and contains all relevant information about the crash.

AirAsia crash

The online article Widersprüche über Ortung des Wracks (orf.at, 2014) (Translation: Contradictions about the location of the wreck) was selected. The article analyses the (at the time) ongoing search for the wreck in a neutral way. No figurative language is used.

An image (AP/dpa, nf.) of an AirAsia plane flying was added.

Ethiopian Airlines Crash

The article Flugzeug der Ethiopian Airlines abgestürzt (diepresse.at, 2019) (Translation: Ethiopian Airlines plane crashes) was adapted one to one as exposure material for the Ethiopian Airlines crash for TG2. The article is factual and contains key elements about the crash without using figurative language. A picture that shows an Ethiopian Airlines plane at an airport is included.

A graphic illustration (APA, 2019) showing a map of the approximate crash site was added to have more material and a similar number of pictures as TG1. However, no actual photos of the crash site were included.

CG)

The CG receives the following articles:

- 1) Neuer Reiseboom – Flugzeuge als Mangelware. (orf.at, 2022) (Translation: New travel boom - airplanes in short supply.)
- 2) Flugplan – Die ersten und letzten Flüge des Jahres.(derstandard.at, 2023) (Translation: Flight schedule - The first and last flights of the year.)
- 3) Im Dreamliner nach Kopenhagen. Ethiopian Airlines erweitert Angebot in Wien. (flughafenfreunde.at, 2023) (Translation: In the Dreamliner to Copenhagen. Ethiopian Airlines expands its offer in Vienna.)

All the articles used for the CG focused on airplanes, but not on airplane crashes and used neutral language. The articles were not manipulated and the already included images were also used for the exposure material.

5.4 Questionnaire and structure of the survey

The online experiment was created on the online survey platform “SoSci Survey”.

At the beginning of the experiment, the participants were introduced to the study and the study procedure without disclosing the exact research interest and informed about the data privacy regulations. Study participants were asked to give their consent to data processing, whereby no conclusions can be drawn about individual persons through data collection.

Before media exposure, participants will be presented a trigger warning: Please note that participation in the study may cause feelings of anxiety/anxiety.

Participants were also able to end the study at any point of time.

After the introduction the participants are asked about their flying habits, particularly how often they have been travelling via airplane in the past and how often they are planning to do so in the future. Based on the participants’ answer it is then evaluated why or why not they are planning to (not) travel via airplane in the future. It is also evaluated whether the respondent is working in the aviation industry e.g. Flight attendants, pilots and thus must fly frequently.

The respondents who stated that they are not planning to travel via airplane are asked to disclose their reason(s,) with fear of flying being among them. Other possible reasons that can be

selected are environmental and financial reasons. It is also possible to give an individual answer.

The items 1-5 of the FAS are also relevant for people who have not been flying the past and are therefore presented to them. These items include e.g. You see an airplane.

In order to evaluate if the participants that have been travelling via airplane in the past have experienced fear of flying in the past, the FAS and FAM are used. While, like mentioned earlier people that have never flown are only given items 1-5 of the FAS, people that have been flying are given both surveys.

To ensure that the questions are aimed towards past flying experiences, the following introduction is used 1) For the FAS: Please think back to your last flight and rate your feelings of anxiety in the following situations as you remember them. Please rate how anxious you felt in the following situations 2) For the FAM: Please think back to the last time you traveled by plane. Please rate the intensity of your reaction during the flight. Indicate how intense you felt the reactions listed.

In the next step recipients are exposed to selected media content. For further disclosure on how the media content was selected, please refer to chapter 5.3. All of the articles are based on actual online articles that have been released. The articles for TG1 and TG2 are assembled from several articles and therefor manipulated to meet the criteria better. The articles used for the CG are not manipulated as they can be found online one-to-one.

Each test group (1,2) and the control group receive three articles which they are asked to read thoroughly.

The test groups TG1 and TG2 receive different pieces of media coverage on air crash disasters. TG1 is assigned three online articles that are previously classified as sensational and emotional. TG2 is presented three online articles that are previously classified as serious and rational. The articles used for TG 1 resemble articles released by tabloids, while the articles used for TG2 resemble (or in fact are) articles released by quality online-media.

After exposure to media content recipients receive a questionnaire to evaluate their immediate anxiety level regarding air travel.

The FAS and FAM are used and presented to all recipients.

The following introduction is used: Please put yourself in the situations listed. Please rate your level of anxiety in the following situations.

To distinct the post-exposure questionnaire from the predisposition questionnaire, participants are asked to imagine the following situation for FAS2 and FAM:

You and your friend are taking a spontaneous trip to Berlin next weekend. You have decided to travel by plane, as this is the quickest and cheapest way to get to your destination. Your bag is packed, and you are ready to start your journey.

FAS 2 is presented with the following introduction:

The day of departure has arrived. Please put yourself in the following situations.

Please rate your level of anxiety in the following situations.

Lastly, the FAM is introduced as follows:

Please imagine that you are on an airplane to Berlin and rate the intensity of your reaction during the flight.

Indicate how intense you are likely to feel the reactions listed.

After the post-exposure questionnaire, questions regarding demographics are proposed.

The items queried are gender, age, place of residence (country and living environment) and educational qualifications.

Gender and age do not have to be answered, if the recipient wishes to not share these details.

In the end it is also asked whether the respondent has previously been diagnosed with an anxiety disorder. The available responses include Aviophobia and Generalised Anxiety Disorder but can also be answered individually via text insertion. The question does not have to be answered, as it also includes the option “Prefer not to tell”.

6. Results

The data analysis is conducted with SPSS. The following hypotheses shall be evaluated:

1. H1a: After being exposed to media content that deal with airplane crashes, there is an increase of perceived fear of flying.
2. H1b: The measured fear level is higher for people that received articles on airplane crashes, than for people who received articles on aviation related topics, that do not involve incidents or crashes.
3. H2: The effect of media exposure to content on airplane crashes, is stronger for respondents, who rate their anxiety levels higher pre-exposure than other respondents with lower pre-exposure anxiety
4. H3a: The effect that media content addressing airplane crashes has on the respondents' anxiety levels is more pronounced for people who are confronted with content that is classified as sensational and emotional than for people who are confronted with an article that is classified as serious.
5. H3b: The effect on the participants' anxiety levels is strongest for people who have a high base level regarding fear of flying and are confronted with content that is classified as sensational and emotional.

6.1 Sociodemographics

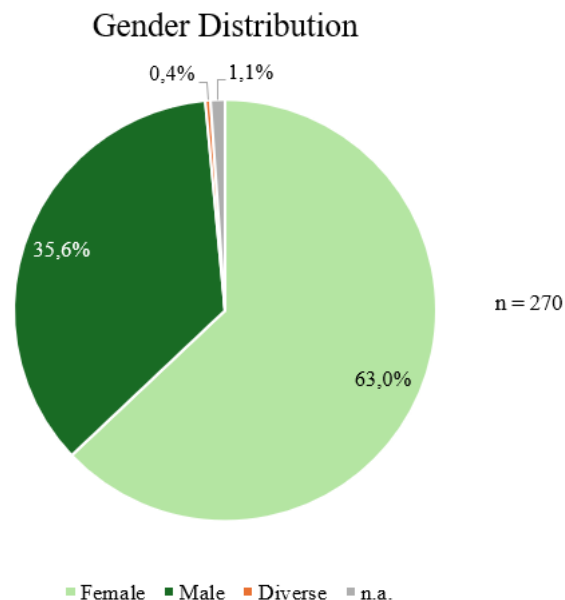
The overall sample consisted of 271 respondents. One data set was removed due to the respondent being underage (17), leaving 270 data sets.

The survey was mainly distributed among people currently living or working in Austria or the DACH Area. 94,1% (254 people) stated to be currently living in Austria, 1,5% (4 people) are currently living in Germany and, while only 0,7% (2 people) are living in Switzerland.

Ten respondents (3,7%) stated that they are currently living in other countries: France (1), Italy (1), Netherlands (1), Spain (2), UK (1), USA (2) and Hungary (2). However, the place of residency is not relevant for this study, which is why no further restrictions were made.

When it comes to the gender distribution 63% (170 people) of all participants are female, 35,6% (96 people) are male, 0,4% (One person) are diverse and 1,1% did not want to share this information (3 people).

Table 1: Gender Distribution



92,2% (249 people) gave information on their current age, while 7,8% (21 people) did not want to share this information. The average age of all respondents is 37,6 years.

The level of education was high, as 48,5% of all respondents have a university degree (131 people).

After the experiment, data was collected on whether the participants have been diagnosed with an anxiety disorder before. 85,2% (230 people) said that that they have not been diagnosed with an anxiety disorder before. 3% (8 people) chose not to provide an answer for this question, which was also a given option in the questionnaire. 1,9% (5 people) said they have been diagnosed before but do not want to disclose more information. 5,6% (15 people) said they have been diagnosed with generalised anxiety disorder. 0,4% (1 person) stated to be suffering from aviophobia. 4,1% (11 people) said they have been diagnosed with other disorders: Agoraphobia and mild claustrophobia, depressive anxiety disorder, anxiety and panic disorder, fear of heights, needle phobia, panic attacks (two people), post-traumatic

stress disorder, social phobia, fear of loss, obsessive-compulsive disorder. Summarised, 11,85% (32 people) stated to have been diagnosed with some form of anxiety disorder.

6.2 Flying habits

Regarding the participants' flying habits the following data was collected:

Out of the 270 participants only 1,5% have never travelled by plane, while the same number of respondents have flown once. 11,1% have flown 2-5 times and 13,7% 6-10 times. 72,2% have flown more than ten times. (Appendix table)

Table 2: Flying Habits 1

How often have you flown in a commercial aircraft in the past?				
<i>Outbound and return flights were counted as one flight.</i>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Never	4	1,5	1,5	1,5
Once	4	1,5	1,5	3,0
2-5 times	30	11,1	11,1	14,1
6-10 times	37	13,7	13,7	27,8
More than 10 times	195	72,2	72,2	100,0
Total	270	100,0	100,0	

When it comes to future travel plans, 63,3% plan to travel by plane once or twice a year. 23% are planning to fly more often than that. 13,7% have no plans of travelling by plane. (Appendix table)

Table 3: Flying Habits 2

Are you planning to travel by commercial airplane in the future?				
	Frequency	Percent	Valid Percent	Cumulative Percent
Yes, I plan to travel by plane once or twice a year.	171	63,3	63,3	63,3
Yes, I plan to travel by plane more than twice a year.	62	23,0	23,0	86,3
No, I am not planning to travel by plane.	37	13,7	13,7	100,0
Total	270	100,0	100,0	

Out of those who are planning to travel by airplane in the future (n=233, 86,3 % of all respondents), 95,7% (82,6% of all respondents) will be travelling by plane for vacation. 24% (20,7% of all respondents) will be flying due to work related reasons.

One person (0.43% of those who are planning to fly and 0,37% of all respondents) is working in the airline industry, however employed as a Sales Manager and not e.g. a flight attendant or pilot. 3,4 % (3,0% of all respondents) stated that other reason will be why they are planning to fly in the future. Among those reasons where the following answers: Visting Family abroad (6 times), Visiting partner abroad (1 time) and No other possibility to reach a certain destination e.g. Australia (1 time).

In total 13,7% of all respondents (n=37) said that they are not planning on travelling by plane in the future. Out of those people 29,7% (4,1% of all respondents) stated that they refuse to fly due to environmental reasons. 16,2% (2,2% of all respondents) stated that they will not be travelling py plane because they suffer from fear of flying. 35,1% (4,8% of all respondents) said that financial reasons are crucial to this decision. 24,3% (3,3% of all respondents) picked other reasons. Not planning a vacation that requires flying was the main reason, given by eight people. One person said they will not be flying as they do not like it, even though they do not have fear of flying.

Only four people of the 270 participants have stated to have never flown before. These people also said that they are not planning on flying in the future. One person said that they will not be travelling by plane because they have fear of flying, the other three people said that it was due to financial reasons. Out of those people, two stated to be diagnosed with anxiety disorders (needle phobia and generalised anxiety disorder)

6.3 Randomization test

The number of test subjects per test group is distributed as follows:

TG1: 92

TG2: 85

CG: 93

To prove that the test groups and the control group have been randomised the following tests are conducted:

Gender, Country and Education were compared with a Chi-Square test and Cramer's-V due to being nominal scaled. A unifactorial ANOVA was used for age, due to being metric scaled.

The verification of the random distribution among the three test groups revealed that gender $\chi^2(6, N=270) = 5.092, p = .532$, country of residence $\chi^2(6, N=270) = 2.296, p = .891$ level of education $\chi^2(16, N=270) = 22.032, p = .147$ were equally randomly distributed, as there is no significant difference between expected and observed values. The respondents' age was also equally distributed among the three groups, $F(2,246) = .11, p = .989$.

Table 4: Randomization Test

	Gender M(SD)	Country M(SD)	Education M(SD)	Age M(SD)
TG1 n= 92	1,35 (0.543)	2,09 (0.436)	7.32 (1.421)	37.49 (12.836)
TG2 n=85	1,40 (0.493)	2,08 (0.442)	7.33 (1.209)	37.76 (12.866)
CG n=93	1,44 (0.634)	2,03 (0.344)	7.24 (1.644)	37.51 (12.942)
Overall = 270	1,40 (0.561)	2,07 (0.408)	7.29 (1.438)	37.58 (12.830)

6.4 Data analysis without differentiation of media content

In this chapter the analysis towards research question 1 (RQ1) and research question 2 (RQ2) is conducted.

The four data sets of people who have never flown before were excluded, as there was not enough data to evaluate the difference between people who have flown before and people who have not.

The first research question (RQ1) focuses on how exposure to media coverage on airplane accidents influences people's fear level regarding flying.

Hypothesis 1a (H1a) states that after being exposed to media content that deal with airplane crashes, there is an increase of perceived fear of flying in comparison to pre-exposure. Hypothesis 1b (H1b) expects, that the measured fear level is higher for people that received articles on airplane crashes, than for people who received articles on aviation related topics, that do not involve incidents or crashes.

In order to analyse the data, the total scores for all three FAS categories (generalized flight anxiety scale, anticipatory flight anxiety scale, in-flight anxiety scale) and the overall score for each case were formed. After this procedure, each case was assigned a score for:

pre-test: generalised flight anxiety, anticipatory flight anxiety and in-flight anxiety, overall

post-test: generalised flight anxiety, anticipatory flight anxiety and in-flight anxiety, overall

The same was done with the data that was collected for FAM, leaving each case with three scores for the pre-test and two scores for the post-test:

Pre-test: somatic modality, cognitive modality, overall

Post-test: somatic modality, cognitive modality, overall

For a better flow of reading TG1 and TG2 combined are referred to as TGx.

To ensure that the pre-test mean scores regarding fear of flying do not differ for the test group(s) and the control group, an ANOVA is calculated. When it comes to the difference between the pre-test mean scores for TGx and the CG, there is no significant difference between the mean scores regarding FAS ($F(1, 264) = 2.261, p = .134$) and FAM ($F(1, 264) = .727, p = .395$). The outcome proves that the base level for fear of flying does not differ between the groups.

Two variables are added to the data set by calculating the difference between the pre- and post-test FAS and FAM scores.

To evaluate H1a, an ANOVA is calculated with the difference scores between the pre- and post-test data and the allocation to TGx and CG as fixed factors. The calculation for FAS shows that the scores differ significantly. $F(1, 264) = 12.303, p < .001, \eta^2 = .045$. That means that the differences in the scores can be explained by the group allocation by 4,5%.

The graph shows that the scores for the test groups are positive, indicating an increase, while the scores for the control group are negative, indicating a decrease.

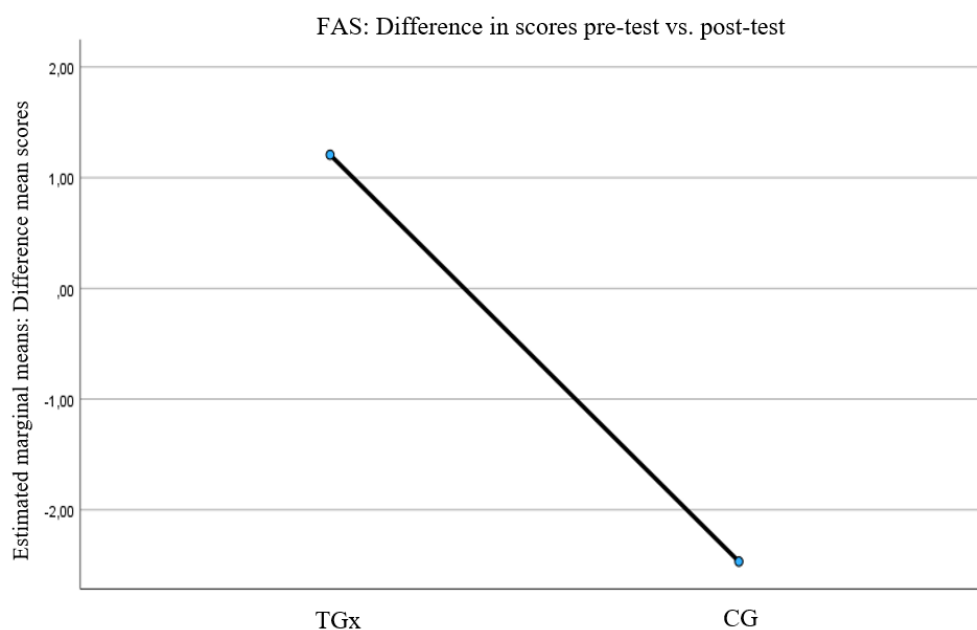


Figure 8: FAS: Difference in scores pre-test vs. post-test

For further analysis paired t-tests are calculated to compare the FAS pre-test and post-test scores. The pre-test and post-test mean scores for all FAS categories combined do not show a significant difference ($t(173) = -1.684, p = 0.094$). When looking at the individual FAS categories, there is a significant difference between the pre-test generalised flight anxiety and the post-test generalised flight anxiety for TGx ($t(173) = -4.332, p < .001, d = -0.328$). The measured anxiety was significantly lower for the pre-test. Regarding the anticipatory flight anxiety ($t(173) = -1.528, p = 0.182$) and the in-flight anxiety ($t(173) = .878, p = 0.381$) there is no significant difference between the pre-test and the post-exposure measurement for TGx.

The overall mean scores for the CG regarding FAS are significantly higher in the pre-test ($t(91) = 5.072, p < .001, d = 0.529$). The analysis for the CG ($N=92$) showed that generalised flight anxiety ($t(91) = 2.459, p = .016, d = 0.256$), anticipatory flight anxiety ($t(91) = 3.297, p = .001, d = 0.344$) and in-flight anxiety ($t(91) = 5.677, p < .001, d = 0.592$) were all significantly higher in the pre-test than in the post test.

Evaluating the FAM data, an ANOVA with the difference scores between the pre- and post-test data and the allocation to TGx and CG as fixed factors is calculated. There is a significant difference between the change of the mean scores $F(1, 264) = 8.897, p = .003, \eta^2 = .033$. The partial Eta Square shows that the differences in the scores can be explained by the group allocation by 3,3%. The graph paints as similar picture as already seen for the FAS:

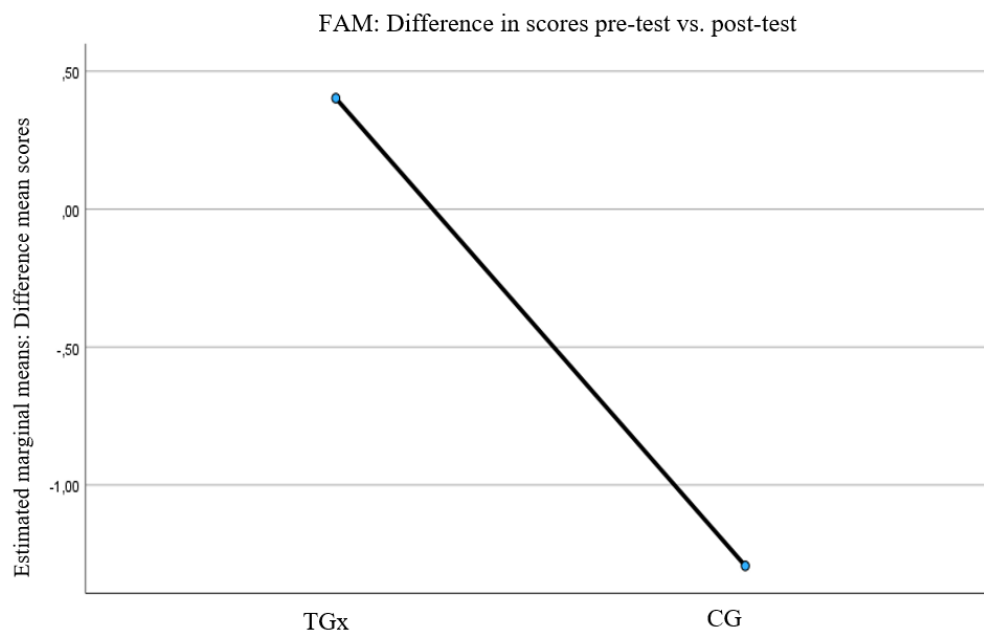


Figure 9: FAM: Difference in scores pre-test vs. post-test

The mean scores for all FAM categories combined regarding TGx do not show a significant difference ($t(173) = -1.062, p = .290$). Apart from that, neither the somatic modality ($t(173) = -1.322, p = .188$) and the cognitive modality ($t(173) = -.617, p = .538$) showed significant differences between pre-test and post-exposure measurement for TGx.

For the CG the somatic modality ($t(91) = 3.342, p = .001, d = 0.348$) and the cognitive modality ($t(91) = 4.459, p < .001, d = 0.465$) both scores were significantly higher in the pre-test than in

the post-test. The mean scores for both FAM categories combined do not show a significant difference ($t(191) = 4.151, p < .001, d = 0.433$).

For testing H1b, ANOVAs for the post-test score for FAS and FAM are calculated, to see if there is a difference in the scores.

When it comes to the difference between the post-test mean scores for TGx and the CG, there is a significant difference, $F(1, 264) = 7.706, p = .006, \eta^2 = 0.028$. The differences in the post-test mean scores between TGx and the CG can be explained by the group classification (in this case TGx vs. CG) by 2.8%.

Looking at the post-test data, there is a significant difference, $F(1, 264) = 4.271, p = .040, \eta^2 = 0.016$. The differences in the mean scores between TGx in comparison to the CG can be explained by the group classification by 1.6%.

The second research question's (RQ2) aim is to elaborate whether higher perceived fear of flying pre-exposure does alter the outcome post-exposure. H2 states that the effect media exposure to content on airplane crashes has, is stronger for respondents, who rate their anxiety levels higher pre-exposure than other respondents with lower pre-exposure anxiety.

The first step is to cluster the data that was collected in the Pre-Test into people with high fear of flying and people with low fear of flying. For that, median splits are conducted for the data from the pre-test FAS and FAM scores. Cluster 1 includes people with lower scores and cluster two includes people with higher scores, meaning they express higher fear levels.

Table 5: Cluster pre-test FAS

Cluster pre-test FAS			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	140	34,49	2,100
Cluster 2: higher fear of flying	126	59,52	23,091

Table 6: Cluster pre-test FAM

Cluster pre-test FAM			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	149	18,69	0,805
Cluster 2: higher fear of flying	117	30,44	12,519

When splitting the data into the test groups, the following scores are built:

Table 7: FAS Cluster Split

TG1 Cluster pre-test FAS			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	42	34,43	2,297
Cluster 2: higher fear of flying	47	57,85	23,969

TG2 Cluster pre-test FAS			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	46	34,83	2,069
Cluster 2: higher fear of flying	39	64,95	21,036

TGx Cluster pre-test FAS			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	88	34,64	2,177
Cluster 2: higher fear of flying	86	61,07	22,834

CG Cluster pre-test FAS			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	52	34,23	1,957
Cluster 2: higher fear of flying	40	56,20	23,581

Table 8: FAM Cluster Split

TG1 Cluster pre-test FAM			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	45	18,00	0,787
Cluster 2: higher fear of flying	44	28,34	12,205

TG2 Cluster pre-test FAM			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	49	18,73	0,861
Cluster 2: higher fear of flying	36	33,67	12,090

TGx Cluster pre-test FAM			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	94	18,72	0,822
Cluster 2: higher fear of flying	80	30,74	12,368

CG Cluster pre-test FAM			
	N	Mean	Std. Deviation
Cluster 1: lower fear of flying	55	18,64	0,778
Cluster 2: higher fear of flying	37	29,81	12,991

After clustering the cases according to their pre-test score, the mean scores for each cluster were created.

To test H2 for FAS an ANOVA is calculated with the difference scores between the pre- and post-test data and the allocation to the groups (TGx and CG) as well as the allocation to the clusters as fixed factors. The group allocation ($F(3, 262) = 14.139, p < .001, \eta^2 = 0.051$) and interaction between the group allocation and the cluster allocation are significant ($F(3, 262) = 6.600, p = .011, \eta^2 = 0.025$). Overall, 5,7% of the variance can be explained ($\text{corr. } R^2 = 0,57$). The outcome indicates that the effect the media exposure had does depend on the basic fear level the participants have. When analysing the graph, it becomes clear, that the difference in mean scores is more pronounced for people with a higher basic level fear of flying.

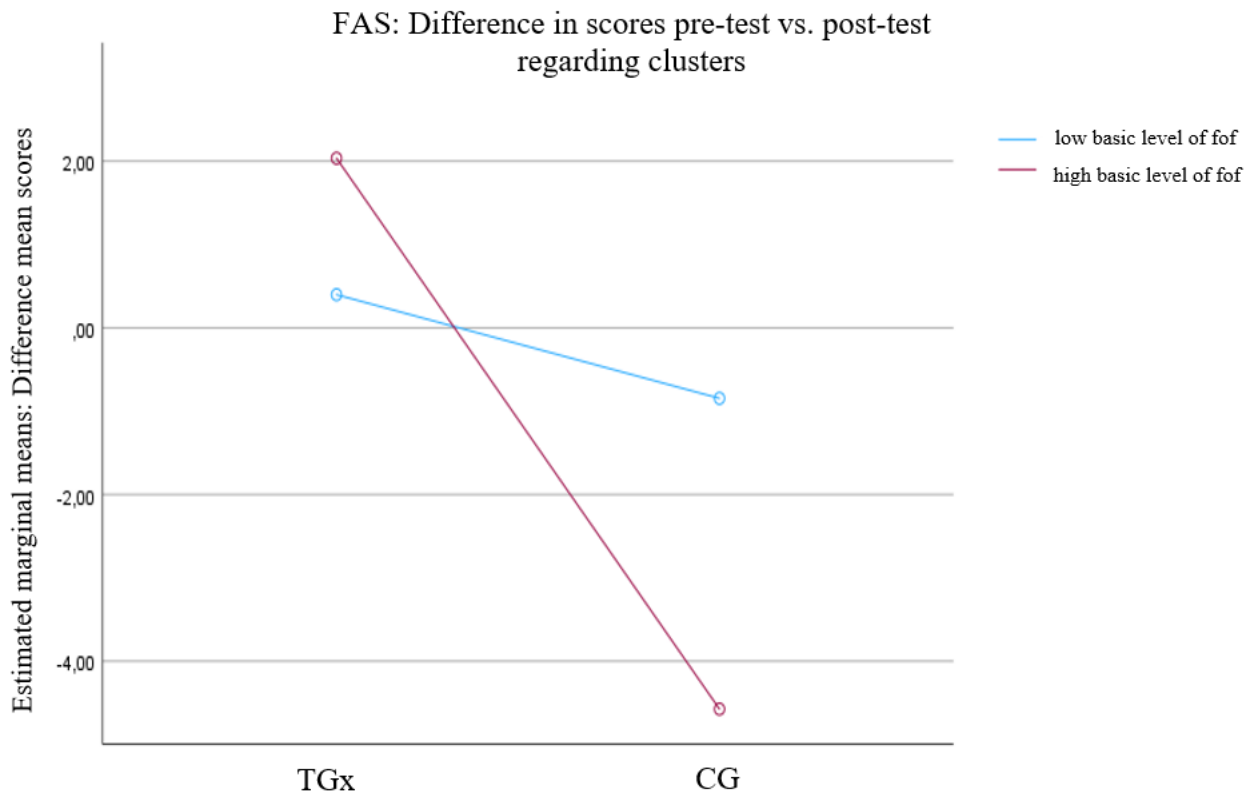


Figure 10: FAS: Difference in scores pre-test vs. post-test regarding clusters

Regarding FAS in Cluster 1 the post-test analysis for TGx vs the CG showed that there is a significant difference between the groups $F(1, 138) = 7.291, p = .008, \eta^2 = 0.050$.

For Cluster 2 the difference is also significant $F(1, 124) = 5.918, p = .016, \eta^2 = 0.046$.

To gain more insight regarding the pre- and post-test data, paired t-tests are calculated.

For the FAS cluster 1, including people with lower fear of flying, the mean score for generalised flight anxiety is significantly lower than the post-test mean score ($t(87) = -3.451, p < .001, d = -0.368$). There is no significant difference regarding the mean scores for anticipatory flight anxiety were also significantly lower in the pre-test, than in the post-test ($t(87) = -1.029, p = .306$). The scores for in-flight anxiety are significantly higher in the pre-test, than in the post-test ($t(87) = 2.142, p = .035, d = 0.228$). The overall FAS mean scores for people low fear of flying showed no significant difference ($t(87) = -1.009, p = .316$).

Looking at the outcome for FAS cluster 2, including people with fear of flying, the mean score differences for generalised flight anxiety ($t(85) = -3.311, p = .001, d = -0.357$) are significantly lower in the pre-test than in the post-test. The scores for anticipated flight anxiety ($t(85) = -$

1.270, $p = .207$) and in-flight anxiety ($t(85) = .245$, $p = .807$) did not show significant differences. The overall FAS mean scores for people with no fear of flying showed no significant difference ($t(85) = -1.463$, $p = .147$).

The procedure was repeated for the FAM data. The group allocation ($F(3, 262) = 11.575$, $p < .001$, $\eta^2 = 0.042$) and interaction between the group allocation and the cluster allocation are significant ($F(3, 262) = 4.322$, $p = .039$, $\eta^2 = 0.016$). Overall 5,0% of the variance can be explained ($\text{corr. } R^2 = 0,50$) The difference in mean scores is more pronounced for people with a higher basic level fear of flying.

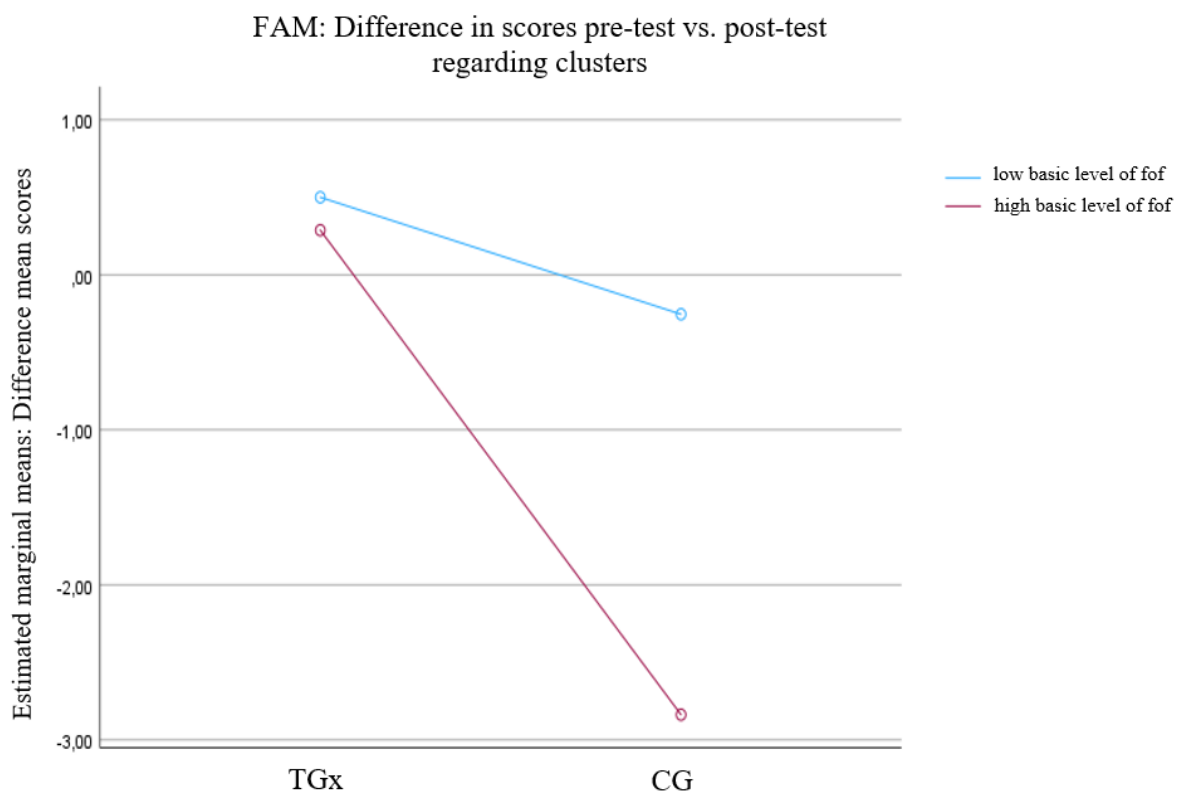


Figure 11: FAM: Difference in scores pre-test vs. post-test regarding clusters

For the TGx FAM Cluster 1 (people with no fear of flying) there are no significant differences between the pre- and post-test measurement for the somatic modality scale ($t(94) = -.743$, $p = .460$) and the cognitive modality scale ($t(94) = -1.522$, $p = .131$). The overall FAM mean scores for people with no fear of flying showed no significant difference ($t(94) = -.1142$, $p = .217$).

Regarding the FAM Cluster 2 (people with fear of flying), there are also no significant differences between the somatic modality scale ($t(79) = -1.098$, $p = .276$), the cognitive modality scale ($t(79) = .433$, $p = .666$) and overall FAM mean scores ($t(79) = -.424$, $p = .673$).

Regarding the CG, 52 people were assigned to Cluster 1 and 40 people were assigned to Cluster 2 Fear of Flying. For the FAM data 86 people were assigned to Cluster 1 No Fear of Flying and 6 people were assigned to Cluster 2 Fear of Flying.

The FAS analysis showed that in Cluster 1 all categories had significantly higher mean scores in the pre-test, except for the generalised flight anxiety: generalised flight anxiety ($t(51) = 1.137, p = .261$), anticipatory flight anxiety ($t(51) = 3.224, p = .002, d = 0.447$), in-flight anxiety ($t(51) = 2.946, p = .005, d = 0.409$), and the overall score for all three categories ($t(51) = 4.178, p < .001, d = 0.579$).

In Cluster 2 the pre-test score were significantly higher than the post-test scores for all categories: : generalised flight anxiety ($t(39) = 2.360, p = .023, d = 0.373$), anticipatory flight anxiety ($t(39) = 2.563, p = .014, d = 0.405$), in-flight anxiety ($t(39) = 5.612, p < .001, d = 0.887$), and the overall score for all three categories ($t(39) = 4.578, p < .001, d = 0.724$).

Regarding the FAM data for the CG Cluster 1 the somatic modality scale ($t(54) = 1.518, p = .135$), The cognitive modality scale ($t(54) = 2.667, p = .010, d = 0.360$) and the overall FAM score ($t(85) = 2.698, p = .009, d = 0.364$) had significantly higher mean scores in the pre-test than in the post-test. In Cluster 2, the somatic modality scale ($t(36) = 3.380, p = .002, d = 0.540$), cognitive modality scale ($t(36) = 4.400, p < .001, d = 0.723$) and the overall FAM score ($t(36) = 4.097, p < .001, d = 0.674$) had significantly higher mean scores in the pre-test than in the post-test.

6.5 Data analysis with differentiation of media content

Research Question 3 (RQ3) focuses on to what degree people's fear levels alter depending on whether they were exposed to sensational and emotional reports on airplane crashes or serious reports on airplane crashes. H3 states that the effect that media content addressing airplane crashes has on the respondents' anxiety levels is more pronounced for people who are confronted with content that is classified as sensational and emotional than for people who are confronted with an article that is classified. The data analysis for evaluating this hypothesis is conducted in this chapter.

H3b: The effect on the participants' anxiety levels is strongest for people who have a high base level regarding fear of flying and are confronted with content that is classified as sensational and emotional.

To test H3 for FAS an ANOVA is calculated with the difference scores between the pre- and post-test data and the allocation to the three groups (TG1, TG2 and CG) as well as the allocation to the clusters as fixed factors. The group allocation ($F(5, 260) = 7.481, p < .001, \eta^2 = 0.054$) and interaction between the group allocation and the cluster allocation are significant ($F(5, 260) = 3.199, p = .042, \eta^2 = 0.024$). Overall, 5,4% of the variance can be explained ($\text{corr. } R^2 = 0,54$). Similar to the calculation with no split between TG1 and TG2, the calculation shows that the effect the media exposure had does depend on the basic fear level the participants have. The Levene test is significant ($p < .001$) and therefore the Bonferroni test is used for the post hoc test regarding the group allocation. The test indicates that there is significant difference between T1 and CG ($p = .001$) and also a significant difference between TG2 and CG ($p = .042$) but not between the two test groups T1 and T2 ($p = .886$). The graph gives more information on the outcome and shows the clear difference between the CG and the test groups combined, but also how the difference between the test groups themselves does not vary as much. The graph also shows how the difference in mean scores between the pre- and post test is bigger for the people assigned to cluster 2 (high basic level of fear of flying)

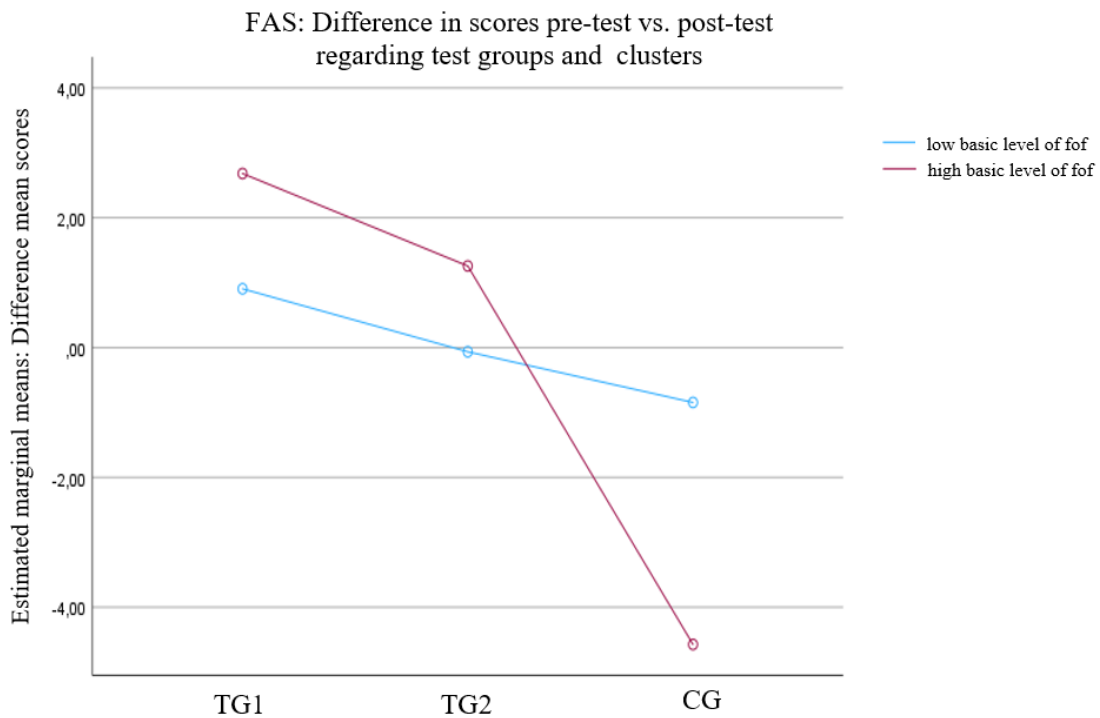


Figure 12: FAS: Difference in scores pre-test vs. post-test regarding test groups and clusters

For FAM, the same calculation was conducted. The group allocation ($F(5, 260) = 7.481, p = .001, \eta^2 = 0.050$) is significant but the classification $F(5, 260) = 3.656, p = .057$ and the interaction between the group allocation and the cluster allocation $F(5, 260) = 2.453, p = .088$ are not. The Levene test was significant ($<.001$) and the Bonferroni test for the group allocation showed that there is significant difference between T1 and CG ($p = .003$) but not between difference between TG2 and CG ($p = .182$) and the two test groups T1 and T2 ($p = .521$).

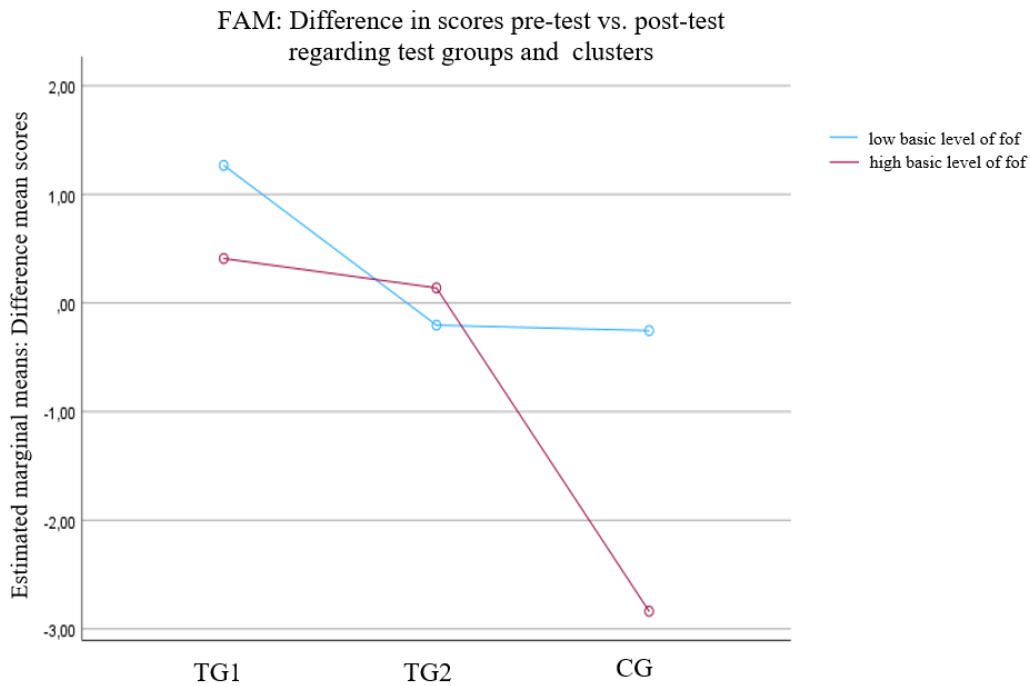


Figure 13: FAM: Difference in scores pre-test vs. post-test regarding test groups and clusters

To measure the differences between the mean scores of the three groups after exposure unifactorial Analysis of Variance (ANOVA) is used. The data shows that there is a significant difference between all three groups $F(2, 263) = 3.853, p = .022, n=.028$. The differences in the post-test mean scores between TG1, TG2 and the CG can be explained by the group classification by 2,8%. There was no homogeneity of variances between groups as determined by Levene's test for equality of variance ($p = 0.001$). The Dunnett-T3 test showed that the scores were significantly higher ($p=.049$) in TG1 compared to the CG (7.33, 95%-CI[-.46, 15.11]) and also significantly higher ($p=.036$) in TG2 than in the CG (7.67, 95%-CI[.00, 15.75]). There was no significant difference between TG1 and TG2 ($p=.986$). When it comes to the difference between the pre-test mean scores for TG, TG2 and the CG, there is no significant difference between the mean scores, $F(2, 263) = 1.309, p = .272$.

Again, the mean scores for each category are measured pre- and post-exposure and are then tested towards significance using paired t-test.

Test group 1 (TG1, $N=89$) received media content that was primarily classified as sensational and emotional. For this test group the generalised flight anxiety ($t(88) = -3.151, p = .002, d = -0.334$) is significantly lower in the pre-test than post exposure. The anticipatory flight anxiety

($t(88) = -1.627, p = .107$) and the in-flight anxiety ($t(88) = .215, p = .830$) show no significant differences.

Regarding the FAM, neither somatic modality ($t(88) = -1.287, p = .201$), nor cognitive modality ($t(88) = -1.288, p = .201$) show significantly different scores in the pre-testing versus the post-testing for TG1.

Test group 2 (TG2, $N=85$) received media reports that were primarily classified as serious. For this test group also the generalised flight anxiety ($t(84) = -3.028, p = .003, d = -0.328$) is significantly lower in the pre-test than post exposure. Regarding the anticipatory flight anxiety ($t(84) = -.383, p = .703$) and the in-flight anxiety ($t(84) = 1.210, p = .230$) there are no significant differences.

In addition, the FAM categories somatic modality ($t(84) = -.471, p = .639$) and cognitive modality ($t(84) = .717, p = .475$) did not show significant differences for TG2.

The control group (CG, $N=92$) the mean scores were significantly higher for all categories, as elaborated in the previous chapter.

Regarding the FAM, there is no significant difference for the post-test data between TG1, TG2 and the CG ($F(2, 263) = 2.222, p = .111$). Looking at the pre-test data, there is also no significant difference ($F(2, 263) = .849, p = .410$)

7. Discussion & Interpretation

The aim of this study was to find out, whether exposure to media coverage on airplane crashes has an immediate effect on the recipient's fear level regarding flying and whether predisposition plays a role. Furthermore, it was examined if the way the articles are written, and the use of images had an impact. In this chapter, the findings and the role of media effects in this study are discussed.

The study used the Flight Anxiety Scale (FAS), with subscales for generalized, anticipatory, and in-flight anxiety, and the Flight Anxiety Modality (FAM), measuring somatic and cognitive anxiety. (Van Gerwen et al., 1999) 271 people participated in the study, but one data set was removed to the person being underaged and another 4 data sets were removed as the participants stated to have never flown before. The outcome for people who had never flown before would have been interesting, however there was not enough data to analyse.

The first research question (RQ1) focuses on how exposure to media coverage on airplane accidents influences people's fear level regarding flying. Hypothesis 1a (H1a) proposes that exposure to articles of airplane crashes increases fear, while Hypothesis 1b (H1b) suggests that the articles elicit higher fear levels than general aviation news.

Pre- and post-exposure scores were collected for both scales, FAS and FAM. Participants were divided into a test group (TGx), exposed articles on airplane crashes, and a control group (CG), exposed to general aviation articles. ANOVAs and paired t-tests were used for analysis.

Regarding H1a, the ANOVA on pre- and post-FAS difference scores revealed a significant group effect ($p < .001$), with TGx showing increased and CG decreased FAS scores.

Paired t-tests showed that within TGx, only generalized flight anxiety significantly increased post-exposure ($p < .001$, $d = -0.328$), suggesting that crash articles primarily affect general anxiety, not anticipation or in-flight anxiety. While the ANOVA on FAM difference scores showed a significant group effect ($p = .003$, $\eta^2 = .033$), with TGx increasing and CG decreasing, no significant changes were observed within TGx for any FAM subscale. This contrasts with the FAS findings and suggests that crash articles might not significantly impact physiological and cognitive anxiety components measured by FAM.

Surprisingly, the control group showed significant decreases in all FAS anxiety measures (generalized, anticipatory, in-flight, and overall) and FAM measures (somatic, cognitive, and overall) from pre-test to post-test. This unexpected finding requires further investigation and could be due to factors like natural reduction in anxiety over time, or external factors influencing the control group. It is also possible that the engagement with the topic for a certain amount of time led to a decrease of anxiety. The outcome could also suggest a calming effect of general aviation news.

Overall, the findings support H1a, as there is a difference for FAS and FAM difference scores between people who received articles on airplane crashes and people who received articles on neutral aviation topics. Further research shows that only some parts of the scales measure a change in fear levels after exposure to articles on airplane crashes. Especially the FAS subscale generalized flight anxiety showed differences in the pre- and post- measurement. Exposure to media coverage of airplane crashes significantly increased generalized flight anxiety. This subscale is the most general and does not require the study's participants to imagine themselves in a certain situation regarding flying. Specifically for the FAM scale it is crucial that the participants partake in the study with a high level of concentration to imagine how they feel during a flight.

H1b was supported by post-test ANOVAs for both FAS ($p = .006$, $\eta^2 = 0.028$) and FAM ($p = .040$, $\eta^2 = 0.016$), indicating higher post-test scores for TGx compared to CG.

In summary, the research towards Research Question 1 provides evidence that crash coverage can increase flight anxiety, while general aviation news can reduce it.

Priming, in this context, refers to activating pre-existing schemas or associations related to fear of flying before presenting the main stimuli (the news articles). This pre-activation can make these associations more accessible in memory, potentially increasing susceptibility to the influence of the articles.

The baseline measurement itself acts as a prime. In the begin of the study the two questionnaires are presented to recipients. While the stated purpose of these questionnaires is to measure baseline anxiety, the very act of answering questions about flight-related fears could prime participants to think about potential dangers, making them more receptive to negative information presented later. This is a subtle form of priming, as participants are not explicitly

directed to think about specific risks, but the questions themselves might make these aspects more salient.

The effect of priming is evident in the significantly higher difference score for both test groups combined in comparison to the control group, as well as the increased generalized anxiety after crash exposure. The control group was crucial in this instance, as it provided a comparison baseline in contrast to the test groups. By presenting airplane crash-related information, the media primes the concept of aviation accidents, making it more accessible in memory and influencing subsequent anxiety responses. The lack of effect on anticipatory and in-flight anxiety might suggest that priming is less effective for anxieties tied to specific situations, whereas generalized anxiety is more susceptible to priming.

In addition, it was researched whether pre-existing fear of flying influences the impact of media exposure on airplane crashes (RQ2). The hypothesis (H2) predicts that individuals with higher pre-existing flight anxiety will experience a greater increase in fear after exposure compared to those with lower pre-existing anxiety.

Participants were divided into two clusters based on pre-test FAS and FAM scores: Cluster 1 (lower anxiety) and Cluster 2 (higher anxiety).

The ANOVA on pre- and post-FAS difference scores revealed significant effects for group allocation (TGx vs. CG, $p < .001$, $\eta^2 = 0.051$) and the group x cluster interaction ($p = .011$, $\eta^2 = 0.025$), indicating that the impact of media exposure depends on pre-existing anxiety. The visual preparation of the data makes it clear that the effect is more pronounced for people with higher levels of fear of flying. Post-test ANOVAs for FAS showed significant differences between TGx and CG in both Cluster 1 ($p = .008$, $\eta^2 = 0.050$) and Cluster 2 ($p = .016$, $\eta^2 = 0.046$). Paired t-tests showed that in Cluster 1, generalized anxiety increased ($p < .001$, $d = -0.368$), anticipatory anxiety remained unchanged, and in-flight anxiety decreased ($p = .035$, $d = 0.228$). In Cluster 2, only generalized anxiety increased ($p = .001$, $d = -0.357$).

For FAM, the ANOVA on difference scores showed significant effects for group ($p < .001$, $\eta^2 = 0.042$) and the group x cluster interaction ($p = .039$, $\eta^2 = 0.016$). Again, the effect is stronger for people with higher basic levels of fear of flying. Paired t-tests also revealed no significant changes in FAM subscales within each cluster. The CG consistently showed decreased anxiety from pre- to post-test for both FAS and FAM, regardless of baseline anxiety.

The findings support H2. The interaction effect suggests that pre-existing anxiety influences how the media exposure influences the participants' fear level. Again, the effects are more pronounced for the FAS measurement. Generalized anxiety appears most susceptible, increasing in both clusters after exposure to articles on airplane crashes. This suggests that individuals with higher pre-existing anxiety might process information on airplane crashes differently, leading to a more pronounced increase in anxiety. Even though the study's participants with high fear of flying are, for the most part, not people with aviophobia but have higher fear levels than people in Cluster 2, they displayed a higher susceptibility to the media exposure. The concept that flying might not be as safe is more prominent in the minds of those assigned to cluster 1. It is assumed, that is the priming of the concept through media exposure on airplane crashes does make it even more accessible.

Research Question 3 (RQ3) examined whether the sensational / emotional tone of media coverage about airplane crashes influences the degree to which fear levels change. Hypothesis 3a (H3a) proposes that exposure to sensational and emotional content leads to a more pronounced increase in anxiety compared to exposure to neutral, serious reporting. Hypothesis 3b (H3b) assumes that this effect is strongest among individuals with high pre-existing fear of flying.

For this study, framing involves manipulating the way information is presented to influence how it is interpreted. Specifically, framing was applied to the news articles about the airplane crash.

Two versions of the news articles were created. The sensationalised versions used emotionally charged language, vivid descriptions of the crash, and focus on the tragic consequences. Emotionality was also an important factor, as the articles were containing highly emotional reports of personal fates and loss of human life. The articles contained images showing parts of the airplane that crashed, the crash site, personal items and even body bags that were prepared for usage. In contrast, the factual version would present the same information in a neutral tone, emphasising objective details and avoiding emotionally charged language. These articles did not feature personal tragedies of victims and their families. The pictures that were used only showed aircrafts of the same airline in flight, but did not feature damaged parts of the airplane.

By comparing the effects of these two versions, it was determined how the framing of the information influences the post-test fear levels.

Participants were divided into three groups: TG1 (sensational/emotional content), TG2 (neutral/serious content), and CG (control, general aviation news). They were also clustered based on pre-test anxiety levels (Cluster 1: low fear; Cluster 2: high fear).

There were no significant differences in pre-test FAS scores or in pre- or post-test FAM scores between the three groups. The ANOVA on pre- and post-FAS difference scores revealed significant effects for group ($p < .001$, $\eta^2 = 0.054$) and the group x cluster interaction ($p = .042$, $\eta^2 = 0.024$). Post-hoc tests showed differences between TG1/CG ($p = .001$) and TG2/CG ($p = .042$), but not TG1/TG2 ($p = .886$). Paired t-tests showed increased generalized anxiety for TG1 ($p = .002$, $d = -0.334$) and TG2 ($p = .003$, $d = -0.328$), but no changes in other FAS subscales.

For FAM, the ANOVA on difference scores showed a group effect ($p = .001$, $\eta^2 = 0.050$), but no cluster effect or interaction. Post-hoc tests showed a difference between TG1/CG ($p = .003$), but not TG2/CG or TG1/TG2. Paired t-tests revealed no significant FAM subscale changes. A post-test FAS ANOVA showed a group effect ($p = .022$, $\eta^2 = 0.028$), with post-hoc tests indicating higher scores in TG1/TG2 compared to CG, but no TG1/TG2 difference. The post-test FAM ANOVA showed no group effect.

The findings do not support H3a and H3b. Both types of crash coverage increased fear of flying in the comparison to the control group, but there was no significant difference between the two test groups. This suggests that sensation / emotional reporting on airplane crashes does not increase fear flying more than neutral / serious reporting. The lack of support for H3a and H3b could indicate that the framing manipulation was not strong enough to elicit significantly different responses, or that negativity of crash reports regardless of tone, overshadow the impact of sensational / emotional framing.

Many studies that look at sensational / emotional reporting and the effect it has on fear focus on television news (Cantor, 2010; Iyengar & Simon; Altheide, 1997; Kleemans and Vettehen, 2009). It is possible, that especially for the short-term media effects in this study, that adding video content would have more impact, similarly to how Wang & Cole's study (2013) was conducted.

Summarised, the main findings are that reports on airplane crashes do increase fear of flying in comparison to reports on general aviation topics and that the effect is stronger for people

with a higher basic level of fear of flying. The findings of this study align with previous research demonstrating the anxiety-inducing effects of media coverage on airplane crashes. As mentioned before, Wang and Cole (2013), previously found that exposure to television news reports of airplane crashes significantly increased viewers' anxiety levels and elicited physiological stress responses such as increased heart rate and goosebumps. This indicates that the effects of negative media go beyond purely psychological effects and also include a measurable physiological component.

8. Limitations

This study provides valuable insights into the immediate effects of media exposure on flight anxiety. However, several limitations must be acknowledged.

While the Flight Anxiety Scale (FAS) and Flight Anxiety Modality (FAM) (Van Gerwen et al., 1999) offer established measures of flight anxiety, their use in assessing the specific impact of media exposure on this anxiety has not been previously validated. It is possible that these scales are not optimally sensitive to the nuances of anxiety changes induced by short-term media exposure. This limitation is also visible in the discrepancy between FAS and FAM results.

This study focused solely on written news articles with still images. If this is the reason why there was no significant difference between the test groups cannot be determined within the thesis. The lack of video material is a major aspect, as it is a prominent feature of contemporary news reporting and social media content. Studies on the effects of visual media on emotional responses, particularly fear and anxiety (e.g., Cantor, 2010; Iyengar & Simon, 1993; Altheide, 1997; Kleemans & Vettehen, 2009; Wang & Cole, 2013), suggest that video content can elicit stronger emotional reactions than text alone. The absence of video in this study may underestimate the full impact of media exposure on fear of flying and does not align with modern news reporting.

Another aspect is that the study sample did not include individuals diagnosed with clinical aviophobia. The participants represented a range of flight anxiety levels, but excluding those with severe phobia limits the generalisability of the findings. Individuals with clinical aviophobia may process information about airplane crashes differently and exhibit more extreme reactions to media exposure. Furthermore, the exclusion of participants who have never flown, due to limited data, poses a missed opportunity for further insight.

9. Outlook

This study's findings provide a starting point for future research to explore the complex relationship between media exposure, individual predispositions, and fear of flying in greater depth.

It was established that people higher fear levels regarding flying react more intensively to media coverage on airplane crashes, which raises questions for future research. Qualitative approaches, such as interviews or focus groups, can offer valuable insights into the individual thought process and the interpretations of media coverage related to aviation accidents. Different articles and images were used in the study, while it was not researched which aspects of the material were crucial for the witnessed effects. Exploring the narratives, emotions, and thought processes associated with changes in flight anxiety can complement quantitative findings and contribute to a more nuanced understanding.

This study focuses on immediate effects. However, longitudinal designs are crucial for examining the long-term impact of media exposure on fear of flying. Future studies could examine the development of fear and anxiety over time and consider media usage as a more important factor. As already mentioned, the inclusion of video content in future research is also essential, given its importance in modern media and its potential for eliciting stronger emotional responses compared to text- and image-based information. Comparative analyses of different media formats and specific visual elements does also provide an opportunity for future research.

Apart from these aspects, research regarding the influence of media coverage on people with clinically diagnosed aviophobia entails further opportunities for this field of research.

10. Conclusion

This study investigates the immediate impact of media exposure to airplane crash coverage on perceived fear of flying. Using a pre-test/post-test experimental design with two test groups and a control group, participants were exposed to one of three conditions: sensational/emotional articles of airplane crashes, neutral/serious articles of airplane crashes, or general aviation news. Regarding the measurement of fear of flying, the Flight Anxiety Situations (FAS) Questionnaire and the Flight Anxiety Modality Questionnaire (FAM) by Van Gerwen et al. (1999) were used. The findings reveal a significant increase in the measured fear of flying immediately following exposure to any form of crash coverage compared to the control group. This suggests that the mere presence of such news, regardless of its framing, can prime anxieties related to flying. While the hypothesis predicted that sensationalised coverage would elicit a greater fear response than neutral coverage, this was not supported by the results. Both forms of crash reporting produced comparable levels of increased anxiety.

The study's findings underscore the powerful influence of media, particularly in pre-existing anxieties. Participants who reported higher levels of pre-existing fear of flying experienced a more pronounced increase in anxiety after exposure to crash coverage, highlighting a vulnerability to media influence within this specific population.

While this research provides valuable insights into the short-term effects of media exposure on fear of flying, further investigation is warranted. Future studies could explore the long-term impact of such exposure, incorporate diverse media formats such as video content, and include people with clinically diagnosed aviophobia to gain a more comprehensive understanding of the effects.

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Abstract

While commercial flying has never been safer, fear of flying is common in the general public. Even though aviation accidents are rare, they cause extensive media coverage when they happen. This study examines the immediate effects of media exposure to airplane crash coverage on perceived fear of flying. Employing a pre-test/post-test experimental design with two test groups and a control group, participants were randomly assigned to one of three conditions: exposure to sensational/emotional articles of airplane crashes, neutral/serious articles of airplane crashes, or general aviation news. Flight anxiety was measured before and after exposure using the Flight Anxiety Situations (FAS) Questionnaire and the Flight Anxiety Modality Questionnaire (FAM). Results revealed a significant increase in self-reported flight anxiety immediately following exposure to both sensationalised and neutral articles of airplane crashes compared to the control group. Contrary to preliminary assumption, the sensational tone of the coverage did not significantly amplify anxiety levels compared to neutral reporting. Pre-existing fear of flying was found to be a moderating factor, with individuals reporting higher baseline anxiety experiencing a more pronounced increase following exposure to crash coverage. These findings highlight the priming effect of media exposure on flight anxiety, suggesting that even neutral reporting of airplane crashes can exacerbate existing fears.

Abstract (Deutsch)

Obwohl Flugreisen nie sicherer waren, ist Flugangst in der Öffentlichkeit weit verbreitet. Flugzeugabstürze sind selten, jedoch wenn sie passieren, wird in den Medien ausführlich darüber berichtet. Diese Studie untersucht die unmittelbaren Auswirkungen der Berichterstattung über Flugzeugabstürze in den Medien auf die wahrgenommene Angst vor dem Fliegen. Die Teilnehmer*innen wurden nach dem Zufallsprinzip einer von drei Bedingungen zugeteilt: reißerische/emotionale Artikel über Flugzeugabstürze, neutrale Artikel über Flugzeugabstürze oder allgemeine Artikel über Neuigkeiten aus der Flugbranche. Die Flugangst wurde vor und nach der Exposition mithilfe der Fragebögen Flight Anxiety Situations (FAS) Questionnaire und Flight Anxiety Modality Questionnaire (FAM) gemessen. Die Ergebnisse zeigen einen signifikanten Anstieg der gemessenen Flugangst unmittelbar nach der Exposition gegenüber reißerischen und neutralen Artikeln über Flugzeugabstürze im Vergleich zur Kontrollgruppe. Entgegen vorläufiger Annahme verstärkte der reißerische Ton der Berichterstattung die gemessene Flugangst nicht signifikant im Vergleich zu neutraler Berichterstattung. Ein grundlegend höheres Niveau von Flugangst erwies sich als moderierender Faktor, wobei für Personen mit höherer Ausgangsangst ein stärkerer Anstieg gemessen wurde. Die Ergebnisse unterstreichen den Priming-Effekt der Medienexposition auf die Flugangst und legen nahe, dass selbst eine neutrale Berichterstattung über Flugzeugabstürze bestehende Ängste verstärken kann.

12. Appendix

Exposure Material

TG1) Lion Air crash

Flugzeug-Unglück in Jakarta

Die letzten Sekunden im Cockpit der Boeing 737

Piloten sollen bis zuletzt verzweifelt in ihrem Handbuch geblättert haben



Retter an der Unglücksstelle. Im Wasser schwimmen kleinere Wrackteile, ein Flugbenzin-Teppich ist zu sehen. Einer der Helfer hat eine Handtasche aus dem Wasser gefischt
Foto: BASARNAS/HANDOUT/EPA-EFE/REX

Die letzten Minuten im Cockpit

Bei dem Absturz des Lion-Air-Fluges „JT 610“ (in der Nähe von Jakarta, Indonesien) sollen die Piloten der Boeing 737 Max 8 bis zuletzt verzweifelt in ihrem Handbuch nach einer Lösung für das Problem geblättert haben. Das berichtet die Nachrichtenagentur Reuters.

Die Piloten hätten sich nicht erklären können, warum die Nase der Maschine nach unten zog, erklärten drei anonyme Personen der Nachrichtenagentur – ihnen sollen die Stimm Aufnahmen aus dem Cockpit vorliegen. Es wäre das erste Mal, dass die Aufnahme der Öffentlichkeit zugänglich gemacht wurden.

Laut Bericht traten die ersten Probleme bereits nach zwei Flugminuten auf, der Pilot meldete dies der Flugsicherung – die Ermittler gehen davon aus, dass ein Fehler im sogenannten „Trimmsystem“ (MCAS) schuld war.

Dieses schätzte offenbar die Lage des Flugzeuges in der Luft falsch ein, korrigierte deshalb den angeblich inkorrekten Kurs!

Über neun Minuten warnte der Bordcomputer laut Bericht die Piloten, der fehlende Aufwind müsste kompensiert werden: Langsam und unwiderruflich neigte sich die Nase des Stahlkolosses nach vorne, die Maschine raste nun ungebremst (725 km/h) aufs Wasser zu – weil die Technik es so wollte. Die Sensoren meldeten weiter und weiter falsche Daten.

Der Pilot kämpfte gegen den Willen der Maschine, versuchte irgendwie Höhe zu gewinnen, das Flugzeug zu stabilisieren. Doch der Computer war stärker: Er drückte die Front immer weiter runter, es ging tiefer und tiefer.

Die Situation wurde minütlich brenzlicher: Parallel zum Kampf des Piloten suchte der Erste Offizier im Handbuch (für abnormale Situationen) nach einer Lösung – doch er fand keine.

► Die anonymen Quellen berichteten Reutes auch, dass die Piloten offenbar nicht mitbekommen hätten, dass sie in einer Schiefelage waren: „Sie haben nur über Geschwindigkeit und Höhe nachgedacht. Nur darüber haben sie gesprochen“, erklärte eine der Personen.

Bevor die Flugzeugkapitäne eine Lösung fanden, zerschellte das Flugzeug auf dem Wasser – alle 189 Passagiere starben.



Mitglieder eines Rettungsteams stellen Leichensäcke in Tanjung Priok, Nord-Jakarta, auf. RESMI MALAU/AFP/Getty Images



Air-Asia-Flug QZ8501 abgestürzt, keine Hoffnung auf Überlebende

Sohn (8) des Piloten glaubt, Papa müsse noch arbeiten

31.12.2014 - 17:39 Uhr

Die Tragödie des Air-Asia-Fluges QZ8501: 162 Menschen waren an Bord des Unglücks-Airbus A320, der vor der Küste Borneos ins Meer stürzte. Bislang konnten sieben Leichen geborgen werden.

Jakarta – Die Hoffnung der Hinterbliebenen, ihre Liebsten hätten wie durch ein Wunder überlebt – mit der Meldung vom Absturz war sie ausgelöscht. Doch wie erklärt man vor allem den Kindern der Opfer, dass ihre Eltern tot sind? Die Familie des Piloten hat sich dazu entschlossen, dessen Sohn (8) zunächst im Dunkeln zu lassen: „Wir haben ihm gesagt, dass sein Papa noch arbeiten muss.“

Wrack gefunden, erste Leichen zu Militärflughafen gebracht

Medienberichten zufolge gilt der Airbus als geortet. Die Besatzung eines indonesischen Marineschiffs habe Bilder gemacht, die das Wrack westlich von Kumai auf Borneo in etwa 24 bis 30 Metern Tiefe zeigten, berichtete das Nachrichtenportal „Tempo.co“. Es habe mit dem Dach nach unten gelegen.

Kurz zuvor hatten am Dienstag Sichtungen mehrerer Trümmerteile die Suchtruppe auf die richtige Fährte geführt. Wenig später wurden auch die ersten Leichen entdeckt, die auf der Wasseroberfläche trieben. Eine soll eine Rettungsweste getragen haben – ein mögliches Indiz dafür, dass die Passagiere vom Absturz nicht überrascht wurden.

Sieben Leichen wurden bislang aus dem Meer gezogen, darunter auch die eines Flugbegleiters. Sie wurden bereits zum Militärflughafen in Surabaya gebracht und sollen dort nun identifiziert werden.

Trümmer und Leichen entdeckt





© Getty Images

BLACK-BOX ZEIGT

Neues Schock-Detail um Abstürze der Todes-Boeing

Trauer, Schock, Wut: Wieder war der Todesflieger eine Boeing 737 MAX 8. Abermals crashte eine Maschine dieses Typs kurz nach dem Start. 157 Menschen starben – wie berichtet – beim Absturz der Maschine der Ethiopian Airlines. Im Flieger saßen Passagiere aus 35 Nationen. Unter ihnen vier Österreicher.

Nach ersten Ermittlungsergebnissen ähneln die Flugschreiber-Daten der am vergangenen Sonntag abgestürzten Ethiopian-Airlines-Maschine denen der im vergangenen Oktober verunglückten indonesischen Lion-Air-Passagiermaschine. Die "eindeutigen Ähnlichkeiten" würden noch näher untersucht, sagte die äthiopische Verkehrsministerin Dagmawit Mogesam am Sonntag.

Die „New York Times“ berichtet, dass der Pilot der Ethiopian Airlines-Maschine bereits wenige Minuten nach dem Start die ersten Notsignale funkte.

► Mit panischer Stimme sprach er von Schwierigkeiten und bat darum, eine Notlandung einleiten zu dürfen. Die Fluglotsen hätten zudem einen starken Wellenflug der Maschine registriert. Ein deutliches Signal, dass es Probleme geben musste. Der Kontakt zwischen Pilot und den Lotsen hielt nur wenige Minuten – dann brach er ab.



Foto: Tiksa Negeri / Reuters

Ein AFP-Reporter berichtete von einem tiefen Krater an der Unglücksstelle. Flugzeugteile und persönliche Gegenstände der Passagiere lagen weit verstreut. Rettungskräfte bargen menschliche Überreste aus dem Flugzeugwrack.

Toter Arzt wäre in wenigen Wochen Papa geworden

Unter den verunglückten Österreichern waren drei junge, engagierte Ärzte und Freunde in der Maschine: unter anderem Armin S. (31), Facharzt im Ordensklinikum der Barmherzigen Schwestern in Linz. Besonders dramatisch: Seine Frau ist hochschwanger.

TG2) Lion Air crash

Indonesien

Maschine des Billigfliegers Lion Air mit 189 Menschen ins Meer gestürzt

Nach dem Absturz eines Flugzeugs im Meer vor Java ist die Hoffnung auf Überlebende gering. Offenbar hatte die Boeing 737 ein technisches Problem.



Eine Maschine der Fluggesellschaft Lion Air startet am Juanda International Airport im indonesischen Surabaya. Foto: AP

Jakarta. Ein Passagierflugzeug des indonesischen Billigfliegers Lion Air ist am Montag kurz nach dem Start in Jakarta ins Meer gestürzt. An Bord des Fluges JT610 hätten sich 181 Passagiere, darunter ein Kind und zwei Babys, sowie acht Crewmitglieder befunden, teilten die Rettungskräfte mit.

Alle 189 Menschen an Bord der Maschine sind dabei wahrscheinlich ums Leben gekommen. Die indonesische Such- und Rettungsbehörde teilte nach stundenlanger Suche am Montag mit, dass es keine Hinweise auf Überlebende gebe. Inzwischen seien aber die ersten Todesopfer geborgen worden.

Die Maschine war kurz nach dem Abheben vom internationalen Flughafen der Hauptstadt von der Radarschirmen verschwunden. Die nationale Rettungsbehörde hatte Hilfe bei der Luftwaffe angefordert, um im Meer vor Java nach dem Flugzeug zu suchen. Vermutet wird, dass das Wrack in einer Tiefe von etwa 35 Metern im Meer liegt.

Der Vorstandschef der Fluggesellschaft, Edward Sirait, berichtete am Montag, dass der Pilot der Boeing 737 kurz nach dem Start um Erlaubnis gebeten habe, zum Flughafen Jakarta zurückzukehren. „Unser Pilot hat nach Vorschrift gehandelt“, sagte der Chef der Fluglinie. „Als er gesehen hat, dass es ein Problem gibt, hat er darum gebeten, zur Basis zurückkehren zu dürfen. Aber wir wissen, wie es zu Ende ging.“

Sirait bestätigte, dass die Maschine zuvor schon ein technisches Problem gehabt habe. Dies sei jedoch vor dem Flug am Montag behoben worden. Details nannte er nicht.



Erste Details zu möglichem Absturzhergang

Widersprüche über Ortung des Wracks

Nach wie vor ist unklar, wie es am Sonntag zu dem Absturz der AirAsia-Maschine mit 162 Menschen an Bord gekommen ist. Genauen Aufschluss darüber kann wohl erst der Flugschreiber geben, der noch nicht gefunden wurde. Die bisherigen Entdeckungen lassen Experten jedoch darauf schließen, dass das Flugzeug wahrscheinlich nicht aufgrund einer plötzlichen Katastrophe abstürzte.

Mittlerweile haben Bergungsmannschaften nach dem Absturz in Indonesien laut CNN zehn Opfer geborgen. Die Leichen trieben vor der Küste Borneos im Meer, unweit der Stelle, wo der Radarkontakt zu dem Airbus A320 abgebrochen war.

Frau in Stewardessenuniform geborgen

Eine Frau trug eine Stewardessenuniform. Die Opfer hätten ihre Bekleidung noch vollständig am Körper gehabt, eines der Opfer habe eine Rettungsweste getragen, sagte ein Mitglied der Rettungskräfte der Nachrichtenagentur Reuters am Mittwoch. Beides deutet darauf hin, dass die Maschine nicht von einer plötzlichen Katastrophe getroffen wurde und dass die Passagiere vor dem Aufprall noch Zeit zum Reagieren hatten.

Widersprüchliche Informationen gibt es darüber, ob das Wrack lokalisiert wurde oder nicht. Indonesische Medien hatten am Mittwoch gemeldet, dass das Wrack westlich der Hafenstadt Kumai in Kalimantan (Borneo) entdeckt worden sei. Die Besatzung eines indonesischen Schiffs habe Bilder gemacht, die die Maschine auf dem Dach liegend auf dem Grund der Javasee zeigten. CNN berichtete, der verunglückte Airbus sei mittels Sonars geortet worden. Der Chef des indonesischen Rettungsdienstes, Bambang Soelistyo, dementierte jedoch die Berichte.

Wahrscheinlich keine Explosion

Gegenüber dem indonesischen Nachrichtenportal Tempo.co sagte der Koordinator des Einsatzes bei der indonesischen Luftwaffe, S. B. Supriyadi, dass aus der Luft ein „großformatiges Flugobjekt“ unter Wasser zu sehen sei. Wenn das Flugzeug - wonach es aussehe - nicht in Teile zerbrochen sei, und da bisherige Opfer keine Brandverletzungen aufwiesen, gehen Experten davon aus, dass die Maschine nicht explodiert ist. Das Auffinden der Notrutsche deute außerdem darauf hin, dass der Pilot womöglich eine Wasserlandung versucht habe. Für voreilige Schlüsse über die Absturzursache sei es aber noch zu früh, hieß es von der Flugsicherheitsbehörde.



Ein Helfer steht an Deck eines Rettungsschiffes, auf der Suche nach Passagieren des vermissten AirAsia-Flugzeugs. © Beawiharta / Reuters

Flugzeug der Ethiopian Airlines abgestürzt



Ethiopian Airlines Boeing 737 (c) REUTERS (Amr Dalsh)

Eine Boeing 737 mit 157 Personen an Bord stürzte nur kurz nach ihrem Start auf dem Weg von Addis Abeba nach Nairobi ab. Es gibt "keine bestätigten Informationen über Überlebende oder mögliche Opfer", teilte die Fluglinie mit.

Eine Maschine der Fluggesellschaft Ethiopian Airlines ist nach Angaben der äthiopischen Regierung am Sonntagmorgen abgestürzt. Die Boeing 737 befand sich auf einem Linienflug zwischen Addis Abeba und der kenianischen Hauptstadt Nairobi. Wie ein Sprecher der Fluglinie bestätigte, befanden sich 149 Passagiere und acht Besatzungsmitglieder an Bord.

keine Informationen über Überlebende

"Wir bestätigen hiermit, dass unser planmäßiger Flug ET302 von Addis Abeba nach Nairobi heute in einen Unfall involviert war", erklärte die Airline. Die Maschine hatte um 8.38 Uhr vom Flughafen Bole International abgehoben. Sechs Minuten später brach der Kontakt zu ihr ab. Such- und Rettungsmaßnahmen seien eingeleitet worden, bisher gebe es "keine bestätigten Informationen über Überlebende oder mögliche Opfer", teilte die Fluglinie mit.

Agenturmeldungen zufolge befindet sich die Unglücksstelle in der Nähe der Stadt Bishoftu, die 62 Kilometer südlich von Addis Abeba liegt. Die staatseigene Ethiopian Airlines ist eine der größten Fluggesellschaften Afrikas, die zuletzt jährlich 10,6 Millionen Passagiere befördert hat. Sie gilt als vergleichsweise sicher. Zuletzt war im Jänner 2010 eine Maschine kurz nach dem Start in Beirut abgestürzt.

Flugzeugabsturz in Äthiopien

Boeing 737 stürzte auf dem Weg von Addis Abeba nach Nairobi ab.

Spannweite
ca. 28 m



Grafik: © APA
Quelle: APA

APA





NEUER REISEBOOM

Flugzeuge als Mangelware

CoV-Beschränkungen gehören der Vergangenheit an, der zwischenzeitlich lahmgelegte Flugverkehr ist beinahe wieder auf Vorkrisenniveau angelangt. Oder könnte zumindest – Fluglinien kämpfen mit einem Mangel an Maschinen, die Auftragsbücher der großen Hersteller sind über Jahre hinweg voll. Dazu kommen Probleme in der Lieferkette und ein Mangel an Arbeitskräften. Mit einer Reaktivierung des Superjumbos A380 suchen Airlines Abhilfe.

Images/Christian Petersen

Der europäische Flugzeugbauer Airbus wird heuer weniger Flugzeuge ausliefern als geplant und hat außerdem mit dem weiteren Hochfahren der Produktion in den nächsten zwei Jahren zu kämpfen. Die für 2022 angepeilte Marke von 700 Verkehrsflugzeugen sei außer Reichweite, räumte der weltgrößte Flugzeugbauer Anfang Dezember ein – nach elf Monaten stand Airbus bei 565.

Der Überhang aus dem laufenden Jahr könnte auch die Planungen durcheinanderbringen, die Produktion von Kurzstreckenmaschinen der A320/A321-Baureihe bis Anfang 2024 auf 65 Flugzeuge im Monat hochzufahren. Zuletzt wurden 50 Maschinen pro Monat geschafft, vor der CoV-Krise waren es 60.

Bestellungen schnellen in die Höhe

Gleichzeitig kann sich Airbus vor Bestellungen kaum retten. 647 Aufträge kamen in den ersten drei Quartalen herein, Stornierungen schon abgezogen. Zum Vergleich: Im Vorjahreszeitraum waren es 133, und auch 2018 und 2019, also vor der Pandemie, waren es mit 256 und 127 deutlich weniger. Mit einem Bestellbuch von 7.294 Maschinen könnte Airbus theoretisch mehr als zehn Jahre produzieren, ohne dass es neue Aufträge brauchen würde, schrieb die „Frankfurter Allgemeine Zeitung“ („FAZ“) Ende Oktober.

Registrierte Flüge pro Tag weltweit 2019–2022

Siebtentagesschnitt



Quelle: Flightradar24

FLUGPLAN

Die ersten und die letzten Flüge des Jahres

Wo landet das letzte Linienflugzeug 2023? Und wo hebt das erste im neuen Jahr ab? Der Official Airline Guide gibt Auskunft

29. Dezember 2023, 10:00, 18 Postings

Am Himmel herrscht auch zum Jahreswechsel keine Ruhe. Was uns zu der spannenden Frage bringt: Wo landet die Maschine des letzten Fluges des Jahres 2023 beziehungsweise wo hebt das erste Linienflugzeug im neuen Jahr ab? Auskunft gibt der Official Airline Guide, ein in Großbritannien ansässiger Dienst für Reisedaten. Dort hat man recherchiert, dass die letzte planmäßige Landung im Jahr 2023 in Tahiti sein wird. Durchgeführt von Air Tahiti Nui geht's laut Plan am 31. 12. 2023 um 14.50 Uhr von Seattle aus los. Um 22.20 Uhr sollte die Maschine dann in Tahiti gelandet sein – quasi rechtzeitig zu den Neujahrsfeierlichkeiten. Ebenfalls mit Air Tahiti Nui muss fliegen, wer die zweitletzte Landung des Jahres miterleben möchte: Die Maschine soll planmäßig um 22 Uhr von Auckland kommend in Tahiti aufsetzen.



Ein Flugzeug der japanischen Airline ANA wird im kommenden Jahr als eines der ersten des Jahres abheben. Der Start erfolgt kurz nach Mitternacht.

APA/AFP/RICHARD A. BROOKS

Einer der ersten Linienflüge des neuen Jahres werde laut OAG planmäßig fünf Minuten nach Mitternacht am 1. 1. 2024 von MIAT Mongolian Airlines vom Flughafen Seoul Incheon abheben. Ziel ist der Chinggis Khaan International Airport in Ulan-Bator, Hauptstadt der Mongolei, wo die Maschine um 2.50 Uhr aufsetzen sollte. Zeitgleich starten auch zwei Maschinen der japanischen All Nippon Airlines vom Flughafen Tokio Haneda: eine in Richtung Kuala Lumpur und eine in Richtung Dubai. Insgesamt seien für das Jahr 2024 derzeit 29.632.049 Linienflüge mit über 4,6 Milliarden Plätzen geplant, heißt es beim OAG. (red, 29.12.2023)



Afrikas größte Airline expandiert auf dem Flughafen Wien: Seit 22. Mai 2023 bedient Ethiopian Airlines vier wöchentliche Flüge nach Kopenhagen. Zusätzlich zu den bestehenden Strecken nach Addis Abeba und Brüssel.

FLUGHAFEN WIEN-SCHWECHAT. Die Nationalfluglinie Äthiopiens verbindet die beiden europäischen Hauptstädte wöchentlich mit einer Boeing 787 Dreamliner. Ein Highlight für Passagiere: In weniger als zwei Stunden fliegt man von Wien im bequemen Langstreckenflugzeug nach Kopenhagen. Offiziell eröffnet wurde die neue Route von Lemma Yadecha Gudeta, CCO von Ethiopian Airlines und Mag. Julian Jäger, Vorstand der Flughafen Wien AG im Rahmen eines Fototermins.

Internationales Drehkreuz Wien-Schwechat

„Die Expansion von Ethiopian Airlines in Wien beweist Vertrauen in die Leistungsfähigkeit unseres Flughafens als internationales Drehkreuz. Neun Jahre nach der Aufnahme der Addis Abeba-Route bedient Äthiopiens Flag-Carrier nun neben Brüssel auch eine Verbindung nach Kopenhagen.

Damit steigt das Angebot an komfortablen Flugverbindungen in Wien. Kopenhagen ist eine großartige Stadt für Sightseeing und Wochenendtrips. Wir freuen uns sehr über die neue Strecke in Wien und die noch engere Zusammenarbeit mit Ethiopian Airlines“ **so Julian Jäger, Vorstand der Flughafen Wien AG.**

Die Flugverbindung wird jeden Montag, Mittwoch, Freitag und Samstag bedient. Ethiopian Airlines hebt dabei immer morgens gegen 7:00 Uhr Richtung Kopenhagen ab und landet am selben Tag gegen 21:00 Uhr wieder in Wien.

Die Flugzeit zwischen Wien und Kopenhagen beträgt weniger als zwei Stunden. Kopenhagen ist Hauptstadt Dänemarks und beliebte touristische Destination. Das wahrscheinlich bekannteste Nationalsymbol der Stadt: Die kleine Meerjungfrau an der Uferpromenade der Langelinie, die ihr Vorbild im gleichnamigen Märchen des dänischen Dichters Hans Christian Andersen findet.