Applying Critical Incidents Technique to Explore the Categories of Service Failure and Service Recovery for Taiwanese International Airlines

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Abstract: The service quality is one of the important reasons that affect the travelers' purchase intention of airline service. During each airline service process, however, service failure might results from various reasons and leads to a low customer satisfaction. Thus, it is important to know what kinds of service failure and recovery for airline service. This study used Critical Incident Technique (CIT) as a research method to collect the data of unsatisfied experiences during the international flight of Taiwanese airlines. In addition, the service process is used to draw out more details in each service failures. The collected data from service failure and service recovery were categorized into various types. This study conducted a cross tabulation comparison on service failure and service recovery. With the analysis results, the research provides some managerial implications for the airlines as well as the suggestions for future research.

Keywords: Service Failure, Service Recovery, Critical Incident Technique, Airline Service

1. INTRODUCTION

In recent years, competition in the aviation market has become more and more intensive. Passengers may consider variety factors while choosing airline companies, such as: flight schedules, price, convenience and the habits. Service quality is one of important factors that influence passengers' choice behaviors. The service quality provided by airlines is related to the whole service processes. However, airline service such as booking, billing, check-in, baggage service, or air service on the aircraft, may lead to service failure due to different reasons and circumstances. This then may result in the dissatisfaction of customers (Bejou and Palmer, 1998). Moreover, providing service when the customers are not satisfied can increase the chances of causing more service failure. When service failure occurs, the service recovery is the key to keep customers (Sousa and Voss, 2009).

Service failure refers to situations that service provider unable to meet customers' expectations completely (Zeithaml et al., 1990). Michel (2001) stated that the service failure is a condition where the service provider forgets to meet customers' expectations in the service process. When consumers involve in the service delivery process, including personnel, physical environment and facilities, and other intangible factors (Lin and Lin, 2011), the occurrence of any event of mistakes making customers feeling unpleasant or dissatisfaction. That phenomenon is known as the service failure. Service Recovery refers to the actions taken

by the service provider for service defects or errors (Gronroos, 1998), which means the behaviors taken by airlines for correcting the service failures (Kelly and Davis, 1994). Those behaviors include any kind of problem-solving actions, as well as changing the attitude of customers' dissatisfaction and retaining customers (Miller et al, 2000; Wirtz and Mattila, 2004). Johnston and Hewa (1997) identified the complaints received from the customers and suggested instant recovery takes place after the occurrence of a service failure. However, the recovery cannot be made if the customers do not complain about their dissatisfaction. Therefore, service recovery needs to identify service failures and act upon them promptly. Most previous studies of service failure and service recovery in different industries used critical incident technique (CIT) as the main research method. CIT suggested by Flanagan (1954) refers to the study technique that collect, sort, and investigate unique key incidents in the service process that leave strength impression to the customers. The researchers can explore the reasons for the occurrence of service failure and the process of service recovery via this technique.

On the other hand, previous studies on service failure and service recovery has been made in many service industries, such as banking, catering, retail, etc. (Bitner et al, 1990; Kelley et al, 1993; Hoffman, et al, 1995; Yoo, et al., 2006). Most recent studies about the airline industry were aimed to investigate the effect of service failure and service recovery on customers' satisfaction and their preference in choice (Bejou and Palmer, 1998; Suzuki, 2004). By studying cases of service failure and service recovery, Bamford and Xystouri (2005) outlined that how to improve the airline services. Lorenzoni and Lewis (2004) pointed out that different nationalities and cultures might have different influences on the types of service recovery. Overall, there are still very limited studies about service failure and service recovery that focus on the airline services. Moreover, there is even less study in this field using CIT method to classify the categories of service failure and service recovery.

In sum, previous studies of airline service failure or recovery were focused on measuring the effect of failure and recovery on passengers' satisfactions or loyalty. The qualitative studies of the nature of the content and category of the airline service failure and recovery, however, are rarely few. Accordingly, the main purpose of this study is to classify the type of service failure and service recovery events occur to airline passengers of Taiwanese international airlines using CIT. Analyzing from the passengers' perspectives, this study discusses the context of service failure and the measure of post-event service recovery. Further analysis can be beneficial for future studies and provide suggestions of related industries for improvement in the quality of service.

2. LITERATURE REVIEW

2.1 Service Failure

The service provision and consumption takes place simultaneously. That is, when service is delivered, consumers and service providers cannot be separated (Barbara and Pamela, 2004). This situation tends to be the inevitable result of service failure (Hess et al, 2003). That means the occurrence of service failure during the process of service delivery is very common in many service industries. Service failure in any level of severity that occurs during service delivery can cause negative reaction of customers, such as the behavior of complaint, bad word-of-month or never return to this service provide anymore (Goodwin, and Ross, 1992). Moreover, the severity of service failure is related to the customers' behaviors (McCollough et al, 2000; Roos, 1999). Customers with wide experiences of service failure are more likely

to make subjective judgments and to expand the severity of service failure (Hess et al. 2007). Service failure may be occurred while the customers' demand is not satisfied, encountering unpredictable delay, or the performance of core service is lower than the acceptable level of customer, (Bitner et al., 1990). Zeithaml et al. (1993) claimed that service failure includes customers' feelings of the bad service result, as well as the service level is below the lowest tolerance range of customers' expectations. Meanwhile, Johnston and Hewa (1997) classified the factors of service failure to the organization-based and customer-based.

Bitner et al. (1990) suggested service failure should be evaluated from the viewpoint of customer. Bitner et al. (1990) then proposed three major behaviors of service failure: (1) the incorrect employees' response to the failure of service delivery system (2) incorrect employees' response to the customer's demand (3) the spontaneous incorrect behavior of employees. Armistead et al. (1995) divided service failure into three types: the mistakes of the service provider, the mistakes of customer, and the mistakes of the relevant organizations. Smith et al (1999), Mohr and Bitner (1995), identify the type of service failure simply into two kinds: outcome-type and process-type. Outcome-type refers to that the customers cannot receive proper service. Process-type refers to that the customer has uncomfortable feelings during the service process. Kelly and Davis (1994) suggested that the service failure should be explored in three dimensions: time, seriousness and frequency. After evaluating from the point of view of the staff, Kelly and Davis (1994) divided the failures into four categories and 16 subcategories. In addition to following the three main categories stated by Bitner et al. (1990), a new category of "problematic customer behavior" is added. Keaveney (1995) divided service failure into two categories: core service failure and service encounter failures. In conclusion, Scholars have different viewpoint of the category of service failure. Thus, it is still an issue that what categories of service failure for airline service industry are.

2.2 Service Recovery

Previous studies found that the results and impact of service failure includes: dissatisfaction (Kelley et al, 1993), decreasing customer confidence (Boshoff, 1997; Boshoff and Leong, 1998), negative verbal communication (Bailey, 1994; Mattila, 2001), the betrayal of customers (Keaveney, 1995; Miller et al., 2000), the decrease in revenue, rising costs (Armistead et al, 1995), reduced staff morale and effectiveness (Bitner et al, 1994). The above shows that service failure will generate considerable negative impact on the company. Most companies provide appropriate actions in order to compensate for the adverse consequences of service failure, and this is called service recovery (Gronroos, 1998; Kelly and Davis, 1994).

Service recovery is a process of handling mistakes (Kau and Loh, 2006). With effective service recovery, service failure does not necessarily lead to the negative results (Craighead et al, 2004). Service provider should adopt adequate compensation after the service failure in order to reduce dissatisfaction (Wirtz et al, 2000). Studies found that after effective service recovery, customers with complaints showed higher satisfaction and more willingness to repurchase than the customers who did not complain (Gilly, 1987). However, another study found that while most companies spend 95% of the time on re-explaining the problems of their customers, they only spend 5% of the time on solving the real problems (Goodman, 1989). Although the implementation of the service recovery can increase short-term costs, this implementation can improve the company's service system and contribute to the decline of companies' operating cost in the long-term (Firnstahl 1989).

Service recovery can be seen as a company's action in making a guarantee to the customers to deal with their complaints regards to the service (Gronroos, 1998). The effective recovery can earn the customers' trust, as well as enhance customer loyalty and increase the

willingness to repurchase in the future (Bejou and Palmer, 1998). Recovery strategies not only aim to offset the dissatisfaction caused by service failure, but also reinforce positive word-of-mouth (Spreng et al, 1995). Moreover, while the perception of the severity can vary in different individuals, the strategies in implementing service recovery should be adjusted accordingly (Magnini and Ford, 2004). That means different service failure may differ in their severity. Therefore, the application and category of service recovery needs to be explored to correspond to the type of service failure.

2.3 Critical Incident Technique (CIT)

Critical Incident Technique (CIT) developed by Flanagan (1954) is a qualitative research methodology, mainly focus on in-depth observation and analysis of the contents. Researchers need to explore the reasons and process of the critical incident. CIT is based on the designed investigative steps to collect observation data of human behavior. These data will be further classified, in order to disclose the actual problem (Flaganan, 1954).

The application of the CIT can be used appropriately in classification studies in many aspects (Chell and Pittaway, 1998). Callan (1998) suggested that there is a wide range for the application of CIT, such as management, human resource management, education or travel industries. This research method has also been widely in service marketing (Bitner et al, 1990; Keavency, 1995). Bitner et al. (1990) previously studied from the customer's point of view, explores the events of satisfaction and dissatisfaction during service contact. Gremler and Bitner (1992) studied various service industries in large-scale using CIT. In addition, there are many applications of CIT that investigated the satisfied and dissatisfied events of service contact. For example: Kelly et al (1993), focusing on retail industry, classify the type of retail error/failures and its service recovery. Bitner et al (1994) investigated the key events of services contact from the viewpoint of staff. Hoffman et al (1995) analyzed the service failures and recoveries in the food and beverage industry. Callan (1998), took the British hotel industry for example, explores the method of CIT. Although this method has become one of the important methods to explore the service failure and service recovery, the study using CIT to airline service is rarely few.

3. METHOD

3.1 Application of CIT

This study aimed to discuss that the service failures and recovery of airline service. This study attempts to explore the type of service failure and service recovery. This study processes qualitative, rather than quantitative, analysis on cases caused customer complaints (service failures). During the interactive process of service contact, the level of customers' satisfaction /dissatisfied can provide more information. In this study, CIT is used to classify the service failure events that cause complaints from customers who joined the airline membership club. This method is considered to be most suitable for researching the satisfaction level in service contact (Nyquist et al., 1985). With the support and effectiveness published by other research, this study use CIT to collect and classify the incidents of service failures and service recovery in domestic airline industry.

In order to effectively compile and analyze data, the classification process must be conducted following the certain procedures to ensure its validity (Bitner et al, 1990). The steps to perform CIT in this study are as follows (Flaganan, 1954):

a. Preparation: Conduct preliminary screening for all received cases; Remove cases unrelated to service failures and service recovery; Number and label the valid cases.
b. First stage: Confirm and sort cases by two researchers. Then classify individual cases.
c. The second stage: Check the reliability of the result of classification. Test results must be above 0.8.
d. The third stage: If the external reliability of the classification results is less than 0.8, two researchers need to execute another round of classification for the collected key cases. Then determine the reliability of the new result until the reliability greater than 0.8.
e. The fourth stage: Check and confirm the content validity of the classification.

As a procedure of CIT, the initial classification framework must be drawn. This study focus on airline service failures, is preliminary categorized in three main categories and thirty subcategories, including: (1) service system: inappropriate policy, information error, flight delays, flights cancellation, disabled aircraft equipment, unexpected meals, duty-free goods flawed/out of stock, and baggage loss/ damage, etc.; (2) reaction for customer demand: overweight baggage, seats and special need for seats; (3) employees' personal behavior: poor service attitude and no response, lack of correct information, unfamiliar with the computer system. Five categories and fourteen subcategories of service recovery includes: (1) reliability: return and refund; (2) tangible compensation: including money back, free gifts, and coupons/price discounts; (3) responsiveness: willingness for quick action and instant response; (4) affability: listen patiently, cordial, and sincerity; (5) caring: including apology or pay personal visit to customer. Items that cannot be attributed to the above classification will be classified in the "other" category. There are usually more than one service failure and recovery in a single case, therefore when classifying complex cases, there will be one or more service failure classification as well as service recovery classification.

Moreover, this study attempts to analyze the service failure based on the process of services received by the passengers, in order to realize where the service failures do occur frequently. Thus, this study completes a passenger service process which includes eight steps. They are: booking service => billing service => check-in service => VIP service => boarding service => inflight service => immigration and baggage service => transfer service. It is mainly based on travelers planning of a trip from the very beginning: in contact with the airlines for booking, purchases a ticket. Until the day of departure, a passenger arrive the airport check-in counters for check-in procedures, boards the gate, receives service from the flight attendants who provide meals drinks on board, and finally arrives at the destination, proceeds to customs clearance and baggage claim etc. Depending on their flight arrangements, some of passengers may also have experience for transfer or stopovers during the service process.

3.2 Data Collection

This study collects cases by issuing open-ended questionnaire and conducting interviews. The main target subjects are the passengers who had dissatisfied experience of Taiwanese international airlines in the past. During the interview, the respondents are asked to narrate and describe the story about the dissatisfying experience. Flanagan (1954) suggested that the CIT has no clear criteria for determining the number of samples. If the object or activities of the research are less complex, and with clearly definition, 50-100 samples will be adequate. Through the interviews and open-ended questionnaire, there are 125 cases collected for service failure. However, among these 125 cases, there are 90 cases that the respondents did not claim to airlines. Therefore, only 35 service recovery cases are recorded.

In terms of CIT the external reliability can be evaluated by examine the consistency of

the classified results from different researchers. In general, it is a good reliability while the consistency of results is more than 0.8 (Keaveney, 1995; Latham and Saari, 1984; Ronan and Latham, 1974.) After the first classification of this study, the consistency between two researchers is 79% for the results of service failure, while 71% for service recoveries. Further investigate the reasons for the inconsistency, this study found that the main cause is that the two staff did not completely understand the context of the cases. With a clear description of the context and process of the case, two researchers executed the classification for the second time. The final classification consistency is improved: the service failure classification increased to 93%, service recovery classification increased to 96%. Therefore, the results of the classification of consistency greater than 0.8, the reliability meets the standard.

4. REESULTS

4.1 Classification of Airline Service Failure

With the open-ended questionnaire issued to the passengers with unsatisfied experience on international flights, we obtained a total of 125 cases of service failure. Some cases include more than one service failure. Therefore, the total number of the failure is more than 125. Table 1 shows the result of service failure classification. The classification results show a total of 266 service failures. Within the 226 failures, number of first-class service failure is 149 times, which accounts for 52% of the total number of times. The second class of customer demand response is 23 times, which accounts for 8% of the total number of time. Finally, the third class, with 92 times of failure related to individual employee behavior, accounts for 34% of the total number. Following is the extended discussion in respect of service failure categories.

Table 1. Result of Service Failure Classification

Service failure type		Number	Percentage
a. Service system	(a) Inappropriate policy	78	29.3%
	(b) Information errors	8	3.0%
	(c) Flight delay	17	6.4%
	(d) Flight cancellation	4	1.5%
	(e) Disabled aircraft equipment	9	3.4%
	(f) Unexpected meals	13	4.9%
	(g) Duty-free goods flawed/out of stock	3	1.1%
	(h) Baggage loss/damage and waiting	17	6.4%
	Sub-total	149	56.0%
b. Customer demand reaction	(a) Overweight baggage	2	0.8%
	(b) Seats and special needs for seats	21	7.9%
	Sub-total	23	8.6%
c. Employee's personal behavior	(a) Poor service attitude and no response	71	26.7%
	(b) Lack knowledge of correct information	19	7.1%
	(c) Unfamiliar with the computer system	2	0.8%
	Sub-total	92	34.6%
Others		2	0.8%
Total		266	100.0%

a. Services system
    Failures in service system include a total of eight subclasses including: inappropriate policy, information errors, flight delay, flight cancellation, disabled aircraft equipment, unexpected

meals, duty-free goods flawed/out of stock, baggage loss/damage and waiting; refers to the failure in the service systems of the airline company. Total of service failure is 150 times, and 52% is the total number of times.

(a) *Inappropriate policy* refers to the mistakes in company regulations and operating rules, such as: "Flight overbooking", "The system did not allow pre-bookings for seats near by the security doors, but customers found that the other guests were able to select the seats later on", "The change in flights models without notifying customers, causing them not able to be seated in the business class cabin", "Customers on waiting list waited at check-in counter to board, although they finally checked-in to the business class cabin but did not get better service after all". Such failures are all related to the regulations developed by the company for its operation.

(b) *Information error* refers to the airlines provide the travelers incorrect information due to the companies' own mistakes, for example: "Flight time changes, without notifying travelers right away", "Wrong information on flight information display board, providing the wrong boarding gates and baggage carousels", "Error in boarding time shown on the boarding pass", "Takeoff time constantly being changed due to typhoon, causing a long wait for the travelers". Such failures usually relate to that the airline company's lack of reconfirmation on correct information.

(c) *Flight delay* means the delay in take-off due to a variety of factors, such as: "The flight delay causing the a break to connect to the next flight, the next flight is only available once a week", "Flight delays lead the delay or cancellation of the meeting, we feel embarrassed and sorry for our client", "The hotel for our trip has been booked, the flight was delayed to the next day, the cost of the first night of the hotel goes to waste". Such failures relate to delay of the flight.

(d) *Flight cancellation* refers to the service failures caused by it flight cancellation, for examples: "Flight cancelled due to the typhoon, the airline did not arrange any alternative flights and left the passengers to pay for the new booking. The airline claims that they do not need to be responsible for this situation because it is caused by the unforeseen weather condition", "The company canceled a flight that is completely fully booked flight, the passengers had paid for the tickets already", "Flight to Hong Kong was canceled without warning, causing great consequences in affect the clients' schedule". Such failures are caused by airline's cancellation of flights.

(e) *Disabled aircraft equipment* refers to the failures caused by the breakdown or defectiveness of the aircraft equipment, such as: "The washroom was too dirty", "Ceiling above the seat was leaking", "Air-conditioning was too cold, it was difficult to fall asleep", "The airline claims that seats in business class cabin can lie flat, but it could not lie flat at all". Such failures are caused by the customers' disappointed experience about the aircraft equipment.

(f) *Unexpected meals* refers to the food and beverage provided to the passenger on aircraft, for example: "The meal taste worse every time", "The flight attendant said that there is no meal but only snacks for the entire flight", "A special meals were requested in advance, but there was not enough to provide on the plane". Such failures result from the dissatisfaction of the customer in regards to the provided in-flight meals.

(g) *Duty-free goods flawed/out of stock* means the failures caused when selling duty-free products to the customer during flight, for example: "Bought duty-free goods during the flight, later found that the amount on the bill was charged twice on the credit card", "Told flight attendant the product wish to purchase first thing was boarding the plane, later when the flight attendant said it is sold out". Such failures are caused during the

customers' experience on buying duty-free goods on the plane.

(h) *Baggage loss/damage, and waiting* refer to the loss, damaged, or long waiting for baggage, which causes the feeling of dissatisfaction for customers, for example: "A stroller was shipped from Taipei, however when it arrived in Bangkok, then it was crooked with a broken handle", "The baggage was not at the destination when we arrived. The staff merely asked us to fill out the form and left without letting us know when the luggage will arrive". Failures such as the above are related to the checked baggage.

b. Customer demand response

There are two subclasses under customer demand response, including overweight baggage, and seats/special needs for seats. This refers to the failures related to the demand of the customers. In this study, it is recorded for 23 times, which is 8% of the total number of times.

(a) *Overweight baggage* failures are caused from customer carrying baggage that exceed the weight limit, one examples is: "Two luggage which one of them weight more than 50lbs, the other less than 50lbs, but the combined weight does not exceed the standard. The staff at the counter threatens me to adjust the contents so the two luggage meet the standard, he will not let me board otherwise. With a rather harsh attitude, the staff emphasize that no luggage can go over 50lb due to the regulation". These failures relates to the customers with exceeding amount of check baggage.

(b) *Seats/special needs for seats* means unable to satisfy the customers' demands when the flight is fully booked, or unable to meet customers' need and preference for seats. Some examples are: "After entering the plane, I found that my seat was taken. It tuned out that airline oversold the seats. Although the staff asked if I would like to switch to another seat, I was not so happy about the situation." "The whole family booked 5 seats in advance. However, when we arrived at the airport, we were told that the seat bookings were all cancelled", "We book the seats one month in advance, why did we still get two separated seats?" Such failures are caused by the personal need of the customers.

c. Employee's personal behavior

Employee's Personal Behavior includes three subcategories: Poor Service Attitude/ Unreacted, Lack Knowledge of Correct Information, Unfamiliar with the Computer System. 93 times were recorded under this type of failure, which consist 34% of the total number of time.

(a) *Poor service attitude and no response* means poor service attitude of service personnel, and unresponsive attitude towards the need of the customers. For example: "I told the flight attendant that my seat was taken. But she gave me an attitude and asked me to find a seat for myself." "The flight attendant seemed to be in a bad mood. When providing service, she had this serious face that does not make the atmosphere pleasant". Such failures are caused by the poor service attitude of the service personnel.

(b) *Lack knowledge of correct information* refers to the staff was not able to master the correct information promptly, causing the failures to provide customers the incorrect information. For example: "The delay of flight was not announced until the original boarding time", "A 14-year-old junior high school students who was traveling alone were asked to sign the consent form. But children less than 15 years of age cannot be asked to sign any consents", "There were no announcement for the early takeoff time for the flight". The causes of such failures are usually due to the inability of the staff to provide correct information to the customers timely.

(c) *Unfamiliar with the computer system* is failure causes by the staffs' unfamiliarity for the operation steps of the computer system. For example: "The cue was very long. It took a long time for the customer in front of us` to check-ins. The staff at the counter seemed very unfamiliar with the computer system", "When purchasing duty-free goods on the plane, the air attendance took a long time to continue the transaction. I have no idea what's going on". Most of such failures are related to the poor skill in operating the computer system which causes the dissatisfaction from the customers due to long waiting time.

Further, the cases are classified and located in the service process, comparing the service failures with the service process step by step. Table 2 displays the percentage of service failures occurred in each steps of the service process.

Observing from the result, it is found that service failures related to company policies, poor service attitude and unresponsiveness are the ones that occur most often. Within the above mentioned, inappropriate policy occur most often in the service processes, reported a total of 23 times, accounting for 8.6% of the total of times. At the service counter, customers usually experience dissatisfaction related to overweight baggage, ticket booking, and seating. The company's policies that are not able to satisfy customers, or policies that make customers that feel their rights are neglected, are usually the cause of service failures.

Failures related to poor service attitude and unresponsiveness take up a large portion in service processes of service provided at the check-in counter and in the aircraft. Poor attitude and unresponsiveness at the check-in counter were reported 22 times, accounting for 8.3% of the total number times. Service failures caused by poor service attitude and unresponsiveness occurred on the plane were reported 17 times, accounting for 6.4% of the total number of times. It is shown significantly on the service process, the time spent on the aircrafts provide face-to-face interactions for the staffs and the customers. With frequent and longtime interaction during the flight, minor but dissatisfactory service failures may still occur without being reported or complained. Although the staffs are providing the service according to the regulations, but slightest mistake can lead to negative impressions for the customers. Therefore, unreported failures related to poor service attitude still make a relatively large proportion in these two types of service process.

In order to prevent more complaints from the customers at the service counter, the airlines should have enough staff at the check-in counter to avoid long cues for the customers. In addition, the airlines should arrange authorized first-line service personnel for resolving problems when service failures arise. This can help preventing the occurrence of negative impression from the customers.

Furthermore, the training for the service staff and first-line service personnel should be well designed. By allowing the airline staffs to understand the importance of service and correct service attitude, a better quality service can be provided for the customers.

In addition to the above two types of failures, lost or damage of luggage and failures related to long wait were reported for a total of 17 times, accounting for 6.4% of the total failures. It is usual that the customers spent a long time waiting at the carousel for their luggage. This is one of the causes for dissatisfaction. There are many factors for baggage delivery failures, such as mechanical difficulties for the carousel and missing luggage tags which unable the delivery process. Regardless of whether the airline can control the reasons for service failure in baggage delivery, these three types of failures are the ones that leave strong negative impressions for the customers. The airlines are suggested to focus on this part during future service trainings for the staffs.

Table 2. Cross tabulation of service failure and service process

Service Process / Service Failure		booking service	billing service	check-in service	VIP service	boarding service	inflight service	immigration and baggage service	transfer service	Total
Inappropriate policy	Count	11	9	23	5	6	10	4	10	78
	%	4.14	3.38	8.65	1.88	2.26	3.76	1.50	3.76	29.32
Information errors	Count	3	0	3	0	1	0	1	0	8
	%	1.13	0.00	1.13	0.00	0.38	0.00	0.38	0.00	3.01
Flight delay	Count	0	0	0	0	16	0	0	1	17
	%	0.00	0.00	0.00	0.00	6.02	0.00	0.00	0.38	6.39
Flight cancellation	Count	2	0	0	0	1	0	0	1	4
	%	0.75	0.00	0.00	0.00	0.38	0.00	0.00	0.38	1.50
Disabled aircraft equipment	Count	0	0	0	1	0	8	0	0	9
	%	0.00	0.00	0.00	0.38	0.00	3.01	0.00	0.00	3.38
Unexpected meals	Count	0	0	0	3	0	9	1	0	13
	%	0.00	0.00	0.00	1.13	0.00	3.38	0.38	0.00	4.89
Duty-free goods flawed/out of stock	Count	0	0	0	0	0	2	1	0	3
	%	0.00	0.00	0.00	0.00	0.00	0.75	0.38	0.00	1.13
Baggage loss/damage and waiting	Count	0	0	0	0	0	0	17	0	17
	%	0.00	0.00	0.00	0.00	0.00	0.00	6.39	0.00	6.39
Overweight baggage	Count	0	0	2	0	0	0	0	0	2
	%	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.75
Seats and special needs for seats	Count	1	0	12	0	2	5	1	0	21
	%	0.38	0.00	4.51	0.00	0.75	1.88	0.38	0.00	7.89
Poor service attitude and no response	Count	3	2	22	0	13	17	10	5	72
	%	1.13	0.75	8.27	0.00	4.89	6.39	3.76	1.88	27.07
Lack knowledge of correct information	Count	2	0	9	1	4	0	2	1	19
	%	0.75	0.00	3.38	0.38	1.50	0.00	0.75	0.38	7.14
Unfamiliar with the computer system	Count	0	0	1	0	0	0	0	0	1
	%	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.38
Others	Count	0	0	1	0	0	0	1	0	2
	%	0.00	0.00	0.38	0.00	0.00	0.00	0.38	0.00	0.75
Total	Count	22	11	73	10	43	51	38	18	266
	%	8.27	4.14	27.44	3.76	16.17	19.17	14.29	6.77	100.00

4.2 Classification of Airline Service Recovery

Table 3 shows the results of service recovery classification. According to the result, the total time of service recovery is 60. First type: reliability, were recorded for 9 times, accounted for 15% of the total recovery. Second type: tangible compensation, were reported for 9 times as well, accounted for 15% of the total recovery. Incident in which the customer reported as the third type: responsiveness, reported 14 times, accounted for 24% of the total recovery. Fourth type: affability, reported for 20 times, accounted for 33% of the total. Lastly, the fifth type: caring, reported for 8 times, accounted for 13% of the total recovery incidents.

Table 3. Result of Service Recovery Classification

Service recovery category		Number	Percentage
a. Reliability	(a)　Return	4	6.6%
	(b)　Refund	5	8.3%
	Sub-total	9	15.0%
b. Tangible compensation	(a)　Money back	1	1.6%
	(b)　Free gifts	4	6.6%
	(c)　Coupons/Price discounts	4	6.6%
	Sub-total	9	15.0%
c. Responsiveness	(a)　Willingness for quick action	4	7.0%
	(b)　Instant response	10	17.0%
	Sub-total	14	24.0%
d. Affability	(a)　Listen patiently	3	5.0%
	(b)　Kindness	2	3.3%
	(c)　Sincerity	15	25.0%
	Sub-total	20	33.3%
e. Caring	(a)　Apology	5	8.3%
	(b)　Personal visit to customer	3	5.0%
	Sub-total	8	13.3%
Total		60	100%

a. Reliability

Reliability-type service recovery includes two sub-types, exchange and refund. A total of 9 times were reported, accounting for 15% of the total times of recovery.

(a) *Return* refers the airlines to assist customers to change their seats or flight. For example: "After a delay in the first flight, customers who missed the following transfer flight were assisted to ride the next available connecting flight", "Due to the mistakes in the service process, customers were unable to sit in the pre-booked seats. The airline assisted the customers to change to other satisfactory seats for them right away".

(b) *Refund* is that the airline returns the original sum of the ticket to the passengers in compensation for the company's service failure. For example: "A flight is over booked, causing some customers with business class bookings downgraded to economy class. The airline is required to refund the difference in price between the business class and economy class", "Customer service center provided incorrect information to the customers who needed to change their tickets. Without being notified by the customer service center about the additional charge, the customers were asked to pay the difference when checking-in at the airport. The customers felt mislead and complained strongly until the airline returned the full amount".

b. Tangible Compensation

Tangible compensatory recovery includes three subclasses: money back, free gifts, and coupon/price discounts. This type of recovery was recorded for 9 times, accounted for 15%

of the total number of times.

(a) *Money back* refers to the airlines provide services such as accommodation for free. For example: "The flight was delayed or canceled, the airline provides the customers free or accommodation for rest", "Customers' baggage have not arrived, airline pays for the customers' daily commodity".

(b) *Free gifts* refer that the airline offers their customers free gifts. For example: "The flight was delayed. When the plane arrived, airline staffs are by the gate, distributing chocolate to apologize for the delay", "Someone felt sick on the plane, and one passenger happened to be a doctor and gave help to the sick passenger. The cabin service director offered champagne for the doctor to show the company's gratitude".

(c) *Coupons/Price discount* is the airlines provide customers coupons in compensation of their service failures, For example: "Luggage did not arrive upon customers' arrival. The customers complained to the airline. The airline then provides USD$25 duty-free coupons for the compensation", "Luggage was damaged during shipping. Customers complained about it and the airlines offer a one hundred U.S. dollars coupon for purchasing duty-free goods on the plane", "To provide customers discounts for their next ticket purchase, in order to make up for the cause of service failure", "To make up for the service failure, the airline offers customers discount on overweight checked baggage when they travel next time".

c. Responsiveness

Two subclasses are included under reaction service recovery: quick willingness and instant response. A total of 14 time of reaction service recovery was recorded, accounting for 24% of the total of times.

(a) *Willingness for quick action* is to ensure that the customers can feel a quick willingness to provide recovery when a situation occurs. For example: "Luggage did not show up at the carousel after a long wait. After a complaint, the airline sent someone to check immediately", "A customer on complains that there are fleas in the VIP Room. In addition to the fixed routine disinfection, a stronger disinfection was reinforced right away".

(b) *Instant response* is to provide remedial action quickly. For example: "The checked baggage did not arrive with the customer at the same time. After reporting to the staff, expressing the urgent need of this baggage, the airline sent the baggage to the customer's house with a Mercedes Benz later at midnight", "The seat of the guardian is separated with the child. The staff arranged new seats immediately after complaining to the air attendant".

d. Affability

Three subclasses are included under affability service recovery: Listening with patience, kindness and sincerity. A total of 20 time of affability service recovery was recorded, accounting for 33% of the total of times.

(a) *Listen patiently* refers to listening to the customers' complaints patiently to listen, for example: "The crew on the plane had no smile on their face and they had a bad attitude which providing service. When I complained this to the cabin service director, she listened to me patiently. Later on, the airline mailed me a thank-you letter for the comments I made", "Some staff at the VIP room used their personal cup to have the drink that is supposed to be served to the customers. It was very unprofessional. After informing the supervisor, he thanked me for the suggestions and corrected the staff".

(b) *Kindness* is to provide service recovery with a kind and cordial attitude when the customers complain, for example: "We misunderstood rule in regards to the weight limit for the carry-on luggage, resulting an overweight luggage. The airline service

staff was very kind and helped to seek solutions for our problem", "The staff found that there is an elderly waiting in the long cue for check-in. They immediately sent someone to guide the elderly to another special counter for check-in".

(c) *Sincerity* refers to making the customers feel the sincere desire to provide a good service recovery that can solve the problem cause by previous service failure For example: "The airline sent one of their representatives with gifts to apologize. With the level of sincerity, I decided to forgive their mistakes", "The airline sent two department supervisors to my store and apologize to me. They told me that the staffs would learn from this lesson, that they must keep a smile and think from the customers' point of view while providing adequate services. Until then, I decided to let go and continue to ride with the airline again".

e. Caring

Two subclasses are included under care service recovery: apologies from supervisor and personal visit to customers. A total of 8 time of care service recovery was recorded, accounting for 13% of the total of times.

(a) *Apology* means that a supervisor or employee apologizes to the customers in person, for example: "When purchasing duty-free goods on board, I forgot to bring my membership card for discount. The cabin service director came to solve the issue and apologized for causing the inconvenience", "There was a change in the ticket price without any clear notification in advance. Not until we arrive at the airport, we found out the actual price was much higher. Because we needed to get on board so we paid without complaining. The complaint was filed when we return from the trip. The department manager made a personal call to apologize for this matter".

(b) *Personal visit to customer* refers airlines sending representatives to visit customers to solve issues and apologize personally. For example: "The supervisor paid a visit, bringing me the refund for the ticket fare in person", "The airline representative and manager came to my company in person to explain the reason why my seat was changed from business class to economy class without any notification".

4.3 Cross Tabulation of Service Failure and Recovery

In addition to explore the categories of service failure and recovery of airline service, this study conducts a cross tabulation based on subcategories of service failure and recovery (see Table 4) in order to realize the relationship between the failure and recovery.

Inappropriate policy is the main service failure type. However, most of them did not receive a proper service recovery (57, 20.4%). The main reason is this kind of failure is related to the regulations of airlines. Most dissatisfied passengers did not claim because they thought these regulations might not be modified. On the other hand, some regulations are the norm of airline operation for international aviation. Airlines do not have enough flexibility for taking action to decrease the passengers' dissatisfaction. They only can return or refund the passengers' flights. Little cases show the responsiveness or affability actions are applied for this failure. In order to express the sincerity for compensation, some airlines offered several kinds of tangible compensation. Base on the cases descriptions, passengers may not be so dissatisfied while they receive a small gift, especially for this uncontrolled service failure.

Table 4. Cross tabulation of service failure and service recovery

Service Recovery / Service Failure		None	Return	Refund	Money back	Free gifts	Coupons/ Price discounts	Willingness for quick action	Instant response	Listen patiently	Cordial	Sincerity	Apology	Personal visit to customer	Total
Inappropriate policy	Count	57	2	3	0	4	1	2	3	0	1	8	2	0	83
	%	20.4	0.7	1.1	0.0	1.4	0.4	0.7	1.1	0.0	0.4	2.9	0.7	0.0	29.7
Information errors	Count	8	0	0	0	0	0	0	0	0	0	0	0	0	8
	%	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Flight delay	Count	12	0	1	0	1	0	0	1	0	0	2	0	0	17
	%	4.3	0.0	0.4	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0	6.1
Flight cancellation	Count	3	0	0	1	0	0	0	0	0	0	0	0	0	4
	%	1.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Disabled aircraft equipment	Count	7	0	0	0	0	0	1	0	0	0	1	0	0	9
	%	2.5	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0	3.2
Unexpected meals	Count	10	0	0	0	0	0	0	0	2	0	1	0	0	13
	%	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.4	0.0	0.0	4.7
Duty-free goods flawed/out of stock	Count	1	0	1	0	0	0	0	1	0	0	0	1	0	4
	%	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	1.4
Baggage loss/damage and waiting	Count	10	2	0	0	0	2	1	2	0	0	2	0	1	20
	%	3.6	0.7	0.0	0.0	0.0	0.7	0.4	0.7	0.0	0.0	0.7	0.0	0.4	7.2
Overweight baggage	Count	1	0	1	0	0	0	0	0	0	0	0	0	0	2
	%	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Seats and special needs for seats	Count	12	1	0	0	1	1	0	2	0	1	1	2	0	21
	%	4.3	0.4	0.0	0.0	0.4	0.4	0.0	0.7	0.0	0.4	0.4	0.7	0.0	7.5
Poor service attitude and no response	Count	55	2	1	0	1	2	0	1	1	0	7	4	1	75
	%	19.7	0.7	0.4	0.0	0.4	0.7	0.0	0.4	0.4	0.0	2.5	1.4	0.4	26.9
Lack knowledge of correct information	Count	11	0	2	0	0	1	0	0	0	0	3	2	1	20
	%	3.9	0.0	0.7	0.0	0.0	0.4	0.0	0.0	0.0	0.0	1.1	0.7	0.4	7.2
Unfamiliar with the computer system	Count	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
Others	Count	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	%	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total	Count	189	7	9	1	7	7	4	10	3	2	26	11	3	279
	%	67.7	2.5	3.2	0.4	2.5	2.5	1.4	3.6	1.1	0.7	9.3	3.9	1.1	100.0

About failure of poor service attitude and no response, most of them still didn't receive any recovery. Some respondents indicated that they did not claim because the service process was finished and they just wanted to go next trip rather than waste time on useless complaint. Only a small proportion of the unsatisfied passengers appealed to the service employee immediately, and they received an apology from a supervisor or employee. Since this service failure is related the perception of dissatisfied passengers, it may leads to a poor impression and bad word-of-mouth. Thus, airlines should take care more about these unsatisfied passengers with service recovery. Sincerity is one of the important things during response to the passengers. Moreover, airlines usually let supervisors to apologize to the passengers after they express their complaints.

Furthermore, instant response and coupons/price discounts are also common used for inappropriate policy instead of free gifts, sincerity or apology. Some inappropriate policy of airlines, such as overbooking, would lead passengers more complaints and dissatisfaction. Thus, it needs more compensatory to recovery the passengers' losses, such as money back and discounts. Some respondents thought they should receive more monetary compensatory to recovery their ticket price and time consumption. Generally, it will influence the passengers' image on airlines that whether airlines can offer proper service recovery immediately.

5. CONCLUSION AND DISCUSSION

5.1 Conclusion

This study applied CIT to explore the categories of service failure and service recovery based on the passengers' dissatisfaction experiences on the Taiwanese international airlines. The main contribution of this study is to realize the service failure and recovery of airline service from a qualitative perspective and propose two general structures to classify the service failure and recovery of airline services. In most airlines in Taiwan, the passengers' complaints are usually classified by departments, rather than the nature of service failure from the viewpoint of passengers. This study concludes two exhaustive structures and descriptions of service failure and recovery which can be used for inspecting the reason of failure behind the passengers' complaints.

The research results demonstrate three main categories and thirty subcategories of service failure. Three main categories are service system, reaction for customer demand, and employees' personal behavior. Thirty subcategories includes inappropriate policy, information error, flight delays, flights cancellation, disabled aircraft equipment, unexpected meals, duty-free goods flawed/out of stock, and baggage loss/ damage, overweight baggage, seats and special need for seats, poor service attitude and no response, lack of correct information, unfamiliar with the computer system. Most of these failures are belong to service system. Furthermore, the respondents indicated that their dissatisfactions were usually caused by the inappropriate policy, and poor service attitude and no response.

On the other hand, this study sorted out the collected cases of airline service recovery into five main categories and thirty subcategories. Five main categories are reliability, tangible compensation, responsiveness, affability, and caring. The subcategories are return, refund, money back, free gifts, coupons/price discounts, willingness for quick action, instant response, listen patiently, cordial, sincerity, apology, and pay personal visit to customer. Affability is the main recovery action that includes sincerity and instant response. Most failure cases did not receive any recovery or compensatory and should be seen as a warning signal for airlines. Because those passengers may switch to other airlines at next time and the

former airline has no opportunity to take any action for retaining those dissatisfied customers.

Furthermore, from the viewpoint of airline service process, the inappropriate policy and poor service attitude and no response which are the most frequent occurred failures are happened in the booking service and inflight service stages. The airlines are suggested to focus on this part during future service trainings for the staffs. This study discusses the managerial implication in the next section.

5.2 Managerial Implication

This study proposes some managerial implications for airlines related to service failure and recovery. First, the airlines should carefully assess the appropriateness of the provisions and regulations that cause passengers dissatisfaction. Some rules or restrictions might be modified or relaxed in order to response to the passengers' needs.

Second, the airlines should strengthen the training of personnel services. It is important that employee should solve problem and provide service recovery at the moment when service failure occurred. Airlines need to consider about the capability for instant response when they recruiting and training employee. Employees must be knowledgeable about the airline services, but they also need to be trained to provide the best service possible in order to keep the passengers coming back after a service failure. Also the empowerment is needed when employee conducting service recovery. Companies should give employees the authority to take care of passengers to that passengers' dissatisfaction (Robinson et al., 2011).

Final, airlines need to build a completed service recovery process and system in order to settle the passengers' complaints. It includes providing a good communication channels for passengers, educating the important of service recovery to employee, and examining the service failure periodically.

5.2 Limitation and Future Research

There still have some research limitations in this study, and some suggestions for future research are proposed in corresponding limitations. First, all respondents in this study were asked to recall their dissatisfaction experience no matter whether they claimed to the airlines or not. Parts of cases, however, contain no circumstance of service recovery. This restricts our exploration on the category of service recovery. Future research is suggested to collect more empirical cases from the internal organization of airlines, such as the customer service center, or customer complaint service unit. Real empirical cases may contribute to realize what the airline service recovery is and how to improve recovery strategy for airlines.

Second, the research cases in this study were collected from the passengers of Taiwanese international airlines. The future researchers may enrich the sample scope with different nationalities. It helps to realize the influence of different culture on the passengers' perceptions of service failure and recovery. Likewise, future study can compare the categories of service failure and recovery with different social characteristics or travel experiences.

Third, this study adopts a qualitative method to collect the variety cases and categorize the typology of service failure and recovery. Future research could apply these results for further quantitative study, such as the effects of different kinds of service failures on passengers' satisfaction, measuring the increased satisfaction degree level through service recovery after service failure, or the optimal recovery strategy for service failures.

Final, service failure refers to that company has not met the customer's expectations during the service encounter. It may cause the "damage" on customer satisfaction (Pérez et al., 2007). In other words, service failure should be seen as a kind of "quality risk" and need to be

managed from the viewpoint of risk control, which is so called quality risk management (QRM) (Claycamp, 2007). Future researchers may apply our results of the subcategories of service failures as the risk factors of airline service. Further study on QRM for airline service will help to improve airline service quality and passenger satisfaction.

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