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Consumer Likelihood to Complain in the U.S. Commercial Airline Industry

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Consumer Likelihood to Complain in the U.S. Commercial Airline Industry

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Table of Contents

Table of Contents	i
Abstract	iv
Chapter 1	1
Introduction.....	1
Problem Statement	1
Purpose Statement.....	4
Operational Definitions.....	5
Likelihood of complaining.....	6
Commercial airline operation issues	6
Research Questions and Hypotheses	7
Significance of the Study	8
Assumptions and Limitations	10
Assumptions.....	10
Limitations	12
Summary	13
Chapter 2—Literature Review	15
Introduction.....	15
Consumer Complaints.....	16
Definitions of Consumer Complaints	16
Benefits of Consumer Complaints	17
Classification of Consumer Complaints	18
Relationship between Consumer Satisfaction and Consumer Complaints	21
Factors Affecting Consumer Complaints.....	22
Likelihood to Complain	23
Gender Consideration	26
Gender Concept and Definition	26

Theoretical Basis.....	28
Gender Consideration in Consumer Behaviors.....	31
Commercial Air Travel	33
Role of Commercial Air Travel.....	33
Issues Related to Air Travel	35
Consumer Complaints in Aviation	38
Introduction and Current Situation	38
Classification of Airline Consumer Complaints	41
Summary	43
Chapter 3—Methodology	44
Introduction.....	44
Research Design and Approach	44
Procedure	45
Power Analysis.....	48
Research Instrumentation and Materials.....	48
Variables.....	48
Independent Variable	48
Dependent Variable	49
Data Analysis	50
Participants' Eligibility and Protection	51
Ethical Considerations	52
Summary	53
Chapter 4—Results	54
Introduction.....	54
Initial Data Analysis (IDA).....	54
Outlier Analysis	55

Normality Assumption	56
Homogeneity of Variance Assumption	57
Equal Sphericity	58
Research Tool	59
Data Analysis	60
Cronbach's α Test	60
Descriptive Statistics	60
Analysis of Variance (ANOVA)	63
Decision on Hypothesis	66
Summary	67
Chapter 5	68
Overview	68
Summary of Findings	70
Discussion	72
Practical Implications	75
Limitations	78
Recommendation for Future Research	79
Conclusion	80
References	82
Appendix A	94
Appendix B	99
Appendix C	103

Abstract

Title: Consumer Likelihood to Complain in the U.S. Commercial Airline Industry

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Consumer emotions play an important role in the marketplace nowadays, which can either directly or indirectly affect the marketing outcomes. Consumer complaints are believed to occur if consumers begin to generate negative emotions due to an unfavorable service experience. However, there are also existing controversies. Moreover, males and females tended to show different attitudes towards complaining in different situations. There is a great significance of doing the research of consumer complaints in commercial airline industry because a majority of the predominant research concentrates on the consumer complaint behaviors in market places such as restaurant, hospital, hotel, and shopping mall.

The research involves a quantitative research methodology to conduct an online survey among selected sample participants in Amazon[®] Mechanical Turk[®] (MTurk) and use measurable data to formulate facts and to uncover patterns in research. After conducting all the descriptive statistics as well as the two-way mixed ANOVA, a significant main effect of airline operation issue has been identified. However, there was not a main effect of gender as well as a non-statistical significant interaction between gender and airline operation issue. Future studies are recommended to conduct to explore further detailed explanations.

Key Words: Consumer complaints, Likelihood, Gender, Airline Operation Issue

Chapter 1

Introduction

The purpose of this chapter is to clarify the interest of the researcher in the phenomenon occurring in the social environment and the research topic. It also generates the problems that are closely related to the research topic. A statement of the problem is made by the researcher to determine the actual gap in the knowledge discussed by previous research regarding consumer complaint behaviors in their studies. The purpose of the study is to what are the effects of gender and airline operation issues on consumer likelihood to complain, especially in the U.S. commercial airline industry. The significance of the study is included to determine why it is of great significance to fill in the knowledge gaps, particularly when there is a lack of research concentrating on the commercial airline consumer's likelihood of complaining. The researcher also addresses the operational definitions and research questions as well as the hypotheses. The research questions can be seen as the basis to do the data collection in the following process while the hypotheses are certain predictions that can be tested in the research. Finally, assumptions and limitations are to identify what is expected to happen in terms of the participants and research instrument and certain drawbacks that occurred during the whole procedure of the survey.

Problem Statement

Consumer emotions play an important role in the marketplace nowadays, which can either directly or indirectly affect the marketing outcomes. According to Chaudhuri (2006), there is a complex interface between consumer emotions and their corresponding behaviors involving numerous vital concepts such as involvement,

learning, perceived risk, and trust. However, the effects of consumer emotions on the marketplace are considered to have more complicated results than just to reduce the expected outcomes. Among all the consumer emotions, consumer complaints can be seen as the key factor that can definitely affect the general environment of the specific marketplace.

Consumer complaints are believed to occur if consumers begin to generate negative emotions due to an unfavorable service experience (Bougie, Pieters & Zeelenberg, 2003; Mattsson, McColl & Lemmink, 2004; Westbrook, 1987). Previous researchers have reached the conclusion that such negative emotions have an important impact on word-of-mouth communication, attitudes about the service provider, customer loyalty, repurchase intentions, and complaining behaviors. Theories from Hirschman (1970), Day and Landon (1977), as well as Singh (1988) provide important support to demonstrate how people will complain by those different means. Even though there seems to be a clear relationship between negative emotions and consumer complaint behaviors, there still exist numerous controversies. For example, previous studies hold different opinions on the relationship between consumer complaints and consumer dissatisfaction. Some tend to measure consumers' willingness to complain using the index of consumer satisfaction while the others stand at the point that the majority of the dissatisfied consumers do not even report their problems to their companies or organizations. In other words, this may result in errors if directly focusing on the consumer complaint behaviors. Consequently, in order to determine the nature of the performance of consumer complaint behaviors in the marketplace, the research looked into the potential factors that can drive the direction of the likelihood of consumers to conduct complaining behaviors.

Despite the fact that every single person around the world is different, gender may determine the individuals' behaviors. Previous research and theories have been put forward to explain how males and females show distinct traits. Not only the biological sex but also the gender identity related to their social roles may lead to different behaviors between males and females. Many studies concluded that men are born with masculinity traits while women are born with femininity traits. This study supports the opposite opinions, which is that gender identity will play a more important role in determining the behaviors of people other than their biological sex. The research further examined the differences in the likelihood to complain among male and female consumers as there is significant evidence showing that they complain using different approaches for different reasons.

A majority of the predominant research concentrates on the consumer complaint behaviors in marketplaces such as restaurant, hospital, hotel, and shopping mall, while few looked deeply into the field of the commercial airline industry. Despite the rapid development of the aviation industry, more issues associated with airlines' irregular operations are coming out to bring side effects to the normal air travel among numerous passengers. Based on several reports issued by DOT and FAA, irregular issues include flight delays, mishandled baggage, and oversales. Simultaneously, there are increasing numbers of different categories of customer complaints about flight problems, fares, baggage, customer service, and other aspects in the past decades. Like consumers in other marketplaces, commercial airline passengers are also believed to be likely to complain if there is an occurrence of such operation issues. All the related commercial airline issues involved are ticket problems, weather delays, flight cancellations, diverted flights, mishandled baggage

and passengers' being denied boarding. In consideration of all the previously stated problems, it is likely to have possible airline operation issues as well as gender effects on the likelihood to complain among commercial airline passengers.

Purpose Statement

The purpose of this study is to determine how gender and different types of airline operation issues affect consumer complaint behaviors. Over the past decades, consumer complaint theory has been utilized by researchers to broaden their research fields in numerous different aspects. A variety of researchers used this theory in many different approaches by involving several parameters such as the main types of complaints. For instance, Chang and Chine (2010) conducted research comparing consumer complaint responses to online and offline environments. The researchers developed a quasi-experimental research design including two distinct groups to examine if there are significant differences of consumers' intention to complain towards an online retailer and offline retailer. Previous consumer complaint research has successfully found that the likelihood of consumer complaints can be driven by situations both with and without service failures. In addition, they found that males tend to behave differently in complaining behaviors to females. However, few studies had actually examined or drawn the conclusion that consumers tended to complain differently when they were in a failure situation or a non-failure situation during a commercial flight or based on different genders.

Predominant articles put forward the statements that many organizations, such as the Office of the Assistant General Counsel for Aviation Enforcement and Proceedings, were monitoring compliance with consumer protection rights. However, commercial airline passengers may still get confused or refuse to complain due to

complicated procedures, budget problems, and unknown complaining methods. Thus, this research aims at figuring out how the different airline operation issues and gender affect a consumer's likelihood to complain under the existence of such conditions. In general, the purpose of the research is to examine if the issues happening during a commercial airline operation can bring negative effects on the consumers' emotions, which would result in a larger likelihood to complain. Meanwhile, the study also aims to determine which airline operation issue can have the biggest effect on consumers' likelihood to complain. In consideration of the gender, a statistical analysis was conducted to determine if male commercial airline passengers present a significantly different likelihood of complaining when compared with female commercial airline passengers. For the purpose of the research, the system was assumed by the researcher to be a commercial airline flight. The whole system includes all the six related categories of commercial airline issues together with a situation that there will be no issues during the flight.

Operational Definitions

In order to evaluate the evidence that airline operation issues and gender affect likelihood of commercial airline passengers to complain, the ideas generated by the researcher must be tested. During the whole process, the researcher created an online survey to gather all the related data. Before actually collecting the data from potential participants, the researcher had to translate the words of a claim into measurement operations. In other words, it is of great significance for the researcher to reach a uniform type of definition, which is defined as an operational definition. It enables all the readers to comprehend the meaning of all the terms and phrases as following:

Likelihood of complaining

Commonly the likelihood of complaining has close relationships with several aspects including motivation, ability, opportunity, level of dissatisfaction, unfairness of exchange, self-confidence, complaining experience as well as the consumers' response towards service recovery (Hoyer & MacInnis, 2008). Within this research setting, the likelihood of complaining refers to the participants' scores on the Likert-type scale based on the following five statements: I would likely complain in this situation; I am not satisfied in the situation; I would like to complain due to inappropriate response given by the airline after service failure; I may not want to fly this airline again; I would complain to my family members and friends.

Commercial airline operation issues

Before this specific research, the most relevant term associated with issues of airline operation is an airline's irregular operation, which is defined as any situation(s) that varies substantially from what was planned by National Air Transportation Association-NATA (2009). In order to get the real operational definition, the researcher has looked into the data collected by the Department of Transportation (DOT) as well as the Federal Aviation Administration (FAA). In addition, the researcher has addressed several categories of operation issues happening in the commercial airline industry, which are collected within the *Air Travel Consumer Report (ATCR)*, such as problems with the flight, baggage, reservation/ticketing/boarding, customer service, refunds, disability, fares, oversales, advertising, discrimination, and animals. Because of the convenience of selecting the participants and budget problems, the researcher ultimately decided to reduce the range of the study within only six different aspects: ticket problems, weather delays,

flight cancellations, diverted flights, mishandled baggage, and passenger denied boarding. Due to the fact that more American users are available to take part in the online surveys via Amazon's[®] Mechanical Turk[®] (MTurk), the research will only select U.S. citizens to join in the survey. As a consequence, the commercial airline operation issues are operationally defined as the occurrence of ticket problems, weather delays, flight cancellations, diverted flights, mishandled baggage, and passenger denied boarding in the U.S. commercial airline industry.

Research Questions and Hypotheses

Research Questions (RQ)

RQ1: What is the difference in consumer complaints by type of airline operation issues in U.S. commercial aviation?

RQ2: What is the difference in consumer complaints by gender?

RQ3: What is the interaction between gender and airline operation issues?

Hypotheses

Null Hypothesis 1

H₀₁: There is not a significant difference in the likelihood of a consumer's complaining by different types of airline operation issues.

Alternative Hypothesis 1

H₁₁: There is a significant difference in the likelihood of a consumer's complaining by different types of airline operation issues.

Null Hypothesis 2

H₀₂: The likelihood of a consumer's complaining would not be significantly different among male and female participants.

Alternative Hypothesis 2

H₁₂: The likelihood of a consumer's complaining would be significantly different among male and female participants.

Null Hypothesis 3

H₀₃: There will be no significant interaction between the variables of airline operation issues and gender.

Alternative Hypothesis 3

H₁₃: There will be an interaction between the variables of airline operation issues and gender. The direction of the hypothesis cannot be determined due to the lack of a priori basis.

Significance of the Study

In general, the significance of the study is to explore consumer complaint behavior in the field of the commercial airline industry. Previous researchers had exerted great effort in studying consumer complaint and consumer complaint behaviors in the marketplace. Based on those research results, the theory related to consumer complaints had been explored and developed over the past several decades. All such studies had previously concentrated on human emotions and the mutual relationship between quality of service and consumer emotions in the business world. A majority of predominant researchers had actually devoted themselves to explaining the development of consumer complaint definitions, classification of consumer complaints, and factors that can affect consumer complaint behaviors. However, such initial research studies are only restricted to the academic criteria of psychology. The development of studying the nature of consumer complaints has not gone deeply into

the scientific community. As a consequence, this specific research content significantly breaks the disciplinary boundaries to comprehend the meaning of consumer complaints using a scientific approach.

In terms of the consumer complaint theory, the research also explored the utilization of the theory in the U.S. commercial airline industry. In other words, based on the knowledge generated from previous research studies, the study of consumer complaint behaviors, was applied in different service industries, including banks, hotels, hospitals, and catering service as well as the aviation industry. This research is significant because it broadens the horizon to study commercial airline passenger complaints when introducing the statistical data from the Air Travel Consumer Report (ATCR) as well as Airline Quality Rating (AQR). Both ATCR and AQR were generated during a fixed time period, during which the occurrence of consumer complaints indicate which issues were complained about from the commercial airline passengers. Even though some relevant previous research concerning consumer complaints in aviation has collected data from the real world, they failed to utilize the more persuasive data as the reference to indicate the top complaint directions among commercial airline passengers.

This study indeed expands the previous theory related to consumer complaints by involving the elements of the consumer complaint performance in the real world. On the basis of this research setting, the researcher significantly included the real-world data in conducting quantitative research to ensure the internal validity as well as to examine the accuracy of the data collected by some official organizations. It should enable other industries and realms to follow a similar procedure to acknowledge consumer complaint theory.

Furthermore, this study examined if airline operation issues actually affect consumer likelihood of complaining. It is of great significance because there may be occurrences when passengers even place their complaints even when the whole flight is smooth and no issue occurred. In order to measure the consumer complaint behavior in the commercial airline industry, the likelihood of complaining is introduced as the key term within the research setting. It attempted to gauge the consumers' motivations and intentions on complaining in a specific situation. As mentioned before, even though previous research has studied the intention of consumers to understand consumer complaints, no other previous researchers have gone through the process to determine the likelihood of consumers to complain. This research into the likelihood rating explored a brand new direction to know why and how consumers respond differently in a specific environment. Within the aviation industry, in the future, the results of the current research in the U.S. can be expanded to research on commercial airline passenger complaint behaviors in other cultures.

This study also involves gender as one of the major factors to determine the consumer complaint behaviors. Previous studies focused on the effects of gender consideration on differences in purchasing power and appetite for consumption. The significance of this research will rely on the effect of gender on the complaint behaviors among commercial airline passengers in the U.S.

Assumptions and Limitations

Assumptions

In order to achieve the validity of the research, the researcher had to be straightforward about the beliefs he brought to the study. All such beliefs could be developed based on such elements as the population of study, the instrument, data

gathering method, and previous knowledge. In this specific quantitative research setting, numerous assumptions were generated to reach related findings. All the possible assumptions involved in this specific research are presented below.

The first and most important assumption concentrated on the participants who took part in the online survey. In common sense, assumptions are self-evident truths. Thus, all the potential participants were assumed to be extremely qualified to join in the study. From the very beginning, respondents were assumed to fully understand the questions they were asked. It could be assumed that participants answered truthfully and accurately to the interview questions based on their personal experience, and that participants responded honestly and to the best of their individual abilities. The participants in the study freely provided the researcher with the ratings of likelihood of complaining regarding their personal commercial airline flying experience. Moreover, they were assumed to devote themselves to answering each research question instead of merely seeking the ultimate compensation afterwards. If there was a lack of such significant assumptions, all the data collected from those participants may not be a real reflection of the general population. There would be an occurrence of a sampling error if all the participants did not behave as they were expected to in the survey process.

Simultaneously, the instrument to be used was assumed to elicit reliable responses. All the research questions were reviewed and approved by relevant experts and professors in the university. The survey questions created to gauge the likelihood of complaining also used some of the previous statements of other research studies to ensure assumed validity and reliability of the study. Furthermore, in order to conduct the statistical data analysis, the researcher utilized the analysis of variance model. All

the independent variables and dependent variable were assumed to be measured and analyzed in an accurate manner via SPSS. If such assumptions were not met in the research setting as there would be a lack of independence, normality, or homogeneity of variances, there would be subsequent occurrence of Type I or Type II errors.

Limitations

Based on the definition of the limitations, there are potential weaknesses in the researcher, which include the aspects out of the researcher's control, such as research funding, research design, statistical model, and many other factors. In this research setting, although the research regarding consumer complaints in the U.S. commercial airline industry has reached its expected goals, there are also numerous unavoidable limitations, as described below.

The researcher used an online survey to gauge the likelihood of complaining among potential participants. However, surveys that are distributed via the internet will generate a significant problem of time constraints since people who suffer with personal time pressure or extensive workload may not be willing to take part in the survey. They may simply overlook it or refuse to take it even though they can get compensation afterwards. The survey instrument called FluidSurveys® and Amazon's® Mechanical Turk® (MTurk) can also bring about several limitations. Respondents are not able to control the survey so that it is possible for them not to finish it on time or not to complete all the survey questions. Due to the characteristics of the online survey, it generated the limitations to force the participants to get into the specific assumed situations so as to restrict the range of their responses. It is different from a face-to-face interview; thus participants were not able to ask clarifying questions. The survey completion procedure could not be monitored and the survey

provider was not able to encourage all the participants to give the results based on their actual feelings. In addition, if the participants got confused about the survey context, they could have been limited in knowing how to complete the questions and where to give their responses. Under such circumstances, potential errors could occur due to the misunderstandings and the results of the following data analysis would certainly be skewed. As for MTurk, it helped the researcher to recruit all the participants in the survey as well as to control the whole environment. Even though it enables random sampling, it is actually not a complete random sampling. Ideally, the selection is U.S. citizens who have commercial airline travel experience. Nevertheless, given the results of getting compensation, some participants may not have even taken a flight in the past. This would certainly affect the survey results. Moreover, it did not seem practical to complete a full instrument to test the likelihood of complaining among consumers. Thus, there is a limitation related to using the five statements to gauge the rating of likelihood of complaining among participants.

An additional constraint is limited financial support and funding put on the research. Given restricted money and resources, only one hundred participants were able to take part in the survey. The result can be accepted by the researcher but it cannot be considered as a full reflection of the likelihood of complaining among the population of all the U.S. commercial airline travelers. Thus, if enough funding and support were ensured in doing the research, the results could be more reliable and have higher validity to represent the nature of the industry.

Summary

In summary, the researcher developed this section to include all the aspects related to the introduction and background of the study. It gives the overall statement

focusing on the literature review in the next section. It drives the direction of the following document, which can be considered as a thorough empirical argument. The whole section was not created by the researcher based on assumptions. It was developed depending on research proofs. The methods section clearly presents each element related to the study procedure, which are later demonstrated and interpreted. It creates preconditions that enable a thorough discussion of the results of the literature review in the following chapter.

Chapter 2—Literature Review

Introduction

It is relatively difficult to explain the human emotions and the relationship between the quality of service and consumer emotions in the business world. To interpret the mutual relationship, the most basic concentration should be targeted at the demonstration of consumer complaints. Key points are relevant to the definitions and classifications of consumer complaints and related theory and factors that affect consumer complaint behaviors. All consumers can be naturally divided into two groups: one is the male consumer group and the other one is the female consumer group. However, not every difference in consumer complaints is driven by a biological sexual difference. Sex-based social roles and especially gender identity also play an important role in determining the method consumers employ to conduct their complaining behavior.

As an essential part in the business world, airline travel is becoming more convenient, affordable, and popular among people from all over the world. Meanwhile, given the scenario of the commercial airline industry, several aspects of services play an important role in guiding the direction of consumer emotions. In other words, problems related to the on-time performance of the flight, ticket prices, baggage issues, or potential safety hazards tend to result in abnormal behaviors of consumers, namely, consumer complaint behaviors. Thus, of the greatest significance, it is vital to learn about the consumer complaints that are driven by different types of airline operation issues.

Consumer Complaints

Definitions of Consumer Complaints

Generally speaking, the performance of consumer complaints can be seen as a complicated combination of behavior and psychology, which relate to numerous aspects including motivation, causes, and the way of acting. Consumer complaints have been studied and defined in several fields of study. In the 1970s, within the field of political science, Hirschman (1970) initially explored the horizon toward the relationship related to a commercial exchange and concluded that consumer complaints could be seen as a deteriorating relationship between the customer and service provider. Consumers have three main options to conduct their complaint behaviors: terminate a relationship with the service provider (exit), speak about the issues (voice), or keep silent and remain in the previous relationship (loyalty).

From the context of product marketing, Day and Landon (1977) reached the agreement that the phenomenon of consumer complaint behaviors originates when perceiving a feeling of dissatisfaction. They consider that it fits into two broader categories: behavioral and non-behavioral responses. According to multiple authors (Drigotas, 1995; East, 2000; Maute & Forrester Jr., 1993) consumer complaint has also been studied within such academic disciplines as psychology, which can be described as individual responses to dissatisfaction in interpersonal relationships. Most commonly, consumer complaint behaviors occur in the marketplace. From this context of setting, Johnston and Michel (2008) described consumer complaint behavior as a behavior of expressing an unfavorable attitude toward an object, person, or condition. The occurrence of consumer complaint behaviors in the marketplace can

be seen as either static activity after consumer purchasing or a process for dynamic adjustment. By merging several grounds of study, Singh (1988) drew the conclusion that if consumers were driven by the feeling of dissatisfaction, they took behavioral or non-behavioral actions to respond. It is important to note that consumer complaint behaviors have a significant relationship with dissatisfaction and definitely affect the harmonious atmosphere of the business market.

Benefits of Consumer Complaints

From the above definitions of consumer complaints, it seems that such behavior only relates to those consumer behaviors that bring side effects to organizations or companies. However, there are also numerous studies concentrating on the benefits that consumer complaint behaviors bring to the marketplace for different enterprises. Nowadays, service providers are increasingly concerned about the perceived service failures that have been undergone by customers because they may bring side effects to the outcomes of the service. Once the service failure occurs, complaints given by the consumers provide significant feedback for the service provider to take remedial measures to satisfy the consumers, retain loyalty, and prevent the loss of sales and profits (Fornell & Wernefelt, 1987; Kelley, 1993; Reichheld & Sasser Jr., 1990; Reichheld, 1993). Furthermore, it also gives the chance to educate the consumers, build up loyalty, and evoke positive word of mouth comments. From the statistical point of view, consumers are encouraged to conduct complaining behaviors in the organizations that are more skilled in marketing management (Tronvoll, 2012). Hence, consumer complaint behaviors can be seen as a double-edged sword; namely, not only do they do harm to the outcome but they also indicate a timely recovery thereby eliminating the existing issues and improving the

current status.

Classification of Consumer Complaints

As commonly cited in the research articles, consumer complaint behaviors are classified hierarchically by several researchers including Hirschman (1970), Day and Landon (1977) and Singh (1988). Researchers and practitioners are able to perceive a better comprehension of consumer reactions along with the procedure from pre-service till post-service based on the learning of different taxonomies of consumer complaint behaviors. The first and most accepted taxonomy of consumer complaint behaviors is the theory of exit, voice, and loyalty.

According to Hirschman (1970), consumers normally take three different options to complain, including directly voicing the complaints towards the service provider or indirectly voicing the complaints towards a third party (e.g., customer service); voluntarily terminating the relationship with the service provider by switching to another; keeping silent and maintaining the relationship with the service provider (being loyal). Exit behavior is considered to be the most powerful and radical method while voicing is a moderate legitimate recuperative mechanism when consumers are passionate about the relationship with the service provider. According to Hirschman (1970), both exit and voice are major economic political alternatives if the organizations are experiencing a recession. It is important to note that either exit or voice can provide early signals to the service provider that there are problems with the service or products. As for consumer complaint behaviors in terms of loyalty, Rusbult (1982) defined loyalty to be a passive behavior utilizing supportive items silently and being patient with the organization until a good alternative option comes along. In contrast to “passive loyalty,” an active way of behavioral loyalty has been

discussed by Withey and Cooper (1992) as actively promoting the organization's business in public.

Generally, there are two levels of hierarchical classification of consumer complaint behaviors described by Day and Landon (1977). The first level divides consumer complaint behaviors into "take actions" and "take no actions." If the consumers take actions to complain, the second level divides their behaviors into public actions such as exploring redress of the complaint, taking legal action, or involving a third party to complain and private actions such as resisting a specific product or service personally and displaying negative word-of-mouth. As for taking no actions, the consumers forget about the problems and do nothing. Another classification schema was utilized by Day (1980) at the second level of its taxonomy, which indicated that there are three categories of consumer complaint behaviors: firstly it refers to redress seeking, namely the motivation to seek a remedy from the service provider either directly or indirectly; secondly, it refers to the behaviors related to exchange dissatisfaction without seeking a remedy; finally, with respect to personal boycott, there is motivation to end the purchasing behavior of the problematic product or service.

In the framework of Hirschman, Day, Landon and Singh (1988), they divided consumer complaint behaviors into three different categories: (1) voice, reflecting actions directed toward the seller; (2) private, involving negative word-of-mouth and exit; (3) third party, relating to actions directed toward external agencies such as the Better Business Bureau and taking legal actions. As for voice behavior, it commonly refers to a redress seeking complaint, which means complaining directing to the targeted service provider with the purpose of a refund, an exchange, compensation, or

an apology (Blodgett & Granbois, 1992; Singh, 1990). In terms of private behaviors, on the one hand, the definition of exit theory follows the same theory provided earlier by Hirschman. It is often driven by the service failures, previous relationship between consumer and service provider, core competitiveness or attraction of the company, and a series of dissatisfaction experiences. On the other hand, according to Singh (1990), it refers to the behaviors of consumers who share the unsatisfied experience with other people, such as friends, family members, and colleagues. It can be extremely harmful to the company or organization because it will strengthen the consumer's dissatisfaction or unsatisfactory feeling and influence others simultaneously (Zeithaml & Binter, 2003). Even worse, if dissatisfied consumers conduct both the exit and negative word of mouth, it will definitely do harm to the future sales by the word-of mouth-recipients (Richins, 1987). The third-party complaint behaviors are related to the actions taken by consumers to complain to at least one agency that is not directly involved in the exchange relationship (Singh, 1989). The most commonly involved third parties are the Better Business Bureau, a lawyer, or social media. Nowadays, there are even more online methods related to third parties. For example, consumers are more accustomed to utilizing social media to express their complaints. A commonly used app called Yelp was founded in 2004 to help consumers provide comments and suggestions as well as complaints for business managers to review. However, even though it is a type of public action, it is also considered to be a distinct phenomenon (Feick, 1987; Singh, 1989) because it often occurs when consumers are not satisfied with or do not receive the redress they are seeking.

Relationship between Consumer Satisfaction and Consumer Complaints

Based on the previous definitions of consumer complaint, there is a potential relationship between consumer satisfaction and consumer complaints. Consumer satisfaction is a quantitative index, which plays a role in measuring the degree of satisfaction as well as quantifying the gap between the expected and actual quality of the service or products. For example, Pfaff (1972) has developed an index of consumer satisfaction, which was able to measure subjective welfare. In other words, it helped to make determinations on how many benefits the consumer got from the marketplace. If the expected service or product quality is lower than the actual quality, the consumer satisfaction index is relatively high. Otherwise, the consumer satisfaction index is low and consumers are more likely to complain. In recent years, a lot of organizations have paid a great deal of attention to consumer complaint behaviors. Some of them even measure the degree of consumer satisfaction based on the number of consumer complaints. Statistically, it is a cost-efficient method for organizations to elevate consumer satisfaction and loyalty by encouraging more complaints given from dissatisfied consumers (Fornell & Wernerfelt, 1987). The plausible reason for this occurrence is that many organizations are so confused about the categories of different consumer complaint behaviors that they treat them equally.

It seems as if there is a significant relationship between consumer complaints and consumer dissatisfaction and consumers tend to commit complaint behaviors in several different ways based on the previous taxonomy of complaint responses. In the marketing field, complaining behaviors often serve as an early warning signal (Fornell, 2007) to help a company or organization learn a consumer's expectation and satisfaction as well as the exact and expected quality of the service or products.

Nevertheless, viewing consumer complaints from this perspective may result in several issues. Firstly, there can be exaggerations, which can influence and alter the procedure of information acquisition and cause misrepresentation issues. Empirical evidence has revealed the phenomenon that there are few correlations that can formulate the relationship between dissatisfaction and consumer complaints (Bearden & Teel, 1983, Halstead, 1996). Secondly, not all the service or product failures originate from the company or organization itself. They may be created by inevitable errors or external factors like the environment or consumer personality. Simultaneously, it is often difficult for consumers to conduct formal complaints due to the multifarious procedure and budget, despite great claims having been put forward to inform every one of the nonexistence of complaining barriers. As a consequence, it is not surprising that a majority of dissatisfied consumers refuse to give their complaint in the real business world. It was revealed by the Troubled Asset Relief Program (TARP) in 1996 that, even though different industries may face different problems to cause consumer complaint behavior, a minority of consumers actually complain to service providers. A modern marketing textbook supports the statement and draws the conclusion that up to 95% of dissatisfied consumers have never reported their problems to their companies or organizations. Hence, it can be more efficient if companies and organizations learn to successfully recognize the factors that affect the consumer complaint behaviors.

Factors Affecting Consumer Complaints

In the past, researchers have contributed to identifying the most relevant factors that can either directly or indirectly affect consumer complaint behaviors. By analyzing all these factors, the complexity and multifaceted aspects of consumer

complaint behaviors can be revealed. Firstly, a specific sector related to consumer complaints can be considered as the primary factor. Consumer complaint behavior can vary according to the different scenarios under which a consumer purchases a service or product. Consumers more easily generate a feeling of dissatisfaction toward received services than products (Best & Andreasen, 1977). In terms of products, complaint behaviors may be different based on durable and not durable products (Day & Ash, 1979). How essential the products are for daily life can also drive the orientation of consumer complaint behaviors (Day & Landon, 1977). Secondly, the factors associated with the dynamic interactive relationship between consumers and products or service providers greatly influence the consumer complaint behaviors as well. Each customer has a different perception of and attributes on the value of the provided products or services. Both subjective and objective elements play a significant role in the evaluation index of experience rated by the consumers. Thirdly, the characteristics of customers have an effect on their complaint behaviors. All the characteristics can be divided into general ones and the identity as a consumer. In the study of consumer complaint behavior, researchers have revealed the existing significant effects of demographic aspects on consumer complaint behaviors. These include age, gender, level of education and income (Heung & Lam, 2003).

Likelihood to Complain

Even though it has been proved that a majority of dissatisfied consumers refuse to complain, the problems within the marketplace that reflect such dissatisfaction still need to be focused on. Consumers are able to complain in several different ways, as stated by numerous researchers: exit, negative word of mouth, third party, etc. Thus, it is of great importance to acknowledge when consumers intend or

are more likely to complain.

According to Hoyer and MacInnis (2009), complaining is more likely when motivation, ability, and opportunity are high. Simultaneously, consumers are more likely to complain if there is an increasing level of their dissatisfaction or increasing severity of the problems they are concentrating on. Based on the equity theory, which was put forward by Adams (1969), the higher the unfairness of an exchange, the more likely the consumers are motivated to take actions to complain. In other words, if consumers encounter situations in which they are treated unequally to what they expend on the situation, they have more motivation to complain about such situations. Nevertheless, the level of dissatisfaction itself cannot fully explain complaining behaviors without significant opportunities (Hoyer & MacInnis, 2009). For example, passengers may be dissatisfied with the service given by a specific airline and this experience highly motivates them to complain about this problem. However, after acknowledging the complicated and time consuming procedure, the likelihood for them to conduct the complaint behaviors tends to become relatively low. These two authors also make the statement that the more blame or attribution for dissatisfaction that is placed on someone else – especially a company or an organization – the more motivated and likely it is that the consumers will complain. As a consequence, when they are aware of the situation in which the issues are closely related to the company or organization and the cause can hardly be changed, they intend to express their feelings of being separated from the issue. According to the *English Collins Dictionary*, tolerance is defined as the permitted variation in some measurement or other characteristic of an object. Thus, in terms of dissatisfaction, different people have their own tolerance threshold. If the level of dissatisfaction goes beyond their

tolerance threshold, they are more inclined to seek revenge on their previous product or service provider such as switching to its major rival.

Moreover, it has been pointed out by Hoyer and MacInnis (2009) that the likelihood and intention for consumers to complain are driven by consumers' attitude, their level of self-confidence, and their previous complaining experiences. According to Singh and Widing (1991), consumers' attitudes toward complaining can be conceptualized as a whole impact in terms of the "goodness" or "badness" of complaining to sellers. Goodness is associated with personal attitude about complaints while badness is related to social aspects. Consequently, people are more likely to complain when they have a more favorable attitude towards complaining (Day & Landon, 1977). As for self-confidence, consumers who conduct complaining actions due to dissatisfied feelings are relatively more assertive and self-confident (Bearden & Mason, 1984; Gronhaug & Zaltman, 1981). Even though such factors that are related to consumer complaints have given rise to researchers' attention, there is still little research that fully explains their effects on the likelihood that a consumer will complain. From self-confidence itself, it can be seen how deeply the people perceive a feeling of capability and assurance when taking their marketplace decisions and behaviors into consideration (Hardesty & Rose, 2001). Thus, it can be expected that if consumers are more self-confident, they are more likely to make the decision to complain. In terms of the effects of previous complaining experiences on consumers' likelihood to complain, the conclusion has been drawn mostly due to empirical research. For instance, if one person succeeded in posting their complaints on Facebook, which received comprehensive social concerns in the past, other people will be more likely to follow the same way to express their own complaints on

Facebook due to the successful complaining experienced and explicit complaining process.

Consumers' likelihood to complain can also be determined by their response to the service recovery. Many consumer complaint behaviors result from service failure. In order to retain their consumers' loyalty, numerous companies make an early decision to recover from their service failure before the consumers actually conduct their complaining behaviors. However, in recent years, much research has revealed that consumers tend to feel unequally treated or do not receive expected compensations. Thus, under such circumstances, they intend to be emotional and more likely to complain by all means. According to Tax and Brown (1988), consumer's satisfaction with service recovery varied 85% in accordance with three aspects of fairness: procedural justice, interactional justice, and outcome justice. *Procedural justice* relates to policies and regulations reviewed by consumers to seek justice; *Interactional justice* refers to the way company members take recovery actions after the service failure for their consumers; *Outcome justice* concentrates on the compensations given to the consumers due to the loss and inconvenience in the service failure. The more consumers perceive the above fairness, the less likely will they conduct complaint behaviors.

Gender Consideration

Gender Concept and Definition

From the perspective of definitions of gender, Kate (2002) and Palan (2001) reached an agreement on the position of gender as having the greatest significance and being the core part of the structure of one's self-image. Specifically, self-image was considered as the key facet to guide the tendency for the consumers to buy

products or services according to the conclusion drawn by the self-congruency theorists (Rosenburg, 1979; Sirgy, 1986). As for self-image, it is the mental picture, generally of a type that has entrenched positions during an external change, which describes the detailed information that is attractive to the objective evaluation of others, such as weight, height, skin color, gender, and IQ. The gender of consumers determines the decision-making process, which brings significant effects on the consumer's brand perception and choices (Sirgy, 1986).

However, there have been a lot of ambiguities when researchers first started to study how gender plays a role in the business market. They tended to confound the concepts between gender and biological sex. Based on its basic definition, gender reflects the range of the characteristics related to and differentiating between masculinity and femininity. According to Hofstede (2001), masculinity stands for a society in which social gender roles are clearly distinct: Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap: Both men and women are supposed to be modest, tender, and concerned with the quality of life. In decades of research, gender traits have been studied in three aspects: biological sex, sex-based social roles, and gender identity. Money (1995) provided significantly different definitions of sexual and gender roles. He also emphasized the importance of exploring the field of study of gender identity because he firstly believed that the biological sex of one person might not be in accordance with one's gender identity. For example, a woman wearing a dress and high heels may exhibit masculinity in a public place. Meanwhile, it sometimes has an effect on the shapes and structures of the individual or group

activities. According to Bem (1981) and Frable (1989), gender develops the connection between individuals and the rest of the world, combines different individual perceptions harmoniously, and generates opinions on proper social behaviors. However, even in the recent years, traditional gender demarcation was still utilized by some in the marketing field to segment the whole market into males versus females. Consequently, there is still a big challenge for people in the real world to understand the meaning of gender.

Theoretical Basis

Biological sex was seen as the only determinant to explain the consumer behaviors that are related to gender in the majority of literature, which also depended on essentialism (Fischer & Arnold, 1990; Hirschman, 1993; Stern, 1999). Grosz (1994) believes that essentialism reflects an explanation that men are predetermined to have the traits of masculinity while women are born with the characteristic of femininity based on the trust of the existence of the settled characteristics as well as assigned attribution and functions. It also gives aid to supporting the ideal that men should take the social roles while women take other distinct roles based on their biological sexual difference. However, opponents who are considered to be the non-essentialists hold the viewpoint that not all the masculine and feminine characteristics have a significant relationship with the biological sexual differences. Moreover, they believe the antecedent factors that lead to the different characteristics between men and women are external social environments instead of the given physiological traits (Dickson, 1982). Based on the statement of Gorman (1992), there is little statistical data that can help to draw the conclusion that most gender differences are due to biological sex. The perspective of the non-essentialist has already been used to do

research in the fields of psychology and sociology and bring great efforts to studying the gender effect in the marketplace. All the marketing researchers are seeking a more comprehensive method to get through to the point that gender is a multi-factorial phenomenon. For example, it was suggested that it would be worthwhile to comprehend the individual gender-related behaviors using much deeper research (Hirschman, 1993; Thompson, 1996). It is not only of great value but also essential to understand gender identity using the multifactorial method (Stern, 1988; Palan, 2001). On the basis of the empirical research in recent years, it can be revealed that there is not a significant relationship between sex and gender identity and gender serves to explain gendered products rather sex (Hirschman, 1987; Fischer & Arnold, 1994; Holt & Thompson, 2004).

Generally speaking, there are two theories dominating the explanation of the gender identity based on the previous social psychology literature: Gender Schema Theory and Multifactorial Gender Identity Theory. According to McCabe (2001) and Palan (2001), conceptual frameworks were generated by both theories to broaden the horizon of other researcher on the influences that gender brought to the social environment, culture and related areas that satisfied the consumers and delivered within marketing research. Gender Schema Theory provides an explanation of the procedure by which individuals establish their own gender identities by emerging masculinity or femininity and the pattern that individuals demonstrate their or others' experiences by utilizing gender identities (Markus & Crane & Bernstein & Siladi, 1982). According to Payne, Connor and Colletti (1987), a cognitive formation is assumed under this theory, which enables individuals to conduct general management among a great deal of gender-related information as well as to develop a relationship

between gender identity and the social events that take place in their surroundings. Different methods are taken by individuals to pursue their gender concerns and to reach the conclusion to classify themselves into three distinct groups: sex-typed, cross-sex-typed, or non-sex-typed. As for the sex-typed group, individuals are consistent with stereotypical norms that are culturally defined and look at the world from a schematic perspective. Individuals who are classified into the cross-sex typed group are more likely to exhibit their gender characteristics as the traits of the opposite biological sex. The individuals who are defined to be non-sex typed do not even establish a reliance on sex type. They are inclined to possess the traits of masculinity and femininity simultaneously or depict themselves as neither feminine nor masculine. As a consequence, from the context of Gender Schema Theory, Bem (1981) concluded that individuals in both sex-typed and cross-sex-typed groups are more inclined to be affected by gender identities. Namely, they are more gender schematic.

Another theory that holds a different view of gender identity and is skeptical about the accuracy of Gender Schema Theory is the so-called Multifactorial Gender Identity Theory. It admits the contribution of Gender Schema Theory to gender psychology. However, according to Edwards (1987) and Spence (1993), Multifactorial Gender Identity theory reveals that Gender Schema Theory has neglected significant evidence that the unifactorial aspect is also one of the factors that leads to observable gender differences. More specifically, Palan (2001) pointed out that Multifactorial Gender Identity Theory assumed that gender identity could be seen as the entirety of gender-related phenomena. It associates with different aspects to varying degrees including gender-related attitudes, interests, gendered role

behaviors, and gendered personality traits. Gender identity is not only multifactorial, but each gender's differentiating factor also has a different developmental history that varies across individuals because the factors are impacted by multiple variables that are not necessarily gender related. It definitely differentiates from the Gender Schema Theory because it generates measures towards numerous gender factors, such as psychological gender, gender role attitudes, and gender orientation. Spence (1993) and Palan (2001) reached an agreement that Multifactorial Gender Identity Theory explores the cognitive perception of gender schema and views gender from a more dynamic approach.

Gender Consideration in Consumer Behaviors

From the historical perspective, the business world and social environment have been constantly transforming in the past decades. There has been evidence showing that women have been gaining more purchasing power in the business world along with the internal trend of globalization. A majority of successful companies have been seeking the available approaches to satisfy all kinds of different consumers. As discussed in the previous sections, consumer complaint behaviors function as an efficient event that can provide companies and organizations with first-hand information about the expected and actual quality of products or services, consumer expectations, and consumer dissatisfaction. All the feedback and complaints given from the consumers ensure the acquaintance of companies and organizations with service failure and consumer requirements so as to reduce the consumer behaviors of exiting, switching, negative word of mouth, and loss of loyalty. Of great significance, the difference in sex, especially gender differences, demands urgent perception when it refers to the consumer complaint behaviors in the business environment.

It has been identified that in the marketplace, women consumers tend to take responding actions more emotionally than men consumers (Melynk & Osselaer, 2012). In comparison, when conducting action behaviors especially the complaining behaviors, men consumers are more strategical and mainly driven by their predetermined goals. When it comes to the criterion of consumer satisfaction, women are more concerned about equal treatment, polite treatment, and sincere apologies while men set goals for distributive justice, mistake correction, as well as compensation for losses. More specifically, consumers who exert female gender characteristics conduct complaining behaviors consistent with giving out their anger or disappointment as well as for the aim of getting apologies and improving the problematic items or services. Moreover, they merely want to give an early warning to the product or service providers. Such disappointed and angry emotions are usually put forward by them because they cannot hold back the feeling of ignorance of basic requirements based on their perceptions. According to the massive statistical reports in the real world, the majority of women consumers are more likely to complain in a discreet and euphemistic way. However, once they make up their minds, their complaints are relatively more resolute. Consumers with female traits prefer to express their complaints using a direct face-to-face communication method because they are in favor of reading their counterpart's facial emotions and reactions so as to avoiding potential conflicts with them. Even though they are often the soldiers who face the opponents directly, they tend not to complain because they will be more upset at times.

As for consumers with male traits, they are more consciously complaining and are well aware of what they want and how to pursue it. Their complaints are often

connected with compensation and even extra indemnity. Similarly, their complaining behaviors are mostly driven by a feeling of anger and disappointment. They only conduct their complaints when they consider their behaviors as an efficient approach, which can be extremely possible to realize. Even though they know their complaints are promising, they usually are determined to depress their emotions. Nevertheless, they tend to break through their emotional restraints and turn into being extremely radical and impolite. At this time, they are likely to involve third parties, such as lawyers, in the complaint behaviors. In contrast to face-to-face communications, consumers with male characteristics are more inclined to perform written complaints because it is easier to present all the related evidence and express their temper through words. Once failing to find an efficient way to complain, they are more likely to exit the relationship and switch to another product or service provider.

Commercial Air Travel

Role of Commercial Air Travel

It has been several decades since the first appearance of the commercial aviation industry in the world. Since World War II, the whole industry began blossoming with a dramatic and accelerated pace. According to Harris (2010), by the mid-1970s, deregulation prevailed in accordance with brand new entrants of airlines, lower fares, and the expansion of novel routes and services broader areas of countries and cities. It was concluded by Semper (1993) that commercial air travel can be seen as a method of transport within a high degree of comfort, speed, and safety level without any doubt. According to the 2001 Compilation and Parts 100 to 102 in *Code of Federal Aviation*, which was published in 2002, numerous people tend to make their decisions to consider it as an essential part of daily life in the real world

nowadays. Given the reasonable fares, it is relatively available and affordable for people from different sectors in society to experience airline travel. Once getting on board, the aircraft and services help an individual develop a sense of belonging, even though they are embraced with unfamiliar and abnormal environmental surroundings (Baagbil, 2013).

It has been concluded in the *Oxford Economics* that not only does air travel bring significant effects to the aviation industry, but it is also highly related to the growth of the economy, cross-country trade and investment, as well as tourism. Consequently, it is a huge and developing industry that dominates the globalization in several other industries. According to the data recorded by the Federal Aviation Administration (FAA), it has been revealed that from 1990 to 2000, there was an annual growth rate of 7% for air travel while the rate reduced a little to 5% during the next decade starting from 2001 all over the world. Even in the countries having a highly developed air travel market, such as North American or European countries, the air travel growth rate reached at least 4% per year. As for the leisure air travel market, large aircraft such as the Boeing 787 Dreamliners and Airbus A380 have been constructed and put into daily operation, which enables airlines to carry more passengers at a time during an even further flight trip. However, according to Aboulafia (2015), having a bigger aircraft does not mean a better aircraft due to more operation costs and safety issues. Thus, the whole aviation world is still pursuing a premium aircraft that is suitable for commercial air travel.

As mentioned before, air travel really helps to boost the development of tourism. Governments are more aware of the significance of tourism to the economic and cultural aspects of their countries. Air travel promotes infrastructure constructions

to fascinate tourists flying in from different countries, especially to the developed countries in Europe and North America (Bardhan, Begley, George & Kroll, 2008). Once tourism gets developed in a specific country, its economic foundation will be consolidated to ensure its citizens will become the new international air travelers in the future.

Issues Related to Air Travel

Even though it seems like commercial air travel is getting more accessible, affordable, popular, and widespread among the population, there are numerous air travelers feeling disappointed about and complaining about the air travel experience. For example, many airline passengers have expressed their disappointment directly based on their terrible experiences with flight network bookings and flight delays in recent years. Numerous people replied to posts either sharing their similar experiences or providing feasible recommendations to solve such problems. In the business world, consumers are getting increasingly accustomed to perceiving an improvement in the products they purchase and service they experience along with experiences at different times. That is why both large and small products are designed to be user-friendly in the real world (PR Newswire, 2013). The same thing happens in the commercial airline industry. According to Kollau (2013), air travel passengers are experiencing an in-flight technology revolution including power ports and storage, tracking and tracing, customer service, and connected crew. Simultaneously, traditional products such as seats, catering, recreational facilities, and safety equipment are continuously advanced in accordance with passengers' requirements and expectations. For example, it was presented in *Business Aviation Strategy* (2007) that Flight Data Analysis had been introduced to the commercial aviation industry

where it had been proved to be an effective safety tool to improve air travel safety. Nevertheless, the aviation industry does not follow the whole pattern to keep upgrading all products and services.

There are two categories of airline products: hard products and soft products. According to Clayton and Hilz (2015), the so-called hard products were developed to satisfy the air traveler within a relatively short time period. These include aircraft, seats, and storage because they cause great budget problems and make it difficult to get a fast return. Soft products, such as online ticket booking, service for disabled passengers, catering, and Wi-Fi Service, are relatively cheaper but still hard to be fully implemented. It calls for large-scale behavioral and cultural transformation within the airline itself, especially among the employees who directly serve passengers at the front line. Thus, under such circumstances, consumer dissatisfactions are inclined to be a challenging issue associated with commercial air travel.

When it comes to airlines, their daily operations definitely affect the experience of commercial air travel. Airlines' irregular operations to some extent affect the quality of the commercial air travel experience. As for the airlines' irregular operations, airlines generate the definition of irregular operations as any situation(s) that varies substantially from what was planned (Amadeus & PhoCusWright Inc, 2013). According to NATA Safety, which was issued in 2008, the most well-known irregular operations include both anticipated situations and non-planned events. Anticipated situations often refer to the temporary loss of services while the non-planned events include severe weather conditions, accidents or incidents, and most important, service failure. Under irregular operations, the costs of airlines, especially the direct costs, increase sharply (Marks, 2011). It was explained in Sabre Airline

Solutions (2008) that an airline's reputation and consumer satisfaction as well as loyalty would be destroyed if there were frequently occurring irregular operations. If a third party such as social media is involved in such events, not only does it affect air travelers' emotions but it also brings more issues of loss of market in the future.

Being confronted with such phenomenon, all the airlines are looking forward to seeking suitable countermeasures to solve the problems. The key point is to find all of the related factors of airlines' irregular operations based on massive statistical data. One of the most famous reports that concentrating on the quality of service provided by the airlines, especially the irregular operations, is the *Air Travel Consumer Report* (ATCR). It was primarily created by the Department of Transportation's Office of Aviation Enforcement and Proceedings (OAEP) in 1987 and is published each month. The Report successfully led to the concentration on carrier performance in terms of the traveling public (Mott & Avery, 2013). According to ATCR, carrier performance can be generally classified into several aspects that are associated with irregular operations: Flight Delays, Mishandled Baggage, Oversales, Customer Service Reports to the Transportation Security Administration, and Airline Reports of the Loss, Injury, or Death of Animals during Air Transportation. Flight delays, for example, are relevant to an airline's on-time performance, different types of delays, and diverted as well as canceled flights. As it was defined, the "on-time" flights are those flights operating within 15 minutes of the scheduled time, which is predetermined in the carriers' Computerized Reservations Systems (CRS) (Penn, Garrow & Newman, 2015). As an essential part in ATCR, the FAA (2013) modified the definition of different flight delays most recently, grouping flight delays into six aspects: air carrier delay, weather delay, national aviation system delay, security delay, and aircraft

arriving late. Air carrier delay is often associated with the delay of cleaning the aircraft, fueling the aircraft, performing required maintenance, cargo loading, or aircraft weight and balance. Weather Delay refers to the delay resulting from weather conditions such as a thunderstorm, icing, raining, wind shear, or microburst. NAS delay usually originates from the control of NAS including air traffic control during the high volume conditions or airport operations. Security delay relates to inappropriate security check, passenger reboarding for security examination, or long lines for security check, while late arriving aircraft delay defines the situations of a delay in the previous airport.

In terms of diverted flights and flight cancellation, a diverted flight is one that has been routed from its original arrival destination to a new, typically temporary, arrival destination. According to the Bureau of Transportation Statistics (2015), diverted flights and canceled flights were only 0.15% and 0.93% respectively, of the total flights among all carriers in January 2015. Flight diversions are mostly caused by weather conditions and technical failures of the aircraft while flight cancellations similarly resulted from weather problems and concerns about the safety and security of the aircraft. In conclusion, airlines' irregular operations definitely play an important role in daily air travel events, which must arouse great concerns from the airline managers to put forward a suitable and sufficient strategic plan to eliminate the accompanying side effects.

Consumer Complaints in Aviation

Introduction and Current Situation

Nowadays, airline passengers are unhappier than in the past with their travel experiences with major airlines in the United States. Based on the taxonomy of

consumer complaint behaviors from the previous research literature, air passengers tend to either complain directly to the airlines, complain to a third party, or just end the relationship with the previous airline and switch to another. Social media is a convenient way for consumers to conduct complaints nowadays. For example, before the occurrence of social networks such as Facebook and Twitter, people could only view consumer complaints from newspapers and television. In this situation, such complaints only catch someone's attention temporarily and people more easily forget what happened before. Nowadays, social media services, such as Twitter, now serve as an effective tool for consumers to place their complaints (Elliott, 2016). People can more easily know and remember that American Airlines, Frontier Airlines, and Spirit Airlines are the three airlines that received the most consumer complaints in 2015. More interestingly, in the spring of 2008, a music band called Sons of Maxwell was on an air tour heading to Nebraska. Their Taylor guitar was severely damaged because it was thrown by United Airlines baggage handlers in Chicago. United Airlines admitted the experience but attributed the fault to other people instead of themselves. After a nine-month communication, United Airlines did not compensate for the loss at all. As a consequence, the band made three songs to express their complaints. The songs are posted on YouTube and have been viewed by thousands of people. Even until now, many people can recall the consumer complaints associated with United Airlines. Based on data collected by the U.S. Department of Transportation (2015), the total number of complaints increased from 15,539 to 20,170 with an increase of approximately 30%. The government data also revealed that there is an increasing number of delayed flights, lost baggage, and consumer complaints (David, 2015). Headley (2015), a professor of marketing at Wichita State College, together with one

of the authors writing the ATCR, found that air travel passengers are more aware that the air travel situation is getting worse.

Airlines prefer to be informed of complaints rather than losing passengers unconsciously. Airline complaints are defined as a formal type of complaint that is filed by airline consumers in order to give out emotions of discontent to airlines or arouse the attention of a related government office such as the National Department of Transportation, which supervises and regulates the airline industry. The majority of airline complaints result from the previous issues related to air travel that remain unsolved or are handled inappropriately. According to McCartney (2005), the DOT received more complaints resulting from unexpected responses given from the airlines to the passengers who complain. There can be multiple effective methods for consumers to lodge their complaints: taking note, solving the problem on the spot, using official channels, and asking help from the professionals (Segan, 2009).

In order to oversee the quality of products and services provided by all domestic airlines in the United States, the Airline Quality Rating (AQR) was created in 1991 and functioned as a tool to assess airline quality based on multiple factors associated with airline performance (Bowen & Headley, 2012). Since 2005, there has been a heated competition among all the domestic airlines in the U.S. Nevertheless, statistically, there was not a sharp increment of airline passenger complaints in the past decade as the rate maintained at almost the same level of 0.88 complaints per 100,000 air travel passengers (Martin, 2009). However, the accuracy of the airline complaint rate has always been criticized because people may stop thinking of formal complaints if the informal ones do not work (Curtis, 2012). A large number of airline passengers did not even know how to conduct formal complaints. Thus, they chose to

be silent and did not complain. Moreover, according to Dunphy (2015), in order to file a formal complaint, consumers should not only transfer 140 characters according to the DOT, but also spend extra money to get their loss of compensation. Thus, they were held back due to the complicated procedure and budget issues.

Classification of Airline Consumer Complaints

The Air Travel Consumer Report, which is published each month by the Department of Transportation's Office of Aviation Enforcement and Proceedings (OAEP) provides a detailed summary of consumer complaints filed with the Department in writing, by telephone, via e-mail, or in person in the aviation industry. The report includes different categories of consumer complaints against individual U.S. airlines except safety complaints, which are handled by the Federal Aviation Administration (FAA), and security complaints, which are handled under the Transportation Security Administration (TSA). Flight problems can be considered as the top issues that result in consumer complaints. Tang (2015) found that in 2014, complaints associated with flight problems accounted for up to 32% of the total complaints recorded by the DOT. Passengers may encounter different situations, such as delays, canceled flights, diverted flights, or other deviations from the flight schedule no matter whether it was expected or unexpected. An increasing number of passengers' complaints are attributed to the occurrence of flight delays and cancellations. Among all the flight delays, weather conditions are the top issue that, can affect an airline's on-time performance. For example, as it was recorded in 2009, the number of consumer complaints even increased by 22% due to the global snowstorms and volcanic ash formed by the volcano eruption in Iceland (ECC-Net Air Passenger Rights Report, 2015). Oversale is a common occurrence in the airline

booking system as passengers may temporarily cancel the flights or even “no show” (Rothstein, 1969). However, oversale becomes a problem when boarding passengers exceed the number of seats on the flight. Under such circumstances, some of the passengers have to choose an alternate flight and wait an unexpected extra time – even more than one day – to take the flights, which will probably destroy their schedule and make them feel angry and register complaints. Meanwhile, they may complain about the oversale if they fail to get the compensation or request an involuntary refund for the ticket (IndependentTraveler, 2012). Consumer complaints related to reservations, ticketing, and boarding can result from mistakenly purchasing airline tickets or making reservations, extra waiting time in booking, ticketing, and boarding, and other problems associated with a passenger’s being denied boarding. Fare is an essential concern when people choose airline travel. As was posted on Flynous.com (2012), any forms of errors in fares, overcharges, or high-priced fares will definitely make airline passengers generate complaints towards the specific airlines. Not only in the past, but also in the current airline operation, there are always existing problems with baggage. Passengers are inclined to complain to airlines or a third party about the loss, damage, or delay of their baggage, extra charge for overweight baggage, and other problems with the baggage claims, which are set differently in different airports. For example, Peterson (2012) pointed out that in Atlanta’s Hartsfield-Jackson International Airport, Delta Airlines had problems dealing with missing suitcases even though fewer passengers checked their baggage. Moreover, airline passengers also have a tendency to complain about the refunds, customer services, disability, advertising, discrimination, and animal problems if there is an occurring inconvenience or mistake associated with all these factors that fail to

satisfy them or meet their predetermined expectations.

Summary

In summary, the researcher developed this section to include all the information from related articles that were reviewed. It presents the definitions, theories, classifications, and many other related factors based on how the previous researchers focused on the consumer complaints, gender consideration, commercial air travel, and consumer complaints in aviation. All the journal articles reviewed by researcher give the basis for constructing the specific research setting, which is discussed in the following chapter. This section also introduces the possible methodology for conducting the survey in Chapter 3.

Chapter 3—Methodology

Introduction

Chapter 3 presents all the related methods and measures used by the researcher. From the perspective of statistics, the research design and approach is introduced in the first section, which is able to explain the whole structure of the study. Detailed information associated with the research design and methodology is included in this section, such as the purpose of choosing the research design and the specific statistical method. A description of sample and location is also involved in this chapter, consisting of population, sample identification, sampling procedure, sample size, sampling technique, and eligibility requirements for all the participants.

In terms of data, Chapter 3 presents a detailed explanation of data collection and data analysis, which lists the instrument, source of data, and specific statistical data analyses to be used to address the research questions and hypotheses. Furthermore, legal and ethical aspects are considered by the researcher in this section. Generally speaking, the aim of constructing the research is to look deeply into the consumer complaint theory in the field of commercial airline travel. As a consequence, the reason that the researcher constructed the research design is to examine the difference in the likelihood of consumer complaints under different types of airline operation issues in U.S. commercial aviation and how gender plays a role in it.

Research Design and Approach

The researcher constructed a consumer perception study that measures the ratings of the likelihood to complain about airline operation issues among the airline passengers within the U.S. commercial airline industry. The research involves a

quantitative research methodology to conduct an online survey among selected sample participants and use measurable data to formulate facts and to uncover patterns in research. An experimental mixed factorial design was used in the research setting. Gender is a quasi-experiment variable, which is lack of random assignment and cannot be manipulated by the researcher. The reason this research lacks random assignment is that, from the baseline, participants were not assigned randomly to the male group and female group. Even though such a limitation is in existence and there is the existence of reduced internal validity and nonequivalent groups from the beginning, the assignment of this research was not associated with impractical and unethical factors. The result of this research will be more natural and in accordance with the real world. Airline operation issues (weather delays, flight cancellations, diverted flights, mishandled baggage, passenger denied boarding, ticket problems and no issues) were able to be manipulated by the researcher to determine if there is a change in participants' likelihood to complain. All the participants were randomly selected from Amazon[®] Mechanical Turk[®] (MTurk), which coordinates the individuals and business and human intelligence to construct online tasks. All the people will get compensation after their participation in the research survey.

Procedure

All the data used in the research were collected from the survey questionnaire, which is the primary research instrument. Before creating the online survey, research discussions were carried out with experts and professors on the validity of all the survey questions. FluidSurveys[®] was utilized by the researcher to develop the survey. All the participants were randomly selected from MTurk and the survey could be opened directly on the website with their own accounts. Then all the participants

could take part in the online survey and be rated on their likelihood to complain under different situations of different types of airline operation issues as well as different gender. All the participants took the online survey in the same situation through the same medium. The researcher then checked the collected data to verify the reliability of the public airline passenger complaint ratings.

There was only one version of the questionnaire. As in the situation related to the airline operation issue, a description of the scenario was shown to all the participants as below:

“Assume that you will take a commercial airline flight from a specific city to another. Please rate your likelihood of complaining based on the following conditions.”

Then all the participants were asked about seven different questions based on their feelings of likelihood to complain in the assumed situation: “Please rate your likelihood of complaining if there is an occurrence of ticket problem, weather delay, flight cancellation, diverted flight, mishandled baggage, passenger denied boarding or no issue during the whole flight trip.” All these questions were counterbalanced to ensure that there was a random sequence for all the seven questions. Under each question, there were the same five statements: “I would complain to the staff member; I would demand immediate and active involvement of a manager; I would write a letter of complaint to the head office; I would talk to other customers about the problem; I would complain to an external agency (e.g. Newspaper).”

The feelings of likelihood to complain were rated based on these five statements corresponding to a five-point Likert scale stating strongly disagree (-2) to strongly agree (+2). A zero score will be given as the neutral position in every scale. By using a Likert scale, the researcher was able to measure each variable and continue

to conduct further data analysis using SPSS. According to LaMarca (2011), a Likert Scale is considered as the most universal approach for researchers to conduct a survey, especially an online survey, because it can be easily understood. Participants in the survey are not required to directly answer either yes or no or to provide their specific opinions. The only thing they need to do is respond in a degree of agreement.

Once the responses were coded by the researcher, further data analysis was simpler for the researcher. It is common to see five ordered response levels together with numerical values range from -2 to 2, although numerous psychometricians prefer to adopt seven or nine levels. In this research setting, the researcher will use the five-point Likert Scale. The participants were required to provide demographic information. All the participants were then dismissed to retrieve their compensation and their information was protected to be private.

This procedure allowed for the conducting of both within-subject and between-subject analyses. In more detailed explanation, the seven different types of airline operation issues were employed by the researcher to test if there were significant differences of passengers' likelihood to complain under such different scenarios as a within subject factor. Gender functioned as the between-subject factor to test if there are significant differences among male and female commercial air travelers. In addition, the situation in which there is not a specific airline operation issue was set as the control, which made it easier for the researcher to observe the occurrence of the change in the likelihood to complain when there was a specific airline operation issue.

Power Analysis

Before the survey was taken by all the participants, an a priori power analysis was taken by the researcher to calculate the minimum sample size needed in the study to enable the detection of a valid and significant effect based on the given sample size. Software called G*Power version 3.1 was utilized to complete the power analysis. In order to conduct the ANOVA test of consumer complaints among the seven different categories of airline operation issues (weather delays; flight cancellations; diverted flights; mishandled baggage; passenger denied boarding; ticket problems; no issue condition), at least 63 participants are required based on the results from G*Power by setting alpha level of significance to .05, Power at .80, effect size to .25, number of measurements to two and number of groups to seven. However, in order to avoid situations such as the loss of data or participants' dropping out as well as to ensure enough female participants, the researcher ultimately decided to increase the sample size to 100 for the sake of the validity and strength of the statistical results. Basically, the researcher achieved adequate power and predetermined the effect size and alpha level of significance to ensure that sufficient data can be run through the statistical procedures.

Research Instrumentation and Materials

Variables

Independent Variable

In general, the research involves two independent variables in the study which are airline operation issues and gender. In terms of the first independent variable – gender – there are two levels of this quasi-experimental variable: male participants and female participants. As for the second independent variable of airline operation

issues, there is a total of seven different levels, including weather delays, flight cancellations, diverted flights, mishandled baggage, passenger denied boarding, flight ticket problems, and no operation issue. All the independent variables were measured based on the nominal scale.

Dependent Variable

The only dependent variable utilized in the research setting was the consumer complaint (consumers' likelihood to complain). The measurement of consumer complaints depended on the results of the survey, which use Likert scales, from all the participants. In order to measure the internal consistency of all the questions associated with consumer complaints, a Cronbach's α (alpha) test was introduced to estimate the internal reliability of such survey questions. Cronbach's α is going to increase when there is an increment of survey questions and their inter-correlations, which can also be described as internal consistency. Internal consistency is measured according to the participants' average scores on the consumer complaint survey. As a general rule, if the results of the Cronbach's α test go beyond 0.7, the internal consistency can be seen as acceptable. Even though all the data collected from this study is ordinal data due to the use of Likert scales, the research assumes it is interval data. According to Vigderhous (1977) and Jakobsson (2004), the reason that analyzing ordinal data as interval data might be parametric statistical tests (based on the central limit theorem) are more powerful than nonparametric alternatives. Moreover, the conclusions and interpretations of parametric tests might be considered easier to interpret and provide more information than nonparametric alternatives. The researcher also focuses on the Likert scales to ensure proper analysis of scalar data and find adequate time to use the ordinal data to present the findings of the survey.

Data Analysis

In terms of the data analysis, the researcher utilized three different statistical data analysis methods: descriptive data analysis, two-way (2×7) mixed ANOVA, and post-hoc analysis. Since an a priori power analysis was conducted, the alpha level of significance was predetermined to be 0.05. All the data was collected through MTurk and input into the software called SPSS for statistical analysis. The researcher decided to include descriptive statistics because they are able to give the simplest way in terms of describing, presenting, and summarizing the data to show specific patterns. In this study, all the results of participants' likelihood to complain were displayed using descriptive statistics based on gender as well as different airline operation issues. These statistics describe the central position of a frequency distribution for such a group of data (mean, median, and mode) and measure how such a group of data will spread out (range, quartile, variance, and standard deviation). The ANOVA test utilized in the research setting aims to analyze the differences of all the means in different groups, such as the gender and airline operation issues groups. It is one of the inferential analyses that also provide procedures for conducting analysis toward the variation within and between different groups. In the study, the researcher conducted a two-way mixed ANOVA because he wanted to examine the effects of two independent variables (gender and airline operation issues) on a single dependent variable (likelihood to complain). In addition, the results of the ANOVA also involve the analysis of the existence of significant interactions. After the global analysis, the researcher also sought to compare the differences between pairs of groups using a post-hoc test. For example, when the researcher knew there were significant differences between participants' likelihood to complain among airline operation

issues groups, a post-hoc test, such as Fisher's least significant difference (LSD), was able to direct the researcher to find out which two levels under the airline operation issues groups are significantly different. All the results of the above test were presented and interpreted by the researcher to indicate whether they retain or reject the null hypotheses. Basically, the data analysis was developed to determine if the gender and different airline operation issues will significantly affect the consumers' likelihood to complain.

Participants' Eligibility and Protection

All the participants in the research setting were randomly selected from MTurk using convenience sampling. According to Buhrmester, Kwang & Gosling (2011) as well as Litman, Robinson & Rosenzweig (2014), MTurk has been extensively used by psychologists in the last few years for participant recruitment. By using this site, not only researcher but also the participants should certify they are 18 years of age or older. According to the Participation Agreement posted by the MTurk service platform; participants have the authority to bind themselves or the companies they represent and transfer funds to their bank account and they should agree with all the terms and conditions associated with policies, procedures, and guidelines under MTurk. In the given researcher setting, all the participants must be U.S. citizens. Thus the researcher should take control of the recruiting procedure to ensure only American people are able to take part in the online survey. However, the researcher is not permitted to exert over control the participant selection on their background knowledge of aviation. In terms of the participants' protection, there was no mental or psychological harm when doing this specific survey using MTurk that is greater than daily normal activities. Meanwhile, all the participants' anonymity and confidentiality

were protected. As was posted by TurkPrime in 2015, all the participants will be equipped with a unique worker ID, which is created as a semi-random alphanumeric string; researchers will know their participants only based on these IDs. A Secure Socket Layer (SSL) software has already been introduced to protect unauthorized access, which especially protects the security of information transmission between the providers and participants. In addition, there are aspects of security protection of MTurk participants, such as the protection of their private credit card for getting their compensation. Anonymity of participants is protected because the participants' names are invisible to the researcher. The only personal information the researcher will retain is the results of the demographic questions for all the participants. To draw a conclusion, the eligibility and protection of participants is important when conducting an online survey. A high level of eligibility requirements and protection towards participants will make the data more demographically diverse, reliable, and qualified in accordance with the research setting.

Ethical Considerations

There is a minimum chance for the participants to be involved in potential ethical or legal risks because MTurk has high compliance with federal laws that prevent the occurrence of unethical and illegal surveys to be conducted by researchers. (Amazon Mechanical Turk Forum, 2013). Moreover, MTurk follows the Labor laws of the United States, which forbid the employment of participants under 18 years old. All the universities in the United States have insisted on institutional review board (IRB) approval for conducting MTurk experiments. It is important to note that institutional review boards in U.S. universities are independent bodies that review proposed experiments for legal and ethical issues. Thus, a request for IRB

approval was submitted by the researcher to ensure no potential legal and ethical issues because the research relates to psychometric aspects (Results in Appendix B).

Summary

In summary, the researcher has developed this section to include all the aspects related to the methodology of the study. It presents the whole process of how the research was completed by the researcher. Appropriate instruments as well as the correct statistical processes are introduced by the researcher to show the validity and reliability of the research. This method section clearly exhibits each elements related to the study procedure and every attempt utilized by the researcher. It creates preconditions that enable a thorough discussion of the results of the data analyses in the following chapter.

Chapter 4—Results

Introduction

In this chapter, all the properties related to data analysis results are given regarding the initial data analysis, descriptive as well as inferential data analysis results. In response to the problems stated in the Chapter 1 of this thesis, all the data were collected in high relevance and put into further analyzing procedure. Generally speaking, the overall aim of this section is to acquire a basic comprehension of the knowledge related to the airline passengers' likelihood to complain based on seven different airline operation issue groups as well as gender. Meanwhile, in order to pursue the results of the difference of airline passengers' likelihood to complain among a combination of these two different ways of factors, this chapter provides exhaustive data analysis results through ANOVA. All the above goals were accomplished in consistence with the development of this chapter under the thesis setting. The results and findings within this chapter affirm the potential for combining the theoretical knowledge with the processing of collecting and analyzing data.

Initial Data Analysis (IDA)

As it was mentioned in the previous section of this thesis, a two-way (2×7) mixed ANOVA was utilized to conduct the statistical data analysis procedure in the research setting. Before actually conducting the ANOVA test, much of the process related to checking had to be involved in the data analyzing process to ensure that the raw data that were collected were practicable to be analyzed using a mixed ANOVA. In other words, it is only appropriate to run a two-way mixed ANOVA after the collected data successfully passed through the examinations of four different assumptions, which can also be considered as initial data analysis. All the four

assumptions are no significant outliers, normal distribution, homogeneity of variances as well as equal sphericity. After determining that all the data meet the requirements of all four assumptions, then it was feasible to run the ANOVA analysis. By running the tests regarding all these assumptions, the corresponding Type I and Type II Errors were subsequently reduced.

Outlier Analysis

The outlier analysis is the first step to test all the assumptions of a two-way mixed ANOVA. The outlier analysis was introduced to detect if there are any significant outliers in any group of the within-subjects factor (airline operation issues) and between-subjects factors (gender). In order to make sure that all the data points are valid for conducting the ANOVA analysis, all the possible significant data points that do not follow the usual pattern should be identified to reduce the negative effects on the results of ANOVA test. In the research setting, the researcher decided to utilize the Tukey's formula to calculate the upper and lower threshold for a significant outlier. According to Turkey (1997), $Upper = Q3 + (1.5 \times (Q3 - Q1))$ while $Lower = Q1 - (1.5 \times (Q3 - Q1))$. Once conducted, all the calculated data points below the Lower threshold and Upper threshold should be considered as significant outliers. After running a explore procedure in Descriptive Statistics via SPSS, it was determined that all the data points were within the range of the Lower threshold and Upper threshold, which means there was no significant outliers lying under the within-subjects or between-subjects factors. As a consequence, all the data points collected via the survey were highly valid, acceptable as well as meet the requirement for the first assumption of ANOVA.

Normality Assumption

The next step is validating the assumptions to determine if the data points of average scores are following a pattern of nearly normal distribution for each combination of groups of gender and airline operation issues. By running a Descriptive Statistics analysis in SPSS, all the p-value under each average score group expect that the average mishandled baggage group under the Shapiro-Wilk test are below .05, which means that the data points for conducting the ANOVA test do not follow an approximately normal distribution in either a Kolmogorov-Smirnov test or a Shapiro-Wilk test. All the statistical results are shown in Table 1. Nevertheless, according to Mordkoff (2016), one may still be able to run the statistical tests including the ANOVA test with a large sample size (usually over 20 items) even if the collected data is normally distributed. Additionally, according to McDonald (2014), an ANOVA test is not very sensitive to moderate deviations from normality. Thus, based on the information given in such relevant literature, the researcher made the decision to continue conducting the two-way mixed ANOVA even if the data points in the research setting were not normally distributed.

Table 1

<i>Tests of Normality</i>						
	<i>Kolmogorov-Smirnov^a</i>			<i>Shapiro-Wilk</i>		
	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
TicketProblem_Ave	.265	151	.000	.899	151	.000
WeatherDelay_Ave	.288	151	.000	.870	151	.000
FlightCancellation_Ave	.226	151	.000	.925	151	.000
DivertedFight_Ave	.118	151	.000	.963	151	.000
MishandledBaggage_Ave	.084	151	.011	.985	151	.112
DeniedBoarding_Ave	.074	151	.043	.970	151	.002
NoIssue_Ave	.360	151	.000	.680	151	.000

a. Lilliefors Significance Correction

Homogeneity of Variance Assumption

The third assumption for conducting an ANOVA is Homogeneity of Variance for each combination of the groups of gender and airline operation issues. The researcher utilized Levene's test to determine the homogeneity of variance (HOV) under SPSS Statistics. When the significance is beyond the α level, we can conclude that the data set meets the requirement of homogeneity of variance. After conducting *Levene's* test using SPSS, the only condition that violated the assumption of homogeneity of variance was the flight cancellation variable (results shown in Table 2). However, according to Larson (2008), moderate deviations from the assumption of equal variances do not seriously affect the results in the ANOVA. Therefore, the ANOVA is robust to small deviations from the HOV assumption. We only need to be concerned about large deviations from the HOV assumption. Thus, it is appropriate to continue conducting the two-way mixed ANOVA in this research setting.

Table 2

<i>Levene's Test of Equality of Error Variances^a</i>				
	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
TicketProblem_Ave	1.679	1	149	.197
WeatherDelay_Ave	.490	1	149	.485
FlightCancellation_Ave	10.122	1	149	.002
DivertedFight_Ave	1.495	1	149	.223
MishandledBaggage_Ave	3.751	1	149	.055
DeniedBoarding_Ave	.234	1	149	.629
NoIssue_Ave	.163	1	149	.687

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: + Gender

Within Subjects Design: Situations

Equal Sphericity

The last assumption for conducting an ANOVA is equal sphericity, which means that there is a need to ensure variances of the differences between the related groups of the airline operation issue for all gender groups to be equal. A Mauchly's Test of Sphericity was introduced to test the equal sphericity using SPSS. For convenience, the researcher used the term "Issues" to cover all the seven conditions under the airline operation issue group. Generally, SPSS generates three different corrections including the Greenhouse-Geisser, the Huynh-Feldt, as well as the lower-bound. The Greenhouse-Geisser correlation is considered as the more conservative and more frequently used by researchers. The significance is less than 0.05, which means that the results reject the null hypothesis that the variances are equal and the assumption of equal sphericity has been violated (result is shown in Table 3). Even though a violation of may increase the probability of the occurrence of a Type II error and a test statistic (F_{ratio}) that simply cannot be compared to tabulated values of the F-distribution, the SPSS software automatically changes the degrees of freedom as well as fix the significance value of the F ratio to help the researcher make the corrections to continue conducting the repeated-measures ANOVA. As a consequence, the researcher could still conduct the following data analysis procedure with the help of SPSS even though there is a violation of sphericity.

Table 3

Mauchly's Test of Sphericity^a

Measure: MEASURE_1

Within Subjects Effect	<i>Mauchl y's W</i>	<i>Approx. Chi- Square</i>	<i>df</i>	<i>Sig</i>	<i>Greenhouse- Geisser</i>	<i>Epsilon^b Huynh- Feldt</i>	<i>Lower- bound</i>
Issues	.212	227.672	2 0	.00 0	.593	.613	.167

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: + Gender

Within Subjects Design: Situations

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Research Tool

In order to fulfill the process of collecting data from all the participants, a single version of the survey questionnaires was utilized as the primary research tool which was created via FluidSurveys®. All the participants were randomly selected from Amazon's ® Mechanical Turk (MTurk) and the participants could open the survey directly on the website with their own accounts. A five-point Likert scale was involved in measuring the airline passengers' willingness to complain based on seven different airline operation issue conditions from strongly disagree (-2) to strongly agree (+2) with an option of neutral (0). According to Petzer & Mostert (2012), the five-point Likert scale was proved to be valid in measuring the likelihood of complaining in the banking, domestic airline and restaurant industries. The researcher slightly changed the assumed context of the survey and kept all the five items under each airline operation issue situation. The SPSS Statistics software was utilized for conducting all the statistical data analyses including descriptive statistics and

inferential statistics properties.

Data Analysis

After running the data analysis procedure in SPSS, all the results are displayed in the output interface of this software, which includes the results of the Cronbach's α tests, descriptive statistics as well as the two-way (2×7) mixed ANOVA.

Cronbach's α Test

As it was mentioned in the Chapter 3, a Cronbach's α (alpha) test was introduced to estimate the internal reliability of survey questions associated with airline passengers' likelihood to complain. In common sense, if the number of survey questions increases, the corresponding Cronbach's α is going to increase as well. Additionally, a result of Cronbach's α test beyond 0.7 can be considered as an acceptable internal consistency (Nunnally, 1978). In this research setting, all the participants were asked the same five questions under seven different airline operation issue conditions. Thus, seven different Cronbach's α tests were run respectively under seven different airline operation issue conditions. The results show that only in the Ticket Problem condition, the Cronbach's $\alpha = .59$, which means there is a relatively low level of internal consistency. However, in the other six conditions, all the values for Cronbach's α were higher than 0.7. Consequently, the results of the Cronbach's α tests can also be accepted even though there is a little deviation from completely acceptable internal consistency.

Descriptive Statistics

A priori power analysis was conducted using a software called G*Power version 3.1 before sampling the participants. By setting the alpha level of significance to .05, Power at .80, effect size to .25, number of measurements to two and number of

groups to seven, the researcher got a minimum sample size of 63 participants. In order to avoid loss of data and ensure enough female participants, the researcher decided to set the limit of the number of participants to 151. Thus, the sample size in this research setting is $N = 151$. As the research also focuses on the effect of gender on the likelihood to complain, the descriptive statistics also show that the sample size for the male participant is $N = 82$ while the sample size for the female participants is $N=69$.

The participants' scores on the likelihood to complain present differently under seven different airline operation issue groups. Table 4 shows all the results including mean and standard deviation. In the condition with ticket problem, the male participants got a mean average score of -0.01 ($SD = 0.74$) while the female participants got a mean score of -0.08 ($SD = 0.67$). And the mean average score under the ticket problem condition among all the participants is -0.04 ($SD = 0.71$). In the condition with weather delay, the male participants got a mean average score of -0.85 ($SD = 0.89$) while the female participants got a mean score of -0.80 ($SD = 0.84$). And the mean average score under the ticket problem condition among all the participants is -0.83 ($SD = 0.87$). In the condition with flight cancellation, the male participants got a mean average score of -0.10 ($SD = 1.05$) while the female participants got a mean score of -0.16 ($SD = 0.72$). And the mean average score under the ticket problem condition among all the participants is -0.13 ($SD = 0.91$). In the condition with diverted flight, the male participants got a mean average score of -0.48 ($SD = 0.91$) while the female participants got a mean score of -0.42 ($SD = 0.83$). And the mean average score under the ticket problem condition among all the participants is -0.45 ($SD = 0.88$). In the condition with mishandled baggage, the male participants got a mean average score of 0.23 ($SD = 0.88$) while the female participants got a mean

score of 0.03 ($SD = 0.73$). And the mean average score under the ticket problem condition among all the participants is 0.14 ($SD = 0.82$). In the condition with no issue, the male participants got a mean average score of -1.40 ($SD = 0.97$) while the female participants got a mean score of -1.35 ($SD = 0.99$). And the mean average score under the ticket problem condition among all the participants is -1.38 ($SD = 0.98$). Figure 1 below shows all the descriptive statistics in separate airline operation issue conditions

Table 4

<i>Descriptive Statistics</i>				
	Gender	Mean	Std. Deviation	N
TicketProblem_Ave	Male	-.01	.744	82
	Female	-.08	.666	69
	Total	-.04	.708	151
WeatherDelay_Ave	Male	-.85	.893	82
	Female	-.80	.836	69
	Total	-.83	.865	151
FlightCancellation_Ave	Male	-.10	1.049	82
	Female	-.16	.721	69
	Total	-.13	.911	151
DivertedFight_Ave	Male	-.48	.912	82
	Female	-.42	.833	69
	Total	-.45	.875	151
MishandledBaggage_Ave	Male	.23	.882	82
	Female	.03	.732	69
	Total	.14	.820	151
DeniedBoarding_Ave	Male	.71	.832	82
	Female	.59	.807	69
	Total	.65	.820	151
NoIssue_Ave	Male	-1.40	.971	82
	Female	-1.35	.993	69
	Total	-1.38	.978	151

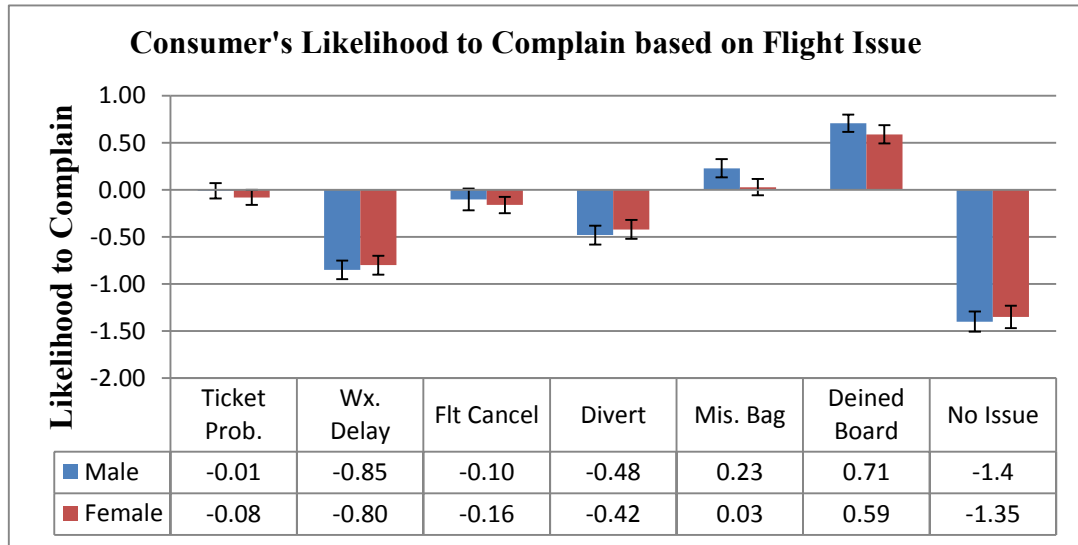


Figure 1 Descriptive statistics plot of consumer's likelihood to complain based on flight issue (SE bars depicted)

Analysis of Variance (ANOVA)

A two-way mixed ANOVA was conducted to determine the effects of gender and airline operation issues on the airline passengers' likelihood to complain. As the result of Cronbach's α test was considered as acceptable, as discussed in the previous section, then all the points related to the participants' scores on the likelihood to complain were then merged together to conduct further analysis within the ANOVA test interface.

Based on the results given from the ANOVA, first of all it can be concluded that there was not a significant interaction between the gender and different airline operation issue conditions, $p = 0.47$. Additionally, there was a main effect of different airline operation issue conditions, $F(3.55, 529.90) = 150.97, p < .05$ from the result of Test of Within-Subjects Effects. However, there was not a significant main effect of gender, $F(1, 149) = 0.17, p = .68$, which was shown on the result of Test of Between-Subjects Effects.

A post-hoc test called Fisher's least significant difference (LSD) was then conducted to carry out a pairwise comparison among all the groups under the main effect of airline operation issue conditions. In the first part, the test interface displayed the result when comparing airline passengers' likelihood to complain under the conditions between ticket problem and the other six conditions. The results showed that there is a significant difference of average scores on the likelihood to complain between airline passengers in the condition of ticket problems and weather delay, $p < .05$, with a mean difference of 0.78. This indicates that airline passengers in the condition with ticket problem are more likely to complain than airline passengers in the condition with weather delay. However, there is not a significant difference of average scores on the likelihood to complain between airline passengers in the condition of ticket problems and flight cancellation, $p > .05$. There was a significant difference of average scores on the likelihood to complain between the condition of ticket problems and diverted flight, $p < .05$, with a mean difference of 0.41, which indicates that airline passengers in the condition with ticket problem are more likely to complain than airline passengers in the condition with diverted flight. There was a significant difference of average scores on the likelihood to complain between the condition of ticket problems and mishandled baggage, $p < .05$, with a mean difference of -0.18, which indicates that airline passengers in the condition with ticket problem are less likely to complain than airline passengers in the condition with mishandled baggage. There was a significant difference of average scores on the likelihood to complain between the condition of ticket problems and passenger denied boarding, $p < .05$, with a mean difference of -0.69, which indicates that airline passengers in the condition with ticket problem are less likely to complain than airline passengers in the

condition with diverted flight. There was a significant difference of average scores on the likelihood to complain between the condition of ticket problems and no issue, $p < .05$, with a mean difference of 1.3, which indicates that airline passengers in the condition with ticket problem are more likely to complain than airline passengers in the condition with no issue.

By combining all the results given by the LSD's post-hoc test shown in Appendix C and Figure 1, the researcher can draw the conclusion that airline passengers are most likely to complain under the conditions of Denied Boarding and Mishandled baggage and least likely to complain when there is no issue during the flight (Results showing in Figure 2). However, as it was mentioned before, there was not significant difference of average scores on the likelihood to complain between airline passengers in the condition of ticket problems and flight cancellation.

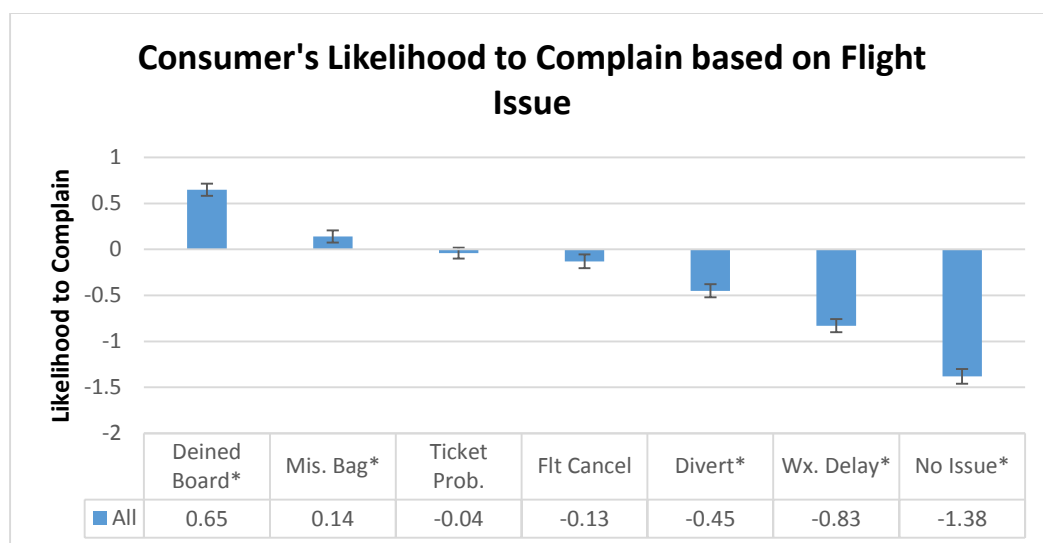


Figure 2 Likelihood to complain sequence (SE bars depicted, * indicated significance $p < .05$)

Decision on Hypothesis

Generally, there are three statistical hypotheses in this research setting.

Null Hypothesis 1

H₀₁: There is not a significant difference in the likelihood of a consumer's complaining by different types of airline operation issues.

Alternative Hypothesis 1

H₁₁: There is a significant difference in the likelihood of a consumer's complaining by different types of airline operation issues.

As for the first hypothesis, the results in the ANOVA test rejected the null hypothesis H₀₁. Thus, there is a significant difference in the likelihood of a consumer's complaining by different types of airline operation issues.

Null Hypothesis 2

H₀₂: The likelihood of a consumer's complaining would not be significantly different among male and female participants.

Alternative Hypothesis 2

H₁₂: The likelihood of a consumer's complaining would be significantly different among male and female participants.

As for the second hypothesis, the results in the ANOVA test failed to reject the null hypothesis H₀₂. Thus, the likelihood of a consumer's complaining would not be significantly different among male and female participants.

Null Hypothesis 3

H₀₃: There will be no significant interaction between the variables of airline operation issues and gender.

Alternative Hypothesis 3

H₁₃: There will be an interaction between the variables of airline operation issues and gender. The direction of the hypothesis cannot be determined due to the lack of *a priori* basis.

As for the last hypothesis, the results in the ANOVA test failed to reject the null hypothesis H₀₃. As a consequence, there was no significant interaction between the variables of airline operation issues and gender.

Summary

After conducting all the descriptive statistics as well as the two-way mixed ANOVA, a significant main effect of airline operation issue has been identified, which indicates that airline passengers tend to have a different likelihood to complain towards different airline operation issues including ticket problem, weather delay, flight cancellation, diverted flight, mishandled baggage, passenger denied boarding and no issue conditions. This specific finding can help me to generate more exhaustive discussion on the knowledge behind such findings. Even though there was not a main effect of gender as well as a non-statistical significant interaction between gender and airline operation issue, it is still worthwhile to explore the horizon beyond such performance to know why such conditions are in existence. Additionally, in the following section, more discussions will be generated which will concentrate on other effects on the airline passengers' likelihood to complain.

Chapter 5

Overview

The purpose of this study was to explore the horizon of the research to look at the effects of gender and different types of airline operation issues on consumer complaint behaviors in the commercial aviation industry within the United States. The study aimed to understand if the commercial airline passengers' likelihood to complain can be significantly affected by the different situations of airline operation issues. Previous research done by Heilman and Chen (2005) indicated that males and female tended to behavior differently towards the same situations in which they were set. Similarly, the researcher assumed that male and female commercial airline passengers would have different attitudes towards complaining (Desai & Sousa, 2015). The researcher introduced seven different aspects of airline operation issues including ticket problems, weather delays, flight cancellations, diverted flights, mishandled baggage, passenger denied boarding and no issue situation into the study to compare the difference between groups. The researcher also involved the scale regarding the likelihood of complaining to measure consumer complaining behaviors. In addition, even though previous researches has already examined the difference of consumer likelihood of complaining between groups using many research criteria, the current research is the first to introduce this measurement in commercial airline industry.

After putting forward the research survey through Amazon's ® Mechanical Turk ® (MTurk), the researcher finally received 151 responses on the website consisting of 82 male participants and 69 female participants. All the participants were randomly selected from the United States. All the participants were asked the

same questions under seven different airline operation issues to calculate their scores on the questionnaire. The gender of the participants was also collected by the questionnaire to use in further statistical analyses.

An experimental factorial design was introduced into the study to examine the effects of gender and airline operation issues on the consumers' likelihood of complaining. As was mentioned before, the research involved two independent variables in the study which were airline operation issues and gender. The first independent variable gender, was identified as a quasi-experimental variable consisting of male participants and female participants. The second independent variable of airline operation issues was divided into seven different levels, including weather delays, flight cancellations, diverted flights, mishandled baggage, passenger denied boarding, flight ticket problems, and no operation issue. All the independent variables were measured based on the nominal scale. A two-way (2×7) mixed ANOVA was utilized to conduct the statistical data analysis procedure in the research setting. By asking the research question: what is the effect of gender and airline operation issues on the commercial airline passengers' complaining behaviors in the United States, the researcher created the research hypotheses as the following:

Null Hypothesis 1

H₀₁: There is not a significant difference in the likelihood of a consumer's complaining by different types of airline operation issues.

Alternative Hypothesis 1

H₁₁: There is a significant difference in the likelihood of a consumer's complaining by different types of airline operation issues.

Null Hypothesis 2

H₀₂: The likelihood of a consumer's complaining would not be significantly different among male and female participants.

Alternative Hypothesis 2

H₁₂: The likelihood of a consumer's complaining would be significantly different among male and female participants.

Null Hypothesis 3

H₀₃: There will be no significant interaction between the variables of airline operation issues and gender.

Alternative Hypothesis 3

H₁₃: There will be an interaction between the variables of airline operation issues and gender.

Summary of Findings

In general, the overall purpose of the research is to achieve a detailed comprehension of the knowledge related to the airline passengers' likelihood to complain based on seven different airline operation issue groups as well as gender. Additionally, in order to determine the difference of airline passengers' likelihood of complaining among a combination of these two different ways of factors, ANOVA test was utilized by the researcher to produce exhaustive data analysis results. All the statistical results are given in the previous chapter.

Before actually conducting the ANOVA, four aspects of Initial Data Analysis (IDA) were introduced by the researcher to the research setting including outliers analysis, the test for normal distribution, the test for homogeneity of variances as well as the test for equal sphericity. After utilizing Tukey's formula to calculate the upper and lower threshold for a significant outlier, the result showed no significant outliers

of the participants' scores on the questionnaire in the research setting. In terms of the test for normal distribution, even though the results indicated that data points did not follow an approximately normal distribution, the researcher still continued to use the ANOVA because an ANOVA test is not very sensitive to moderate deviations from normality (McDonald, 2014). Similarly, despite the fact that results showed a violation of homogeneity of variances, the ANOVA is robust to small deviations from the HOV assumption (Larson, 2008). Finally, results also made it possible to reject the null hypothesis of equal sphericity. However, due to the benefit of using the SPSS software, the degrees of freedom as well as the significance value of the F ratio were automatically fixed to help the researcher conduct a valid repeated-measures ANOVA. Under such circumstance, the researcher continued on conducting the ANOVA test.

Based on the results shown within the output display of SPSS, it was concluded that there was not a significant interaction between the gender and different airline operation issue conditions and there was no significant difference of the consumer likelihood of complaining between male and female commercial airline passengers. The researcher also conducted a post-hoc test to make a the pairwise comparison which indicated that airline passengers were more likely to complain under then situations of passenger denied boarding and mishandled baggage than the conditions with weather delay or without any issues. However, as was mentioned before, there was not a significant difference of average scores on the likelihood to complain between airline passengers in the condition of ticket problems and flight cancellation. Thus, the researcher successfully rejected the second hypothesis to draw the conclusion that there was a significant difference of likelihood of complaining among the seven different airline operation issues.

Discussion

The concentration of this research was set on the commercial airline passenger's likelihood to complain. Furthermore, the researcher conducted further study to determine if gender and different airline operation issues would have impacts on the commercial airline passenger's likelihood to complain. The second chapter presents the great contribution that have been made by different researchers on identifying the most relevant factors that can either directly or indirectly affect consumer compliant behaviors. Petzer and Mostert (2012) introduced the scale of "Respondents' likelihood of voicing a complaint based on a fictional service failure with their current service provider" to study the consumers' attitude towards domestic airline service failure. Similarly, the researcher used the same scale to measure passengers' likelihood to complain in the U.S. commercial airline industry. Meanwhile, that study also examined consumer's complaint behaviors in the field of bank and restaurant which provided great external validity for the researcher to conduct the study in this research setting.

The information from the previous researches successfully gave practical methods and provided a reliable measurement for the researcher to focus on the complaining behaviors among commercial airline passengers in the United States. However, as was mentioned in the previous literature review section, there had been a controversial relationship between consumer satisfaction and consumer complaints. Even though different industries may face different problems to cause consumer complaint behavior, a minority of consumers actually complain to service providers (TARP, 1996) due to the problem itself or the environment problems such as the budget issues and complexity of complaining. As a consequence, a commercial airline

passenger could have actually to speak out their complaints. In the questionnaire, participants were only asked the questions about their likelihood to voice, used a private method or involve a third party to complain, which supported the theory given by Hirschman (1970), Day and Landon (1977) as well as Singh (1988). However, these participant may not be well educated enough to know how complicated the procedure of filing a complaint or even do not know how to complain formally at all. They could have merely assumed their likelihood to complain once they noticed a specific airline operation issue. Additionally, even though a participant has experienced complaining to any of the airlines, their family members, friends, colleagues or a third party and acknowledged the inflexibility and complexity of the problem, they could also be likely to complain because it was more likely to have a mental activity than actually doing that when completing a questionnaire. To sum up, when the participants acquired a feeling of dissatisfaction, they could either be willing to complain or not in the same environment. Thus, the scale might not be the perfect one to really reflect the commercial airline passengers' likelihood to complain.

As for the first hypothesis in the study, the researcher failed to reject the null hypothesis that there was a significant difference in the likelihood to complain between male and female commercial airline passengers. However, previous researchers had identified that in the marketplace, women consumers tend to take responding actions more emotionally than men consumers (Melynk & Osselaer, 2012). Consumers with female traits prefer to express their complaints using a direct face-to-face communication while consumers with male traits tended to write formal complaints or involve a third party to complaint. Sometimes they would like to suppress their emotions to end the relationship and switch to another. Thus, maybe the

uncontrolled extraneous variables like age, education level and flying frequency confounded the results. Based on the theoretical foundation given in the literature review, all the participants could be categorized into different groups including sex-typed, cross-sex-typed, or non-sex-typed. Moreover, Palan (2001) indicated that the Multifactorial Gender Identity Theory assumed gender identity to be associated with gender-related attitudes, interests, gendered role behaviors, and gendered personality traits. However, the current research only focused on the surface level of biological sexual differences. As a consequence, future studies should be introduced to study how gender identity will influence the likelihood to complain among commercial airline passengers.

In terms of the second hypothesis, the research rejected the null hypothesis that there was a significant difference of likelihood to complain among different airline operation issues. In the previous literature review section, it is noted that flight problems can be considered as the top issues that result in consumer complaints. Based on the Air Travel Consumer Report (2015), there were almost four times the complaints associated with flight problems than either boarding, baggage or ticket problems. Tang (2015) found that in 2014, complaints associated with flight problems accounted for up to 32% of the total complaints recorded by the DOT. However, based on the results given by the post-hoc test, it was interesting to note that commercial airline passengers were more likely to complain about passenger denied boarding, mishandled baggage, and ticket problem than those flight problems including flight cancellation, diverted flights and weather delay. Given that phenomenon, one plausible explanation could be that it was more flexible and easy for them to complain once the passenger experienced denied boarding, mishandled

baggage, or a ticket problem than those flight problems. In common sense, once a passenger identifies a problem on the spot at the airport, he or she can easily get the attention of the person in charge to help him or her solve the problem. For example, if one runs into a situation such as losing baggage in the airport, having a passenger in the flight who was denied boarding or if one is involuntarily bumped from the flight due to overbooking, he or she can directly complain to the customer service or the airline right in the specific airport to help find the lost luggage or achieve eligible compensation afterwards. However, it is relatively hard for the passengers to complain if the airline operation issues occur during the flight. Even though a passenger can complain directly to the flight attendant, the weather delay, flight cancellation, or diverted flights have already take place and are difficult to be altered or avoided. Even if the passengers are able to document the experience, gather relevant information from the airline, and file a formal complaint with the airline through AirSafe.com online complaint form or AirSafe.com, it will take them a fairly long time to finish the whole process. In addition, some airlines have even started to charge passengers fees if they want to file a complaint. Under such circumstances, passengers may be less likely to voice their complaints. In the no issue condition, commercial airline passengers were assumed to be less likely to complain than in any other situations with airline operation issues. The result was reasonable because they were satisfied with the environment without service failure. The results of this study successfully support such assumptions.

Practical Implications

Research studies have broken through the limit of different industries to study the consumer complaint behaviors in the United States commercial airline industry. It

is of great significance to introduce the measurement of likelihood to complain to understand whether airline passengers tend to complain differently or not in situations of different problems. Similar to the researches that have been done before to ensure a harmonious atmosphere in banks, restaurants, hospitals or hotels, the results of this research also provide practical implications for building up the foundations as well as to making up the deficiency within the commercial airline industry.

On the one hand, research results indicated that male and female commercial airline passengers tend to have a similar level of likelihood to complain. It seemed to provide the implications that there was no difference of consumer complaint behaviors regarding gender. However, a major previous study supported the idea that female and male tended to have different attitudes towards complaint in many other industries. The theoretical basis behind the study of gender also proved that it was not the truth that males always have male traits while females always have female traits. It could flip around or not follow the biological sex. Thus, it provided important implications for conducting more research to examine how gender identity affected the consumer complaint behaviors behind the gender. Once such research is conducted, it will give practical implications for airlines or airports to develop different channels for male and female passengers. It will make it possible to help airlines or airports to address different consumer complaints among male and female passengers and give back corresponding responses and practical service recovery plans. The ultimate implication in the airline industry is to build up consumer loyalty and take timely actions to solve the problems resulting from consumer complaints. Additionally, it also suggests that other industries replicate this study to identify consumer complaints by gender and find the best way to prevent negative word of

mouth and loss of customer loyalty.

On the other hand, the results also provided practical implications to examine how people were going to complain differently in different situations, especially between the failure situation and non-failure situation. For example, when introducing a number of automatic devices on the aircraft such as autopilot, automatic landing gears or automatic oxygen masks, it is feasible for the researcher to compare passengers' likelihood to complain with each of those devices and make pairwise comparison with the passengers' likelihood to complain when there is no automatic device on board. In addition, from the results of the study, it was relatively surprising to find that commercial airline passengers were more likely to complain about passenger denied boarding, mishandled baggage, and ticket problem than those flight problems including flight cancellation, diverted flights and weather delay. This indicated that airports and airlines should find more applicable ways for passengers to simplify the process or withdraw the fees to actually file a formal complaint. They should try their best to reduce the occurrence of airline operation issues of flight problems because airlines may unconsciously lose their loyal passengers due to the lower level of likelihood to complain. As for those situations in which passengers were more likely to complain, airports and airlines should take immediate actions to help those passengers to solve their problems including finding the lost baggage, providing reasonable compensation and negotiating with passengers to reschedule their flights. Also, airports should optimize their baggage handling procedure, as well as their ticket reservation and booking system to reduce the occurrence of service failures.

Limitations

The current research generated limitations on numerous aspects. Because the online survey was used as the tool to gauge the likelihood of complaining among potential participants, time constraints were a limitation for the researcher to collect data from potential participants who suffer with personal time pressure or extensive workload and may not be willing to take part in the survey. By posting the survey through Amazon's[®] Mechanical Turk[®] (MTurk), participants were not able to ask clarifying questions. The survey completion procedure could not be monitored and the survey provider could not encourage all the participants to give the results based on their actual feelings. In addition, if the participants got confused about the survey context, they might have casually given their answers. Ideally, the selection was U.S. citizens who had commercial airline travel experience. Nevertheless, given the results of getting compensation, some participants may not have even taken a flight in the past. That would certainly affect the survey results. The selection procedure was not a real random selection; it only selected participants who had an account on Amazon.

Additionally, the current research also generated a delimitation which makes it hard for future researchers to replicate the study. Firstly, the scale used in this research only focused on the likelihood to complain among participants. However, it actually ignored the different ways participants presented their complaints. Secondly, the researcher only chose to determine the effect of gender and different airline operation issues on the consumers likelihood to complain even though the information of age and ethnicity was also collected but disregarded by the research. These extraneous factors could also bring side effects on any following replicated research.

Recommendation for Future Research

The current study examined the effects of gender and different airline operation issues on consumer complaint behaviors merely based on the measurement of their likelihood to complain. However, consumer complaint can be seen as a complicated combination of behavior and psychology, which relate to numerous aspects including motivation, causes, and the way of acting. According to the theory given by Hirschman (1970), Day and Landon (1977) and Singh (1990), even though consumers are willing to complain about the problem they are faced with, they tend to behave differently. Thus, future research should be conducted to determine what factors actually affect the differences of consumer complaint behaviors.

To ensure the random selection of the participants in the study, the researcher posted the survey on Amazon's ® Mechanical Turk ® (MTurk) to enable all the people who wanted to be involved in the study to participate in the survey and get the compensation. Thus, if there are enough resources and funding, future research should collect data from a wider range to replicate the current study. Because all the participants were only selected from Amazon's ® Mechanical Turk ® (MTurk), it actually set the limit for the research to only examine the data of those U.S citizens who already had an account on the Amazon. Given the fact that commercial aviation is a global industry, future study should select people from different countries or different cultures to compare their complaint behaviors because people from different countries or different cultures may have different attitudes or cultural recognition towards complaining. This also requires future behavioral analysis studies.

The current study also indicated that there was no difference of consumer complaint behaviors regarding gender. Based on similar research that had been done

before in many other industries, males and females presented different complaint behaviors. As it was mentioned before, future study should examine how gender identity affects the consumer complaint behaviors behind the gender. As for the different situations of airline operation issues, except for the seven different situations given in this study, future research could also be conducted to determine the consumer complaint behaviors in the situations of customer service, disability, advertising, discrimination, or animals. Even though there were a small number of consumer complaint cases with such conditions, the total number has actually been increasing in the past decades which has caused public concern all over the world.

Not only in the commercial airline industry, but also in the industries that have close relationship with our daily lives, each customer has a different perception of and attributes on the value of the provided products or services. Consumers are relatively sensitive to the immediate service or product recovery. As noted in the article review section, the Taylor guitar of a music band called Sons of Maxwell was severely damaged because it was thrown by United Airlines baggage handlers in Chicago. Then they wrote three different songs to complaint about ineligible compensation. Future research should be extended to determine the relationship between consumer complaints and service recovery. If such research can be done in the future, it will help industries to make decisions on providing immediate recovery to stop losing consumers.

Conclusion

The purpose of the study was to expand the study of consumer complaints in the commercial airline industry. After involving 151 participants in the research, the study ultimately indicated that the likelihood to complain could be affected by

different airline operation conditions but had nothing to do with the gender of passengers in the United States commercial airline industry. Further, several practical implications have been generated to indicate that the study helps airlines to build up consumer loyalty and take timely actions to solve the problems resulting from consumer complaints. Airports should optimize their operation systems to ensure that fewer service failures happen in those conditions in which consumers are most likely to complain. Future research has also been promoted to look at consumer complaint behaviors across different countries and cultures because of the globalization of the whole aviation industry. Given all the limitations of this study, more detailed theory and knowledge should be involved to study the consumer complaint behaviors in the aviation community because it is actually a significant part of human behaviors.

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Appendix A

Are you at least 18 years of age?

- ☐ Yes
☐ No

Next

Instructions

You will be presented with two different scenarios and you will then be asked some questions about each scenario. Following that, you will be asked some demographic questions. The data collection process is anonymous and your response will remain confidential. This should take you about 3-4 minutes.

Back

Next

Assume that you will take a commercial airline flight from a specific city to another. Please rate your likelihood of complaining based on the following conditions.

Please rate your likelihood of complaining if there is an occurrence of ticket problem during the whole flight trip:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would complain to the staff member	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would demand immediate and active involvement of a manager	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would write a letter of complaint to the head office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would talk to other customers about the problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would complain to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

an external agency (e.g. newspaper)

Please rate your likelihood of complaining if there is an occurrence of weather delay during the whole flight trip complain in this situation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would complain to the staff member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would demand immediate and active involvement of a manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would write a letter of complaint to the head office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would talk to other customers about the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would complain to an external agency (e.g. newspaper)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please rate your likelihood of complaining if there is an occurrence of flight cancelation during the whole flight trip

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would complain to the staff member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would demand immediate and active involvement of a manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would write a letter of complaint to the head office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would talk to other customers about the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would complain to an external agency (e.g. newspaper)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please rate your likelihood of complaining if there is an occurrence of diverted flight during the whole flight trip

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would complain to the staff member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would demand immediate and active involvement of a manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would write a letter of complaint to the head office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would talk to other customers about the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would complain to an external agency (e.g. newspaper)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please rate your likelihood of complaining if there is an occurrence of mishandled baggage during the whole flight trip

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would complain to the staff member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would demand immediate and active involvement of a manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would write a letter of complaint to the head office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would talk to other customers about the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would complain to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**an external agency
(e.g. newspaper)**

Please rate your likelihood of complaining if there is an occurrence of passenger denied boarding during the whole flight trip

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would complain to the staff member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would demand immediate and active involvement of a manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would write a letter of complaint to the head office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would talk to other customers about the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would complain to an external agency (e.g. newspaper)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please rate your likelihood of complaining if the whole trip will be smooth and there will be no occurrence of issues which may affect the normal operation.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would complain to the staff member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would demand immediate and active involvement of a manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would write a letter of complaint to the head office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would talk to other customers about the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**I would complain to
an external agency
(e.g. newspaper)**



Are you male or female?

☐ Female

☐ Male

What is your Age?

Back

Next

Thank you for completing your survey! You are done now.

Please input your initials followed by your age. For example, if your name is John Smith and you are 24 years old, then you would input: JS24

Please return to MTurk and enter this code into the appropriate place so that you can be paid for your time.

Back

Submit

Appendix B



Florida Institute of Technology
Institutional Review Board

Notice of Exempt Review Status

From: Florida Tech Institutional Review Board
FWA00014339, IRB00001690

To: Xinpei Lu

Date: May 18, 2016

IRB Number: 16-108

Study Title: Consumer complaints in the US commercial airline industry

Dear Researcher:

Your research protocol was reviewed and approved by the IRB Chairperson. Per federal regulations, 45 CFR 46.101, your study has been determined to be minimal risk for human subjects and exempt from 45 CFR 46 federal regulations and further IRB review or renewal unless you change the protocol or add the use of participant identifiers. This study is approved for one year from the above date. If data collection continues past this date, a Continuing Review Form must be submitted.

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Access to data is limited to authorized individuals listed as key study personnel.

The category for which exempt status has been determined for this protocol is as follows:

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior so long as confidentiality is maintained.
 - a. Information is recorded in such a manner that the subject cannot be identified, directly or through identifiers linked to the participant and/or
 - b. Subject's responses, if known outside the research would not reasonably place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing, employability, or reputation.



Florida Institute of Technology

Institutional Review Board Office
Dr. Lisa Steelman, Chair IRB
School of Psychology
(p) 674-8104
lsteelma@fit.edu
<http://www.fit.edu/research/committees/irb/index.html>

RESEARCH INVOLVING HUMAN SUBJECTS
Exempt Application

This form shall be used if there is **minimal risk** to human subjects and one or more of the conditions below apply. If there is more than minimal risk associated with the research (none of the conditions below apply) or if the research utilizes a special population (children, prisoners, institutionalized individuals, etc.), please use the full application form found on the IRB website.

You should consult the university's document "Principles, Policy, and Applicability for Research Involving Human Subjects" prior to completion of this form. Copies may be obtained from the Office of Sponsored Programs and on the IRB website.

Name: Xinpei Lu and Scott R. Winter
Date: May 6, 2015
Academic Unit: COA
Email: Xlu2015@my.fit.edu swinter@fit.edu

Title of Project: Consumer Complaints in the U.S. Commercial Airline Industry

- ☐ 1) Research conducted in established or commonly accepted educational settings, involving **normal educational practices**, such as:
 - a. research on regular and special education instruction strategies, or
 - b. research on the effectiveness of or the comparison among instruction techniques, curricula, or classroom management methods.
- ☒ 2) Research involving the use of **educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior** unless:
 - a. the subjects can be identified, directly or through identifiers linked to the subjects and
 - b. any disclosure of subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Note: This exemption does not apply to survey procedures or interviews involving minors.
- ☐ 3) Research involving the use of educational tests, survey or interview procedures, or observation of **public behavior** if:
 - a. the subjects are elected or appointed public officials or candidates for public office or
 - b. the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
- ☐ 4) Research involving the **collection or study of existing data, documents, records, or specimens** if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, indirectly or through identifiers linked to the subjects.
- ☐ 5) Research and demonstration projects that are conducted by or subject to the approval of Department or Agency heads and that are designed to study, evaluate, or otherwise examine:
 - a. **public benefit or service programs**,
 - b. procedures for obtaining benefits or services under those programs,
 - c. possible changes in or alternatives to those programs or procedures, or
 - d. possible changes in methods or levels of payment for benefits or services under those programs.
- ☐ 6) **Taste and food quality evaluation** and consumer acceptance studies if:
 - a. wholesome foods without additives are consumed or
 - b. food is consumed that contains food ingredients found to be safe by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

1. List the objectives of the proposed project.

The objective of this study is to find the U.S. Commercial airline consumer's likelihood of complaining under different scenarios of airline operational issues.

2. Describe the research project design/methodology. Discuss how you will conduct your study, and what measurement instruments you are using. If your project will use a questionnaire or structured interview, attach. Please describe your study in *enough detail* so the IRB can identify what you are doing and why.

This study will use a survey experimental design. Participants will answer a survey (attached) to determine if their difference of likelihood of complaining based on the different airline operational issues and gender.

3. Describe the characteristics of the subject population, including number, age, sex, and recruitment strategy (attach actual recruitment email text, recruitment flyers etc).

The survey will be uploaded to Amazon's Mechanical Turk (MTurk) and consist of worldwide participants. Participants must be at least 18 years old to complete the study. No identifying information will be collected through the use of MTurk.

4. Describe any potential risks to the subjects (physical, psychological, social, legal, etc.) and assess their likelihood and seriousness. Research involving children must carefully assess risks and describe the safeguards in place to minimize these risks.

This proposed study is not anticipated to pose any greater risk than normal daily activities.

5. Describe the procedures you will use to maintain the confidentiality and privacy of your research subjects and project data.

Participant's confidentiality is of the highest concern to the researchers. No identifying data will be collected during any phase of this research study.

6. Describe your plan for informed consent (attach proposed form).

The proposed study requests a waiver of informed consent consistent with Title 45 CFR 46.116(d). Instructions are included with the survey questions and will be read by participants at the beginning of the study. The study produces minimum risk to participants.

7. Discuss the importance of the knowledge that will result from your study and what benefits will accrue to your subjects (if any).

This study significantly enables us to examine if airline operation issues actually affect consumer's likelihood of complaining including ticket problems, weather delays, flight cancellations, diverted flights, mishandled baggage, passenger denied boarding and no issue condition. In addition, the likelihood of complaining will be measure among male and female commercial airline passengers. Participants will receive compensation for their completion of the study.

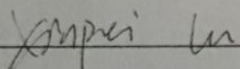
8. Explain how your proposed study meets criteria for exemption from Institutional Review Board review (as outlined on page 1 of this form).

This study meets exempt criteria because it poses minimal (If any) risk to the subjects taking the survey. The participant's confidentiality and anonymity will be protected and participants also have the option to opt out of the survey. The study also uses traditional survey procedures.

Signature Assurances

I understand Florida Institute of Technology's policy concerning research involving human subjects and I agree:

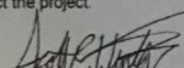
1. to accept responsibility for the scientific and ethical conduct of this research study,
2. to obtain prior approval from the Institutional Review Board before amending or altering the research protocol or implementing changes in the approved consent form,
3. to immediately report to the IRB any serious adverse reactions and/or unanticipated effects on subjects which may occur as a result of this study,
4. to complete, on request by the IRB, a Continuation Review Form if the study exceeds its estimated duration.

PI Signature 

Date 5/6/2016

Advisor Assurance: If primary investigator is a student

This is to certify that I have reviewed this research protocol and that I attest to the scientific merit of the study, the necessity for the use of human subjects in the study to the student's academic program, and the competency of the student to conduct the project.

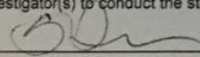
Major Advisor 

Date 5/6/16

Major Advisor (print) Scott F. Winter

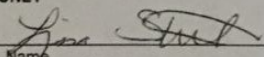
Academic Unit Head: It is the PI's responsibility to obtain this signature

This is to certify that I have reviewed this research protocol and that I attest to the scientific merit of this study and the competency of the investigator(s) to conduct the study.

Academic Unit Head 

Date 5.12.16

FOR IRB USE ONLY

IRB Approval 

Date 5-17-16

Name

IRB #

16-108

Appendix C

Within-Subjects Factors

Measure: MEASURE_1

Situations	Dependent Variable
1	TicketProblem_Ave
2	WeatherDelay_Ave
3	FlightCancellation_Ave
4	DivertedFlight_Ave
5	MishandledBaggage_Ave
6	DeniedBoarding_Ave
7	NoIssue_Ave

Descriptive Statistics

	Gender	Mean	Std. Deviation	N
TicketProblem_Ave	0	-.01	.744	82
	1	-.08	.666	69
	Total	-.04	.708	151
WeatherDelay_Ave	0	-.85	.893	82
	1	-.80	.836	69
	Total	-.83	.865	151
FlightCancellation_Ave	0	-.10	1.049	82
	1	-.16	.721	69
	Total	-.13	.911	151
DivertedFight_Ave	0	-.48	.912	82
	1	-.42	.833	69
	Total	-.45	.875	151
MishandledBaggage_Ave	0	.23	.882	82
	1	.03	.732	69
	Total	.14	.820	151
DeniedBoarding_Ave	0	.71	.832	82
	1	.59	.807	69
	Total	.65	.820	151
NoIssue_Ave	0	-1.40	.971	82
	1	-1.35	.993	69
	Total	-1.38	.978	151

Multivariate Tests^a

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^c
Situations	Pillai's Trace	.705	57.284 _b	6.000	144.000	.000	.705	343.701	1.000
	Wilks' Lambda	.295	57.284 _b	6.000	144.000	.000	.705	343.701	1.000
	Hotelling's Trace	2.387	57.284 _b	6.000	144.000	.000	.705	343.701	1.000
	Roy's Largest Root	2.387	57.284 _b	6.000	144.000	.000	.705	343.701	1.000
	Pillai's Trace	.035	.876 ^b	6.000	144.000	.514	.035	5.255	.338
Situations * Gender	Wilks' Lambda	.965	.876 ^b	6.000	144.000	.514	.035	5.255	.338
	Hotelling's Trace	.036	.876 ^b	6.000	144.000	.514	.035	5.255	.338
	Roy's Largest Root	.036	.876 ^b	6.000	144.000	.514	.035	5.255	.338

a. Design: + Gender

Within Subjects Design: Situations

b. Exact statistic

c. Computed using alpha = .05

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Situations	Sphericity Assumed	394.247	6	65.708	150.973	.000	.503	905.836	1.000
	Greenhouse-Geisser	394.247	3.557	110.849	150.973	.000	.503	536.950	1.000
	Huynh-Feldt	394.247	3.679	107.169	150.973	.000	.503	555.388	1.000
	Lower-bound	394.247	1.000	394.247	150.973	.000	.503	150.973	1.000
	Sphericity Assumed	2.261	6	.377	.866	.519	.006	5.195	.347
Situations * Gender	Greenhouse-Geisser	2.261	3.557	.636	.866	.474	.006	3.080	.261
	Huynh-Feldt	2.261	3.679	.615	.866	.477	.006	3.185	.265
	Lower-bound	2.261	1.000	2.261	.866	.354	.006	.866	.152
	Sphericity Assumed	389.096	894	.435					
Error(Situations)	Greenhouse-Geisser	389.096	529.934	.734					
	Huynh-Feldt	389.096	548.131	.710					
	Lower-bound	389.096	149.000	2.611					
	Sphericity Assumed	389.096	894	.435					

a. Computed using alpha = .05

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Situations	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Situations	Linear	3.310	1	3.310	12.919	.000	.080	12.919	.946
	Quadratic	49.769	1	49.769	93.119	.000	.385	93.119	1.000
	Cubic	235.024	1	235.024	302.217	.000	.670	302.217	1.000
	Order 4	32.011	1	32.011	107.584	.000	.419	107.584	1.000
	Order 5	62.062	1	62.062	121.288	.000	.449	121.288	1.000
	Order 6	12.071	1	12.071	51.621	.000	.257	51.621	1.000
Situations * Gender	Linear	.027	1	.027	.107	.744	.001	.107	.062
	Quadratic	.078	1	.078	.146	.703	.001	.146	.067
	Cubic	1.188	1	1.188	1.527	.218	.010	1.527	.233
	Order 4	.075	1	.075	.251	.617	.002	.251	.079
	Order 5	.008	1	.008	.015	.902	.000	.015	.052
	Order 6	.886	1	.886	3.788	.054	.025	3.788	.490
Error(Situations)	Linear	38.169	149	.256					
	Quadratic	79.635	149	.534					
	Cubic	115.872	149	.778					

Order 4	44.335	149	.298					
Order 5	76.242	149	.512					
Order 6	34.843	149	.234					

a. Computed using alpha = .05

Levene's Test of Equality of Error Variances^a

	F	df1	df2	Sig.
TicketProblem_Ave	1.679	1	149	.197
WeatherDelay_Ave	.490	1	149	.485
FlightCancellation_Ave	10.122	1	149	.002
DivertedFlight_Ave	1.495	1	149	.223
MishandledBaggage_Ave	3.751	1	149	.055
DeniedBoarding_Ave	.234	1	149	.629
NoIssue_Ave	.163	1	149	.687

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: + Gender

Within Subjects Design: Situations

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Gender	90.029	1	90.029	35.279	.000	.191	35.279	1.000
Error	.424	1	.424	.166	.684	.001	.166	.069
Total	380.235	149	2.552					

a. Computed using alpha = .05

Estimates

Measure: MEASURE_1

Situations	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	-.044	.058	-.158	.070
2	-.824	.071	-.964	-.684
3	-.134	.075	-.281	.014
4	-.452	.072	-.593	-.310
5	.131	.067	-.001	.262
6	.648	.067	.515	.780
7	-1.375	.080	-1.534	-1.217

Pairwise Comparisons

Measure: MEASURE_1

(I) Situations	(J) Situations	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	.780 [*]	.066	.000	.649	.911
	3	.090	.067	.182	-.042	.221
	4	.408 [*]	.060	.000	.290	.525
	5	-.175 [*]	.054	.002	-.282	-.067
	6	-.692 [*]	.072	.000	-.833	-.550
	7	1.331 [*]	.080	.000	1.174	1.488
2	1	-.780 [*]	.066	.000	-.911	-.649
	3	-.691 [*]	.080	.000	-.849	-.532
	4	-.373 [*]	.060	.000	-.492	-.253
	5	-.955 [*]	.074	.000	-1.100	-.809
	6	-1.472 [*]	.099	.000	-1.667	-1.276
	7	.551 [*]	.061	.000	.430	.672
3	1	-.090	.067	.182	-.221	.042
	2	.691 [*]	.080	.000	.532	.849
	4	.318 [*]	.060	.000	.199	.437
	5	-.264 [*]	.067	.000	-.397	-.131
	6	-.781 [*]	.077	.000	-.933	-.629
	7	1.242 [*]	.094	.000	1.056	1.428
4	1	-.408 [*]	.060	.000	-.525	-.290
	2	.373 [*]	.060	.000	.253	.492

5	3	-.318*	.060	.000	-.437	-.199
	5	-.582*	.059	.000	-.699	-.466
	6	-1.099*	.084	.000	-1.265	-.934
	7	.924*	.081	.000	.763	1.085
	1	.175*	.054	.002	.067	.282
	2	.955*	.074	.000	.809	1.100
	3	.264*	.067	.000	.131	.397
	4	.582*	.059	.000	.466	.699
	6	-.517*	.065	.000	-.646	-.388
	7	1.506*	.095	.000	1.318	1.694
6	1	.692*	.072	.000	.550	.833
	2	1.472*	.099	.000	1.276	1.667
	3	.781*	.077	.000	.629	.933
	4	1.099*	.084	.000	.934	1.265
	5	.517*	.065	.000	.388	.646
	7	2.023*	.112	.000	1.801	2.245
	1	-1.331*	.080	.000	-1.488	-1.174
7	2	-.551*	.061	.000	-.672	-.430
	3	-1.242*	.094	.000	-1.428	-1.056
	4	-.924*	.081	.000	-1.085	-.763
	5	-1.506*	.095	.000	-1.694	-1.318
	6	-2.023*	.112	.000	-2.245	-1.801

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Pillai's trace	.705	57.284 ^a	6.000	144.000	.000	.705	343.701	1.000
Wilks' lambda	.295	57.284 ^a	6.000	144.000	.000	.705	343.701	1.000
Hotelling's trace	2.387	57.284 ^a	6.000	144.000	.000	.705	343.701	1.000
Roy's largest root	2.387	57.284 ^a	6.000	144.000	.000	.705	343.701	1.000

Each F tests the multivariate effect of Situations. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

b. Computed using alpha = .05

Estimates

Measure: MEASURE_1

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
0	-.273	.067	-.405	-.141
1	-.313	.073	-.457	-.169

Pairwise Comparisons

Measure: MEASURE_1

(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^a	
					Lower Bound	Upper Bound
0	1	.040	.099	.684	-.155	.235
1	0	-.040	.099	.684	-.235	.155

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Measure: MEASURE_1

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	.061	1	.061	.166	.684	.001	.166	.069
Error	54.319	149	.365					

The F tests the effect of Gender. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Computed using alpha = .05

3. Gender * Situations

Measure: MEASURE_1

Gender	Situations	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
0	1	-.010	.078	-.165	.145
	2	-.851	.096	-1.040	-.662
	3	-.105	.101	-.304	.094
	4	-.483	.097	-.674	-.292
	5	.229	.090	.051	.408
	6	.710	.091	.531	.889
	7	-1.400	.108	-1.614	-1.186
1	1	-.078	.085	-.247	.090
	2	-.797	.104	-1.003	-.591
	3	-.162	.110	-.380	.055
	4	-.420	.106	-.629	-.212
	5	.032	.098	-.162	.226
	6	.586	.099	.390	.781
	7	-1.351	.118	-1.584	-1.117