

Florida Institute of Technology

## Scholarship Repository @ Florida Tech

---

Theses and Dissertations

---

5-2017

### A Comparison of Airline Passengers' Perception and Attention Toward Onboard Safety Briefing Video Presentations

Yousef Aba Alkhail

*Florida Institute of Technology*

Follow this and additional works at: <https://repository.fit.edu/etd>



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

---

#### Recommended Citation

Alkhail, Yousef Aba, "A Comparison of Airline Passengers' Perception and Attention Toward Onboard Safety Briefing Video Presentations" (2017). *Theses and Dissertations*. 6.

<https://repository.fit.edu/etd/6>

This Thesis is brought to you for free and open access by Scholarship Repository @ Florida Tech. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Scholarship Repository @ Florida Tech. For more information, please contact [kheifner@fit.edu](mailto:kheifner@fit.edu).

A Comparison of Airline Passengers' Perception and Attention Toward  
Onboard Safety Briefing Video Presentations

By

Yousef Aba Alkhail

A thesis submitted to the College of Aeronautics at  
Florida Institute of Technology  
in partial fulfillment of the requirements  
for the degree of

Master of Science  
in  
Applied Aviation Safety

Melbourne, Florida  
May, 2017

We the undersigned committee hereby approve the attached thesis, “A Comparison of Airline Passengers’ Perception and Attention Toward Onboard Safety Briefing Video Presentations,”

by

Yousef Aba Alkhail

---

Scott R. Winter, Ph.D.  
Assistant Professor, College of Aeronautics  
Thesis Major Advisor

---

Victoria Dunbar, Ph.D.  
Assistant Professor, College of Aeronautics  
Committee Member

---

Paul A. Craig, Ph.D.  
Professor, Middle Tennessee State University  
Committee Member

---

Troy Nguyen, Ph.D.  
Associate Professor, College of Engineering  
Committee Member

---

Korhan Oyman, Ph.D.  
Professor and Dean, College of Aeronautics

## **Abstract**

Title: A Comparison of Airline Passengers' Perception and Attention Toward Onboard Safety Briefing Video Presentations

Author: Yousef Aba Alkhail

Advisor: Scott R. Winter, Ph.D.

The purpose of this study is to determine the effect of the type of safety demonstration on a passenger's perception and attention. Furthermore, the study examined if there are gender differences based on participant gender. The design utilizes a two-study approach. Study 1 used Florida Tech College of Aeronautics students. For Study 1, the design for Florida Tech Aeronautics students was a mixed design using one within subjects variable and one between subjects variable. This study was a nonrandomized, posttest-only design. Experimental conditions were counterbalanced.

The ANOVA analysis of Study 1 demonstrated that there was no significant interaction between gender and type of video on perception and attention. Besides, the outcome of this study demonstrated that there was not a significant difference in the flight demonstration video on passengers' perception and attention. The result of this study indicated that there was not a statistically significant difference in perception and attention between genders. The ANOVA analysis for Study 2 showed that there was not a significant interaction between gender and type of video on perception and attention. However, the data of this study showed that

there was a significant difference in the flight demonstration video on passengers' perceptions and attention. Nevertheless, the ANOVA for Study 2 showed that there was no significant difference in perception and attention between genders.

## Table of Contents

|   |             |
|---|-------------|
| <b>Acknowledgement.....</b>                             | <b>viii</b> |
| <b>Dedication.....</b>                                  | <b>ix</b>   |
| <b>Chapter 1 .....</b>                                  | <b>1</b>    |
| <b>Introduction.....</b>                                | <b>1</b>    |
| <b>Problem Statement .....</b>                          | <b>1</b>    |
| <b>Background on the Problem Statement.....</b>         | <b>1</b>    |
| <b>Purpose Statement.....</b>                           | <b>4</b>    |
| <b>Operational Definitions.....</b>                     | <b>5</b>    |
| <b>Research Questions.....</b>                          | <b>6</b>    |
| <b>Hypotheses .....</b>                                 | <b>6</b>    |
| <b>Assumptions, Limitations, and Delimitations.....</b> | <b>7</b>    |
| <b>Chapter 2 Literature Review .....</b>                | <b>9</b>    |
| <b>Introduction .....</b>                               | <b>9</b>    |
| <b>Perceptions .....</b>                                | <b>9</b>    |
| <b>Attention.....</b>                                   | <b>14</b>   |
| <b>The Effect of Humor on Attention .....</b>           | <b>21</b>   |
| <b>Gender.....</b>                                      | <b>28</b>   |
| <b>Safety Briefing .....</b>                            | <b>33</b>   |
| <b>Summary.....</b>                                     | <b>38</b>   |
| <b>Chapter 3 – Methodology.....</b>                     | <b>41</b>   |

|  |           |
|--|-----------|
| <b>Introduction.....</b>                           | <b>41</b> |
| <b>Research Design and Approach.....</b>           | <b>41</b> |
| <b>Sample.....</b>                                 | <b>42</b> |
| <b>Power Analysis .....</b>                        | <b>43</b> |
| <b>Instrumentations.....</b>                       | <b>43</b> |
| <b>Procedures.....</b>                             | <b>44</b> |
| <b>Data Analysis.....</b>                          | <b>47</b> |
| <b>Participants' Eligibility Requirements.....</b> | <b>48</b> |
| <b>Legal and Ethical Considerations.....</b>       | <b>49</b> |
| <b>Budget and Time Schedule.....</b>               | <b>49</b> |
| <b>Summary.....</b>                                | <b>49</b> |
| <b>Chapter 4 –Introduction.....</b>                | <b>51</b> |
| <b>General Design.....</b>                         | <b>51</b> |
| <b>Research Tool.....</b>                          | <b>52</b> |
| <b>Data Analysis.....</b>                          | <b>53</b> |
| <b>Study Outlier Analysis.....</b>                 | <b>59</b> |
| <b>Study 1 Inferential Statistics.....</b>         | <b>59</b> |
| <b>Study 1 Decision On Hypotheses.....</b>         | <b>61</b> |
| <b>Study 2 Outlier Analysis.....</b>               | <b>62</b> |
| <b>Study 2 Inferential Statistics.....</b>         | <b>67</b> |
| <b>Study 2 Decision On Hypotheses.....</b>         | <b>69</b> |
| <b>Summary.....</b>                                | <b>70</b> |

|  |            |
|--|------------|
| <b>Chapter 5 – Conclusion.....</b>             | <b>72</b>  |
| <b>Study 1 Summary of finding.....</b>         | <b>74</b>  |
| <b>Study 1 Discussion.....</b>                 | <b>79</b>  |
| <b>Study 2 Summary of finding .....</b>        | <b>79</b>  |
| <b>Study 2 Discussion.....</b>                 | <b>80</b>  |
| <b>General Discussion.....</b>                 | <b>84</b>  |
| <b>Practical Implications.....</b>             | <b>85</b>  |
| <b>Limitation.....</b>                         | <b>85</b>  |
| <b>Recommendation for future Research.....</b> | <b>86</b>  |
| <b>Summary.....</b>                            | <b>87</b>  |
| <b>References.....</b>                         | <b>89</b>  |
| <b>Appendix A.....</b>                         | <b>100</b> |
| <b>Appendix B.....</b>                         | <b>103</b> |
| <b>Appendix C .....</b>                        | <b>105</b> |
| <b>Appendix D.....</b>                         | <b>106</b> |
| <b>Appendix E.....</b>                         | <b>110</b> |



## **Acknowledgement**

The author's first wish was to express his gratitude to his major advisor Dr. Scott R. Winter for his help and support in conducting this study. This research was done successfully under his great assistances and guidance. Without his support, patience and encouragement, this thesis could not have been accomplished perfectly.

Furthermore, the author would like to thank all the committee members, professors, Victoria Dunbar, Paul A. Craig, and Troy Nguyen for their help and cooperation. Moreover, the writer extends appreciation to professors Meredith Carroll and Rian Mehta for their permission to use their classes in order to collect the data of this study. The researcher also wants to thank professor Travis Conradt for his help and support in letting use Sona system to collect data.

Additionally, the author grateful to his mother Ansaf Nuwilati who passed away in 2014, in Boston, MA and to his father Othman Aba Alkhail who died in 1998 in Riyadh, Saudi Arabia.

The scholar shares his gratitude to his sisters, brothers, and wife for their encouragement. Besides, the researcher would like to thank his daughter Aleen even though the little princess kept him busy doing this study. Finally, the author indebted his government for their financial aid.

## **Dedication**

The author would like to dedicate this thesis to his beloved late mother Ansaf Nuwilati and to his beloved late father Othman Aba Alkhail for their encouragement. This thesis is also dedicated to his wife, sisters, brothers, daughter, and friends for all their love and encouragement.

# **Chapter 1**

## **Introduction**

The purpose of Chapter One is to explain the introductory structure of the study. Chapter One demonstrates the problem statement, background of the problem statement, purpose statement, and operational definitions. Other parts presented in this chapter contain research questions, hypotheses, assumptions, limitations, and delimitations.

### **Problem Statement**

Airlines are required to provide a passenger safety briefing before each flight. However, the problem is that passengers may not pay attention to the safety demonstration video onboard. Airlines have tried interjecting humor into the safety briefings to encourage both novice and frequent fliers to pay attention to the presentation. This study will examine if there is a difference in perception and attention between a traditional or humorous safety briefing video.

### **Background on the Problem Statement**

Many people who fly have a great fear that they are going to be in a plane crash. However, there is only about a one in 90 million chance that an individual is going to die in a plane crash. Despite this statistic, there are still a large number of people who think that the chance of surviving an air accident is going to be very small. The concept of “implicit trust” prevents many people from believing in the airline safety system because they are completely dependent on others for whether or not the aircraft and the flight system will be conducted properly (CASA, 2013).

The illusion of a lack of control is further made difficult because many times, passengers are not really prepared for what they should do, even if there is an emergency situation. The Civil Aviation Safety Authority in Australia (2013) suggested that while it is important to give information to passengers concerning safety, it is even more important that they learn the information so that they are able to act appropriately when an emergency situation occurs. In a survey that was conducted by the Australian Transport Safety Bureau (ATSB), passengers reported that they paid some attention to the briefing that they were given concerning safety and that they were paying some attention during crew announcements; however, during the safety video and regarding the safety card, they were paying very little attention. Very few passengers reported paying attention to the safety media that was provided in order to teach them about what to do during a safety-related situation (CASA, 2013).

Passengers may not want to be distracted by information that will cause them to stress and therefore, they will avoid listening to the information that could help them survive should an accident occur. It is easy to avoid information where the belief exists that it would not have a great effect on increasing survivability. In addition, the safety messages are sometimes competing for the attention of passengers with other activities, which can create a loss of transmission. Preflight and post takeoff information as well as distractions such as electronic devices or entertainment can sometimes take over and prevent passengers from hearing the information that they need to know about safety (CASA, 2013).

Another problem that can occur is a perceived social pressure for pretending like the information is either not important or is well known. It is the fear that listening to safety information may make the person appear to be an amateur flyer who is not sophisticated enough to already understand safety information that is given on almost every flight (CASA, 2013). Those who fly frequently may be overconfident about the amount of information that they have already learned in the past. In addition, people who are flying for the first time or have general fears about flying may have too much anxiety in order to correctly absorb the information (CASA, 2013).

As a result, there are few people who really understand cabin safety. Because of the high level of advertising that supports comfort and entertainment, safety is not often prioritized. Proven track records can lead to complacency and this can lead towards a lack of full knowledge on safety. Finding a medium between keeping passengers relaxed and instilling in them the importance of understanding safety precautions and capabilities can be difficult (CASA, 2013). Therefore, as a passenger, it is important to look for safety information and learn appropriate procedures.

Walker (2016) discusses an important point of modern living that is affecting the way in which emergency procedures occur after an airline incident. Using the example of an Emirates Boeing 777 where 300 people survived after the crash landing at a Dubai airport which left the aircraft bursting into flames. Although the only fatality was a firefighter, in the process of using rapid evacuation, passengers were stopping and trying to get their bags out as well as

using their phones. The activities inside the plane were known because of personal videos taken by passengers who should have been focused on exiting the airplane rather than creating their next social media upload.

Walker (2016) states that the consequences for passengers if they continue to behave recklessly during an emergency situation could be incredibly inconvenient. It could mean changes in the design of carry-on bins making them lock, limits on whether or not carry-on bags can even be brought on board, as well as limits on devices. However, the airline could solve this problem to some extent by changing the type of emergency instructions that they give to passengers. Focusing on rules may provide passengers with a better perspective on how to conduct themselves during an emergency.

Although the point is not to get rid of safety video there is a significant point in trying to refocus what passengers think about during an emergency situation. Although Walker (2016) does not mention it, the behaviors described are common at the end of the flight, which may mean passengers are just merely going back to their default activities which take place at the end of a flight to make sense of what they are experiencing. Discussing how to behave in an emergency, such as leaving personal possessions behind and participating in the rapid evacuation, may help passengers to exhibit appropriate behaviors.

### **Purpose Statement**

The purpose of this study is to determine the effect of the type of safety demonstration on passenger's perception and attention onboard. Additionally, the study will examine if there are gender differences based on participant gender. This

study is aims to understand the reason behind why most passengers do not pay attention to the safety briefing. A previous study was conducted by Ruenruoy (2015), in which a survey design was used to test passengers' perceptions toward onboard safety briefings. This study will use an experimental design to examine the effect of safety briefings on passengers' perceptions and their attention onboard.

### **Operational Definitions**

A safety demonstration video is defined as the safety direction that supports passengers to understand about the safety measures in case of emergency during a flight. This safety demonstration usually takes place before the aircraft takes off. In the context of this study, the safety briefing is defined as a safety video guide that will be displayed in the classroom for participants (Government of Canada; Transport Canada; Civil Aviation; 2013).

Perception is defined as the aptitude to understand material by using a person's five senses to understand how the world works (Wickens, Hollands, Banbury & Parasuraman, 2015). Perception is related to recognizing the surrounding atmosphere that is perceived by an individual on the foundation of which some results are realized (Arnheim, 1969; Boothe & Springer, 2002). In the context of this study, perception is defined as the way that participants will perceive the safety video demonstrations.

Attention is defined as a technique describing the ability of an individual to focus on any specific matter. Attention is an aspect of people which is evident from birth, and it is considered to be a reflex delivering the skill to distinguish what should or should not be of importance (Goldstein, 2014). In the context of this

study, attention is defined as the amount of the information that participants will memorize after they watch the safety video demonstrations.

In the context of this study, gender is defined as being either female or male. Gender is a social role, while sex is based on the physical reproductive state of a person. Hence, gender is changeable, while sex is not changeable without sexual reassignment surgery (Franklin, 1996).

### **Research Questions**

RQ1. What is the effect of the flight safety demonstration video on a passenger's perception?

RQ2. What is the effect of the flight safety demonstration video on a passenger's attention?

RQ3. What is the difference in perception between participant gender?

RQ4. What is the difference in paying attention between participant gender?

RQ5. Will there be an interaction between type of video and participant gender?

### **Hypotheses**

H<sub>01</sub>. There is no significant difference in the flight safety demonstration video on a passengers' perceptions.

H<sub>A1</sub>. There is a significant difference in the flight demonstration video on passengers' perceptions.

H<sub>02</sub>. There is no significant difference in flight safety demonstration video on passengers' attention.

H<sub>A2</sub>. There is a significant difference in the flight demonstration video on passengers' attention.



H<sub>03</sub>. There is no significant difference in perception between participant gender.

H<sub>A3</sub>. There is a significant difference in perception between participant gender.

H<sub>04</sub>. There is no significant difference between participant gender in paying attention.

H<sub>A4</sub>. There is a significant difference between participant gender in paying attention.

H<sub>A5</sub>. There is a significant interaction between participant gender and type of video

H<sub>05</sub>. There is no significant interaction between participant gender and type of video

### **Assumptions, Limitations, and Delimitations**

#### **Assumptions**

This study consists of several assumptions, which are presented as the following:

- Participants will answer all the questions honestly.
- Participants will contribute effort to make this study reasonable.
- This study will trust the participants to answer the questions seriously.

#### **Limitations**

Limitations for this study include the limited number of participants for Study 1. Watching a safety briefing video in a classroom may be different than in a plane, but the study cannot be conducted in a plane due to a limited budget. For Study 1, participants cannot meet at the same time and day due to the schedule of the classes. Portrayed in classroom for the Study 1 and on a computer screen for Study 2.

## **Delimitations**

This study consists of several delimitations, which are the following:

- For Study 1, the study is delimited to students who will enroll in two sections of Introduction to Human Factors (AHF3101) classes in Fall 2016.
- For Study 2, the study is delimited to participants who will take a survey on Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> (MTurk).
- Other limitations and delimitations may continue to progress while the study is being conducted.

## **Summary**

In summary, the previous section presents the problem statement, background on the problem statement, purpose statement, and operation definition. Additional portions presented in this chapter contain research questions, which are four questions on passengers' perceptions and attention. This chapter also includes the hypotheses, which were five null hypotheses and five alternative hypotheses. This chapter also presents the assumptions, limitations, and delimitations of this study.

## **Chapter 2**

### **Literature Review**

#### **Introduction**

This section reviews the prevailing literature on airline passengers' perceptions and attention toward onboard safety briefings. Relevant studies will be reviewed in a study-by-study approach to establish the theoretical framework of this subject area. Review will be conducted in the following areas: perception, attention, gender, and safety briefings.

#### **Perceptions**

In the context of this study, a perception is defined as the ability to interpret information by hearing and seeing or other senses. For example, an individual interprets the yellow light to mean warning. People with sensory organs, such as the eye, nose, and ears, in order to recognize how the world works (Wickens, Hollands, Banbury & Parasuraman, 2015). Perception is related to the understanding of the surrounding atmosphere by using a person's own senses. The surrounding atmosphere is observed by people on the basis of which, some consequences are deduced (Arnheim, 1969; Boothe & Springer, 2002).

Coren (2003) asked how people would know that a car is good or if it is a lemon. The only way to know whether or not something is good is to try it out first. People answer these questions by using their senses. Sekuler and Black (1994) stated that it is important to know all factors of the structure and how components interact to perceive it as a whole. People must determine the type of setting in order to know what is important about what is being perceived.

Bierhoff (2012) mentioned that personal perception is certainly significant in daily life for humans. After the Second World War, scholars attempted to develop studies on personal perception. For example, the halo effect is defined as a person's first impression of another character that is accurate that could not be fixed.

Perception is based on the observation of an individual on the basis of which important decisions could be made correctly. The most important steps of this process are to observe the environment and the processes taking place in the environment carefully, and then to make an inference based on that observation (Flanagan & Lederman, 2001). This observation and inference could be used to make a perception in the human mind, which would act as a guide for a person to make decisions in the future. These decisions could be associated exactly to the same situation or some different state, which is to some extent similar to the real situation faced by the person (Gibson, 2015).

The method of forming perceptions is very significant since these perceptions control the thinking of an individual. This task is related to the process leading individuals to form perception and various theories, which are related to establishing an adequate perception. The perception is formed through careful observation of the environments. The individuals make careful observations, the eyes, which are involved in the observation process, send signals to the brain, and then the brain is used to send signals to different body organs so as to help them react to any specific condition (Gibson, 1966; Gibson, 2002). Aside from the eyes, the ears are also involved in making the perception and then sending suitable

signals to the brain so as to aid the brain to make an applicable perception about any exact circumstance. The perception also depends on the retention of memory accumulated in the brain as well as the attention being given to any condition by the person. Hence, perception matters a lot since the process of perception could define the thinking process of any individual. Different persons perceive different things when observing similar situations (Keeley, 2003). Perception depends on personal experience. People will have different experiences and define what how good that experience is through different types of criteria. Human perception can be seen through either negative or positive perspectives, even when experiencing the same thing (Keeley, 2003; Sekuler & Black, 1994). Some people have better skills in perceiving their experiences than do others. Sekuler and Black (1994) stated that the importance behind studying perception is based on solving world problems.

In a study conducted on Taiwan's domestic flight passengers, which examined the public's perceptions of cabin safety, Chang and Liao (2008) determined that passengers lacked the awareness of exit row seating circumstances. They stated that passengers who are traveling in an aircraft do not read the safety card, which is available onboard, and they do not know where the emergency door is. Hence, people lack perception about safety during the flight.

Chang and Liao's study was a survey design utilizing 500 questionnaires with a response rate of 92.8 percent. The questionnaires were distributed in December 2005 in two cities in Taiwan. Data analysis was conducted utilizing the frequencies, *t*-test, one-way ANOVA, and Scheffe Post Hoc. They used the one-way ANOVA, a test for significance ( $P < .05$ ), to determine whether or not the

perceptions of the participants differ by age category. The perceptions about emergency exit procedures in the 41-50-year-old group was significantly more appropriate responses than other from the 21-30- and 31-40-year old groups. These two former age groups, however, are the majority of air travelers.

In addition, Chang and Liao (2008) reported that, based on the Scheffe Post Hoc analysis, frequent air travelers had more exact perceptions of exit seating limitations and requirements compared to infrequent flyers. The researchers concluded that most of the Taiwanese respondents lacked an understanding of the exit seating rules. They suggested that further studies should emphasize founding a flight safety education program.

In a related study that examined the “effect of aviation safety education on passenger cabin safety awareness” (Chang & Liao, 2009, p. 1337) tested three hypotheses on the relationships between aviation safety learning and a positive effect on the attitude, safety understanding, and behavior of the passengers in the cabin (KAB). Empirical data were collected using a questionnaire on the constructs of investigating the hypotheses. A convenience sampling approach was adopted, in which case the investigators collected 300-filled questionnaires in Taipei’s Songshan Airport in May 2007. The hypotheses were tested based on the structural model of the study. It was established based on this approach that aviation safety education meaningfully affects airline passengers’ cabin safety understanding, behavior, and attitude.

Chang and Liao (2009) further asserted that the fundamental issues contributing to airline passengers’ aviation safety education include: “emergency

equipment use procedures, situational awareness and response, regulations necessary to know and aviation safety education channels” (p. 1341). Further results from the study also pointed to a lack of correlation between knowledge and attitude. The researchers went on to note that, even with the lack of correlation, they safely concluded that aviation safety education increases airline passengers’ awareness about cabin safety. However, Chang and Liao (2009) contended that the seeming inconsistency between knowledge and attitude exists because perception, for the most part, is related to how people value life. For the purpose of this study, this result could help the author to indicate that passengers have a lack of perception about the safety information that is presented onboard. Moreover, this study showed that age and experiences play a significant role in understanding safety knowledge.

### *Visual perception*

Visual perception includes the image formed at the retina of the eye, which conveys a message to the human brain (Gibson, 2002). However, the visual perception not only involves the image formed at the retina, but also includes the information given by the sensory system in analyzing the statistical information related to the surroundings (Arnheim, 1969). The visual perception theory is the most vital theory among the perception theories since it contains both the information given by the brain as well as the sensory system on the human body. The visual perception has two problems, which are “how does the environment impress itself onto the eye and how does information from the eye make it to the brain for further processing?” (Boothe & Springer, 2002, p.12). There is a

relationship between the human brain and the environment to fix these problems (Boothe & Springer, 2002). For the purpose of this study, this theory will provide context for how passengers are influenced by visual perception. It is an essential component to understand how passengers perceive information that leads to a solution for a specific problem. Perception also plays a role in self-preservation. As an example, when an individual crosses the street, it is their perception about the safety of that act that makes sure they are not struck by a car.

### **Attention**

Attention is defined as a procedure that is related to the ability of an individual to focus on any particular issue. Moreover, attention is defined as a concept commonly studied by scholars in the field of cognitive psychology as they are principally interested in how humans process information within a specific setting (Broadbent, 1958; Goldstein, 2014). This relates to people's ability to emphasize something despite the stimuli that may be around them within a specific location (Beard, Sawyer, & Hofmann, 2012; Cohen, 2014; Kahneman, 1973) . When an individual is speaking and the other is listening, then it depends upon the attention span of the other person to perceive the required or significant information from his or her discussion (Collet, Morel, Chapon, & Petit, 2009).

Attention is an aspect of humans that exists from birth, and it is considered to be a reflex providing the ability to know what should or should not be of significance (in terms of alternates) and thus is part of the survival process (Goldstein, 2014). Attention functions as such: when an individual has four differences of sound in one location (music, chatter, TV, alarm clock) he or she can



reduce three to listen to the fourth (Beard et al., 2012; Goldstein, 2014; Treisman, 1964). Both habituation and sensory versions are procedures by which the mental attention is focused on stimuli that change rather than external factors that stay constant. Information that remains unchanged is ignored by people's sensory receptors (Beard et al., 2012; Ciccarelli & White, 2015; Cohen, 2014).

In other words, people become unfeeling to constant stimuli because their adaptive mind normalizes the stimuli, resulting in a decrease in demand for their attention. The attention spans of various individuals vary. Basically, some people having a high attention span, listen carefully to each and every word that the speaker is saying, and have the skill to wrest significant knowledge more straightforwardly as compared to other person (Deutsch & Deutsch, 1963). There are fewer of these people today compared to other people in the past. Moreover, these people have a high intelligence as well on the basis of which they are capable of grabbing all the vital points swiftly within a specific environment (Correa, Chávez & Roberts, 2010). On the other hand, the individuals owning a common attention span are skilled at taking out the essential data at an average speed after listening to someone who presented. These are the characters most commonly found in the society (Anderson, 2005).

Some individuals have the problem of a very short attention span; in other words, they find themselves to be incapable of concentrating on any single matter for more than five seconds. The attention is not a singular independent existence but is a multidimensional part. Its dependency is on various issues and the intellect is one of them. The auditors are able to focus on the settings as well as the events,

which take place in the environments. Via this concentration, listeners are able to obtain precious material. The stronger the concentration is, the greater is the attention span and the better is the quality of information obtained (Bosse, Tainturier & Valodois, 2007).

Attention is a state in which an individual is able to pay complete and undivided attention to another individual so as to learn and get knowledge. In this process, the most vital component is the concentration level exhibited by the auditor (Bodenhausen & Hugenberg, 2009; James, 1890). Attention is a psychological and neurological technique in which the focus of a person is paying close attention to all that is being said (Broadbent, 1958).

Many times an individual is skilled at gaining a lot of information from the environment if he or she is capable of paying due attention to various facts. Attention is also largely dependent upon the culture in which one is present. If an individual is not paying attention, then there are several factors that could affect the attention span (Cherry, 1953). There could be some linguistic obstacles that could affect the attention span of an individual to a great deal. Furthermore, if there are many distractions in the surroundings, the individual is unable to give his or her full attention to any person or object (Norman, 2008).

According to Nyberg (2009), during rush hour, it is hard for one to focus on the traffic and to talk at the same time. Human beings have a limited attention span; therefore, they will usually not talk during rush hour traffic. However, there are different levels of multi-tasking that can take place depending on individual capacities. Due to a distracted atmosphere, an individual is unable to give his or her

absolute attention to a speaker. There are many factors, such as noise and temperature, which affect the attention span of an individual (Gordon & Burch, 2003). These factors are determined by the attention theories given by renowned scholars. The following is a detailed analysis of several attention theories.

#### *Attenuation theory*

There are many theories given by researchers for specifying the factors affecting the attention span of individuals. However, the most important one for this study is attenuation theory. This theory, offered by Treisman (1964) presents a theory so as to explain the strategy that the human brain uses while being in any environment. While an individual is present in an atmosphere, he or she gives attention to certain aspects of the atmosphere and fails to categorize or process other elements present in the same atmosphere (Deutsch & Deutsch, 1963; Treisman, 2014).

Kahneman's model contributed to the early basics of attention research and knowledgeable future experiments about brain activity relating to the procedure of stimuli (Cohen, 2014; Goldstein, 2014; Seeber, 2011). This work led to the emergence of information processing models of attention. Broadbent (1958) made contributions to this field when studying competing messages received by traffic controllers on a military aircraft base (Cohen, 2014; Goldstein, 2014; Lachter, Forster & Ruthruff, 2004). Attenuation theory describes the basic reasons behind this selective listening and attention span. This theory lists a series of issues that affect the attention span of any individual. Thus, for the purpose of this study, attenuation theory will help frame the experiences of how passengers pay attention

to safety demonstrations during an onboard video demonstration. This theory is significant in understanding how a passenger's brain processes the information and what causes him or her not to pay attention to the video.

### *Filter theory*

Filter theory fundamentally gives a series of factors affecting the attention span of any individual (Salvucci & Taatgen, 2008). Filter theory improves the filter model, which depicts the selection basis of the human brain. The selection principles depend upon the medium of communication and atmosphere surrounding the speaker and the listener (Treisman, 1964).

Broadbent (1958) referred to this as "Dichotic listening," which again is a filter model of attention that posits that humans can pay attention to only a certain extent from one ear at a time (Goldstein, 2014; Seeber, 2011). At an initial phase of processing, Broadbent (1958) expected that the filter disallowed the unattended communication (Cohen, 2014; Goldstein, 2014).

Treisman's model differs from Broadbent's in that he suggested that the information is not eliminated but rather attenuated (Treisman, 2014), i.e., that attention is diminished but not completely gone (Cohen, 2014; Goldstein, 2014). Therefore, for example, if a channel includes one's name while there is a competing message, he or she still has the ability to hear it because the material is accessible. Treisman conducted an experiment among bilingual individuals (Treisman, 2014), and presented them with an English attended message as well as an unattended message in their native language of French (Cohen, 2014; Goldstein, 2014). The study concludes that the participants had the ability to relay the fact that

both messages were identical in meaning. Broadbent's filter model is thus challenged (Treisman, 2014), as it recommended that the biologically given filter cannot describe the aptitude to filter information (Cowan, Rouders, Blume, & Sauls, 2012; Goldstein, 2014). It is not that there is not a biological component to attention, but that it cannot completely describe how people filter information (Marwala, 2014). Treisman's studies emphasized the significance of semantic processing, or the meaning of the information as it relates to processing (Goldstein, 2014; Treisman, 2014).

Bottleneck theories encompass both explanations for the attention system (Cohen, 2014; Goldstein, 2014; Marwala, 2014; Seeber, 2011). Broadbent emphasized the physical characteristics of sound and Treisman stressed the importance semantic processing (Treisman, 2014), the meaning of the information people are being exposed to. Filter theory is used to describe how people will pick out which information they will retain and which will be discarded. Filter theory will help to support the author's understanding of the effect of the attention span on passengers.

#### *Capacity theory*

The capacity theory basically depicts all the factors that determine the communication requirements of any individual. Such a theory describes various factors due to which the communication could improve between two individuals. Due to this improvement, the attention span of the listener is improved (Cherry, 1953; Cherry, 2016). Therefore, all these factors not only determine the communication, but also the attention span of the individuals involved in any

conversation. As a result, this theory plays a very important role in ensuring the attention span of an individual.

Broadbent designed an experience to examine the process of shifting attention; it is assumed that people have a limited capacity to practice information to prevent over-stimulation. There is a filter that controls how much information one can process (Cohen, 2014; Goldstein, 2014). Thus, Broadbent's theory will help the researcher of this study in determining the limited capacity passengers have for information and how this information is processed within the environment. As a result, this theory plays a very important role in making sure the attention span of passengers have a limit capacity to practice their information during emergency situation.

#### *Multimode theory*

This exceptional theory relates the attention span as well as focus of a person with the meanings of an individual (Deutsch & Deutsch, 1963). If an individual is capable of maintaining concentrating during any event within the environment, this means that his or her interest is peaked during such event. In other words, the attention span is improved by the quantity of interest presented by an individual in any specific happening or conversation (Norman, 2008). The attention of an individual can be interrupted by different factors, the most significant of which is linguistic barriers. In addition to this, the disturbance in the surroundings could easily distract the auditor and decrease his or her attention span (Norman, 2008).

The human attention span was an average of 12 seconds in 2000. However, in the study conducted in 2014, it was shown that an individual had only an eight-second attention span. Goldfish have a nine-second attention span, while human beings have an attention span of only eight seconds. Therefore, goldfish have longer attention spans than humans (McWilliams, 2014; Piliieci, 2015).

As philosophy and psychology began to differentiate and become isolated disciplines, psychology took over the study of attention. There was a tenacious reluctance to apply an exact description to the term attention. However, as cognitive psychology began to improve, a meaning for attention became more important because more experimental tasks needed the use of attention. However, post 1990s, there began a search for determining a characterization for attention and one of the ways was to look at its mechanisms. One of the main mechanisms is that of selectivity (Mole, Smithies, & Wu, 2011).

### **The Effect of Humor on Attention: A Marketing Context**

The issue of humor and how it relates to attention in a viewer has been of high interest to advertisers. Humor tends to provide a superior method of grabbing the attention of an audience as well as providing for longer retention of a greater amount of material (Hoang, 2013).

The following studies examined a number of different ways in which researchers have looked at attention as it relates to humor in context with advertisements. There are many elements that go into the creation of a successful advertising campaign. Madden and Weinberger (1982) examined the use of humor on the way it affected attention in magazine advertising. In order to conduct their

study, they obtained a sample of advertisements from Starch/Inra/Hooper, Inc. The company uses an aided technique for recall, which is intended to establish the amount of time readers will give their attention to any particular ad. The participants that are used by the company range from 100 to 150 individuals who meet the criteria of being at least 18 years old and match the age/sex/occupation requirements that have been established by the magazine. Finally, they must also have read some part of the issue prior to the point when they are interviewed about their reaction to the advertisement. Measurements were based on: noted, which means the number of people in the participant group who saw the advertisement; seen-associated, which mean the number of people who looked long enough at the advertisement to understand which product was being presented; and read-most, which referred to whether or not the reader was engaged enough to read the rest of the text.

The method used by Madden and Weinberger (1982) was to select specific product ads related to liquor from the tests that have been run by Starch. The researchers chose 148 liquor ad scores, which were across 12 different magazines and were viewed between 1976 and 1979. They chose all that were in the nonsense category, and none that were in the sex or aggression category. After analysis, the conclusions that were reached by the researchers showed that there was a positive correlation between an advertisement using humor and the amount of attention a viewer would give to the ad. The humor attention link is not independent from racial characteristics or gender characteristics of the respondent.



Weinberger and Gulas (1992) investigated the use of humor in advertising and found that humor was something that needed to be applied to advertising campaigns with caution and care. There is no guarantee that humor is going to make better ads, but if it is carefully constructed it can provide for enhanced attention. In a meta-analysis of a variety of different research studies conducted on related topics, the researchers concluded that humor does attract attention, it does not have a negative effect on comprehension, it is more effective or at least has greater advantage over non-humor, does not enhance source credibility, but it does enhance general liking of a particular product. In addition, the researchers found that humor that is related to the brand is more effective than humor that is unrelated. Factors concerning the audience as well as the nature of the product in relationship to the way in which the humor is introduced will have an effect on the audience members' response.

Stuck, Holland, Van Baaren, and Knippenberg (2010) investigated the effect of humor on memory and attention. The first experiment examined 58 students, 13 males and 45 females; 15 texts that were humorous; 15 texts that were non-humorous but evoked positive feelings; and 15 that were both humorous and evoked positive feelings. Within those texts were advertisements for three energy drink brands. While the participants were reading, the researchers used a video-based eye tracker that would find the pupil as well as the brightest part of the eye, which was the corneal reflex. It would then measure the position of the center of the pupil as it related to the way in which the corneal reflex was positioned. The

data collected had 3000 XY coordinated pairs, which detailed the position of the eye every two minutes.

The second experiment was conducted with 30 participants, 10 males and 20 females, who looked at the same images but they were not directed to do it in any particular order. There were nine brands that were allocated throughout the text, which resulted in 45 experimental trials. The results of the study showed that humor enhanced retention as compared to non-humorous positive and neutral stimulus where non-humorous context was encoded at a reduced rate. Although it has been shown in previous research that humor has an effect on memory, this research by Stuck, Holland, Van Baaren, and Knippenberg (2010) showed that humorous material enhanced attention, which could be connected to the increase in memory retention.

However, humor can sometimes be combined with other types of attractive attention-getting strategies, including taboo. In a study conducted with two groups of respondents, one group of 80 and one of 100. Sabri (2012) examined the relationship between the optimum level of taboo arousal effects to achieve maximized attention and recall. The study defined taboo as social and cultural production, which violates normal prohibitions within a social group. The experiment that was conducted in this study manipulated the independent variables of low to high-level taboo, or no humor or humor, against dependent variables of attention, recall, and general attitude towards the advertisement. Advertisements are located in a lower right-hand position on a magazine article and the respondents

were asked to read the article. Three different types of advertisements combined with two different articles were used to test the hypotheses.

In the exploration of taboo arousal advertisements in terms of attention in recall, the study examined strategies that were used in terms of taboo and the use of humor compared to non-humor. Sabri (2012) discussed the findings in relationship to the most important point, which was that there is a limit to taboo arousing creative treatments. The way in which humor is received in relationship to an advertisement being taboo is a critical point that must not be crossed. The study determined that there was a curvilinear relationship that existed between intensity level and self-reported levels of attention in recall. In other words, there becomes a point where the tactic of using taboo humor can be counterproductive to the effects of memory and recall.

There are three primary theories related to humor. The first is incongruity theory which suggests that the effect of humor is to upset the normal strategy of listening. Humor occurs when the ‘punch line’ or the final moment creates something unexpected. Relief theory is based on the idea that humor is designed to relieve physiological tension. Another theory is superiority theory. This theory is based on the idea that there is a social context for humor. In this type of humor, the feeling of superiority elicits laughter. The two men in the Ocean Spray cranberry bog on television commercials often use superiority based turns of events to create humor (Ozturk, 2014).

Wells and Foxall (2012) wrote that humor is often used through what is called the Challenge Model because at the core of advertising humor is the

departure from what is expected. Advertising humor is based on a cultural understanding that will set-up the meaning of the humorous outcome. The audience will recognize ‘play signals’ which are “facilitating conditions” that signal the audience that the situation is not serious and humor is the intent. This can convert even raw aggression into humor.

In advertising, these methods work on a single drive by advertisers to get the attention and stay in the memory of consumers. Hollis (2011) mentioned that the idea is to create as much attention as possible for the message. According to principles of the brain, the mind remembers what was unexpected. Although based on cultural appropriateness, humor in advertising is designed to be remembered. The challenge is to hold the focus of the consumer and created a relationship between the memory of the advertisement and the product, highlighting something about the brand. The trick is to create humor that does not overwhelm the brand, leaving the brand as the memory.

### **The Effect of Humor on Attention: A classroom Context**

Wanzer and Frymier (1999) conducted a study on students’ perception. The researchers wanted to see whether or not is there any relationship among humor and learning. They mentioned that humor is an important tool to increase students’ perception in the classroom. Moreover, humor plays a significant role to make the classroom enjoyable. Wanzer and Frymier (1999) mentioned that using humor by teachers could positively influence a student’s learning in the classroom. Furthermore, they said that a teacher who uses humor motivates students in the classroom; however, an instructor who does not use humor in the classroom

demotivates his or her students. The authors stated that many studies were found to show positive relationships among the humor and learning in the classroom.

Wanzer and Frymier (1999) conducted a study with 314 students who were registered in introductory communication sessions at a middle-size Midwestern University. In their study, the sample contained 124 males and 190 females. In this study, a five-point Likert scale was used in order to collect the data from the participants. The outcome of this study showed that there “was a significant positive correlation between student perceptions of teacher’s humor orientation and student learning” (p .57).

Another study was conducted by Wanzer, Frymier, and Irwin (2010) with 378 students, who were asked to complete an online survey. The purpose of their study was to determine whether or not is there any relationship among teacher humor and student education. The study’s results showed that there is a significant relationship among teacher humor and student education.

Several previous articles showed that advertisements that used humor were more effective than non-humorous advertisements. However, taboo-related material or the context of the advertisement in relationship to humor also has an influence and must be taken into account when aiming an advertising campaign. For the purposes of this study, the research discussed above showed that humor has a positive effect on the amount of attention and retention of information. Therefore, these previous studies can support the theoretical foundation for my research approach.

## **Gender**

In the context of this study, gender is defined as being either female or male. Gender is a social role, while sex is based on the physical reproductive state of a person. Therefore, gender is changeable while sex is not changeable without sexual reassignment surgery (Franklin, 1996).

### *Differences in Classroom Settings*

The problem of gender as it relates to attention has been studied in order to determine whether or not women have better attention than men, or if the opposite is true. In a study conducted by Rehnman and Herlitz (2006), the ability of females to recognize faces was studied against the ability for males to be able to accomplish this goal. The study was conducted with two groups of nine-year-old children from Sweden with 101 participants in the first group and 96 in the second. The participants were shown pictures of faces that were either of Bangladeshi or Swedish children, as well as adults. The purpose was to see if they could remember the face when questioned later. The results of the study showed that girls were more likely to remember female faces, no matter what ethnicity or age of the faces. Boys and girls were able to equally recognize Swedish male faces, but girls recognized more faces from Bangladesh. The conclusion of the study was that females had a superior ability to recognize faces, leading to an assumption that the attention that they paid to these faces was superior to that of the male participants (McKelvie, 1981; Rehnman & Herlitz, 2006; Loven, Rehnman & Herlitz, 2008).

Another study was done by Beyer (1998) with 275 female participants and 213 male participants, all of college age. These participants were examined to see

whether or not self-perception had a relationship to the way in which accuracy of recall is measured. The results of the study showed that female participants were more likely to underestimate the level of their performance, while also having better recall in terms of their mistakes. Through the use of post task self-evaluations, performance was measured on the accuracy of self-evaluations, the response bias, and a sense of calibration. The results of the study suggest that female participants paid more attention to the parameters and consequences of the study than did male participants. For the purpose of this study, previous articles have been used to show that there were differences in attention and perception between males and females.

### **Attention Deficit Disorder Differences**

Attention can be examined through looking at conditions that are related to the problem of attention. As an example, attention deficit/hyperactivity disorder (ADHD) occurs in a large portion of the population as a multifactorial disorder that has a complex ideology and a great deal of genetic underpinning (Biederman, 2005). Biederman (2005) estimated that approximately 5 to 10 percent of children in the world and about 4 percent of all adults suffer from ADHD. Although it can be found throughout the world, there is the perception that it is only an American disorder. It is suspected that the method for calculating the number of children in other nations may not necessarily be the same in terms of the criteria that are used to define the disorder.

The perception of environmental hazard risk was also studied for a variety of different demographic differences, including gender. Riechard and Peterson

(1998) looked at 231 participants who are between the ages of 10 and 17 and who came from 12 different schools across a large metropolitan area in the southeast region of the United States. The results of the study showed that female students had a significant difference in their perception of risk scores compared with male students. The study also shows that females show more attention to specific details than do males under the circumstances of the study.

One of the key clinical features of ADHD is its comorbidity. This includes oppositional defiant disorder, mood disorders, conduct disorders, learning disorders, and anxiety disorders. Mood disorders include both unipolar and bipolar disorders (Biederman, 2005). However, gender has a relationship with comorbidity. In a previous study, Biederman (2005) found that girls who presented with ADHD had less risk for disruptive behavior disorders than do boys with ADHD. This discrepancy may account for the disparity between male and female victims of the disorder. Therefore, girls actually may be under-identified and are not getting sufficient treatment. Attention has a great deal of influence on effective outcomes.

Biederman's study looked at the assessment of teaching strategies and behaviors of professors in accounting and finance classes. The Teaching Behavior Inventory was used as an instrument to examine perceptions of upper-level female and male accounting students. The analysis looked at specific types of observable behaviors by accounting instructors in the faculty. The method of research that was used was through creating a statistical analysis of the questionnaire as well as data that was collected on basic demographics. The participant group consisted of 65.5 percent males and 34.5 percent females. Approximately 65 percent of the



respondents were enrolled in classes that were taught by female instructors. The examination of low interference instructor behaviors resulted in a significant difference between male and female students on all eight of the perspectives on which the study examined behavior. In addition, males and females saw the behaviors of male and female accounting professors as significantly different (Biederman, 2005).

Biederman et al. (2004) further explored attention deficit in an earlier paper in which the question of attention-deficit/hyperactivity disorder in adults was examined. The study looks at 219 adults who were diagnosed with ADHD and who had been visiting an outpatient psychiatric clinic for more than seven years. These were compared to 215 control subjects who were in a group that was matched to the participants. The results of the study showed that gender did not seem to have an association in terms of ADHD and the comorbidity of other psychiatric disorders. However, ADHD did exist in terms of cognitive deficits and a greater rate of major depression as well as anxiety disorders and antisocial personality disorders. Although the previous studies presented that gender moderated at least the rate of comorbidity, this study showed that comorbidity was steady in both genders, with a slightly increased number of behavioral disorders in males. The results of the study concluded that ADHD was a valid diagnosis for adults and the problem of attention could be compromised by its existence. In addition, differences in gender in terms of results were more limited in the study than in previous studies or studies in children.

According to the Centers for Disease Control's 2015 data of psychiatric diagnoses of ADHD, nearly 20 percent of school-aged children have ADHD (Lahey et al., 2015). Attention-deficit/hyperactivity disorder (ADHD) is a cognitive and behavioral, developmental disorder that contains the incapability to be attentive, hyperactivity, and impulsiveness (Lahey et al., 2015; Owens & Hinshaw, 2016). Recently, there have been several attempts to use these models as well as neurological imaging to describe the central features of Attention-Deficit/Hyperactivity Disorder (ADHD) (Cowan et al., 2012; Goldstein, 2014; Lahey et al., 2015). Such symptoms have been attributed to irregular dopamine functioning and the consequence is a learning insufficiency (Wu, Xiao, Sun, Zou, & Zhu, 2012). Attention disorders, as they relate to the executive functioning and ordering, are also impacted by dopamine modulations (Owens & Hinshaw, 2016; Wu et al., 2012). Medication can sometimes solve the dopamine dysfunctions and decrease negative emotional, learning, and behavioral outcomes (Owens & Hinshaw, 2016; Wu et al., 2012) .

Researchers have observed that ADHD children appear to have a cognitive bottleneck when it comes to multitasking (Cowan et al., 2012; Jacobson et al., 2011). Cognitive bottlenecks are also regarded as the reason for low reading fluency between children with ADHD (Jacobson et al., 2011). The overload of material trying to be pressed through acts like a bottleneck (Marwala, 2014) and the outcome is attention deficiency; in addition, it slows the process of information needed for the decision-making regulator (Jacobson et al., 2011; Lahey et al., 2015). Abnormalities in working memory have been cited to be a critical

component of ADHD (Cowan et al., 2012) as well as the incapability to reorient attention or accurately perceive the stimulus (Jacobson et al., 2011). Considering all the models presented here, it seems that the best method to address ADHD would be to address the biochemical aspects (Wu et al., 2012) along with the behavioral ones (Lahey et al., 2015). Strategies to effectively reduce adverse outcomes for this growing population.

### **Safety Briefing**

A safety demonstration is given by the safety director who usually assists passengers in knowing about the safety procedures in case of emergency; it takes place before the airplane takes off (Government of Canada; Transport Canada; Civil Aviation, 2013).

The Flight Safety Foundation (2000) supported a report that examined the necessity of safety briefings for passenger airlines. However, the report cites that previous research shows that most passengers do not adequately receive the information due primarily to a lack of attention to the demonstration at the beginning of the flight. As an example, a flight in 1974 showed that only one out of 53 passengers could activate the oxygen flow in their mask when the cabin decompressed. In 1975, the same issue occurred with cabin decompression and only two out of 180 passengers could operate the masks. The FSF (2000) report stated that the attention that passengers pay to pre-departure safety briefings has a direct impact on survival should an accident take place. Through a study that was reported by the FSF (2000), it was discovered that across 18 flights that held 457

passengers, post flight surveys showed that 52 percent had watched half or less of the safety briefing (FSF, 2000).

To satisfy the requirements for a Master of Science in Aviation Management, Ruenruoy (2015) studied the perceptions of the safety demonstration by passengers on aircraft. One of the points that is made by the author is that even though their safety is an important aspect of participation by passengers on a flight, most passengers have very low enthusiasm towards the demonstrations. Through the development of a survey-based study, Ruenruoy (2015) determined that passengers believe that the safety demonstration is important and that they should pay attention, but that there are not clear communication channels through which to hear the demonstration, and therefore, interest was generally lost.

According to federal regulations regarding aviation, airlines must give safety briefings and provide cards to passengers so that they may be briefed on emergency safety procedures when they are flying. According to a report for the Federal Aviation Administration written by Corbett, McLean, and Cospers (2008), the briefing cards needed to be tested to make sure that the graphic symbols are understandable regardless of literacy and that the message of safety is being communicated effectively. In order to conduct a study that could be used by the FAA, the authors used 785 participants that came from a variety of different resources, which included public offices, high schools, as well as safety workshops and committees, and from federal offices. The demographic range was from 15 to 63 years of age with 54 percent female and 46 percent male. The conclusion of the study suggested that safety briefing card elements need to be developed through

basic educational principles, which includes textual information as a method of focusing attention and simplifying complex symbols by using more readable concepts. Because there is a prevalence of poor passenger attention to safety briefing cards, the authors recommend making some changes in order to satisfy safety protocols (Corbett, McLean, & Cospers, 2008).

The Australian Transport Safety Bureau also commissioned a report in order to understand the level to which cabin safety communication was being received by passengers on airlines. Parker (2006) wrote the report in which the perceptions of passengers were found to be agreeable on the point that cabin safety communication is important, but that behaviors do not match the perception reported by the participants. Key drivers of the reduction in perceptions of relevance were found to be the repetitiveness of the message combined with confidence that safety would be attended to. Attention levels were determined to be more often low, and the overall analysis suggested that safety communication was usually ignored when there was overconfidence or persistent familiarity with the information. In addition, social norms that exist on the plane suggest that too much attention indicates a fear of flying. However, improvement in communicating safety information may not necessarily be conducive to improved retention of information.

Tehrani and Molesworth (2015) studied the effects of mood as a moderating factor in terms of information retention of safety briefings. The intention of the study was to determine whether or not a preflight safety briefing had a positive impact on passenger mood, which was measured before and after the safety

briefing. As a result of the study, it was determined that safety briefing videos had the capacity to manipulate the mood of passengers when movie themes or humor is used as a way in which to enhance the safety briefing experience. However, it was also discovered that the higher the entertainment value, the lower retention was in terms of key points on the safety videos. The study was conducted with the intention of looking for a solution to the problem of the repetition and tedious nature of safety demonstrations. Unfortunately, research in this study suggested that the trade-off to improved entertainment value did not meet the standards required for developing greater attention to the information. However, passengers who have been through an actual airline incident may have a very different perception of the importance of airline safety information.

Chang and Yang (2011) conducted a study in which mixed methodology with a survey and interviews was used to examine the use of cabin safety information by passengers who were on China Airlines Flight120, which had experienced an accident. The data collected suggested that the most important factors for passengers were the assistance of the crew and the understanding of emergency procedures. This study presents evidence that the briefing is an important aspect to preparation for emergency procedures, but conflicts with other studies showing that passengers are primarily inattentive.

The aircraft in the accident, a Boeing 737-800 carrying 157 passengers, which departed from Taiwan Taoyuan airport, caught fire and crashed at Naha Airport, Okinawa, Japan, (Chang & Yang, 2011). Chang and Yang (2011) studied the Taiwanese passengers' perceptions of cabin safety. The study examined

deficiencies in passenger safety education and cabin crew training with a focus on emergency evacuation procedures. The investigation was carried out on the 110 Taiwanese survivors. A survey, which included a qualitative and quantitative questionnaire, was used to establish the perceptions of the passengers. An in-depth interview, which aimed at investigating the emergency evacuation process, was used for the qualitative questionnaire. The interview questions were adapted from a previous research effort by Snow, Carroll, and Allgood (1970) and they included four broad areas: configuration, environment, procedure, and bio behavior. On the quantitative questionnaire, a five point Likert-scale was used to determine respondents' perceptions of cabin safety. In analyzing the quantitative data, a Factor Analysis was conducted to identify patterns in the cabin safety issues.

Results from Chang and Yang's (2011) studies on configuration showed that 47.5 percent of the respondents' exits were blocked due to insufficient aisle width. This obstructed passengers from obtaining help from the flight attendants. On environmental questions, 72.5 percent of the respondents reported threatening conditions before receiving instructions to activate emergency evacuation. Approximately 82.5 percent of the respondents reported not hearing a crew procedural announcement during the evacuation. The bio behavior-related questions demonstrated that the safety briefing video was watched by about 69 percent of the respondents, but only 14 percent believed was useful for evacuation purposes.

Findings based on the factor analysis of cabin safety on respondents' perceptions on future safety involvement showed that the respondents considered

three serious safety issues. These safety issues include: “the situation awareness of flight and cabin crew emergency evacuation instructions by crewmembers; and assistance for disabled passengers by cabin crew” (Chang & Yang, 2011, p. 1050). For the purpose of this study, the outcome revealed by Chang and Yang (2011) showed that 69 percent of the passengers watched the safety demonstration on board while only 14 percent believed that the safety briefing video was valuable during an emergency evacuation. Therefore, this study helps the author support the theoretical foundation idea that people think that the safety briefing is not useful. These studies showed that most of the people had very low enthusiasm towards the safety briefing. That is why it is really important to conduct my study in this area to provide a solution to the low attention towards the safety briefing.

### **Summary**

In summary, the literature review for the proposal study has included the several previous articles and studies that were reviewed on the perception, attention, gender, and safety briefings. It can be seen that the various authors defend the concept of attention and perception of the people based on their experiences. People have different opinions with respect to the term perception. Some people perceive it negatively while other people perceive it positively. Moreover, some people have an effective ability to perceive more than others. Perception is really important to study in order to understand the human behavior and to fix this particular issue.

Chang and Liao in 2008 conducted their study in order to examine the public’s perception of cabin safety, and they found out that most passengers have a



lack of understanding of the safety onboard. Chang and Liao (2009) did another study on passenger 's perceptions and contended that the apparent variation between knowledge and attitude exists because perception, for the main part, is associated with how people value life. For the purpose of this study, it is really important to understand how passengers perceive the safety briefing in order to fix the issue related to the lack of perception toward the safety briefing.

Moreover, various authors explained the attention span of an individual who have problem of a short span. Attention theories have been proposed by famous scholars, Treisman, Deutsch, Deutsch, Kahneman, and Broadbent to know the factors that have an effect on the human brain during attention. Bottleneck theories explain how humans filter information from the environment. Cherry (1953) explained the capacity theory of humans – that an individual has a limited amount of information that can be processed. Deutsch and Deutsch (1963) explained the ability of an individual to focus on any event within the environment.

Some previous studies have examined the number of different ways in which researchers have looked at attention as it relates to humor in connection with advertisements. The issue of humor and how it relates to attention in a viewer has been of high interest to advertisers. Humor tends to deliver a superior method of attracting the attention of an individual as well as providing for longer retention of a higher amount of material. Moreover, humor has a large effect on the amount of attention and retention of information that a viewer will have. Therefore, advertisements that use humor are more effective than non-humorous advertisements. In a classroom, teachers who use humor are more effective than

teachers who do not use humor. However, taboo-related material or the context of the advertisement in relationship to humor also has an effect and must be taken into consideration when designing an advertising campaign. Some previous collections of literature look at the way in which gender is related to selectivity in relationship to the amount of attention and the types of attention that can be seen in males in comparison to females.

FSF (2000) studied the need of safety briefings for passenger airlines. But, the report showed that most passengers do not sufficiently receive the information due primarily to a lack of attention to the demonstration at the beginning of the flight. Researchers discovered that passengers only watched half or less of the safety briefing onboard. Ruenruoy (2015) discovered that passengers think that the safety demonstration is significant and that they should pay attention, but that there are not clear communication channels through which to hear the demonstration; thus, concentration was commonly lost. Corbett, McLean, and Cospers (2008) suggested that safety briefing card elements need to be developed through basic educational principles and they recommend making some changes in order to satisfy safety protocols. There is a prevalence of poor passenger attention to safety briefing cards. According to Parker (2006), attention levels were determined to be more often low and the overall analysis suggested that safety communication was usually ignored. Therefore, several researchers discovered that most people had very low enthusiasm towards the safety briefing.

## **Chapter 3**

### **Methodology**

#### **Introduction**

The purpose of Chapter three is to describe the methodological framework of the study. The underlining considerations behind the adoption of the proposed methodology of the study are further described. In this light, this chapter presents the study design approach, the target and accessible population, the sampling strategy, power analysis to determine the appropriate sample size, research instrument, data collection procedure, threats to instrument validity and reliability, and ways to curtail the threats are discussed.

Other areas presented in this chapter include data analysis and legal and ethical considerations of the study. Once again, this study aims to determine the effect of the type of safety demonstration on a passenger's perception and attention onboard.

#### **Research Design and Approach**

The methodology of this study is quantitative and uses a quasi-experimental design for Study 1 and a true experimental design for Study 2. A quasi-experimental design and a true experimental design are appropriate for producing significant information about the cause and effect that this study aims to establish. The design utilizes a two-study approach – Study 1 will use Florida Institute of Technology (Florida Tech) College of Aeronautics (COA) students and Study 2 will use Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> (MTurk<sup>®</sup>). For Study 1, the design for

Florida Tech Aeronautics students is mixed design using one within subjects variable and one between subjects variable. This will be a nonrandomized, posttest-only design. Experimental conditions will be counterbalanced. For Study 2, the design approach for MTurk<sup>®</sup> is between participants, and this will involve the random assignment of participants to either the treatment or the control group. The treatment group will be administered a humorous safety briefing video, while the control group will be administered a traditional safety briefing video.

### **Population**

The target population of the proposed study will be all the students in United States of America. For Study 2 the target population will be persons in the U.S with US IP addresses. The accessible population first will be Florida Tech Aeronautics students as within participants (Study 1) and the second will be MTurk<sup>®</sup> participants as between participants (Study 2).

### **Sample**

Participants will include both males and females. Demographic data, gender, age, level of education, and number of times of travel by aircraft will be collected. The characteristics of the data will be described when the data are collected. A convenience sampling technique will be adopted to select the participants of the study. The convenience sampling technique is appropriate for this study because the participants have to be willing, enthusiastic, and available to participate in the study.

## **Power Analysis**

The G\*Power statistical tool was utilized to conduct a power analysis to determine the suitable sample size for the study (Faul, Erdfelder, Lang & Buchner, 2007). A priori power analysis with the following input parameters: effect size (ES) of .25, recommended minimum power of .8, and alpha of .05 was conducted. The result of the power analysis shows a total sample size of 34 for the within participants (Aeronautics students) is required. For the between participants (MTurk<sup>®</sup>) a total sample size of 128 is required. However, in order to ensure appropriate gender number, the researcher will solicit 200.

## **Instrumentation**

There is no standard instrument to collect the data that is relevant to my research goals. In view of that, the researcher has constructed a questionnaire to measure the participants' perceptions and attention that they have paid to the visuals and information presented in the safety demonstration videos (see Appendix E). Participants' perceptions will be measured using a five-point Likert scale, with results being expressed as strongly agree, agree, neutral, disagree, and strongly disagree (see Appendix A).

Participants' attention will be measured using a questionnaire that consists of 11 multiple-choice questions that are related to the safety demonstration video. Appendix B shows the questionnaire form. The participants will be asked to answer the questions on the questionnaire after they have watched the safety demonstration videos (the video links are available in Appendix E). The questionnaire form will

be paper-based with COA students and will be administered electronically on MTurk.

A section of the questionnaire will collect demographic data. Questions related to demographic information are stated in Appendix C. The demographic information sought for the purpose of this research consists of items that describe participants' characteristics, such as age, gender, and their level of education.

An expert will establish the content validity of the questionnaire that the researcher has constructed. This will be achieved by presenting my constructed instrument to a professional aviation specialist to make a determination of the content validity of the instrument.

### **Procedures**

All students who will enroll in the two sections of Introduction to Aviation Human Factors (AHF3101) classes in Fall 2016 at Florida Tech will be recruited for Study 1. The students who will be in these classes will meet during normal class hours. During the class session, participants will watch the video demonstration and they will be given questions to answer that are related to the video briefings. The first human factors class will watch a traditional safety briefing video. The other class will watch a humorous safety briefing video (the video links are available in Appendix E). The participants will be issued the questionnaire form. A week later, the participants who will have already watched a traditional video will then watch a humorous safety briefing video (see Appendix E). The other class who will have already watched a humorous safety briefing video will then watch a traditional video. Therefore, the administration of the videos will be counterbalanced.

No pretest will be administered in this study. Both groups will be measured on the dependent variable and scores; the number of correct answers on the attention and perception test will be acquired. The number of correct answers will be used to determine the difference between the two classes. The location of this study will be at Florida Tech's College of Aeronautics. For Study 2, participants will watch the video demonstrations; then, they will receive questions to answer electronically, which are related to the video briefings. Participants will be randomly assigned to either the treatment or control group. The treatment group will watch a humorous safety briefing video. The control group will watch a traditional safety briefing video. Participants for study 2 will be recruited from Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> MTurk<sup>®</sup>.

### **Major Sources of Invalidity**

The major sources of invalidity to this design approach will be subject effect, diffusion, and mortality. A subject effect threat occurs when the way that participants act in an experiment is different from the way that they would usually behave in the real world. They might do their best irrespective of the treatment. The threat is named the Hawthorne Effect (Ary et al., 2010). In the context of this proposed study, subjects (Florida Tech students and MTurk participants) might do better than predicted in the study. For example, Florida Tech students are very familiar with research events; the students may be challenging each other to achieve above their normal skill level because they are within the COA; and they may already have more familiarity with safety briefing videos.

“Diffusion threat occurs when participants in treatment group communicate knowledge about the treatment to control group” (Ary et al., 2010, p 282).

Diffusion might be a threat in this study only for Study 1, if students who are in the one group share information with the other group about what they have experienced in the study. This threat is high because the subjects know each other within the College of Aeronautics. To control the diffusion, the researcher will explain to both groups the significance of not sharing the information about the study with the others.

“Mortality threat” refers to a loss of participants during a study (Ary et al., 2010). Mortality might be a threat in Study 1 if any participant (student) is absent during the study. To control for this threat, the scholar will disregard the results of the students who are absent, and he will mention this fact in the study.

## **Variables**

### ***Independent Variable***

The independent variables (IV) in this study are type of flight safety demonstration video and participant gender. The types of flight safety demonstration are traditional and humorous. There are two levels of this IV (gender), which are male and female. Gender will be measured using a nominal scale.

### ***Dependent Variable***

The dependent variables are the passengers’ perception and attention. Perception will be measured by using rating scale. Participants’ perceptions will be measured using a five-point Likert scale, with results being stated as strongly agree,



agree, neutral, disagree, and strongly disagree.

The attention will be measured by utilizing a testing format. The questionnaire, which consists of 11 multiple-choice questions that are related to the safety video demonstrations, will be given to the participants to measure their attention.

### **Data Analysis**

Data will be obtained after the participants answer the questions. Data will be gathered from Aeronautics students at Florida Tech who will enroll in the two aviation human factors classes (AHF 3101) during the fall 2016 semester at Florida Tech and from the MTurk participants. This study will acquire demographic data after the participants complete the questionnaire form. After the data is collected, the researcher will check for missing data.

The author will use a two-way mixed ANOVA to establish whether there are any significant differences between the independent variables and/or interactions. The investigator will also report the measures of central tendency (mean and median). The alpha level will be settled at .05. The scholar will test the hypotheses to reach a logical conclusion for my study, based on the data collected. The purpose of the data analysis is to establish whether a difference can be found in attention and perception between a traditional or humorous safety briefing video, as well as any differences in interactions between genders.

## **Participants' Eligibility Requirements**

The following are the minimum eligibility requirements for participation in this study:

1. This study is restricted to potential participants that are aged 18 years and older.
2. Study 1 participants must be Florida Tech students.
3. Study 2 participants must have access to Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup>.
4. Participants recruited via Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> are restricted to either the treatment or control group.

## **Participants' Protection**

The Florida Tech Institutional Review Board (IRB) protocol for the protection of human subjects in research will be applied. Measures will be taken to protect the participants from risk exposure in the research process. Exposure to risks, if any, would not be greater than normal daily activities. Confidentiality and anonymity of the participants and their responses to survey questions will be protected. No student will be linked to the research findings. The discomfort that the participants may face in the research process will be greatly reduced and should not be any greater than in normal daily activities.

## **Legal and Ethical Considerations**

In conducting this study, no human will be subjected to any physical task. Participants have the right to withdraw from the study at any time they want. Participants have the right to decline participation in the experiment study. Participants are allowed to ask any question related to the study at any time they want. If requested, participants will be provided with the summary of this study's finding.

## **Budget and Time Schedule**

For the purpose of conducting this study, a total sum of \$1,000 will be required throughout the study period. The study will require copying and printing costs of approximately \$400. The majority of the funds will go towards personnel expenses, as some money will be given to the participants as compensation. The MTurk participants will be given some money to encourage their participation in this study.

Snacks and soda will be provided to the participants at Florida Tech. The budget could be less than half of the proposed amount, if I am able to administer the study during the class period. If participants are not present in the first video demonstration, they just do not participate in the study.

## **Summary**

Chapter three provided a general and a specific description of the research methodology. The target population has been defined, the sample size determined, the research administration and instruments discussed. The study variables – both dependent and independent – have been stated. Another purpose of the chapter is to

present and explain the proposed method of data analysis and data presentation.

Sources of invalidity have been identified and measures to minimize or control the threats identified. Other elements – participants' eligibility requirements, participants' protection, and legal and ethical considerations of the study have been discussed. Finally, this chapter provides the grounds for Chapter four, which discusses how the data that will be obtained is going to be analyzed.

## **Chapter 4**

### **Introduction**

Chapter four presents and analyzes the data that the researcher collected from Florida Institute of Technology (Florida Tech) students and Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> participants. The researcher used the statistical IBM SPSS statistics software to analyze the data and interpret the outcome from SPSS. The descriptive and inferential statistics are delivered in this chapter. Once again, the purpose of this study is to determine the effect of the type of safety demonstration on a passenger's perception and attention. Furthermore, the study examined if there are gender differences based on participant gender. This study aims to determine which type of flight safety demonstration videos that participants like better and if they remember information better from either traditional or humorous videos. The review is directed in the following areas: general design, research tool, data analysis, analysis of variance (ANOVA), and conclusion.

### **General Design**

The methodology of this study is quantitative and uses a quasi-experimental design for the Study 1 and a true experimental design for Study 2. The design utilizes a two-study approach – Study 1 used Florida Institute of Technology (Florida Tech) students, and Study 2 used Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> (MTurk<sup>®</sup>). For Study 1, the design for Florida Tech students is within participants. This used a nonrandomized, posttest-only design. Experimental conditions used as counterbalanced. The independent variables (IV) in this study are type of flight safety demonstration video, which are traditional and humorous, and participant

gender. The dependent variables are the passengers' perception and attention. A two-way mixed ANOVA was used for Study 1 to establish whether there are any significant differences between the independent variables and/or interactions. A two-way ANOVA was used for Study 2 to establish whether there are any significant differences between the independent variables and/or interactions. A two-study design was used because the researcher was unsure if Turkers would complete the full study. Therefore, the researcher did not want MTurk to be his only data collection opportunity.

### **Research Tool**

As mentioned in the previous chapter, the researcher constructed a questionnaire to measure the participants' perceptions and attention that they paid to the visuals and information presented in the safety demonstration videos. Participants' perceptions were measured using a five-point Likert scale, with results being expressed as strongly agree, agree, neutral, disagree, and strongly disagree. The five point Likert scale ranges from (+2) for strongly agree, (+1) for agree, (0) for neutral, (-1) for disagree, and (-2) for strongly disagree (see Appendix A).

Participants' attention was measured using a questionnaire that consists of 11 multiple-choice questions that are related to the safety demonstration video. The participants were asked to answer the questions on the questionnaire after they watched the safety demonstration video (the video links are available in Appendix E). Appendix B shows the questionnaire form. The questionnaire form was paper-based for COA students and was administered electronically on MTurk. The

researcher used FluidSurveys<sup>®</sup> and Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> (MTurk<sup>®</sup>) to create the survey and questions in order to collect the data for Study 2.

Professors at Florida Institute of Technology determined the content validity of the questionnaire. This was accomplished by showing the constructed instrument to the professors who were aviation specialists to make a determination of the content validity of the instrument before the researcher collected the data.

## **Data Analysis**

### **Descriptive Statistics**

The target population of this study is all the students in United States of America. The accessible population was first Florida Tech students as within participants (Study 1), the researcher of this study started to collect his data from the College of Aeronautics (COA). Since the author did not get enough gender number, he approached to the College of Science. After that, he approached to the College of Engineering. Finally, the College of Psychology and Liberal Arts allowed him to use their online program "Sona" in order to select participants and to list the study as a two- parts study in this system. The researcher ran a secondary session where he had students from different undergraduate majors.

The second accessible population was MTurk<sup>®</sup> participants as between participants (Study 2), in particular, participants who were in the U.S with US IP addresses. The participants included in this study were both males and females.

## Study 1

For Study 1, the design is within participants. This is a nonrandomized, posttest-only design. Experimental conditions are counterbalanced. An a priori power analysis with the following input parameters: effect size (ES) of .25, recommended minimum power of .8, and alpha of .05 was conducted. The result of the power analysis shows a total sample size of 34 is required. However, the researcher of this study solicited 53 for the within participants study. There were (N=40) males and (N=13) females in this study. These participants were approximately 75.4% males and 24.5% females. All participants were undergraduate level. Twelve participants were majoring in Aerospace; eleven participants were majoring in Aeronautical Science; ten participants were majoring in Software Engineering; seven participants were majoring in Aviation Management; three participants were majoring in Forensic Psychology; two participants were majoring in Computer Science, two participants were majoring in Aviation Human Factor; two participants were majoring in Management Information Systems; only one participant was majoring in Business; and one participant was majoring in Mechanical Engineering, and finally, a participant was majoring in Construction Management.

Participants' Age. The mean age of the participants was 21 ( $SD=1.581$ ). The average age of females was 21 ( $SD=1.354$ ). The average age of males was 21 ( $SD=1.648$ ). Table 1 shows the participants' ages.



Table 1

*The average age of participants*

| <b>Gender</b> | <b>Mean(M)</b> | <b>SD</b>    | <b>N</b>  |
|---------------|----------------|--------------|-----------|
| Male          | 21             | 1.648        | 40        |
| Female        | 21             | 1.354        | 13        |
| <b>Total</b>  | <b>21</b>      | <b>1.581</b> | <b>53</b> |

*Study 1: Perception Data*

The average score of the participants who watched a traditional video was 1.287 ( $SD=.585$ ,  $N=53$ ). The average score for the males who watched a traditional video was 1.293 ( $SD=.500$ ,  $N=40$ ). The average score of the females who watched the traditional video was 1.270 ( $SD=.819$ ,  $N=13$ ). The average score of the participants who watched the humorous safety briefing video was 1.031 ( $SD= .548$ ,  $N=53$ ). The average score of males was .987 ( $SD=.572$ ,  $N=40$ ). The mean for the females was 1.169 ( $SD=.461$ ,  $N=13$ ). Table 2 shows the average score of participants' perceptions.

Table 2

*The average score of participants' perceptions*

| <b>Type of video</b> | <b>Gender</b> | <b>Mean(M)</b> | <b>SD</b> | <b>N</b> |
|----------------------|---------------|----------------|-----------|----------|
| Traditional video    | Male          | 1.293          | .500      | 40       |
|                      | Female        | 1.270          | .819      | 13       |
|                      | Total         | 1.287          | .585      | 53       |
| Humorous video       | Male          | .987           | .572      | 40       |
|                      | Female        | 1.169          | .461      | 13       |
|                      | Total         | 1.031          | .548      | 53       |

#### Study 1: *Attention Data*

The average score of the participants who watched a traditional video was 10.09 ( $SD=.904$ ,  $N=53$ ). The average score for the males who watched the traditional video was 10.23 ( $SD=.832$ ,  $N=40$ ). The average score of the females who watched the traditional video was 9.69 ( $SD=1.032$ ,  $N=13$ ). The average score of the participants who watched the humorous safety briefing video was 9.58 ( $SD=1.262$ ,  $N=53$ ). The average score of males was 9.63 ( $SD=1.295$ ,  $N=40$ ). The mean for the females was 9.46 ( $SD=1.198$ ,  $N=13$ ). Table 3 shows the average score of participants' attention.

Table 3

*The average score of participants' attention*

| <b>Type of video</b> | <b>Gender</b> | <b>Mean(M)</b> | <b>SD</b> | <b>N</b> |
|----------------------|---------------|----------------|-----------|----------|
| Traditional video    | Male          | 10.23          | .832      | 40       |
|                      | Female        | 9.69           | 1.032     | 13       |
|                      | Total         | 10.09          | .904      | 53       |
| Humorous video       | Male          | 9.63           | 1.295     | 40       |
|                      | Female        | 9.46           | 1.198     | 13       |
|                      | Total         | 9.58           | 1.262     | 53       |

*Assumption Testing*

The assumptions for a two-way mixed ANOVA include the following:

- The data gathered should meet the assumption of Sphericity.
- The data collected from the populations is normally distributed.
- The data has homogeneity of variance.
- The data collected should not have significant outliers (Gravetter & Wallnau, 2013).

*Study 1: Perception Assumptions*

The assumption of Sphericity was not violated for the two-way interaction because the p value was  $p > 0.05$ , which was shown by Mauchly's test of Sphericity. After running the Shapiro-Wilk, the researcher found that the data was

not normally distributed for the traditional video since  $p = .002$ , which is less than .05. As considered by Levene's test for equality of variances, the assumption of homogeneity of variances was violated for the traditional video,  $p = .010$  because the p value is less than .05. However, there was not statistical significance for the humorous video because the p value was .581, which is more than .05. Thus, there was homogeneity of variances for this video. Sullivan and Artino (2013) illustrated that "parametric tests tend to give the correct answer even when statistical assumptions, such as a normal distribution of data are violated, even to an extreme degree. Thus, parametric tests are sufficiently robust to yield largely unbiased answers that are acceptably close to the fact" (p .542.). Zar (1996) mentioned, "ANOVA results can be relied on even when distributional assumptions are violated" (p. 13.6). According to Montana State University (n.d.) that "moderate deviations from the assumption of equal variances do not seriously affect the results in the ANOVA. Thus, the ANOVA is robust to small deviations from homogeneity of variance" (p. 56).

#### *Study 1: Attention Assumptions*

The output from Mauchly's test of Sphericity showed that the assumption is not violated for the two –way interaction because the p value was  $p > 0.05$  which showed by Mauchly's test of Sphericity. When running the Shapiro –Wilk, the researcher found that data was not normally distributed for the traditional video since the  $p < .001$ , which was less than .05. Also, the data for humorous video was not normally distributed which was  $p < .001$ .

Aa considered by Levene's test for equality of variances, the assumption of

homogeneity of variances was met for traditional video because the  $p = .343$ . Thus, there was not statistical significant level for the Levene's test because the p value is greater than .05. The Levene's test for equality of variances was met for the humorous video,  $p = .976$ . Sullivan and Artino (2013) illustrated that "parametric tests tend to give the correct answer even when statistical assumptions, such as a normal distribution of data are violated, even to an extreme degree. Thus, parametric tests are sufficiently robust to yield largely unbiased answers that are acceptably close to the fact" (p .542.).

### **Outlier Analysis**

There were no notable outliers for values of more than  $\pm 1.5$  in boxplots. Several values less than  $\pm 1.5$  were noticed in the boxplots.

The first value that was found in the first test administration in perception data was about 0.25. This value was less than 1.5 box lengths from the edge of the box. The second value was noticed in the second perception test administration. This value was 0.25, which is less than 1.5 box lengths from the edge of the box. The third value was -0.25, which was noticed in the first test in attention data. The fourth value was 0.5 box lengths from the edge of the box, which was noticed in the second attention test. Thus, all the values that were found in the boxplots were less than  $\pm 1.5$ .

### **Inferential Statistics**

#### ***Study 1 Analysis of variance (ANOVA)***

A two-way mixed design ANOVA was used in IBM SPSS for Study 1 to establish whether there are any significant differences between the independent

variables and/or interactions. The independent variables (IV) in this study are type of flight safety demonstration video and participant gender. The types of flight safety demonstration: are traditional and humorous. The dependent variables are the passengers' perception and attention. The alpha level was settled at .05. A Cronbach's alpha test was used on perception for the first test to determine the measurement of consistency and to measure the reliability between the responses to the survey. The score that presented reliable statistics, which was .849. Moreover, a Cronbach's alpha test was used on perception for the second test. The score presenting reliable statistics that was .802.

Cronbach's alpha test was used on attention for the first test to determine the measurement of consistency and to measure the reliability among the responses to questions. The score was .802 that presented reliable statistics. For the second test, a Cronbach's alpha test was used on attention and showed that score was .801, which presenting reliable statistics.

Thus, it is a good value as long as it is above 0.7. Values of 0.7 to 0.8 are considered as adequate (Bland & Altman, 1997). George and Mallery (2003) mentioned that the value of alpha  $>.8$  is considered a good value and sensible target in the study.

### ***Study 1 ANOVA Analysis for participants' perception***

There was no significant interaction between participant gender and type of video on perception score  $F(1, 51) = .843, p = .363, \text{partial } \eta^2 = .016$ . There was not a significant difference in the flight demonstration video on passengers' perception  $F(1,51) = 3.345, p = .073, \text{partial } \eta^2 = .062$ . There was no statistically significant

difference in perception between genders,  $F(1,51) = .308, p = .581$ , partial  $\eta^2 = .006$ . Table 2 in Appendix D shows the results of the analysis of variance.

### ***Study 1 ANOVA Analysis for participants' attention***

There was no significant interaction between gender and type of video in paying attention,  $F(1, 51) = .502, p = .482$ , partial  $\eta^2 = .010$ . There was not a significant difference in the flight demonstration video on passengers' attention,  $F(1,51) = 2.541, p = .117$ , partial  $\eta^2 = .047$ . There was no significant difference between genders in paying attention,  $F(1,51) = 2.229, p = .142$ , partial  $\eta^2 = .042$ . Table 3 Appendix D demonstrates the results of the analysis of variance.

### **Study 1 decision on Hypotheses**

There are five questions and five null and alternate hypotheses in this study. The purpose of this study is to determine the effect of the type of safety demonstration on passengers' perception and attention onboard. Additionally, the study examined if there are gender differences between the participants.

The first null hypothesis is that there is no significant difference in the flight safety demonstration video on a passenger's perception. The outcome showed that there was not a significant difference in the flight demonstration video on passengers' perceptions.  $F(1,51) = 3.345, p < .073$ , partial  $\eta^2 = .062$ . Hence, the decision was to fail to reject the null.

The second null hypothesis is that there is no significant difference in the flight safety demonstration video on passengers' attention. Based on the findings, there was no significant difference in the flight demonstration video on passengers'

attention  $F(1,51) = 2.541, p < .117, \text{partial} = \eta^2 = .047$ . Since the  $p$  value is greater than 0.5, the decision here was to fail to reject the null.

The third null hypothesis is that there is no significant difference in perception between genders. The results showed that there is no significant difference in perception between genders. The outcome showed that there was no statistically significant difference in perception between genders,  $F(1,51) = .308, p < .581, \text{partial} = \eta^2 = .006$ . Accordingly, the decision was to fail to reject the null hypothesis.

The fourth null hypothesis is that there is no significant difference between genders in paying attention. The outcome showed that there was no significant difference between genders in paying attention,  $F(1,51) = 2.229, p < .142, \text{partial} = \eta^2 = .042$ . Thus, the  $p$  value is greater than 0.5. Accordingly, the decision was to fail to reject the null.

The fifth null hypothesis is that there is no significant interaction between participant gender and type of video. The outcome showed that there was no significant interaction between participant gender and type of video on perception score  $F(1, 51) = .843, p = .363, \text{partial} = \eta^2 = .016$ . There was no significant interaction between gender and type of video in paying attention,  $F(1, 51) = .502, p = .482, \text{partial} = \eta^2 = .010$ . Therefore, the decision was to fail to reject the null.

### **Study 2 Descriptive Statistics:**

A total sample size of 128 was required. However, in order to ensure an appropriate gender number, I solicited 193. There were (N=95) males and (N=98) females in Study 2. These participants were approximately 49.2% males and 50.7%



females. The traditional video group was 102 participants. Forty-eight out of one hundred and three participants were females, and fifty-four out of one hundred and three participants were males. The mean age of the control group was 35.41 ( $SD=10.90$ ). The average age of females was 36.1 ( $SD=11.98$ ). The average age of males was 36.9 ( $SD=9.90$ ). Table 4 shows the participants' ages.

The number of participants in the humorous video group was 91 participants. Fifty out of ninety-two participants were females and forty-one out of ninety-two were males. The average age of the experimental group was 33.68 ( $SD=10.65$ ). The mean age of females in this group was 33.46 ( $SD=10.65$ ). The average age of males in the experimental group was 33.95 ( $SD=9.78$ ). Table 4 shows the participants' ages.

Table 4

*The average age of participants*

| <b>Group</b> | <b>Gender</b> | <b>Mean(M)</b> | <b>SD</b> | <b>N</b> |
|--------------|---------------|----------------|-----------|----------|
| Control      | Male          | 36.9           | 9.90      | 54       |
|              | Female        | 36.1           | 11.98     | 48       |
| Total        |               | 35.41          | 10.90     | 102      |
| Experimental | Male          | 33.95          | 9.78      | 41       |
|              | Female        | 33.46          | 10.65     | 50       |
| Total        |               | 33.68          | 10.65     | 91       |

*Study 2: Perception Data*

The average score of the control group was 1.009 ( $SD=.627$ ,  $N=102$ ). The mean for the males that were in the control group was 1.006 ( $SD=.611$ ,  $N=54$ ). The average score of the females that were in this group was 1.013 ( $SD=.652$ ,  $N=48$ ). In the experimental group, the mean was 1.638 ( $SD=.425$ ,  $N=91$ ). The average score of the males that were in the experimental group was 1.566 ( $SD=.489$ ,  $N=41$ ). The mean for the females in this group was 1.697 ( $SD=.358$ ,  $N=50$ ).

Table 5

*The average score of participants' perception*

| <b>Group</b> | <b>Gender</b> | <b>Mean(M)</b> | <b>SD</b> | <b>N</b> |
|--------------|---------------|----------------|-----------|----------|
| Control      | Male          | 1.006          | .611      | 54       |
|              | Female        | 1.013          | .652      | 48       |
| Total        |               | 1.009          | .627      | 102      |
| Experimental | Male          | 1.566          | .489      | 41       |
|              | Female        | 1.697          | .358      | 50       |
| Total        |               | 1.638          | .425      | 91       |

*Study 2: Attention Data*

The average score of the control group was 8.85 ( $SD=1.531$ ,  $N=102$ ). The average score of the males that were in the control group was 8.94 ( $SD=1.571$ ,  $N=54$ ). The mean for the females that were in this group was 8.75 ( $SD=1.495$ ,

$N=48$ ). In the experimental group, the mean was 9.31( $SD=1.420$ ,  $N=91$ ). The mean of the males that were in the experimental group was 9.22 ( $SD=1.423$ ,  $N=41$ ). The mean for the females in this group was 9.38 ( $SD=1.427$ ,  $N=50$ ).

Table 6

*The average score of participants' attention*

| <b>Group</b> | <b>Gender</b> | <b>Mean(M)</b> | <b>SD</b> | <b>N</b> |
|--------------|---------------|----------------|-----------|----------|
| Control      | Male          | 8.94           | 1.571     | 54       |
|              | Female        | 8.75           | 1.495     | 48       |
| Total        |               | 8.85           | 1.531     | 102      |
| <hr/>        |               |                |           |          |
| Experimental | Male          | 9.22           | 1.423     | 41       |
|              | Female        | 9.38           | 1.427     | 50       |
| Total        |               | 9.31           | 1.420     | 91       |

### *Assumption Testing*

The assumptions for a two-way ANOVA include the following:

- The data gathered should not have significant outliers (Gravetter & Wallnau, 2013).
- The observations are random samples from a normal distribution.
- Observations are independent of each other.
- The population has the same variance (homogeneity of variance)” (Montgomery ,2001, p.3).

### **Outlier Analysis**

Several outliers were found in the boxplots in SPSS. The first outlier was in the control group that was composed of males. This outlier was more than three

box lengths from the edge of the box. The second outlier was found in the female group and was greater than three box lengths from the edge of the box. The third outlier was found in the female treatment group, and it was more than three box lengths from the edge of the box.

There are some reasons why a researcher might find outliers in his or her data:

There are some reasons why a researcher might find outliers in his or her data: 1) likelihood of data entry errors, 2) measurement errors, and 3) genuinely unusual values (Laerd statistics, n.d). In this study, the data was collected by using FluidSurveys, thus, the researcher of this study downloaded the file and posted it in SPSS so there should not be any data entry errors. Moreover, it is unlikely that measurement errors in this study would be the result of the outliers since the values were coded -2 to 2. Genuinely unusual values might be the reason behind these outliers, however, this can be difficult to determine with this sample (additional samples may show these values to not be unusual). Therefore, the researcher of this study decided to leave the outliers and include them in the data analysis process.

### *Study 2: Perception Assumptions*

After running the Shapiro –Wilk, the researcher found that the data was not normally distributed. As considered by Levene’s test for equality of variances, the assumption of homogeneity of variances was violated,  $p = .001$ , because the  $p$  value is less than .05. According to Montana State University (n.d.), “the ANOVA is robust to small deviations from homogeneity of variance” (p.56). When a normal distribution of data is violated, the parametric test is robust for an assumption of

these violations (Sullivan & Artino, 2013).

### *Study 2: Attention Assumptions*

The Shapiro –Wilk test showed that the data was not normally distributed because the p value is less than .05,  $p < .010$ . Thus, the assumption of normal distribution is violated. As considered by Levene’s test for equality of variances, the assumption of homogeneity of variances was equal,  $p = .746$ . Thus, the outcome of Levene’s test is not statistically significant because it is greater than .05. Sullivan and Artino (2013) stated that parametric tests are adequately robust although a normal distribution of data is violated.

## **Inferential Statistics**

### *Study 2 Analysis of variance (ANOVA)*

A two–way ANOVA was used in IBM SPSS for Study 2 to establish whether there are any significant differences between the independent variables and/or interactions. The independent variables (IV) in this study are type of flight safety demonstration video and participant gender. The types of flight safety demonstration: are traditional and humorous. The dependent variables are the passengers’ perception and attention. The alpha level was settled at .05.

Cronbach’s alpha test was used on perception data for the control group to determine the measurement of consistency and to measure the reliability among the responses to the survey questions. The consistency score was .812 that presented on reliable statistics. Moreover, Cronbach’s alpha test was used on perception data for the experimental group to determine the measurement of consistency and to

measure the reliability among the responses to the survey questions. The score was .833, which displayed on reliable statistics.

Cronbach's alpha test was used on attention data for the control group to determine the measurement of consistency and to measure the reliability among the responses to the survey questions. The consistency score presented on reliable statistics, which was .831. Cronbach's alpha test was used on attention data for the experimental group. The consistency score was .811 that presented on reliable statistics. Thus, it counts as good reliability as long as it is above 0.7. Values of 0.7 to 0.8 are considered as adequate (Bland & Altman, 1997). George and Mallery (2003) motioned that the value of alpha  $>.8$  is considered a good value and sensible target.

As stated before, the purpose of the data analysis was to establish whether a difference could be found in attention and perception between a traditional or humorous safety briefing video.

### ***Study 2 ANOVA Analysis for participants' perception***

There was no significant interaction between gender and type of video on perception score  $F(1, 189) = 0.234, p=0.629$ , partial  $\eta^2=.001$ . There was a significant difference in the flight demonstration video on passengers' perceptions  $F(1,189)= 275.59, p <.001$ , partial  $\eta^2=.593$ . There was no significant difference in perception between participant gender  $F(1,189)=.145, p > 0.704$ , partial  $\eta^2=.001$ . The average score of the participants who watched a humorous safety briefing video was significantly higher on their perception than those who watched a

traditional safety briefing video. Table 5 shows the outcomes of the analysis of variance.

### ***Study 2 ANOVA Analysis for participants' attention***

There was no statistically significant interaction between gender and type of video on attention score  $F(1,189) = .682$ ,  $p = .410$ , partial  $\eta^2 = .004$ . There was a significant difference in the flight demonstration video on passengers' attention  $F(1,189) = 4.437$ ,  $p < .036$ , partial  $\eta^2 = .023$ . There was no significant difference between participant gender in paying attention,  $F(1,189) = 0.006$ ,  $p = .937$ ,  $\eta^2 = 0.001$ . Thus, the  $p$  value is greater than 0.5. The average score of the participants who watched the humorous safety briefing video was significantly higher on their attention than those who watched a traditional safety briefing video. Table 6 shows the outcomes of the analysis of variance.

### **Study 2 Decision on Hypotheses**

There are five questions, and five null and alternate hypotheses in this study. The purpose of this study is to determine the effect of the type of safety demonstration on a passenger's perception and attention onboard. Furthermore, the study examined if there are gender differences between the participants' perceptions.

The first null hypothesis is that there is no significant difference in the flight safety demonstration video on passengers' perceptions. The outcome showed that there was a significant difference in the flight demonstration video on passengers' perceptions  $F(1,189) = 275.59$ ,  $p < .001$ , partial  $\eta^2 = .593$ . Thus, the decision was to reject the null hypothesis.

The second null hypothesis is that there is no significant difference in the flight safety demonstration video on passengers' attention. Based on the findings, there was a significant difference in the flight demonstration video on passengers' attention  $F(1,189) = 4.437, p < .036$ , partial  $\eta^2 = .023$ . The  $p$  value is greater than 0.5, so the decision was to reject the null.

The third null hypothesis is there is no significant difference in perception between genders. The results showed that there was no significant difference in perception between genders  $F(1,189) = .145, p > 0.704$ , partial  $\eta^2 = .001$ . Hence, the decision was to fail to reject the null hypothesis.

The fourth null hypothesis is there is no significant difference between genders in paying attention. The outcome showed there was no significant difference between genders in paying attention,  $F(1,189) = 0.006, p > .937$ , partial  $\eta^2 = 0.001$ . Thus, the  $p$  value is greater than 0.5. Thus, the decision was to fail to reject the null hypothesis.

The fifth null hypothesis is that there is no significant interaction between gender and type of video. The result indicated that there was no significant interaction between gender and type of video on perception score  $F(1, 189) = 0.234, p = 0.629$ , partial  $\eta^2 = 0.001$ . There was no statistically significant interaction between gender and type of video on attention score  $F(1, 189) = .682, p = .410$ , partial  $\eta^2 = .004$ . Hence, the decision was to fail to reject the null.



## **Summary**

The purpose of this study was to determine the effect of the type of safety demonstration on passengers' perception and attention. Moreover, the study examined if there are gender differences based on participant gender. An ANOVA analysis demonstrated that there was no significant interaction between gender and type of video on perception. Furthermore, the outcome of the ANOVA analysis showed that there was no significant difference in the flight demonstration video on passengers' perception and attention. The ANOVA analysis showed that there was no statistically significant difference in perception and attention between genders. Therefore, the study failed to reject all five null hypotheses.

The ANOVA analysis for Study 2 indicated that there was no significant interaction between gender and type of video on perception and attention. The ANOVA analysis indicated that there was a significant difference in the flight demonstration video on passengers' perceptions and attention. An ANOVA for the participants' perception showed that there was no significant difference in perception and attention between genders. Thus, the results failed to reject the null hypotheses. Chapter 5 will present a summary and discussion of these findings.

## **Chapter 5**

### **Conclusion**

The purpose of this study was to determine the effect of the type of safety demonstration on passengers' perception and attention. Additionally, the study tested if there were gender differences based on participant gender. The design utilizes a two-study approach. Study one used Florida Tech students. For Study 1, the design for Florida Tech students was a mixed design using one within subjects variable and one between subjects variable. This study was a nonrandomized, posttest-only design. Experimental conditions were counterbalanced. The study used 53 participants. There were 40 males and 13 females.

For Study 2, the design approach utilized Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> and was between participants. It involved the random assignment of participants to either the treatment or the control group. The treatment group was administered a humorous safety briefing video, while the control group was administering a traditional safety briefing video. The number of participants in this study was 193 participants. There were 95 males and 98 females.

The independent variables (IV) in this study are type of flight safety demonstration video and participant gender. The types of flight safety demonstration are traditional and humorous. The dependent variables are the passengers' perception and attention. A two-way mixed design ANOVA was used for Study 1 to establish whether there are any significant differences between the independent variables and/or interactions. A two-way ANOVA was used for Study 2 to establish whether there are any significant differences between the independent

variables and/or interactions. The studies have answered the following questions:

RQ1. What is the effect of the flight safety demonstration video on a passenger's perception?

RQ2. What is the effect of the flight safety demonstration video on a passenger's attention?

RQ3. What is the difference in perception between genders?

RQ4. What is the difference in paying attention between genders?

RQ5. Will there be an interaction between type of video and participant gender?

The studies have examined the research hypotheses, which are the following:

H<sub>01</sub>. There is no significant difference in the flight safety demonstration video on passengers' perceptions.

H<sub>A1</sub>. There is a significant difference in the flight demonstration video on passengers' perceptions.

H<sub>02</sub>. There is no significant difference in the flight safety demonstration video on passengers' attention.

H<sub>A2</sub>. There is a significant difference in the flight demonstration video on passengers' attention.

H<sub>03</sub>. There is no significant difference in perception between participant gender.

H<sub>A3</sub>. There is a significant difference in perception between participant gender.

H<sub>04</sub>. There is no significant difference between participant gender in paying attention.

H<sub>A4</sub>. There is a significant difference between participant gender in paying attention.

H<sub>05</sub>. There is no significant interaction between participant gender and type of video

H<sub>A5</sub>. There is a significant interaction between participant gender and type of video

### **Study 1 Summary of Findings**

A two-way mixed ANOVA was used to establish whether there were any significant differences between the independent variables and/or interactions. The ANOVA analysis demonstrated that there was no significant interaction between gender and type of video on perception. Furthermore, the outcome of the ANOVA analysis showed that there was not a significant difference in the flight demonstration video on passengers' perception. The ANOVA analysis showed that there was no statistically significant difference in perception between genders.

An ANOVA for the participants' attention showed that there was no significant interaction between gender and type of video in paying attention. The ANOVA analysis demonstrated there was no significant difference in the flight demonstration video on passengers' attention. The ANOVA analysis displayed there was no significant difference between genders in paying attention.

### **Study 1 Discussion**

The study has answered five questions with their null and alternative hypotheses. The first question was, "What is the effect of the flight safety demonstration video on a passenger's perception?" The null hypothesis that is related to this question is that there is no significant difference in the flight safety demonstration video on passengers' perceptions. The alternate hypothesis that is related to the first question is there is a significant difference in the flight demonstration video on passengers' perceptions. The outcome from the ANOVA

showed that there is no significant difference in the flight demonstration video on passengers' perception.

Ruenruoy (2015) established that most travelers have a very low interest regarding the flight safety demonstrations even though passengers believe that the safety demonstration is really important to pay attention to. Thus, one possible explanation could be that participants in Study 1 might not be interested in the content of the humorous flight safety video. Chang and Yang (2011) found only 14 percent of passengers considered that watching the safety demonstration on board is important and valuable in times of emergency evacuations. It could be that participants in Study 1 believed that the humorous flight safety demonstration was not valuable on emergency situation. Another probable explanation could be that the humorous flight safety video is actually a relative tool. So, it may be that some participants believed that the humorous safety video was helpful while others considered that it was not beneficial. Hence, the outcome showed that there was not a significant difference in the flight demonstration video on passengers' perception.

The second research question that guided this study was, "What is the effect of the flight safety demonstration video on a passenger's attention?" The null hypothesis related to this question was that there is no significant difference in the flight safety demonstration video on passengers' attention, and the alternate hypothesis linked with this question is that there is a significant difference in the flight demonstration video on passengers' attention. The ANOVA analysis demonstrated that there was no significant difference in the flight demonstration video on passengers' attention.

Weinberger and Gulas (1992) mentioned that when companies want to use humor in advertising, they should take caution since there is no guarantee that humor will construct good ads. Perhaps the participants in Study 1 may have been zoned out during the study due to the low interest in the construct of the humorous video (the humorous video was 80's themed and the current students were born in the mid-1990's). Hence, the result revealed that there was not a significant difference in the flight demonstration video on passengers' attention. Norman (2008) stated that when an individual has a good amount of interest in a particular subject or event, his or her attention span is enhanced. Thus, one explanation could be that these participants did not connect with humor; thus, the humor may have missed this target audience. Tehrani and Molesworth (2015) found that using a humor safety briefing video did not improve passenger attention, and humor may lower retention of safety information. Therefore, it is possible that the participants in Study 1 who watched the humorous video in the classroom did not pay attention to the flight demonstration video because they were not interested in the humorous video.

The Civil Aviation Safety Authority in Australia (2013) found that passengers during the flight were paying very little attention to the safety video, and they may not have wanted to be distracted by material that will cause them to stress. Therefore, they would avoid attending to the information that could assist them in surviving should a disaster happen. In addition, distractions such as electronic devices can occasionally take over and prevent travelers from paying attention. An explanation could be that the participants in Study 1 paid little

attention to the safety video due to distraction in the classroom. Another explanation could be that participants already know the information about flight safety; therefore, they did not pay full attention.

The third question that guided this study was, “What is the difference in perception between genders?” The study tested the null hypothesis of this question, which was that there is no significant difference in perception between genders. The study has tested the alternate hypothesis of this question, which was that there is significant difference in perception between genders. The outcome from the ANOVA demonstrated that there was not a statistically significant difference in perception between genders.

Teleb and Al Awamleh (2012) conducted a study to establish “whether gender differences in Visual selective attention, working memory, anticipation time, auditory reaction time and visual- motor coordination performance existed” (p.33.). They found that there was not a significant difference between genders in perception. A probable explanation could be that participants in Study 1 were not interested in watching the humorous flight safety demonstration. Hyde (2005) established that there was no significant difference between genders on cognitive skill. Hyde (2005) stated that females and males both share common cognitive skills. Thus, it is possible that males and females in Study 1 have the same common cognitive skills toward the flight demonstration video. Therefore, the result of this study revealed that there was not a statistically significant difference in perception between genders.

The fourth question conducted in this study was, “What is the difference in paying attention between genders?” The null hypothesis of this question was that there is no significant difference between genders in paying attention and, the alternate hypothesis of this question was that there is a significant difference between genders in paying attention. The ANOVA analysis demonstrated that there was no significant difference between genders in paying attention.

A study was done by Fasanya, McBride, Pope-Ford and Ntuen (2012) to see whether or not there is any difference between genders on divided attention. They found that there was not a statistical significance between genders on divided attention. Thus, it might be that males and females had the same attention span toward the humorous flight safety demonstration, and it may be that both genders have the same consideration about the humorous safety briefing video. Hence, there was no significant difference between genders in paying attention.

The fifth question that guided in this study was, “will there be an interaction between type of video and participant gender?” The null hypothesis for this question was there is no significant interaction between gender and type of video, and the alternate hypothesis was there is a significant interaction between gender and type of video. The outcome of the ANOVA showed that there was no significant interaction between gender and type of video on perception and attention.

Madden and Weinberger (1982) conducted a study to examine the relationship between an ad utilizing humor and the quantity of attention. The



researchers found that the humor attention relationship is not independent of gender characteristics of the respondent.

### **Study 2 Summary of Findings**

A two-way ANOVA was used for Study 2 to establish whether there were any significant differences between the independent variables and/or interactions.

The ANOVA analysis indicated that there was no significant interaction between gender and type of video on perception. The ANOVA analysis also indicated that there was a significant difference in the flight demonstration video on passengers' perceptions. An ANOVA for the participants' perception showed that there was no significant difference in perception between genders. The average score of the participants who watched a humorous safety briefing video was significantly higher on their perception ( $M = 1.638$ ,  $SD = .425$ ) than those who watched a traditional safety briefing video ( $M = 1.009$ ,  $SD = .627$ ).

The ANOVA for the participants' attention showed that there was no statistical interaction between gender and type of video on attention. The ANOVA analysis indicated that there was a significant difference in the flight demonstration video on passengers' attention. However, the ANOVA analysis demonstrated that there was no significant difference between genders in paying attention. The average score of the participants who watched a humorous safety briefing video was significantly higher on their attention than those who watched a traditional safety briefing video. Thus, participants might prefer to watch a humorous safety briefing video ( $M = 9.31$ ,  $SD = 1.495$ ) than a traditional safety briefing video ( $M = 8.85$ ,  $SD = 1.531$ ).

## **Study 2 Discussion**

Study 2 has several questions with their null and alternative hypotheses. The first question was, “What is the effect of the flight safety demonstration video on passengers’ perception?” The study tested the null hypothesis that there is no significant difference in the flight safety demonstration video on passengers’ perceptions and, the study tested the alternate hypothesis that there is a significant difference in the flight demonstration video on passengers’ perceptions. Results revealed that there was a significant difference in the flight demonstration video on passengers’ perceptions. The average score of the participants who watched a humorous safety briefing video was higher on their perception than those who watched a traditional safety briefing video.

Wanzer and Frymier (1999) conducted a study by using a five-point Likert scale to gather their data in order to determine the correlation among student perceptions of a professor's humorous character and student education. They found that there “was a significant positive correlation between student perceptions of a teacher’s humor orientation and student learning” (p .57). Wanzer and Frymier (1999) stated that humor is an essential technique to be presented in the school in order to enhance students’ perception. They found that a teacher who uses humor could positively impact students’ learning and motivate them in the classroom, while a teacher who does not use humor discourages his or her students in the classroom. Wanzer and Frymier (1999) found that several recent studies demonstrated a positive relationship between learning and humor within the classroom. It is possible that participants in Study 2 who watched a humorous

safety briefing video were interested in the design of the flight safety demonstration. Another possible reason could be that a humorous safety briefing video improved their perceptions. Hence, the average score of the participants who watched a humorous safety briefing video was higher on their perception than for the participants who watched a traditional safety briefing video.

The second research question, which led this study was, “What is the effect of the flight safety demonstration video on passengers’ attention?” The study tested the null hypothesis that there is no significant difference in the flight safety demonstration video on passengers’ attention, and the study tested the alternate hypothesis that there is a significant difference in the flight demonstration video on passengers’ attention. The ANOVA result showed that there was a significant difference in the flight demonstration video on passengers’ attention.

Hoang (2013) mentioned that humor provides an excellent tool for attracting an audience’s attention and allowed for longer memorization of a larger quantity of material. A possible explanation could be that the humorous safety briefing video attracted participants’ attention, and it improved their ability to memorize the information. It may be that the humorous safety briefing video played an important role in inviting the participants’ attention; therefore, the average score of the participants who watched the humorous safety briefing video was higher on their attention than those who watched the traditional safety briefing video.

Madden and Weinberger (1982) investigated whether the use of humor in magazine advertising could grip peoples’ attention or not. They found that there

was a positive relationship between the amount of attention a watcher would provide to the advertisement and an ad utilizing humor. Stuck, Holland, Van Baaren, and Knippenberg (2010) indicated that humorous material improved attention that could be associated with the improvement in memory retention. Hollis (2011) explained that the brain memorizes something unexpected, such as humor, within the advertisement, which is designed to help a reader with memorization. Norman 2008 explained that the amount of initial interest plays a significant role in improving and enhancing the attention span of an individual in a specific event or discussion. It may be the reason why the humorous safety briefing video enhanced participants' attention span and memory. Thus, the study established that there was a significant difference in the flight demonstration video on passengers' attention.

The third question in this study was, "What is the difference in perception between genders?" The study tested the null hypothesis that there is no significant difference in perception between genders, and the study tested the alternate hypothesis that there is significant difference in perception between genders. The results revealed that there was no difference in perception between genders.

Ziv (1988), conducted a study to examine whether or not humor could have an effect on teaching. The author found that there was no significant difference in education with humor between genders. Busari (2012) conducted a study to examine if there is a difference between genders on perceptions of academic anxiety and reaction to stressors. The author found that there was no difference between males and females in their perception. Hence, one explanation could be

that the male and female participants in Study 2 had a similar interest toward the flight safety demonstration. Thus, results revealed that there was no difference in perception between genders.

The fourth question was, “What is the difference in paying attention between genders?” The study tested the null hypothesis that there is no significant difference between genders in paying attention. The study tested the alternate hypothesis that there is a significant difference between genders in paying attention. The result from the ANOVA showed that there was no significant difference between genders in paying attention.

Upadhayay and Guragain (2014) mentioned that males and females were similar in terms of cognitive function. Thus, it may be that the males and females in Study 2 have similar attention spans toward the humorous safety video. This could be why the outcome of this study showed that there was no significant difference between genders in paying attention.

The fifth question was, “will there be an interaction between type of video and participant gender?” The null hypothesis for this question was there is no significant interaction between gender and type of video. The alternate hypothesis was that there is a significant interaction between gender and type of video. The results of the ANOVA indicated that there was no significant interaction between gender and type of video on perception and attention. Ziv (1988) indicated that there was no significant difference and no interaction between genders in education by using humor in teaching. A possible explanation would be that gender have no difference in term of attention toward the type of videos. Thus, the result of this

study showed that there was no significant interaction between gender and type of video on perception and attention.

### **General Discussion**

The purpose of this study was to determine the effect of the type of safety demonstration on passengers' perception and attention. Additionally, the study tested if there were gender differences based on participant gender.

Chang and Liao (2008) conducted their study by using a survey design that had five hundred questionnaires with a reply rate of 92.8 percent. Chang and Liao's a study established that the passengers' perceptions about emergency exit techniques in the 41-50-year-old group was significantly different from the 21-30- and 31-40-year old groups, yet the two former age groups are the majority of passengers. Hence, the outcome of Study 1 demonstrated that there was not a significant difference in the flight demonstration video on passengers' perception and attention. Furthermore, Study 1 showed that there was no significant difference in perception and attention between genders, whereas Study 2 indicated that there was a significant difference in the flight demonstration video on passengers' perceptions and attention. However, Study 2 also showed that there was no significant difference between genders in perception and attention. The researcher found that both studies share the common outcome that there was no significant difference between genders in perception and attention.

It is possible that since the Study 1 consists of younger participants who were born likely in the middle of the 90s compare to other participants in Study 2 who were born in the late 70s and early 80s that they may be more connected with

an 80's themed humorous flight safety video more than the young age participants in the Study 1.

### **Practical Implications**

Based on the finding of this study, there is a contrast between whether or not the humorous safety briefing video can improve passengers' perception and attention toward onboard videos. This study suggests that there may be differences in perception of the humor. Based on the finding of this study, airlines may have to be cautious when they are developing humorous video. They should make sure this type of video might be applied or not to the audience and consider humor topic might be related to all passengers.

Additionally, airlines may have to ensure that this type of video could be connected to all ages range of participants. Since the problem has not been solved, the airlines should change the way that they show the safety demonstration video onboard.

### **Limitations**

Limitations for this study include the limited number of participants and the number of females at Florida Tech for Study 1. Moreover, the limitation for Study 1 was unequal sample cell sizes. Watching a safety briefing video in a classroom may be different than in a plane, but the study cannot be conducted in an aircraft due to a limited budget and safety reasons. For Study 1, participants could not meet at the same time and day due to the schedule of the classes. Moreover, the researcher of this study got access to one group of participants at one time. Participants watched a safety briefing video by having it portrayed in a classroom.

Since this study used a convenience sample, not everyone was willing to participate in this study.

Study 1 found that the data of the perception and of the traditional video were not normally distributed. In addition, the data of attention for the traditional video and humorous video was not normality distributed. Besides, the assumption of homogeneity of variances of the perception conditions was violated in the traditional video case. Levene's test for equality of variances for the attention condition was normally distributed for the humorous video.

For Study 2, participants watched a safety briefing video on a computer screen. Collecting data via Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> (MTurk) might affect the outcome of this study since the participants got compensation in order to participate. That might influence their enthusiasm for contributing to this study. Study 2 violated the assumption of homogeneity of variances for perception and normality for the humorous video for the male participants of the perception conditions and the attention conditions.

### **Recommendation for Future Research**

The participants of the current study were from Florida Tech and from Amazon's<sup>®</sup> Mechanical Turk<sup>®</sup> website. Thus, to replicate this research, it is highly recommended to conduct this study at another university where there will be an equal number of males and females to see if there will be a difference in perception and attention between genders. To replicate this research, it is strongly suggested to use a mixed methodology design, quantitative and qualitative, to get a better understanding of why most of the passengers do not pay attention to the safety



demonstration video onboard. Future research should also be expanded to other nationalities and cultures to see if there will be cultural or national differences between the passengers in perception and attention to the safety demonstration video onboard.

To replicate this research, it is also strongly recommended to use a wide age range of participants to see if there are any age differences between participants on perception and attention. Another recommendation for future study is to create another funny video to examine if it would be more effective with a younger age group. Future researchers should examine more information on these types of videos to see whether or not they will attract passengers' attention toward the onboard safety briefing video. Any future study should try to interject humor into the safety briefings to see the benefits on peoples' perception and attention. The data of both studies are helpful for the future researcher to better understand how to conduct this study in the future.

### **Summary**

The purpose of this study was to determine the effect of the type of safety demonstration on passengers' perception and attention. Additionally, the study has tested if there were gender differences based on participant gender. The ANOVA analysis of Study 1 demonstrated that there was no significant interaction between participant gender and type of video on perception and attention. Besides, the outcome of this study demonstrated that there was not a significant difference in the flight demonstration video on passengers' perception and attention. The result of this study indicated that there was not a statistically significant difference in

perception and attention between genders. A probable explanation could be that humor is relative; thus, some passengers considered that a funny video was a good technique to improve someone's perception and attention while others believe it is not a good tool to enhance perception and attention. Additionally, the 80's themed humorous video may not have resonated with the younger participants that composed the sample in study 1.

The ANOVA analysis for Study 2 showed that there was not a significant interaction between gender and type of video on perception and attention. Yet, the data of this study showed that there was a significant difference in the flight demonstration video on passengers' perceptions and attention. Nevertheless, the ANOVA for Study 2 showed that there was no significant difference in perception and attention between genders. The researcher of this study mentioned that male and female participants in Study 2 might have had similar interests toward the flight safety demonstration. Thus, the outcome of this study showed that there was not a significant difference in perception and attention between genders. As noted, both studies share the common result that there was no significant difference between genders in perception and attention.

## References

- Ary, D., Jacobs, L. C., & Sorensen, C. (2010). *Introduction to research in education*. (8<sup>th</sup> ed.) Belmont, CA: Wadsworth.
- Arnheim, R. (1969). *Visual Thinking* (Berkeley: University of California Press. *Arnheim Visual Thinking*.
- Anderson, J. R. (2005). *Cognitive Psychology and its implications*. (6<sup>th</sup> ed.) New York: Worth Publishers.
- Beyer, S. (1998). Gender differences in self-perception and negative recall biases. *Sex Roles, 38*(1/2), 106-133.
- Biederman, J., Faraone, S. V., Monuteaux, M. C., Bober, M., & Cadogen, E. (2004). Gender effects on attention-deficit/hyperactivity disorder in adults, revisited. *Biological psychiatry, 55*(7), 692-700.
- Biederman, J. (2005). Attention-deficit/hyperactivity disorder: a selective overview. *Biological Psychiatry, 57*. 1215-1220.
- Broadbent, D. (1958). *Perception and Communication*. London: Pergamon press. *Applied Psychology Research Unit, Medical Research Council, Cambridge, England*
- Bosse, M. L., Tainturier, M. J., & Valdois, S. (2007). Developmental dyslexia: The visual attention span deficit hypothesis. *Cognition, 104*(2), 198-230.
- Beard, C., Sawyer, A. T., & Hofmann, S. G. (2012). Efficacy of attention bias modification using threat and appetitive stimuli: A meta-analytic review. *Behavior therapy, 43*(4), 724-740.

- Boothe, R. G., & Springer. Link (Online service). (2002). *Perception of the visual environment*. New York: Springer.
- Bierhoff, H. W. (2012). *Person perception and attribution*. Springer Science & Business Media. ISBN: 978-3-642-74132-6 (Print) 978-3-642-74130-2
- Bodenhausen, G. V., & Hugenberg, K. (2009). Attention, perception, and social cognition. *Social cognition: The basis of human interaction*, 1-22
- Bland, J. M., & Altman, D. G. (1997). Statistics notes: Cronbach's alpha. *Bmj*, 314(7080), 572.
- Busari, A. O. (2012). Identifying difference in perceptions of academic stress and reaction to stressors based on gender among first year university students. *International Journal of Humanities and Social Science*, 2(14), 138-146.
- Brilliant Ads. (2014, Jan 30) .80's in Flight Safety Video -Delta Airlines Online Advert. Retrieved from <https://www.youtube.com/watch?v=zLte6uLMi1g&t=130s>
- Chang, Y. & Liao, M. (2008). Air passenger perceptions on exit row seating and flight safety education. *Safety Science*, 46, 1459–1468
- Chang, Y. & Liao, M. (2009). The effect of aviation safety education on passenger cabin safety awareness. *Safety Science*, 47, 1337–1345
- Chang, Y. & Yang, H. (2011). Cabin safety and emergency evacuation: Passenger experience of flight CI-120 accident. *Accident Analysis and Prevention*, 43, 1049–1055
- Cherry, K. (2016). How Psychologists Define Attention. Retrieved from <http://psychology.about.com/od/cognitivepsychology/f/attention.htm>

- Cherry, E. C. (1953). Some experiments on the recognition of speech, with one and with two ears. *The Journal of the acoustical society of America*, 25(5), 975-979.
- Collet, C., Morel, M., Chapon, A., & Petit, C. (2009). Physiological and behavioral changes associated to the management of secondary tasks while driving. *Applied Ergonomics*, 1041-1046.
- Correa-Chávez, M., & Roberts. (2010). "Cultural patterns in children's learning through keen observation and participation in their communities. *Advances in Child Development*, 209
- Ciccarelli, S. K., & White, J. N. (2015). *Psychology*: (4<sup>th</sup> ed.) Pearson Education.
- Corbett, C. L., McLean, G. A. & Cosper, D. K. (2008). Effective presentation media for passenger safety I: comprehension of briefing card pictorials and pictograms. *Federal Aviation Administration Report*.
- Coren, S. (2003). *Sensation and perception*. (3<sup>th</sup> ed.) John Wiley & Sons, Inc.
- Cohen, R. A. (2014). Cognitive Psychology of Attention: Foundations *The Neuropsychology of Attention* (pp. 19-53): Springer.
- Cowan, N., Rouder, J. N., Blume, C. L., & Saults, J. S. (2012). Models of verbal working memory capacity: what does it take to make them work? *Psychological Review*, 119(3), 480.
- Civil Aviation Safety Authority. (2013). FSA Issue 93-Safety-no laughing matter? *Australian Government*. Retrieved from <https://www.casa.gov.au/standard-page/fsa-issue-93-safety-%E2%80%93-no-laughing-matter-0>

- Deutsch, J., & Deutsch, D. (1963). Attention; Some theoretical considerations. *Psychological Review*, 80-90.
- Delta. (2008, Feb 20). Delta's In-flight Safety Video. Retrieved from [https://www.youtube.com/watch?v=MgpzUo\\_kbFY](https://www.youtube.com/watch?v=MgpzUo_kbFY)
- Franklin, S. (1996). *The sociology of gender*. Edward Elgar. Retrieved from <http://econpapers.repec.org/bookchap/elgeebok/700.htm>
- Flanagan, J. R., & Lederman, S. J. (2001). Neurobiology: Feeling bumps and holes. *Nature*, 412(6845), 389-391.
- Flight Safety Foundation Staff. (2000). Cabin crews must capture passenger's attention in pre-departure safety briefings. *Flight Safety Foundation*, 35(4), 1- 11.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G\* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods*, 39(2), 175-191.
- Fasanya, B. K., McBride, M. E., Pope-Ford, R., & Ntuen, C. (2012). Gender differences in auditory perception and computational divided attention tasks. *Computer Technology and Application*, 3(9).
- Gordon, T., & Burch, N. (2003). *Teacher effectiveness training: The program proven to help teachers bring out the best in students of all ages*. Three Rivers Press (CA).241.
- Goldstein, E. B. (2014). *Cognitive Psychology: Connecting Mind, Research and Everyday Experience*: Cengage Learning.

- Government of Canada; Transport Canada; Civil Aviation. (2013). A *Safety Demonstration Video*. Retrieved from <https://www.tc.gc.ca/eng/air-passengers-safety-tips-safety-on-board-573.htm>
- Gibson, J. J. (2015). *The ecological approach to visual perception: classic edition*. Psychology Press, New York, NY
- Gibson, J. J. (1966). *The Senses Considered as Perceptual Systems*. Lawrence Erlbaum
- Gibson, J. J. (2002). A theory of direct visual perception. *Vision and Mind: selected readings in the philosophy of perception*, 77-90.
- Gravetter, F. J. & Wallnau, L. B. (2013). *Statistics for the Behavioral Sciences*. (9th ed.) Belmont, CA: Wadsworth CENGAGE Learning.
- George, D., & Mallery, M. (2003). *Using SPSS for Windows step by step: a simple guide and reference*.
- Hoang, A. T. (2013). *Impact of humor in advertising on consumer purchase decision*, Master's thesis, Saimaa University of Applied Sciences). Retrieved from [https://www.theseus.fi/bitstream/handle/10024/67417/thesis\\_final%20version\\_Anh%20Hoang.pdf?sequence=1](https://www.theseus.fi/bitstream/handle/10024/67417/thesis_final%20version_Anh%20Hoang.pdf?sequence=1)
- Hoffman, D. D., Singh, M., & Prakash, C. (2015). The interface theory of perception. *Psychonomic Bulletin & Review*, 22(6), 1480-1506. Retrieved from <http://search.proquest.com.ezproxy.libproxy.db.erau.edu/docview/1733897856?accountid=27203>

Hollis, N. (2011). Why funny TV commercials work. *The Atlantic*. Retrieved from [http://www.theatlantic.com/business/archive/2011/10/why-funny-tv-](http://www.theatlantic.com/business/archive/2011/10/why-funny-tv-commercials-work/247117/)

commercials- work/247117/

Hyde, J. S. (2005). The Gender Similarities Hypothesis. *American Psychologist*, Vol. 60, No. 6.

James, W. (1890). *The Principles of Psychology*. New York: Henry Holt and company

Jacobson, L. A., Ryan, M., Martin, R. B., Ewen, J., Mostofsky, S. H., Denckla, M. B., & Mahone, E. M. (2011). Working memory influences processing speed and reading fluency in ADHD. *Child Neuropsychology*, 17(3), 209-224.

Kahneman, D. (1973). *Attention and effort* (p. 246). Englewood Cliffs, NJ: Prentice-Hall.

Keeley, M. N. (2003). *asking the right questions: a guide to critical thinking*. New Jersey: Pearson Prentice hall.

Loven, J., Rehnman, J., & Herlitz, A. (2008). Attention modifies gender differences in face recognition. Paper presented at the, 43(3-4) 503

Lahey, B. B., Pelham, W. E., Loney, J., Kipp, H., Ehrhardt, A., Lee, S. S., ... & Massetti, G. (2015). Three-year predictive validity of DSM-IV attention deficit hyperactivity disorder in children diagnosed at 4–6 years of age. *American Journal of Psychiatry*.



- Lachter, J., Forster, K. I., & Ruthruff, E. (2004). Forty-five years after Broadbent (1958): still no identification without attention. *Psychological review*, *111*(4), 880.
- Laerd statistics. (n.d.). Determining if you have outliers based on residuals. Retrieved from <https://statistics.laerd.com/premium/spss/twrma/two-way-repeated-measures-anova-in-spss-9.php>
- Madden, T. J. & Weinberger, M. G. (1982). The effects of humor on attention in magazine advertising. *Journal of Advertising*, *11*(3), 8-14.
- Marwala, T. (2014). Filtering Irrelevant Information for Rational Decision Making *Artificial Intelligence Techniques for Rational Decision Making* (pp. 111-130): Springer.
- Mahone, E. M. (2011). Working memory influences processing speed and reading fluency in ADHD. *Child Neuropsychol*, *17*(3), 209-224.
- Mole, C., Smithies, D., & Wu, W. (2011). *Attention: Philosophical and psychological essays*. New York: Oxford University Press.
- McWilliams, K. (2014). Humans now have less attention span than goldfish. *University Wire*. Retrieved from <http://search.proquest.com.portal.lib.FloridaTech.edu/docview/1651888934?accountid=27313>
- McKelvie, S. J. (1981). Sex differences in memory for faces. *Journal of Psychology: Interdisciplinary and Applied*, *107*, 109-125.

- Montana State University (n.d.). Tests for Homogeneity of Variance -  
math.montana.edu. Retrieved from  
<http://www.math.montana.edu/jobost541/sec2e.pdf>
- Montgomery DC (2001) Design and Analysis of Experiments (5th ed.) John Wiley  
& Sons Inc., New York
- Norman, D. (2008). Toward a theory of memory and Attention. *Psychological Review*, 229-564.
- Nyberg, L. (2009). Kognitiv neurovetenskap: Studier av sambandet mellan  
hjärnaktivitet och mentala processer. Lund: Studentlitteratur. Retrieved  
from [http://umu.diva-  
portal.org/smash/record.jsf?pid=diva2%3A409240&dswid=4312](http://umu.diva-portal.org/smash/record.jsf?pid=diva2%3A409240&dswid=4312)
- Owens, E. B., & Hinshaw, S. P. (2016). Childhood conduct problems and young  
adult outcomes among women with childhood attention-  
deficit/hyperactivity disorder (ADHD). *Journal of Abnormal Psychology*,  
125(2), 220.
- Ozturk, G. (2014). *Handbook of research on the impact of culture and society on  
the entertainment industry*. Hershey, PA: Information Science Reference.
- Pilieci, V. (2015). Your attention span now less than goldfish's. *The Ottawa Citizen*  
.Retrieved form  
[http://search.proquest.com.ezproxy.libproxy.db.erau.edu/docview/16806524  
18?accountid=27203](http://search.proquest.com.ezproxy.libproxy.db.erau.edu/docview/1680652418?accountid=27203)

- Parker, A. (2006). Public attitudes, perceptions and behaviours towards cabin safety communication (Research and Analysis Rep. No. B2004/0238). *Canberra, Australia: Australian Transport Safety Bureau.*
- Rehman, J. & Herlitz, A. (2006). Her face recognition ability in girls: magnified by own sex and own ethnicity biased. *Memory, 14*(3), 289-296.
- Riechard, D. E. & Peterson, S. J. (1998). Perception of environmental risk related to gender, community, socioeconomic setting, age, and locus of control. *The Journal of environmental education, 30*(1), 11-19.
- Ruenruoy, R. (2015). Passengers perceptions of the safety demonstration on board an aircraft. Master's thesis, Middle Tennessee State University, Tennessee.
- Sabri, O. (2012). Taboo advertising: can humor help to attract attention and enhance recall? *Journal of Marketing Theory and Practice, 20*(4), 407-422.
- Stuck, M., Holland, R. W., Van Baaren, R. & Knippenberg, V. (2010). Humor in the eye tracker: attention capture and distraction from context cues. *The Journal of General Psychology, 137*(1), 37-48.
- Snow, C.C., Carroll, J.J., Allgood, M.A. (1970). *Survival in emergency escape from passenger aircraft*. Technical Report, DOT/FAA/AM-70/12
- Salvucci, D. D., & Taatgen, N. (2008). Threaded cognition: An integrated theory of concurrent multitasking. *Psychological Review, 101*–30. Accounting classroom. *Journal of Accounting and Finance Research, 7*(3), 15-23.
- Seeber, K. G. (2011). Cognitive load in simultaneous interpreting: Existing theories—new mo

- Sekuler, R., & Blake, R. (1994). *Perception* (3rd ed.). New York: McGraw-Hill.
- dels. *Interpreting*, 13(2), 176-204.
- Sullivan, G. M., & Artino, A. R. (2013). Analyzing and Interpreting Data from Likert-Type Scales. *Journal of Graduate Medical Education*, 5(4), 541–542. Retrieved from <http://doi.org/10.4300/JGME-5-4-18>
- Treisman, A. (1964). Selective Attention in Man. *British medical Bulletin*, 20(1), 12-16 .
- Treisman, A. (2014). The psychological reality of levels of processing. *Levels of processing in human memory*, 301-330.
- Tehrani, M. & Molesworth, B. R. C. (2015). Preflight safety briefings, mood and information retention. *Applied Ergonomics*, 51, 377-382.
- Teleb, A. A., & Al Awamleh, A. A. (2012). Gender Differences in Cognitive Abilites. *Current Research in Psychology*, 3(1), 33.
- Upadhayay, N., & Guragain, S. (2014). Comparison of cognitive functions between male and female medical students: a pilot study. *J Clin Diagn Res*, 8(6).
- Weinberger, M. G. & Gulas, C. (1992). The impact of humor in advertising: a review. *Journal of Advertising*, 21(4), 35-59.
- Wanzer, M. B., Frymier, A. B., & Irwin, J. (2010). An explanation of the relationship between instructor humor and student learning: Instructional humor processing theory. *Communication Education*, 59(1), 1-18. Doi: 10.1080/03634520903367238

- Wanzer, M. B., & Frymier, A. B. (1999). The relationship between student perceptions of instructor humor and students' reports of learning. *Communication Education, 48*(1), 48-62. doi:10.1080/03634529909379152
- Wu, J., Xiao, H., Sun, H., Zou, L., & Zhu, L.-Q. (2012). Role of dopamine receptors in ADHD: a systematic meta-analysis. *Molecular neurobiology, 45*(3), 605-620.
- Wickens, C. D., Hollands, J. G., Banbury, S., & Parasuraman, R. (2015). *Engineering psychology & human performance*. Psychology Press.
- Wells, V. K., & Foxall, G. R. (2012). *Handbook of developments in consumer behavior*. Cheltenham: Edward Elgar.
- Walker, K. (2016). Editorial: Onboard safety videos need to change the script. *Air Transportation World*. Retrieved from [http://m.atwonline.com/safety/editorial-onboard-safety-videos-need-change-script? NL=AW-05&Issue=AW-05\\_20160823\\_AW-05\\_156&sfvc4enews=42&cl=article\\_5&utm\\_rid=CPEN1000000404038&utm\\_campaign=6780&utm\\_medium=email&elq2=3cff5458d552403cb856602777cd1883](http://m.atwonline.com/safety/editorial-onboard-safety-videos-need-change-script?NL=AW-05&Issue=AW-05_20160823_AW-05_156&sfvc4enews=42&cl=article_5&utm_rid=CPEN1000000404038&utm_campaign=6780&utm_medium=email&elq2=3cff5458d552403cb856602777cd1883)
- Ziv, A. (1988). Teaching and learning with humor: Experiment and replication. *The Journal of Experimental Education, 57*(1), 4-15.
- Zar, J. H. (1996). *Biostatistical Analysis* (3rd ed.). Upper Saddle River, NJ: Prentice-Hall, p. 128 for references and specifics.

## Appendix A

Dear participants, thank you so much for joining in this research “The Comparison of Airline Passengers’ Perception and Attention Toward Onboard Safety Briefing Video Presentations.” During this study, no human will be subjected to any physical test procedure. You have the right to withdraw from the study at any time you want. You have the right to decline participation in the experiment study if you want. Please do not hesitate to email Dr. Scott Winter if you have any questions regarding this study at [swinter@Florida Tech.edu](mailto:swinter@Florida Tech.edu) or email Mr. Yousef Aba Alkhail at [yabaalkhail2015@my.Florida Tech.edu](mailto:yabaalkhail2015@my.Florida Tech.edu)

1. The safety briefing video helped me understand the safety instructions.
  - a) Strongly agree
  - b) Agree
  - c) Neutral
  - d) Disagree
  - e) Strongly disagree
2. The video makes me attentive.
  - a) Strongly agree
  - b) Agree
  - c) Neutral
  - d) Disagree
  - e) Strongly disagree

3. After watching the safety briefing video, I can easily explain to others how to use the safety equipment, such as oxygen mask, seat belt, and life jacket.
  - a) Strongly agree
  - b) Agree
  - c) Neutral
  - d) Disagree
  - e) Strongly disagree
4. The design of the video peaked my interest.
  - a) Strongly agree
  - b) Agree
  - c) Neutral
  - d) Disagree
  - e) Strongly disagree
5. The video was clear and audible for me to comprehend.
  - a) Strongly agree
  - b) Agree
  - c) Neutral
  - d) Disagree
  - e) Strongly disagree

6. If this video is played in actual flight, it would help the passengers understand the safety briefing.

- a) Strongly agree
- b) Agree
- c) Neutral
- d) Disagree
- e) Strongly disagree



## Appendix B

**Please answer all questions from the information provided in the video:**

- 1- Who led the safety demonstration in this video?
  - a) Male
  - b) Female
  
- 2- When can you use your electronic devices onboard?
  - a) Before the take off
  - b) After take off
  - c) As long as all cellular functions are disabled
  
- 3- If you are seated in the emergency exit, what are you required to do?
  - a) Review the responsibilities for the emergency exit.
  - b) Change your seat.
  - c) Ask the flight attendant for information.
  
- 4- If you are not able to perform the emergency functions, what should you do?
  - a) Ask the flight attendant to change your seat.
  - b) Stay in your seat with no objection.
  
- 5- When should you fasten your seat belt?
  - a) After taking off
  - b) When the seat belt sign is on
  - c) All times when during the flight time
  - d) B and C
  
- 6- How many emergency exits on the aircraft?
  - a) 8
  - b) 7
  - c) 6
  - d) 4
  - e) 2

7-Where are emergency exits on the aircraft located?

- a) Two over the wings and four in each side of the aircraft
- b) Two over the wings and two in each side of the aircraft
- c) Four over the wings and two in each side of the aircraft
- d) Four over the wings and four in each side of the aircraft

8- Which company is the airplane for?

- a) American Airlines
- b) Delta
- c) United
- d) Jet Blue

9- What type of the aircraft is in the video?

- a) B777
- b) B737
- c) A380
- d) A337

10- What should you do in case of the emergency egress?

- a) Look for the nearest exit.
- b) Wait for instructions.
- c) Look for the exit in the back of the airplane.

11- Where is the adult life jacket located in economy class?

- a) Under the seat
- b) On the seat bucket
- c) Between the seats
- d) In cabin baggage

12- What is the color of the life jacket for passengers?

- a) Red
- b) White
- c) Green
- d) Yellow

## **Appendix C**

Demographic data. Please answer the following questions:

**Age:**

**Gender:**

- a) Male
- b) Female

**Level of education:**

- a) High school
- b) Associate degree
- c) Undergraduate
- d) Graduate

**Number of times of travel by aircraft in the last year:**

**How many flights a year in the last 5 years?**

**What is your major?**

**Where are you from?**

**Ethnicity:**

- a) White
- b) Asian
- c) African American
- d) Latino
- e) Other

## Appendix D

Table 2

Analysis of Variance Table for Perception

| Source              | Type III of               | Type III of   |              |               |             |             |             |
|---------------------|---------------------------|---------------|--------------|---------------|-------------|-------------|-------------|
|                     |                           | Squares       | df           | MS            | F           | P           | $\eta^2$    |
| <b>Perception</b>   | Sphericity Assumed        | .816          | 1            | .816          | 3.345       | .073        | .062        |
|                     | Greenhouse-Geosser        | .816          | 1.000        | .816          | 3.345       | .073        | .062        |
|                     | Huynh-Feldt               | .816          | 1.000        | .816          | 3.345       | .073        | .062        |
|                     | Lower-bound               | .816          | 1.000        | .816          | 3.34        | .073        | .062        |
| <b>Perception*</b>  | <b>Sphericity Assumed</b> | <b>.206</b>   | <b>1</b>     | <b>.206</b>   | <b>.843</b> | <b>.363</b> | <b>.016</b> |
| <b>Gender</b>       | <b>Greenhouse-Geosser</b> | <b>.206</b>   | <b>1.000</b> | <b>.206</b>   | <b>.843</b> | <b>.363</b> | <b>.016</b> |
|                     | <b>Huynh-Feldt</b>        | <b>.206</b>   | <b>1.000</b> | <b>.206</b>   | <b>.843</b> | <b>.363</b> | <b>.016</b> |
|                     | <b>Lower-bound</b>        | <b>.206</b>   | <b>1.000</b> | <b>.206</b>   | <b>.843</b> | <b>.363</b> | <b>.016</b> |
| <b>Error</b>        | <b>Sphericity Assumed</b> | <b>12.438</b> |              | <b>51</b>     | <b>.244</b> |             |             |
| <b>(Perception)</b> | <b>Greenhouse-Geosser</b> | <b>12.438</b> |              | <b>51.000</b> | <b>.244</b> |             |             |
|                     | <b>Huynh-Feldt</b>        | <b>12.438</b> |              | <b>51.000</b> |             |             |             |
|                     | <b>Lower-bound</b>        | <b>12.438</b> |              | <b>51.000</b> |             |             |             |

Table 2. Tests of Within-Subjects effects was showed to see the difference in perception between gender.

Table 3

*Analysis of Variance Table for Perception*

| Source             |                                       | Type III of Squares       | df            | MS           | F            |             | P           |
|--------------------|---------------------------------------|---------------------------|---------------|--------------|--------------|-------------|-------------|
| $\eta^2$           |                                       |                           |               |              |              |             |             |
| <b>Attention</b>   | Sphericity Assumed                    | 3.386                     | 1             | 3.386        | 2.541        | .117        | .047        |
|                    | Greenhouse-Geosser                    | 3.386                     | 1.000         | 3.386        | 2.541        | .117        | .047        |
|                    | Huynh-Feldt                           | 3.386                     | 1.000         | 3.386        | 2,541        | .117        | .047        |
|                    | Lower-bound                           | 3.386                     | 1.000         | 3.386        | 2.541        | .117        | .047        |
| <b>Perception*</b> | <b>Sphericity Assumed</b>             | <b>.669</b>               | <b>1</b>      | <b>.699</b>  | <b>.502</b>  | <b>.482</b> | <b>.010</b> |
|                    | <b>Greenhouse-Geosser</b>             | <b>.669</b>               | <b>1.000</b>  | <b>.699</b>  | <b>.502</b>  | <b>.482</b> | <b>.010</b> |
|                    | <b>Huynh-Feldt</b>                    | <b>.669</b>               | <b>1.000</b>  | <b>.699</b>  | <b>.502</b>  | <b>.482</b> | <b>.010</b> |
| <b>Gender</b>      | <b>Lower-bound</b>                    | <b>.669</b>               | <b>1.000</b>  | <b>.699</b>  | <b>.502</b>  | <b>.482</b> | <b>.010</b> |
|                    | <b>Error</b>                          | <b>Sphericity Assumed</b> | <b>67.954</b> | <b>51</b>    | <b>1.332</b> |             |             |
|                    | <b>(Attention) Greenhouse-Geosser</b> | <b>67.954</b>             | <b>51.000</b> | <b>1.332</b> |              |             |             |
|                    | <b>Huynh-Feldt</b>                    | <b>67.954</b>             | <b>51.000</b> |              |              |             |             |
|                    | <b>Lower-bound</b>                    | <b>67.954</b>             | <b>51.000</b> |              |              |             |             |

Table 3. Tests of Within-Subjects effects was showed to see the difference in attention between gender.

Table 5

*Analysis of Variance Table for Perception*

| Source                | SS      | df  | MS      | F        | $\eta^2$ | p    |
|-----------------------|---------|-----|---------|----------|----------|------|
| Corrected Model       | 74.046  | 3   | 24.682  | 92.171   | .000     | .594 |
| Intercept             | 508.584 | 1   | 508.584 | 1899.248 | .000     | .909 |
| Gender                | .039    | 1   | .039    | .145     | .704     | .001 |
| Type of Video         | 73.799  | 1   | 73.799  | 275.592  | .000     | .593 |
| Gender *Type of Video | .063    | 1   | .063    | .234     | .629     | .001 |
| Error                 | 50.611  | 189 | 268     |          |          |      |
| Total                 | 615.329 | 193 |         |          |          |      |
| Corrected Total       | 124.656 | 192 |         |          |          |      |

Table 5. Tests of between-Subjects effects was showed to see the difference in perception between gender.

Table 6

Analysis of Variance Table for Attention

| Source                | SS        | df  | MS        | F        | $\eta^2$ | p    |
|-----------------------|-----------|-----|-----------|----------|----------|------|
| Corrected Model       | 11.487    | 3   | 3.829     | 1.737    | .161     | .027 |
| Intercept             | 15729.858 | 1   | 15729.858 | 7135.559 | .000     | .974 |
| Gender                | .014      | 1   | .014      | .006     | .937     | .000 |
| Type of Video         | 9.782     | 1   | 9.782     | 4.437    | .036     | .023 |
| Gender *Type of Video | 1.504     | 1   | 1.504     | .682     | .410     | .004 |
| Error                 | 416.638   | 189 | 2.204     |          |          |      |
| Total                 | 16296.000 | 193 |           |          |          |      |
| Corrected Total       | 428.124   | 192 |           |          |          |      |

## Appendix E

### Flight safety videos

- A humorous safety briefing video

Brilliant Ads. (2014, Jan 30) .80's in Flight Safety Video -Delta Airlines Online

Advert. Retrieved from

<https://www.youtube.com/watch?v=zLte6uLMi1g&t=130s>

- A traditional safety briefing video

Delta. (2008, Feb 20). Delta's In-flight Safety Video. Retrieved from

[https://www.youtube.com/watch?v=MgpzUo\\_kbFY](https://www.youtube.com/watch?v=MgpzUo_kbFY)