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Master's Thesis

The Effect of Perceived Realism on User Acceptance
in the In-Flight Safety Videos

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2024

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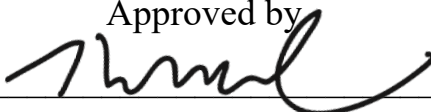
The Effect of Perceived Realism on User Acceptance in the In-Flight Safety Videos

A thesis/dissertation submitted to
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Master of Science

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01 / 15 / 2024

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The Effect of Perceived Realism on User Acceptance in In-Flight Safety Videos

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Abstract

Although plane accidents have significantly decreased since the emergence of the Federal Aviation Administration (FAA) in the 1970s, 1,500 people still die in plane crashes every year, 900 in fatal accidents with a survival rate of less than 1 percent, and 600 in ‘practically survivable’ accidents. Of those, 330 died from direct cause of impact, and 270 died as a result of smoke, toxic substances, or failure to evacuate. Even if the proportion of death rate due to the delay in evacuation is comparably smaller than the other factors, there is no doubt that it still brings fatal consequences for passengers. Several accident reports indicate that people show various behavioral patterns due to psychological anxiety about having to evacuate, which disrupts them from evacuation. In another report, only half of those who watched the airline safety information video remembered the content, and only 3 percent could pull out a life jacket and wear it. Thus, it is crucial to effectively convey the information of the safety information video, which currently seems like it is not working so efficiently. As a solution, to make people pay attention to the video and at the same time to promote their brand, airline companies have been adding entertaining elements in their safety videos, which might positively affect people's mood but negatively on delivery information, according to the prior studies that were practiced in the department of aviation.

However, these studies on aviation videos tend to only use individual elements as a factor of entertainment – which in media communication defines there is more than one cause when the media entertain people. The narrative, ability to relate to characters, use of images, aesthetics, editing techniques, etc. all influence entertainment, thus this study attempts to explore aviation videos and the effect of entertainment, which the cause of it is inclusively defined here as perceived realism, to the viewer when they intake the information. The study was conducted through an online survey, and three questions related to affectional acceptance – preference, interest, and brand awareness, and three related to informational acceptance – information delivery, amount of information, and memorability of information, were asked on a 5-point Likert scale for the measure. The average means were pulled out for the highest scores, according to the total numbers of 107 participants, gender groups, and age groups. The numbers were also statistically analyzed using SPSS to see if there were any significant differences between groups. The result implies that the realism of context was directly related to the cause of entertainment rather than the realism of images, and both affectional and informational acceptance were higher when the video was filmed in live action rather than when it was 2D animated. The result was irrelevant to the gender but there were significant differences in the age groups. The implications are discussed further in the section.

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Terms and Abbreviations

AAIB	Air Accident Investigation Branch
FAA	Federal Aviation Administration
NTSB	National Transportation Safety Board

I. INTRODUCTION

1.1. The Evolution of Airline Safety Videos

In the 1980s - ever since the introduction of the built-in screens in airplane cabin seats, the history of in-flight safety video has begun. Initially, this video was kept in the form of a flight attendant standing in an aisle hitting the mandated key safety points of Federal Aviation Administration (FAA) regulations for a very long time, then finally fell into the transition in 2007. Richard Branson, an aviation entrepreneur, utilized aviation videos to promote the brand identity of Virgin America Airlines with the slogan – “Make flying good again” which resulted in creating the first fully animated in-flight safety video with vigorous humor and jokes. Then followed by Delta Airlines' 2008 safety video which went viral online reaching 300,000 views in a single month, the fame reached out to the entire business recognizing the opportunity and amount of possibility that the safety videos could be used as a tool to visualize the brand and make an appeal to the people. It resulted in the transformation of airline videos into diversity. For example, Qatar Airlines invited sports celebrities in their safety videos, New Zealand Airlines made theirs into a parody of a popular film – Lord of the Rings -, and Virgin America Airlines created a musical video in which flight attendants dance and sing out the key safety points to be delivered to the passengers (Vyte Klisauskaite, 2023).

There are a few reasons why airline businesses choose to make their safety videos go through such changes. One is the strict regulations that are put on to the industry, due to how strongly the FAA considers safety issues, airline companies could only make little changes to their services to promote their brands. Certainly, the companies saw the safety videos as an opportunity to communicate with the consumers better without violating any regulations, attempting to appeal to their brand identity. And to do so it was inevitable to add commercial characteristics and marketing techniques to the videos. (New York Magazine, 2019); (ALNNEWS, 2017); The other is that the research shows that if the passengers get to engage more in the safety videos, they will better remember the safety instructions (Tehrani & Molesworth, 2015).

1.2. The Importance of Airline Safety Videos

Then why are these briefings so important - Though along with the birth of the FAA which began operation in 1967, (FAA, 2021) the fatal air accident rates had fallen dramatically up until 1970 (ETSC, 1996), there is some portion of death that are caused in the process of evacuation. According to the European Transport Council(ETSC, 1996), 90 percent of aircraft accidents can be categorized as ‘survivable’ or ‘technically survivable’. When about 1500 people die each year in aircraft accidents, 900 die in fatal crashes which has less than one percent of the survival rate, the other 600 die in ‘technically survivable accidents’, and among those 330 die as a direct result of the impact, and 270 due to the effects of smoke, toxic fumes, heat, and resulting evacuation problems. Galea (2003) states that the following are the variations of human reactions when they were put into a situation where evacuation is needed, according to the studies and lab experiments:

- **Situational Disorientation:** the passenger may remain seated in disbelief for a brief period
- **Anxiety behaviors:** when placed in unusual and high-risk situations it can become increasingly difficult to deliver peak performance and even simple tasks such as releasing the seat restraint may be difficult.
- **Social bonding behaviors:** passengers will attempt to reunite with separated traveling companions.
- **Affiliative behavior:** this can manifest itself as passenger movement towards the familiar, most commonly displayed as passengers collecting carry-on luggage and valuables before evacuating.
- **Fear flight behavior:** passengers immediately unbuckle their seat restraints and flee.
- **Physiological disorientation:** In conditions of post-crash fire, passengers may be unable to locate exits due to smoke-induced loss of visibility followed by intoxication effects brought on by inhalation of narcotic fire gases.
- **Altruistic behavior:** even under very severe conditions, passengers may attempt to assist fellow passengers, even at the risk of exposing themselves to potentially life-threatening situations
- **Behavioral inaction:** some passengers may remain frozen on the spot unable to move;
- **Panic:** this is an irrational, asocial, and potentially destructive behavior such as fighting with fellow passengers.

These behaviors may disrupt the evacuation process in the accident; the British Air Accident Investigation Branch (AAIB) reports that the passengers were hindered from evacuation due to actions they were asked to avoid in safety guidance videos during the evacuation process (AAIB, 2013). The devastating Japanese jet crash which happened on January 2nd, 2024, was evaluated as a ‘textbook evacuation’ according to Alex Macheras, an aviation analyst, as all the passengers with the crews in the cabin were able to survive through a quick evacuation. He states in the interview with BBC(2024), that ‘passengers can slow things down in panic – for example by trying to grab their bags from lockers’, and broadcasts estimate the reason why everyone could survive in the accident was the fact that no one tried to carry or go back for their luggage which enabled fast proceed of evacuation. Thus, safety videos must deliver the information as effectively as possible, as faster evacuation is crucial to protect passengers from being exposed to further danger that might lead to any fatal harm.

The regulations set up by the Federal Aviation Administration guide that briefings should be done orally or in the form of video presentation, and only deliver the information that is necessary to the safety. For example, commercial advertisements and promotions should not be included in the video and the safety information briefing scripts since it is irrelevant to safety. **Table 1** clarifies what is mandated to be included in the safety briefings. (FAA, 2019)

Table 1 FAA Regulations for Mandated Information in Passenger Safety Briefings

No.	Title	Content
1	Compliance With Signs and Placards	The safety information briefing must include a statement that the FAA’s regulations require passenger compliance with the lighted passenger information signs, posted placards, and instructions for crew members.
2	Smoking	The safety information briefing must also include when, where, and under what conditions smoking is prohibited.
3	Seatbelts	F/As or other appropriate crewmembers must brief passengers on the method of fastening, tightening, and unfastening seatbelts.
4	Exits	F/As or other appropriate crewmembers must brief passengers on the location of emergency exits.
5	Individual Floatation Equipment	F/As or other appropriate crewmembers must brief passengers on the type, location, and use of required flotation equipment.
6	Exit Seating	In response to NTSB Safety Recommendation A-00-077 regarding a passenger occupying exit seating, the FAA strongly encourages air

		carriers to require crewmembers to provide a preflight personal briefing to each passenger seated in an exit seat.
7	Passengers needing Assistance	A F/A or other appropriate crewmembers must individually brief a passenger who may need assistance moving expeditiously to an exit.
8	Floor Proximity Emergency Lighting	An F/A should inform passengers that emergency lights are located at aisle armrests (if applicable), on or near the floor of the aircraft to guide them to an emergency exit.
9	Portable Electronic Devices	Passengers' education should include company policy regarding the expanded use of PEDs, with permissible times, conditions, and limitations when various PEDs may be used.
10	Oxygen Equipment Including Passengers Using Oxygen Therapy.	Before reaching 25,000 feet, F/As or other appropriate crewmembers must demonstrate the use of oxygen equipment including locating, donning, and adjusting the equipment; any action that might be necessary to start the flow of oxygen; and the prohibition against smoking during oxygen use. P
11	Supplemental Information	Passengers shall be briefed regarding safety information briefing cards and additional safety actions.
12	Extended Overwater Operations.	If the flight involves extended overwater operations, F/As or other appropriate crewmembers must brief passengers before the overwater portion of the flight begins.

Though it seems important to pay attention to the safety videos for understanding and remembering these instructions, they are not delivered efficiently or neglected; The U.S. Federal Transportation Safety Board stated that passengers remembered only 50 percent of the instructions during the safety guidance briefing, and only 3 percent of the passengers succeeded in finding life jackets. (NTSB,2000).

1.3. Airline Videos and Experiences

Several studies were done to explore the effect of airline safety videos. This research seems to have started by highlighting the importance of giving an informative presentation to the passengers (Johnson et al., 1975) and then moved on to comparing the media that were used to deliver safety keys such as cards and videos, with the findings that comprehensions for safety briefing cards were low (Caird et al., 1997) and that the videos were more effective than using cards (Chittaro, 2017). Then the rise of the entertainment value in airline safety videos affected the direction of these researches towards looking over the effect of humor on information delivery. Molesworth pulled out multiple results on such, exploring the relationship between entertainment factors mood and retention, with some valuable statements that entertainment positively affects mood but negatively on retention. (Molesworth, 2014; Ragan et al., 2017; Tehrani & Molesworth, 2015)

However, though some of the research does cover the variations of safety videos, they tend to define entertainment only on a limited scale, such as visual or auditory humor and pleasure from viewing celebrities. Not a lot of studies seem to approach this dimension with the definition of entertainment in media communication, thus it could suggest some different insights if the extended definition of entertainment was used to measure its effect on the viewers when watching the inflight safety videos. This paper attempts to define the extended entertainment element as perceived realism and then explore the effect on the viewers regarding information and affection. Thus the research question is suggested as follows:

Will perceived realism affect the viewer's acceptance of airline safety videos?

II. LITERATURE REVIEW

2.1. Elements of Entertainment in Media Communications

This section is about how broader fields of media communication interpret entertainment in videos and argue on how diverse elements there are in videos that cause entertainment to the viewers. Several studies in communication have stated that the cause of entertainment is multidimensional and complex, Vorderer et al., (2004) emphasize the complexity of entertainment, and that in media not only the technology, the aesthetics, and interaction with user characteristics but also the content of the media product and how it is presented affects the entertainment experience. García-Avilés & de Lara, (2018) explore the cause of entertainment specifically in informative videos and define four dimensions of entertainment – story, images, personalization, and humor. Postman (1985) argued that entertainment is not simply a feature of television but the principle frame that defines all its content and by extension reality itself, claiming through the medium ‘all subject matter is presented as entertaining’.

If entertainment cannot be defined only as humor, or a preference towards celebrities, how should this be approached to understand the effect of entertainment on the safety videos in terms of delivering information? One big difference between the common type of traditional safety videos and those with high entertainment value is that elements such as narrative, story, exaggeration, and aesthetics are added, not just the safety keys, which creates the perception of unreal, thus people feel entertained by the media. The following section explains the perceived realism and why people are entertained by such features.

2.2. Perceived Realism

2.2.1. Definition

The term perceived realism is defined in the Dictionary of Media and Communication published by Oxford University Press: How real something is perceived as being and the criteria used to evaluate this: e.g. about television, whether it involves actors, whether it is a cartoon, etc (Chandler & Munday, 2016). Also as (Gerbner & Gross, 1976) define, perceived realism is the audience’s judgment of the degree to which the narrative world is reflective of the real world. The early studies on perceived realism were mainly on exploring the relationship between the realism in the violent content and the aggression in children.(Atkin, 1983; Barlett & Rodeheffer, 2009; Chaney, 1970; Gerbner & Gross, 1976; Potter et al., 1995) Then these studies continued defining perceived realism and its conceptual structure. The overall studies on perceived realism only explore contextual aspects – but as Sunhea Ham & Sohye Lim (2009) argue the development of the technology of image making such as 3D computer graphics

emphasized the importance of evaluating the effect of representative realism on its own, we would also like to separate physical characteristics of realism in media within the defined dimension of perceived realism.

2.2.2. Dimensions of Realism

With the widespread use of television and recognition of the state of realism in television and media, researchers have long tried to define the dimension of realism and its measurement but had little agreement on them. There were more than 10 dimensions that were suggested at the time until Busselle & Greenberg (2000) reevaluated them to 6. Then, A. Hall (2003) and Cho et al., (2014) again evaluated and reconciled the varied approaches by investigating how audiences conceptualize media realism. The following are defined dimensions of realism:

Perceived Plausibility: a fundamental requirement of perceived realism, refers to the degree to which narrative presentations of behaviors and events could occur in the real world.

Perceived Typicality: the degree to which narrative portrayals appear to fall within the parameter of the audience's past and present experiences.

Perceived Factuality: the degree to which a narrative is perceived to portray a specific individual or event in the real world, sometimes viewed as representative of realism. (Cho et al., 2014)

Involvement: potential for the audience to become involved with or to relate to media characters

Perceived Narrative Consistency: to which a story and its elements are judged to be congruent and coherent, and without contradictions.

Perceived Perceptual Quality: the degree to which the audio, visual, and other manufactured elements of media narrative comprise a convincing and compelling portrayal of reality, independent of the consideration of whether the content of the narrative is related or relevant to the audience's real-world experience.

While plausibility, typicality, factuality, involvement, and narrative consistency closely relate to the contextual aspects of realism, perceptual quality affects the viewer in a physical form, which could be separated from the cognitive perception of realism to the sensory perception of realism. As stated, in the evolution of image-making techniques, from 2D animation to 3D and even towards virtual reality, realism in this dimension has been studied on its own, actively. (B. K. Kim et al., 2019; van Leeuwen et al., 2013; Xue et al., 2012) Thus, this paper also examines the effect of realism from the depiction of images and separated perceptual quality and then defines it as representative realism.

Representative Realism, also known as representationalism, is a philosophical perspective on perception in which the mind is argued to apprehend objective material reality through internal mental

representations constructed from immediate sense data from which the corresponding existence of objects in the physical world can be inferred (Chandler & Munday, 2016). Multiple elements affect representative realism, mainly caused by the sensory stimuli. Specifically, the realism of images or videos is defined by the depiction, the differences between drawings, volume, color, editing, etc. (Sunhea Ham & Sohye Lim, 2009) For example, Pouliot & Cowen (2007) states that the adjustment or control to the camera movement or sound making may affect the sense of realism.

2.3. Relevance Between Entertainment and Perceived Realism

Then how are perceived realism and entertainment related? There are similarities between the quality of contextual realism and the occurrence of the entertainment experience. According to Vorderer et al., (2004), the prerequisites for entertainment in media are a *sense of disbelief*, that the user needs to perceive the events described in the narrative as if they were “real”, despite obviously “unreal” and that any doubts about the realism of the fiction, therefore, immediately prevent the entertainment experience. *Empathy towards characters*, along with the *capability and desire to relate to characters*, is caused by an involvement in perceived realism, Zillmann (1994) states that empathic reactions are linked to positive affective dispositions and counter empathic reactions to negative affective dispositions. *User’s sense of being transported to the site of the action*, which also relates to the ability to empathize, and lastly, *interest in specific topics*. As such the research on the cause of entertainment aligns with the dimensions of perceived realism.

Some researchers directly investigated the relationship between perceived realism and entertainment. Van Leeuwen et al., (2013) studied the responses of adolescents on perceived realism and enjoyment of televised entertainment education and related narrative realism to the enjoyment. A. E. Hall & Bracken, (2011) stated that narrative transportation was found to be associated with enjoyment and perceived realism in the experience of watching narrative films. Also, the realism in images may affect entertainment. For example, Postman (1986) states that even the simplest of camera techniques such as representing a scene with shots from several points of view, introduces an entertainment dimension, which is relatable to Pouliot & Cowen’s (2007) statement on the editing skills affecting the sense of realism. Darley (2003) states that the strategies of using 3D – contemporary aesthetics that tend to eclipse the real content promote in its place the fascination with the spectacle and the form of science. Overall, the fictional state of media has a relation to realism and causes entertainment from the users.

2.4. Summary

To summarize, though multiple researches were done on safety videos to explore their effect on passengers taking information with their entertainment value, prior studies only used limited factors of entertainment rather than as a whole. As media communication defines, the cause of entertainment is complex, could be anything that exists inside the frame, images, sound, narrative, etc. As Vorderer et al., (2004) suggest some requirements for the occurrence of entertainment, have a close relationship to perceived realism, and thus this study uses dimensions of perceived realism as a factor of entertainment.

The dimensions of perceived realism are divided into two, contextual and representative realism, as the development of technology in image-making emphasizes the importance of evaluating the physical quality of realism. Contextual realism is about how close the narrative of the content is to perceived reality. Representative realism is about how close the depicted image is to perceived reality. **Table 2** shows the summary of perceived realism, and compares the two dimensions that were defined.

Table 2. Summary of Perceived Realism

Perceived Realism		
	Contextual Realism	Representative Realism
Definition	How observed context and events in the media feel realistic and similar to the real world.	How observed images in the media feel realistic or similar to the real world
Dimensions	Plausibility Typicality Factuality Involvement Narrative Consistency	Perceptual Quality
Cause	Narrative, Story	Drawings (Line, volume, color, shades)

III. METHOD

This study aims to explore the effect of perceived realism on user acceptance, specifically how the viewer accepts the video according to contextual and representative realism to evaluate the affection and information of the airline safety videos.

RQ. To what extent will perceived realism affect the viewer on their user acceptance of airline safety videos?

Though the terminology user acceptance is defined as a personal attitudinal implication affecting people's choice to perform or not to perform a specific behavior (Technology & Morris, 1996), in this paper - for operational definition, we would like to define *acceptance* as how the viewer takes the input or stimuli processes the information or emotion and evaluates the input with their perception. Since the purpose of this study is to find out whether the perceived realism - the cause of entertainment - affects the viewer negatively or positively in processing the information, we separated acceptance into two dimensions: affectional and informational. Affectional acceptance could represent delivery in marketing techniques applied to the video and its effect on how people subjectively and emotionally intake the video such as in the brand image, preferences, and interest, whereas informational acceptance represents how successful the informational message, in this study, refers to FAA guidelines, affected users to utilize the given information.

To answer the research question, the hypothesis is defined: if contextual and representative realism in the video is highly relatable and evaluated as an event that could happen or exist in real life, it will affect the informational acceptance of the users. If contextual and representative realism in the video is highly unrelatable and evaluated as an event that could not happen or exist in real life, it will affect the affectional acceptance of the users. Following are the hypothesis questions.

H1. Contextual realism will affect the affectional acceptance of the users.

H2. Contextual realism will affect the informational acceptance of the users.

H3. Representative realism will affect the affectional acceptance of the users.

H4. Representative realism will affect the informational acceptance of the users.

To answer the research question and hypothesis, we collected a total of 55 existing airline safety videos that are published online and went through two workshops with 4 design graduate students to categorize them. The first workshop was done to generally label the videos according to their features and

characteristics, such as contents, the drawings of images that refer to live-action or animated, and which airlines they were published from. Then the second workshop was done to compare and contrast each video so that eventually 4 videos were selected to be fitted in the extremes of each realism which is, the lowest / highest in contextual and representative realism. The responses were collected through an online survey via Google Forms and then evaluated statistically.

3.1. Materials

3.1.1. Sorting Videos

For the research, we collected airline safety videos that were published online, 55 in total. Then ran through two separate workshops to sort them out, with four graduate students who currently are studying in the design department.

In the first session, design students were asked to watch the videos briefly and sort the videos into categories. For this process, we suggested the categorization proposed by Jin and Kim (2020) to the designers first then asked them to fit the videos into the category or modify them to fit the criteria of this research. They classified the videos according to representative realism - drawings first, whether it's filmed in live action or animated, then the designers decided if it should fall into which contextual category in the table. If the videos did not fit in any of the labels, they created new ones. **Table 3** shows the result of this part of the workshop and categorization.

Table 3. The result from the first video sorting

Representative	Contextual	Airline	Content
Live action	Music Video	Korean Air (2019)	The instructions are delivered with music and dances
		Virgin America (2013)	
		Malaysia Airlines (2022)	
	Celebrities	Korean Air (2019)	Well-known celebrities introduce safety procedures
		British Airways (2017)	
		Qatar Airways (2016)	
		Air New Zealand (2014)	
	Humor	British Airways (2017)	Safety procedures are introduced like a comedy
	Crew Demo	Delta Air Lines(2008)	Flight attendant introduces safety procedures
		Delta Air Lines (2023)	
		American Air Lines(2016)	
		Air France (2015)	
	Child Demo	Thomson Airways (2009)	Children introduce safety procedures
		Arabia (2012)	
		Pegasus (2015)	
		Vueling (2018)	
	Passenger Demo	Portuguese (2013)	Passenger demonstrates the safety procedures
		China Airlines (2020)	
ANA (2021)			
Delta Air Lines (2021)			
Thai Airways (2023)			
Air India (2023)			

	Movie Themed	Air New Zealand (2014)	Made in the style of a well-known movie – Lord of the Rings
	Culturally Appealing	ANA (2019)	Introduces safety procedures with the culture of the country
		Air France (2015)	
		Air France (2021)	
		Thai (2018)	
	Landmarks	British Airways (2023)	Presents Landmarks of the country
		Singapore (2017)	
		Hawaiian (2015)	
		New Zealand (2014)	
	Performance	Air Canada (2022)	Safety procedures introduced with performance – moving sets, metaphors
LATAM Airlines (2022)			
American Airlines (2019)			
Performance	American Airlines (2023)	Safety procedures introduced with performance – moving sets, metaphors	
	Joon (2019)		
Linear Narrative	Air New Zealand (2022)	Introduces safety procedures with a linear narrative	
2D animated	Passenger Demo	British Airways (2000)	Passenger demonstrates the safety procedures
		Czech Airlines (2013)	
		Brussels Airlines (2016)	
		Virgin America (2007)	
		Azul Brazilian Airlines (2015)	
	Azul Brazilian Airlines (2019)		
Crew Demo	Arkia Israeli Airlines (2015)	Flight attendant introduces safety procedures	
Stop Motion	KLM Royal Dutch Airlines (2015)	Drew images on a plate and laid out in sequence to create movement of images	
Movie Themed	Virgin Atlantic (2014)	Made in a style of movie cliché	
3D animated	Movie Themed	Turkish Airlines (2023)	Made in the style of a well-known movie - LEGO
	Passenger Demo	Turkish Airlines (2019)	Passenger demonstrates the safety procedures
		Norwegian Air Shuttle (2012)	
		Air Mauritius (2020)	
		Sri Lankan Air Lines (2014)	
		Air Berlin (2011)	
Virgin Australia (2012)			
Crew Demo	Fly Dubai (2011)	Flight attendant introduces safety procedures	
Linear Narrative	Hainan Airlines (2015)	Introduces safety procedures with a linear narrative	

As **Table 3** shows, there were far more various types and numbers of videos that were filmed in live-action versus animated ones. Figure 1 illustrates some examples chosen from live-action videos. From left top to bottom: Korean Air (2019), British Airways (2017), right top to bottom: Thai Airways (2023), Air France (2021).



Figure 1. Live-Action Choice Examples

Figure 2 illustrates some examples that were chosen from 2D animation videos. From left top to bottom: Virgin Atlantic (2014), Arkia Israeli Airlines (2015), right top to bottom: Czech Airlines (2013), British Airways (2000). The styles were mainly divided into two: line drawings with minimum shadings, and comparatively round shades with no lines.



Figure 2. 2D-Animation Choice Examples

Figure 3 illustrates some examples that were chosen from 3D animation videos. From left top to bottom: Turkish Airlines (2019). Norwegian Air Shuttle (2012), right top to bottom: Air Mauritius (2020), Turkish Airlines (2023)

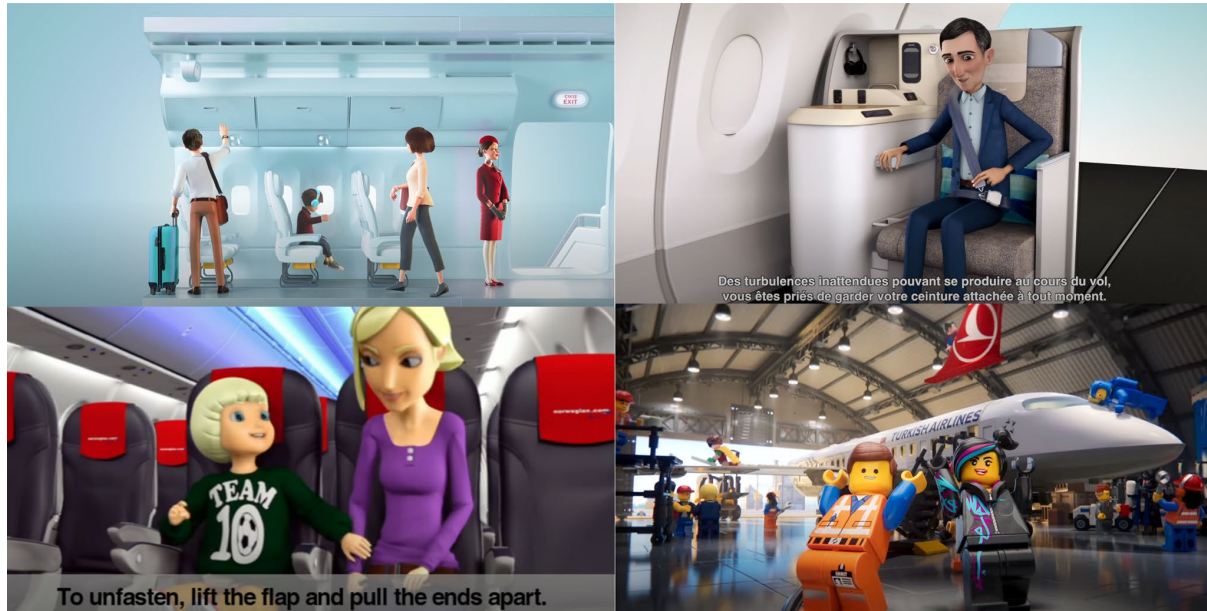


Figure 3. 3D-Animation Choice Examples

3.1.2. Selecting Videos

In the second part of the workshop, designers compared and contrasted 55 videos to pull out the ones that are in the extreme of – unrealistic and realistic context, unrealistic and realistic representation, which is, drawings of the images.

Representative Realism

For representative realism, like referred, measured the drawings of the images in the video, to see which videos align in shapes, volume, color, and lights. Designers excluded 3D animation from the criteria since in the process of creating 3D textures, the style can be pushed towards more realistic or more 2D followed by the intention of the creators. Thus the borderline of whether it is perceived as 2D or 3D can be unclear. As a result, the dimension of representative realism is decided with live-action and 2D animation. High representative realism leans towards live-action and lower representative realism leans towards 2D animation. Figure 4 shows a dimension of representative realism that is defined in this study for the experiment.

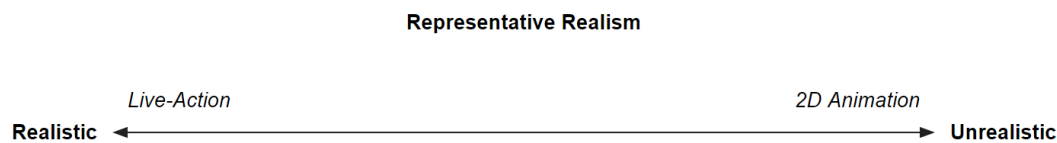


Figure 4 Dimension of Representative Realism

Since the number of animated videos was far less than the live-action ones, especially when it comes to entertainment, we first selected videos from the 2D animated that had similar styles from each other and then chose live-action videos according to the context of the selected 2D animated videos. Also, we had to consider the number of videos and whether they had enough informative videos or entertaining videos in that style so that we make sure we had 2D animated entertainment videos that could be compared with the live-action ones. Figure 2 shows some of the videos we initially selected in an attempt to match the drawing styles of the images, It has enough numbers of videos that were both informative and entertaining so that it is available to compare in terms of contextual realism as well.

As a result, we found 4 videos that are in the extremes in each dimension of contextual realism and representative realism. **Table 4** shows how we labeled the videos and in which criteria they were fitted in.

Table 4. Selected Videos and Description

Video Number	Context	Image
Video 1	Parody of famous film – movie cliches, contains non-safety related scenes, most of the scenes cannot happen in real life	Live – Action, round shading
Video 2	Parody of the famous film – Lord of the Rings, contains non-safety related scenes, most of the scenes cannot happen in real life	2D animated, flat shading
Video 3	A common type of safety video, all the scenes are relevant to safety, and every context can happen in real life	Live – Action, round shading
Video 4	A Common type of safety video, most of the scenes are relevant to safety, every context can happen in real life	2D animated, flat shading

Table 5 shows the video names and their placement in the contextual realism and representative realism frame. Figure 7 is the visual dimension of the table. Video 1 is a 2D animated entertainment video with a fictional narrative. Video 2 is a live-action entertainment video with a fictional narrative. Video 3 is live live-action informative video with no fictional narrative. Video 4 is a 2D animated informative video with no fictional narrative.

Table 5 Selected Videos in Dimension

Video Number	Contextual Realism	Representative Realism
Video 1	Low	Low
Video 2	Low	High
Video 3	High	High
Video 4	High	Low



Figure 7. Selected Videos in Dimension

Below are the screenshots from the videos selected. Figure 8 lays out screenshots from video 1, a 2D animated video with an unrealistic narrative. The video is about the main character falling asleep and then going through multiple references to the film genre along with the vocal narration of the flight attendant pointing out the key safety points.

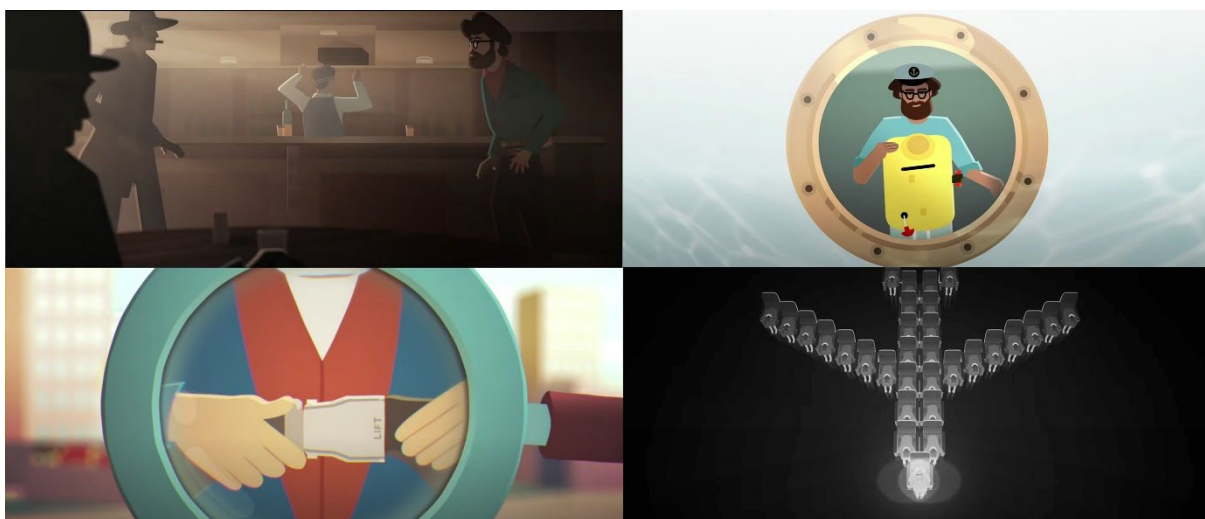


Figure 8. Screenscapes from Video 1

Figure 9 lays out screenshots from Video 2, a highly representative realism video with low contextual realism. The video is about multiple characters onboard going through multiple references to the well-known film Lord of the Rings along with the vocal narration of a flight attendant pointing out the key safety points.



Figure 9 Screenscaps from V2

Figure 10 lays out screenshots from Video 3, a highly representative realism video with a high contextual realism. The video is a traditional type of airline safety video that focuses only on delivering information, The flight attendant points out key safety points and the images are all about illustrating the instructions.

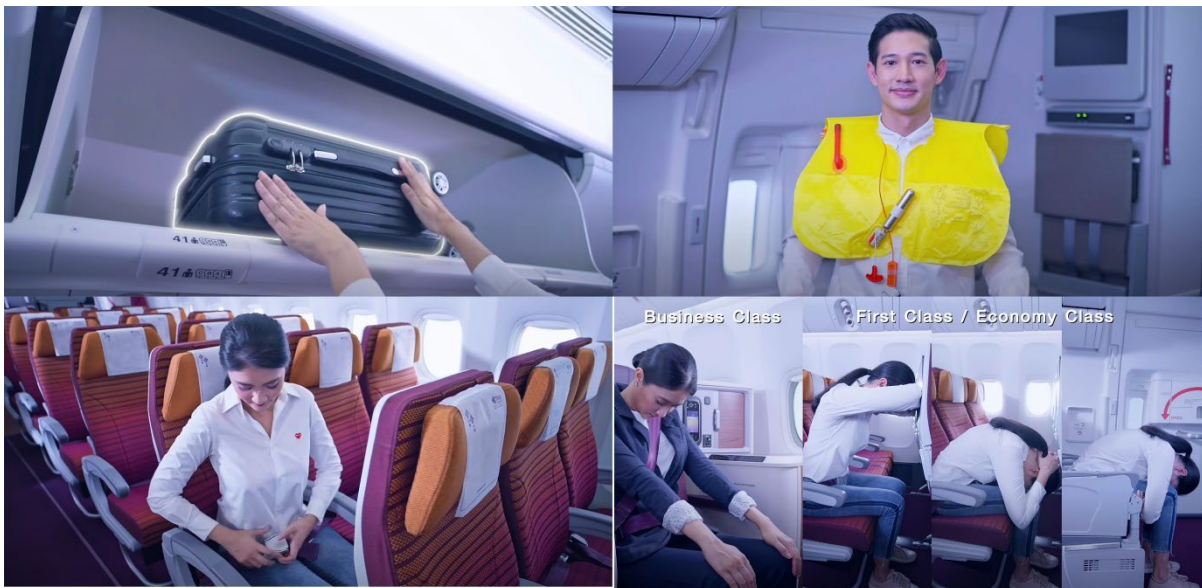


Figure 10. Screenscaps from V3

Figure 11 lays out screenshots from Video 4, a 2D animated video with a realistic narrative. Like Video 3, this is a traditional type of airline safety video that focuses only on delivering information, a vocal narration points out key safety points and the images are all about illustrating the instructions.



Figure 11. Screenscapes from V4

3.1.3. Questionnaire

The questionnaire was designed to measure acceptance according to the affectional and informational aspects. The survey first collected basic demographic information such as name, age, and gender, then to explore the former experiences of the general public on safety briefings, additional questions were included. These questions may help to understand the overall trends in the samples. Table 6 below lists the questions.

Table 6. Background Information Question Sets

Questions	Scale
How often do you get on a plane?	Single Choice
Do you pay attention to the safety briefings?	Five Point
How various were the safety videos you've watched on a plane in their forms? (from common – -traditional videos to the ones with entertainment values)	

This question set first asks about the individuals’ annual flight frequency. This is a single-choice question and the choices were: (1) more than once a year, (2) 2-3 times a year, and (3) five times a year. The following two questions are five-point scale questions asking, first, if they do pay attention to the safety briefings and second, how many different types of safety information videos they have encountered. The ‘various types of safety information videos’ mentioned here compare the traditional and common types of video-oriented delivering information - that focuses mainly on presenting flight attendants pointing out the mandated key points of the FAA regulations - to the video with entertaining values. This question is to estimate the trend of current airline businesses and which one they are utilizing more as a safety video.

After collecting background information, participants were asked to watch the four selected videos in random order and answer the question sets after one another. To evaluate the differences between affectional and informational dimensions, respectively, when users accept information that is delivered with or without perceived realism. The list of questions is shown in **Table 7**. All questions are evaluated on a 5-point Likert scale.

Table 7. Acceptance Question Sets

Questions			Scale
Affectional	Preference	How much did you like the video?	Five Point
	Brand Image	Does this video give you a positive impression of the airline company?	
	Interest	Would you pay attention when you encounter this type of video?	
		Would you watch this video again even if you already know the content?	
Informational	Delivery	Was the information delivered clear and easy to understand?	
	Amount	Do you think the amount of information delivered was enough?	
	Memorability	Do you think you can remember the information and use it in an actual emergency?	

3.2. Participants

107 participants in total (N=107) answered the survey. People were recruited online and if specific age groups did not qualify the least 10 people, snowball sampling was used. Thus the nationality of the samples was all limited to Koreans, and the individual's educational level was not considered, but basic demographic information was collected such as age and gender to investigate if there were any differences between the variables. Figure 9 below describes the distribution of age groups (AG) in percentage. There were 12 people in AG1 (11.2%), 27 people in AG2 (25.2%), 52 people in AG3 (48.6%) 16 people in AG4. (15.0%)

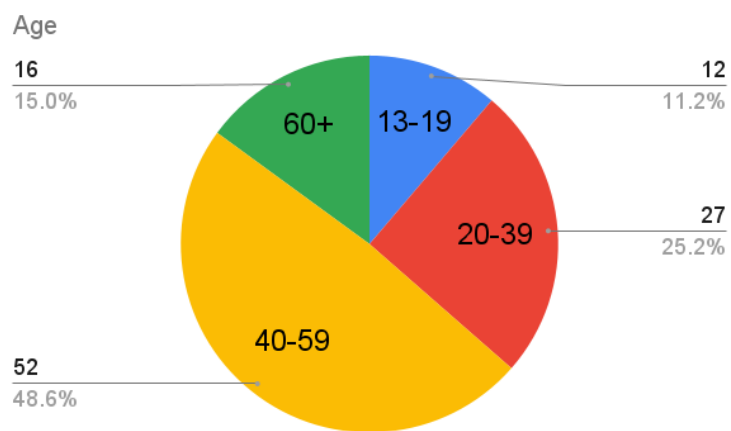


Figure 12. Age Distribution

Figure 9 describes the distribution of gender, There were 68 females out of 107 (63.6%), and 39 males (36.4%)

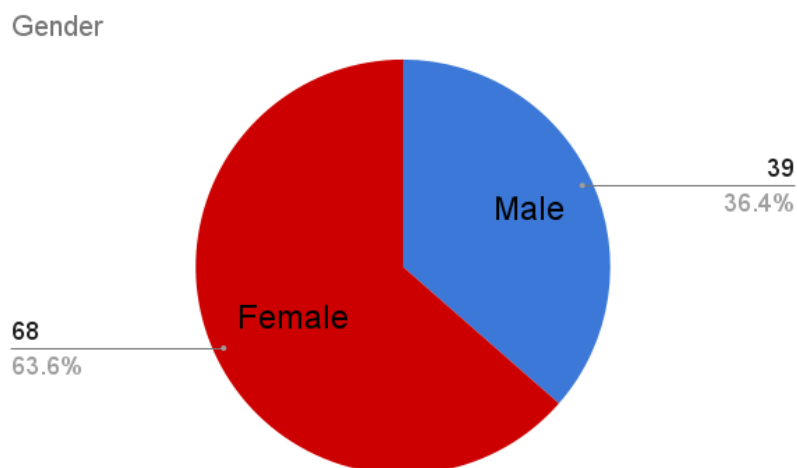


Figure 13. Gender Distribution

3.3. Procedure

This study aims to explore the differences between the acceptance of airline safety videos depending on the dimensions of perceived realism. To see how people reacted to the selected videos, the survey was conducted online via Google Forms. The participants were asked to fill out the form in order. It cannot be specified which devices participants used to answer the questionnaires. The submitted forms were directly recorded in a database.

3.4. Data Analysis

The questions were collected on 5 5-point Likert scale (except for one item scaled to 3) and were analyzed statistically according to the independent variables - gender and age groups, and dependent variables – each question on affectional and informational acceptance. The statistical analysis was pulled out using the software – SPSS. Both of them were put into the Kolmogorov-Smirnov test and the Shapiro-Wilk test for normality and turned out to be non-parametric. Thus to see if there is a significant difference between the variables, gender group comparisons were put into the Mann-Whitney U test, and for background questions, age group comparisons were put into the Kruskal Wallis Test.

IV. RESULTS

4.1. Prior Flight Experience and Perception

Before the survey, three questions were asked to understand the backgrounds and boarding experiences of the participants. Figure 14 illustrates the distribution of responses to the single choice question of annual frequency of boarding on a plane, in percentage. Out of 107, 66 people answered only once a year (61.7%), 32 people answered 2-3 times a year (29.9%), and 9 people answered more than 5 times a year. (8.4%)

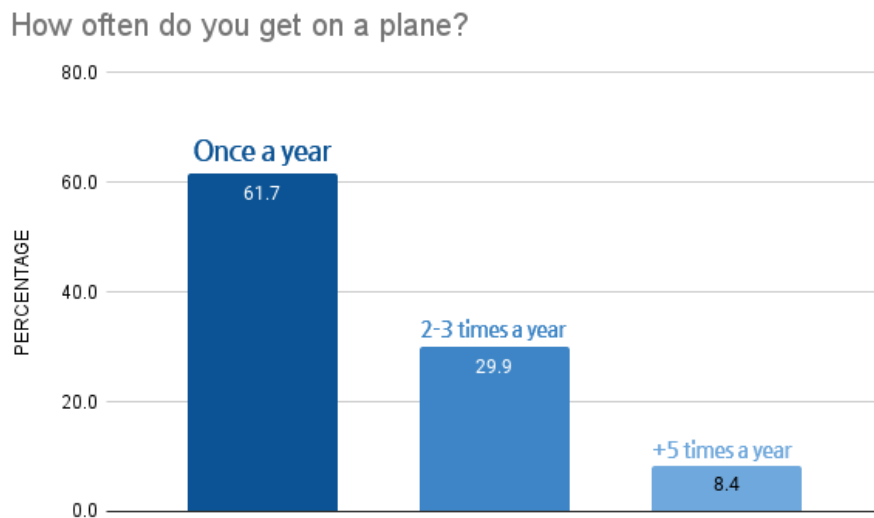


Figure 14 Distribution of Frequency Onboard

The data for this question did not qualify for normality and thus were put in the non-parametric Kruskal Wallis test. **Table 8** below shows the medians according to the frequency onboard and the acceptance question sets. **Table 9** illustrates the result of the Kruskal-Wallis test. The test indicates that there were some significant differences between the groups, ‘once a year’, ‘2-3 times a year’ and ‘+5 times a year’, specifically across video 3 (high representative and contextual realism), with the value of preference – 0.045, delivery – 0.011, information amount – 0.008. Table 8 is marked with the highest mean averages according to the acceptance and it is observed that the higher acceptance score tends to spread across the videos when the frequency gets higher as well.

Table 8 Average Mean Scores According to the Frequency Onboard

Frequency	Video	Preference	Interest	Brand Image	Delivery	Amount	Memorability
Once a year	V1	3.88	3.72	3.86	3.80	3.73	3.65
	V2	4.08	4.04	3.89	3.76	3.82	3.61
	V3	3.88	3.61	3.92	4.36	4.30	4.11
	V4	3.68	3.44	3.67	4.00	3.89	3.88
2-3 times a year	V1	3.85	3.74	3.91	3.52	3.52	3.58
	V2	4.00	3.92	3.76	3.85	3.64	3.85
	V3	3.39	3.23	3.55	3.85	3.85	3.76
	V4	3.21	3.11	3.24	3.61	3.52	3.39
More than 5 times a year	V1	3.89	3.33	3.89	3.67	2.78	3.33
	V2	3.67	3.89	3.78	3.56	3.67	3.78
	V3	3.89	3.83	3.78	4.33	4.00	3.78
	V4	3.78	3.50	3.67	3.89	3.56	3.56

Table 9 Frequency Onboard Kruskal Wallis Test

Video		Preference	Interest	Brand Image	Delivery	Amount	Memorability
V1	Kruskal Wallis	.074	.907	.029	1.713	5.046	.741
	Sig.	.964	.635	.986	.426	.080	.691
V2	Kruskal Wallis	1.054	.113	.119	.792	.630	1.973
	Sig.	.590	.945	.942	.673	.730	.373
V3	Kruskal Wallis	6.180	5.189	4.343	8.968	9.660	4.688
	Sig.	.045*	.075	.114	.011*	.008*	.096
V4	Kruskal Wallis	4.140	1.976	2.612	2.205	2.416	4.277
	Sig.	.126	.372	.271	.332	.299	.118

*p<.05

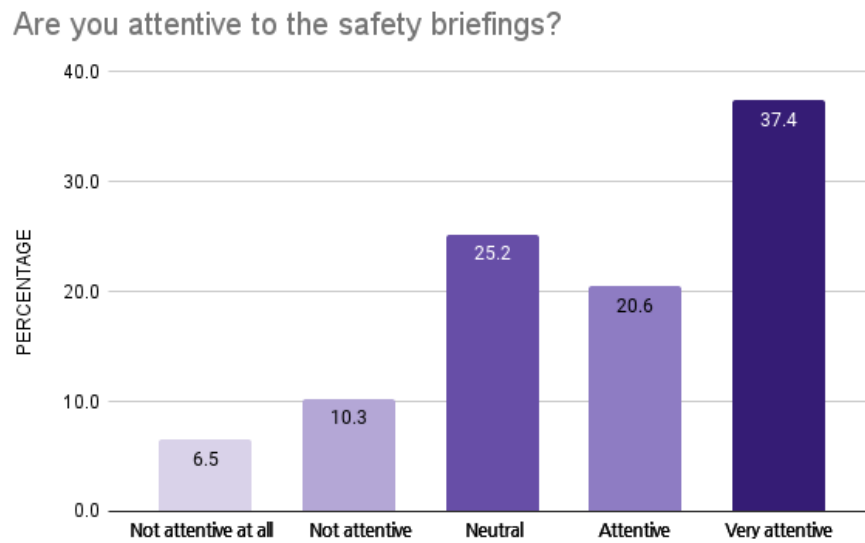


Figure 15. Distribution of attentiveness

Figure 15 illustrates the distribution of responses to the five-point scale question of how attentive they are to the safety airline videos. Out of 107, 40 people answered they are very attentive (37.4%), 22 people answered they are attentive (20.6%), 27 people answered neutral (25.2%), 11 people answered not attentive (10.3%) and 7 people answered not attentive at all (6.5%).

The data for this question did not qualify for normality and thus were put in the non-parametric Kruskal Wallis test. **Table 10** below shows the medians according to the attentiveness and the acceptance question sets. **Table 11** illustrates the result of the Kruskal-Wallis test. The test indicates that there were some significant differences specifically across informational acceptance on V1, with the value of delivery – 0.005, and memorability – 0.013. **Table 10** is marked with the highest mean averages according to the acceptance and it is observed that the higher acceptance score tends to spread across video 2 – high representative realism and low contextual realism, and video 3 – high representative realism and high contextual realism.

Table 10. Attentive Score Average Means

Attentive Score	Video	Preference	Interest	Brand Image	Delivery	Amount	Memorability
Not Attentive At All	V1	3.71	3.29	3.29	2.43	3.00	2.43
	V2	3.86	4.00	3.00	3.14	3.29	3.00
	V3	3.71	3.21	3.86	4.00	4.00	4.29
	V4	3.29	3.36	3.43	4.00	3.14	4.00
Not Attentive	V1	3.64	3.45	3.91	3.18	2.82	3.00
	V2	4.18	4.23	4.09	4.18	3.82	4.18
	V3	3.18	3.09	3.55	4.27	4.00	3.64
	V4	3.27	2.95	3.36	3.73	3.27	3.36
Neutral	V1	3.74	3.56	3.85	3.78	3.81	3.63
	V2	4.07	3.91	3.85	3.89	4.04	3.85
	V3	3.59	3.31	3.63	4.11	4.19	3.81
	V4	3.22	3.13	3.41	3.78	3.78	3.52
Attentive	V1	4.18	3.93	4.00	3.86	3.73	3.73
	V2	3.86	3.82	3.59	3.55	3.41	3.55
	V3	3.77	3.50	3.59	4.41	4.18	4.09
	V4	3.91	3.75	3.73	4.05	3.77	4.09
Very Attentive	V1	3.88	3.78	3.90	3.93	3.63	3.85
	V2	4.10	4.11	4.13	3.85	3.85	3.70
	V3	3.93	3.79	4.05	4.15	4.13	4.03
	V4	3.73	3.39	3.63	3.90	3.98	3.70

Table 11. Attentive Score Kruskal Wallis Test

Video		Preference	Interest	Brand Image	Delivery	Amount	Memorability
V1	Kruskal Wallis	3.144	3.967	2.338	14.952	7.500	12.686
	Sig.	.534	.410	.674	.005*	.112	.013*
V2	Kruskal Wallis	1.262	3.171	7.862	4.728	5.457	4.851
	Sig.	.868	.530	.097	.316	.244	.303
V3	Kruskal Wallis	4.964	6.960	4.926	3.625	.961	2.895
	Sig.	.291	.138	.295	.459	.916	.576
V4	Kruskal Wallis	7.199	5.455	2.585	1.770	6.512	5.460
	Sig.	.126	.244	.629	.778	.164	.243

*p<.05

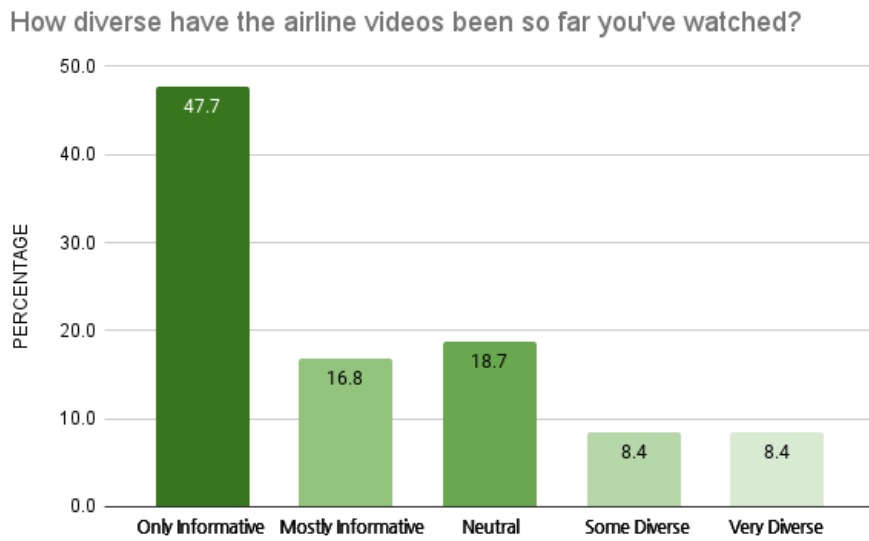


Figure 16. Distribution of Viewing Experience

Figure 16 illustrates the distribution of responses to the five-point scale question of how diverse have the airline videos been. As mentioned above in the method section, this question is to see the trends of the current airline business market and which videos they are utilizing more. Out of 107, 51 people (47.7%) answered they've only watched the informative type of videos, 18 people answered mostly informative (16.8%), 20 people answered neutral (18.7%), 9 people answered diverse (8.4%) and another 9 people answered very diverse (8.4%).

The data for this question did not qualify for normality and thus were put in the non-parametric Kruskal Wallis test. **Table 12** below shows the medians according to the attentiveness and the acceptance question sets. **Table 13** illustrates the result of the Kruskal-Wallis test. The test indicates no significant differences with the former experience of watching the various types of videos.

Table 12. Variety Score Average Means

Variety Score	Video	Preference	Interest	Brand Image	Delivery	Amount	Memorability
Only Informative	V1	3.86	3.56	3.75	3.71	3.53	3.41
	V2	3.90	3.89	3.71	3.55	3.45	3.47
	V3	3.47	3.25	3.49	4.12	4.16	3.86
	V4	3.59	3.25	3.65	3.88	3.88	3.80
Mostly Informative	V1	3.94	3.89	3.89	3.78	3.56	3.78
	V2	4.00	3.92	3.89	3.94	3.89	3.67
	V3	3.72	3.58	3.94	4.28	4.06	3.94
	V4	3.56	3.39	3.50	4.11	3.72	3.72
Neutral	V1	3.50	3.63	3.80	3.35	3.25	3.50
	V2	4.20	4.18	4.00	3.95	4.05	4.05
	V3	3.95	3.80	3.95	4.25	4.10	4.15
	V4	3.05	3.00	3.05	3.50	3.50	3.25
Some Diverse	V1	4.56	4.00	4.22	3.56	3.78	3.56
	V2	4.44	4.56	4.22	4.00	4.00	4.00
	V3	4.22	3.89	4.33	4.33	4.22	4.22
	V4	3.67	3.89	3.67	3.67	3.11	3.56
Very Diverse	V1	3.89	3.83	4.33	4.44	4.33	4.44
	V2	4.11	3.89	4.11	4.22	4.44	4.11
	V3	4.11	3.72	4.22	4.22	4.11	3.89
	V4	4.44	4.11	4.11	4.56	4.44	4.44

Table 13. Variety Score Kruskal Wallis Test

Video		Preference	Interest	Brand Image	Delivery	Amount	Memorability
V1	Kruskal Wallis	7.225	3.103	3.720	8.371	5.892	8.257
	Sig.	.124	.541	.445	.079	.207	.083
V2	Kruskal Wallis	2.218	4.930	9.650	6.760	7.482	6.782
	Sig.	.696	.447	.684	.295	.047	.149
V3	Kruskal Wallis	7.482	6.782	8.974	1.011	.634	1.299
	Sig.	.112	.148	.062	.908	.959	.862
V4	Kruskal Wallis	9.276	9.348	7.021	6.776	7.237	7.959
	Sig.	.055	.053	.135	.148	.124	.093

*p<.05

4.2. Overall User Acceptance

This section shows the result of the overall data samples collected. Each question was scaled to five and all the numbers were added and then divided into numbers of samples for mean averages. The higher value indicates a positive response to the given categories. **Table 14** shows the mean average numbers of each question set from the videos. In video 1, preference (3.87) and brand image (3.87) have the highest values, and information amount (3.57) has the lowest value. In video 2, Preference (4.04) has the highest value, and information memorability (3.71) has the lowest value. Video 3, Information delivery (4.20) has the highest value, and Interest (3.50) has the lowest value. Video 4, Information delivery has the highest value, and Interest (3.35) has the lowest value. These numbers show that the videos with unrealistic narratives have higher scores on affectional acceptance, and videos with realistic narratives have higher scores on informational acceptance.

Table 14 Overall Mean Average

Video	Preference	Interest	Brand Image	Delivery	Amount	Memorability
V1	3.87	3.69	3.87	3.70	3.57	3.59
V2	4.04	4.00	3.87	3.79	3.77	3.71
V3	3.72	3.50	3.79	4.20	4.13	3.96
V4	3.56	3.35	3.55	3.89	3.76	3.72

4.3. Gender and User Acceptance

This section shows the result of overall data, gender as an independent variable. **Table 15** shows the mean average scores for each question set from the videos. Both males and females had the highest score on video for preference and interest. For brand image, males had the highest score on both videos 2 and 3, and females had the highest score on video 1. For all the informational acceptance, both males and females had the highest scores on video 3.

Table 15. Gender Mean Average

Video	Sex	Preference	Interest	Brand Image	Delivery	Amount	Memorability
V1	Male	3.69	3.50	3.72	3.59	3.46	3.38
	Female	3.97	3.79	3.96	3.76	3.63	3.71
V2	Male	3.95	4.01	3.79	3.72	3.69	3.79
	Female	4.09	4.00	3.91	3.82	3.81	3.66
V3	Male	3.77	3.65	3.79	4.15	4.00	3.97
	Female	3.69	3.41	3.78	4.22	4.21	3.96
V4	Male	3.62	3.37	3.38	3.77	3.64	3.62
	Female	3.56	3.35	3.55	3.89	3.76	3.72

To explore the significant difference between the values, the data sets were put through the Mann-Whitney U test. **Table 16** shows the result, no sig values in the table are less than .05, so statistically there is no significant difference between any of these values.

Table 16. Mann-Whitney U test on Gender Comparison

Video		Preference	Interest	Brand Image	Delivery	Amount	Memorability
V1	Mann-Whitney U	1113.000	1146.500	1152.500	1172.000	1219.500	1079.500
	Wilcoxon W	1893.000	1926.500	1932.500	1952.000	1999.500	1859.500
	Z	-1.443	-1.179	-1.175	-1.038	-.711	-1.654
	Sig.	.149	.238	.240	.299	.477	.098
V2	Mann-Whitney U	1182.500	1325.000	1229.500	1222.000	1199.500	1276.000
	Wilcoxon W	1962.500	3671.000	2009.500	2002.000	1979.500	3622.00
	Z	-.986	-.007	-.654	-.700	-.852	-.336
	Sig.	.324	.995	.513	.484	.394	.737
V3	Mann-Whitney U	1254.000	1161.000	1303.000	1291.000	1131.000	1326.000
	Wilcoxon W	3600.000	3507.000	3649.000	2071.000	1911.000	3672.000
	Z	-.486	-1.087	-.156	-.245	-1.356	.000
	Sig.	.627	.277	.876	.806	.175	1.000
V4	Mann-Whitney U	1254.500	1290.500	1159.000	1184.500	1224.000	1225.500
	Wilcoxon W	3600.500	3636.500	1939.000	1964.500	2004.000	2005.500
	Z	-.479	-.232	-1.118	-.960	-.686	-.675
	Sig.	.632	.816	.263	.337	.493	.500

$P \leq .05$

4.4. Age and User Acceptance

This section shows the result of the overall data, age group as an independent variable. **Table 17** below describes the mean averages of questions from each video according to the age groups. For convenience, each group is labeled from 1 to 4. Age group 1 counts from age 13 to 19, age group 2 counts from age 20 to 39, age group 3 counts from age 40 to 59, and age group 4 counts from age 60 +. Age group 1 seemed a bit more acceptable when in the informational aspects of the video. Their overall informational acceptance was around 4 for most of the videos, except Video 1 which is an animated, unrealistic contextual video. Age group 2 response was pretty much clear and close to what was intended, their affectional acceptance was higher on unrealistic narrative videos and informational acceptance was higher on realistic narrative videos. Age group 3 and age group 4 evaluated the traditional type of aviation video the highest. Teenagers seem to have a better ability to take the information, and older generations from 40 seemed to be more comfortable watching the traditional types of video rather than the ones with animation or unrealistic narratives.

Table 17. Age Group Mean Average

Age Grp	Video	Preference	Interest	Brand Image	Delivery	Amount	Memorability
1	V1	3.50	3.58	3.75	3.92	3.92	3.75
	V2	4.33	3.54	3.83	4.08	4.00	3.67
	V3	3.17	2.83	3.42	4.08	4.33	3.33
	V4	4.00	3.58	3.92	4.33	4.42	4.00
2	V1	4.44	3.98	4.26	3.63	3.67	3.44
	V2	4.15	4.24	3.85	3.70	3.44	3.44
	V3	3.33	2.94	3.63	4.22	4.11	3.93
	V4	3.89	3.52	3.81	4.04	3.70	3.89
3	V1	3.67	3.44	3.56	3.62	3.35	3.48
	V2	3.87	3.89	3.79	3.60	3.71	3.65
	V3	3.83	3.71	3.79	4.10	4.10	4.00
	V4	3.33	3.19	3.42	3.85	3.75	3.67
4	V1	3.81	4.06	4.31	3.94	3.88	4.06
	V2	4.19	4.31	4.19	4.31	4.31	4.38
	V3	4.44	4.25	4.31	4.56	4.13	4.38
	V4	3.44	3.41	3.25	3.44	3.38	3.38

To explore the significant difference between the values, the data sets were put through the Kruskal Wallis Test. **Table 18** shows the result, highlighted values are less than p which indicates that there are significant differences between the values.

Table 18. Kruskal Wallis Test for Age Group Comparison

Video		Preference	Interest	Brand Image	Delivery	Amount	Memorability
V1	Kruskal Wallis	12.338	6.522	10.397	1.333	3.632	3.785
	Sig.	*0.006	0.089	0.015*	0.721	0.304	0.286
V2	Kruskal Wallis	3.077	4.404	2.524	5.997	7.763	7.686
	Sig.	0.380	0.221	0.471	0.112	0.051	0.053
V3	Kruskal Wallis	13.744	21.725	5.529	3.573	1.513	4.506
	Sig.	0.003*	<.001*	0.137	0.311	0.679	0.212
V4	Kruskal Wallis	6.174	2.093	4.301	5.471	5.744	2.663
	Sig.	0.103	0.553	0.231	0.140	0.125	0.447

*p<.05

V. DISCUSSION

5.1. Prior Flight Experience and User Acceptance

The hypothesis set up for this study was to investigate the effect of two dimensions of perceived realism – contextual realism and representative realism – on the two dimensions of acceptance – informational and affectional, specifically for airline safety videos. If the video is perceived to be more realistic in its narration and depiction of images, the viewer will show better acceptance of information. If perceived to be unrealistic in its narration and depiction of images, then the viewer will show better acceptance of affection. The overall average means for the videos according to the acceptance indicates that representative realism has less effect on the acceptance rather than contextual realism. The realism of images – the way it's depicted, specifically rather if it's animated or not, seems to have fewer effects on acceptance. It may be because of the characteristics of an informative video, if the informative videos were made into 2D animation it would be less clear when delivering information due to the indirect description. Interestingly, Atkin (1983) states in his research that the realistic depiction of violence may raise aggression and more likely to imitate (Gunter & Harrison, 1996), it seems like people can easily relate to the content of the video when the images are more realistic, which could be a valid point when making safety videos. While Video 2 – a video with high representative realism and low contextual realism – had the highest evaluation on affectional acceptance and comparably low evaluation on informational acceptance, Video 3 – a video with high representative realism and high contextual realism had the highest evaluation on informational acceptance and comparably low evaluation on affectional acceptance, this result had a similar trend to Tehrani & Molesworth's (2015) research result on the relationship between entertainment and retention, that the entertainment might affect negatively on retention.

There were significant differences between the groups specifically on video 3 – which is the very basic type of a safety video, with high representative realism and high contextual realism – which seems like the cause could relate to the tendency that nearly half of the people only have watched videos like video 3 through their experiences in flight. The repeated view of the video affected preference, informational delivery, and information amounts (if the amount of the information felt to be enough), people who get on a plane 2-3 times a year showed comparably lower acceptance of those items to the people who get on a plane once a year and more than five times a year. Such a result may indicate that the number of watching the video may affect the viewer's acceptance and effectiveness. In relation, to the question asking how they were attentive to the videos – Video 1 had significant differences between the groups, on its informational delivery and memorability. Since video 1 is at the most transformation

from the common safety videos, with unrealistic depictions and narratives, people who were not attentive to the video do not have enough former experiences or knowledge better than the ones who were attentive, thus will have a harder time understanding or absorbing the safety key points. Thus it is important to keep the video realistic, to make the information accessible to anybody who watches the video.

5.2. The Influence of Gender and Age on User Acceptance

Statistically, the gender groups showed no differences in acceptance. On the other hand, age groups did have significant differences, but the differences were only distributed in affectional acceptance, which may imply that preferred videos may differ according to the age groups, but the degree of understanding of the information does not differ from the age groups. Interestingly, the acceptance showed some similarities to the user experience, to the fact that there were no differences between genders but age groups when evaluating the product (JungKyoon Yoon et al., n.d.; C. Kim & Christiaans, 2016). It is vague whether informative videos fall into the category of media products, it could be valuable to explore if the entertainment aspect of the informative video gives the viewer a similar experience when viewing the media product.

5.3. Design Implications

The result of the research implies that when it comes to the informative videos the users seemed to be more convinced and felt informed when the images were presented in realistic depictions rather than in style such as animation. Thus, the video may contain unrealistic narratives, it is important to keep the images filmed in live action rather than animating them with characters since the viewers should get the sense of using the safety tools. Plus, the realism in narratives and the paces of the presented scenes should be adjusted to make the video less distracting and prevent disrupting the delivery of information, especially considering those who have no or little experience watching the safety videos.

VI. CONCLUSION AND FURTHER STUDY

The studies on aviation videos have been only attentive to a single element of the entertainment when viewing the video, which in media communication defines there are far more components that cause entertainment. This research explores the relationship between perceived realism, defined as an entertainment cause, and how it affects the affectional and informational acceptance of the viewers in airline safety videos. Through the workshop 4 videos were selected for each extreme of dimensions of perceived realism – contextual realism and representative realism. The survey was conducted online, and 107 participants answered the 6 questions on affectional and informational experiences from every 4 videos. The result concluded that in airline safety videos, contextual realism was the main cause of the entertainment, or the affection towards the informative video depended on them. To preserve the informational use of the video as much as possible, it is important to keep the videos made in live-action rather than animation. Statistically, the results had no difference between genders but age groups did show some differences. Younger generations, aged 13-19 seemed to take the information more easily than other age groups. Aged 20-39 seemed to take the unrealistic narrative as affectional and realistic narrative as informational. Age above 40 seemed to evaluate the traditional aviation videos with both realistic representative and contextual realism.

However, the study may have a few limitations – the survey was only conducted on South Koreans thus the result might have been affected by cultural backgrounds. Also, the unequal quantitative ratio between gender and age groups may cause biases. Plus, the fact that the videos were shown online, probably on various types of screens such as mobile phones or PCs - there might be a difference between the experience of watching the video in an aircraft. Considering such limitations, further research could get rid of the cause of demographic biases as much as possible and be conducted in an environment that is similar to commercial aircraft to get close to the actual watching experience of safety videos. To evaluate the more precise effect of realism it might be also helpful to control the videos in style and narratives to get rid of the bias caused by other possible elements.

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APPENDIX

Google Form Online Survey

기내 안전 영상에 대한 설문 조사

이 설문은 기내 안전 영상의 현실적 표현에 따른 기억력과 호감도를 보는 실험입니다.
총 4개의 영상을 보시고 질문에 답해주시면 됩니다.
각 영상은 총 5분 인편이며, 설문 작성 5분 총 소요시간 20분 정도 예상됩니다.

kngunj@gmail.com 계정 전환 🔒

🔒 비공개

* 표시는 필수 질문임

개인 정보 입력
아래 개인정보는 오로지 연구 목적을 위해 수집되며 이외의 용도로 사용 되지 않습니다.
연구 종료 후 알파가 됩니다.

성함 *

내 답변

연령 *

내 답변

성별 *

여성
 남성
 기타

연락처 (설문에 부족한 부분이 있을 경우 추가 질문을 위해 사용됩니다. 실험 종료 후 다른 개인 정보와 함께 알파가 됩니다.)

내 답변

비행기를 얼마나 자주 타십니까? *

전혀 없다
 연 1회
 연 2-3회
 연 5회 이상

비행기 탑승 시 승무원의 안전 안내나 안전 안내 영상을 주목하시는 편인가요? *

1 2 3 4 5

그렇지 않다 그렇다

현재까지 비행기 탑승시 시청한 기내 영상의 형태가 얼마나 다양한가요? *

1 2 3 4 5

기본 종류만 보았다 다양한 종류를 보았다 (애니메이션, 캐릭터 등)

다음 1/13페이지 양식 지우기

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kneunji@gmail.com 계정 전환 🔗
🔒 비공개

V1

아래 영상을 시청하시고, 질문에 답해주세요.

Virgin Atlantics



뒤로
다음
2/13페이지
양식 시우기

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Google 설문지

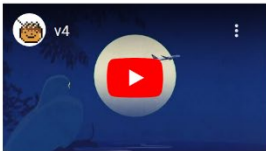
기내 안전 영상에 대한 설문 조사

kneunji@gmail.com 계정 전환 🔗
🔒 비공개

V4

아래 영상을 시청하시고, 질문에 답해주세요.

AZUL Flight



뒤로
다음
11/13페이지
양식 시우기

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기내 안전 영상에 대한 설문 조사

kgeunji@gmail.com 계정 전환

비공개

*표시는 필수 질문임

V1 - 선호도 질문

1번 비디오에 관련하여 선호도에 대한 질문입니다. 아래의 문항에 답해주세요.
5점 척도에 따라 답해주시길 바랍니다.

- 1: 전혀 아니다
- 2: 아니다
- 3: 보통
- 4: 그렇다
- 5: 매우 그렇다

이 영상이 마음에 드셨나요? *

	1	2	3	4	5	
아니다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	그렇다

이후 기내에서 이런 영상을 마주하게 되었을때 주목 할 것 같나요? *

	1	2	3	4	5	
아니다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	그렇다

다음 비행 시에도 이런 유형의 영상이라면 내용을 알고 있음에도 또 시청하실 의사가
있으신가요?

	1	2	3	4	5	
아니다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	그렇다

이 영상이 항공사에 대한 인상이나 평가에 긍정적인 영향을 주나요? *

	1	2	3	4	5	
아니다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	그렇다

뒤로

다음

3/13페이지

양식 지우기

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기내 안전 영상에 대한 설문 조사

kngunji@gmail.com 계정 전환

비공개

*표시는 필수 질문임

V1 - 사용성 질문

1번 비디오에 관련된 사용성에 대한 질문입니다. 아래의 문항에 답해주세요.
5점 척도에 따라 답해주시길 바랍니다.

- 1: 전혀 아니다
- 2: 아니다
- 3: 보통
- 4: 그렇다
- 5: 매우 그렇다

이 영상이 전달한 정보가 명확하고 이해하기 쉬웠나요? *

	1	2	3	4	5	
아니다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	그렇다

이 영상이 제공한 정보의 양이 적절하다 생각하시나요? *

	1	2	3	4	5	
아니다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	그렇다

실제 비상상황에서 해당 영상의 정보를 기억하고 활용할 수 있을 것 같나요? *

	1	2	3	4	5	
아니다	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	그렇다

영상에 대한 생각이나 의견을 작성해주세요. *

내 답변

뒤로

다음

4/13페이지

양식 지우기

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Google 설문지

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