

An Empirical Investigation on Customer Perception towards Aviation Accidents AND its Effects

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Abstract: This research studies on various criteria which were used to evaluate public's perception or point of view on different aviation crisis. It is concentrated on general public's reaction to various crisis like Hijack, Bomb Threat, Sabotage etc. This research is to know psychological impacts on general public and the aftermaths of the crisis and their ways to overcome that traumatic phase. When an accident happens, the media usually exaggerates and it becomes crucial for an airline to rebuild the trust and loyalty amongst the people. This research also takes witnesses of the hijack into its account. It also provides insights on post-accident investigation and types of compensation provided by airlines to the victims. The research development used in this study was Descriptive Research Design. The sample size was 100 passengers. The sampling technique used to draw the sample was convenience sampling method. The tool used to collect the data from samples was questionnaires. The statistical analysis was done using SPSS software. Survey of trauma issues and more such things are observed from the victims.

Keywords: Public Perception, Psychological impact, Media exaggeration, Air accidents, Post-accident phase.

1. Introduction

Even with the technological upgradation or excessive crew resource training, aviation fatalities and accidents still cannot be avoided. There are many people who have flying anxiety or aviophobia and still can't travel through aeroplane. This research focuses on people perceptions towards an airline and it's accident rates, airline industry has managed to gain people's trust and faith but even one small accident is enough to shake that trust. Aircraft is proven to be the safest mode of transport out there yet the cause of huge public responses, concerns and panic. An accident does not only effects on survivors or victims but it also affects general public's trust towards an airline. The causes of aviophobia is not only crashes and heights but also hijack, bomb blast, threats and so on. Aviation has always been an easy target for terrorists as it deals with mass public and news that are related to aviation catches fire around the globe. An aviation accident causes distrust and fear amongst the people. Majority of the people faces difficulty to overcome such crisis and trauma. As passengers (victims) are trapped in an enclosed aircraft for a certain amount of time filled with torture, fear and uncertainty which leads to psychological disorder and trauma. According to statistics multiple injuries are detected in crisis like hijack and crashes. 42% of the fatalities causes immediate death followed by 22% of head injury, 12% of internal injury (thorax, abdomen etc..) 4% of people burns and 3% of people drowns in case of crash in any water bodies. A person who survives has post-accidental trauma issues.

This study took survey from people who has witnessed a particular event. People who are born after any incident can't help but people who were already grown up and has seen the incident through the eyes of media knows better about the crisis and the pressure that they felt after or during the crisis. I've used descriptive research to collect samples from people who had witnessed any of the incidents occurred in aviation. Media usually exaggerates and more often than not doesn't display or show the entire and every minute details related to the incidents. One can trust media blindly but being in this world where one gets to know everything that is happening in the other part of the world on their fingertips which makes them bound to trust whatever media says. Media cannot reveal everything to the general public as it can create havoc among the people but sometime hiding some miscellaneous news can create trouble not only to the victims and survivors but also to the public watching them. General public can't help but to see those incidents getting unfold through the eyes of media which may or may not hamper their lives. These study focusses on three phases of an incident and accident.

First phase: Media's influence on public perceptions regarding aviation crisis.

Second phase: Post-accidental phase, trauma and psychological effects.

Third phase: Regaining or rebuilding trust among the public and airline's compensation for their loss.

It takes a lot of time and effort to gain public's trust for a particular airline. People normally choose their favourite airlines over the years according to different classifications based on On-Time performances, economical fairs, hospitality and most importantly safety. It is been said that people for once can ignore bad food/meals served on board but cannot put their life at risk. Thus, it makes it difficult for an airline to gain people's trust easily and

make them switch to other airlines. However, one incident or aviation accident might lead to break in customer's trust, loyalty and some major amount of loss of lives, monetary and inventory cost. We might already know how much one aircraft costs and how much it takes to repair and overhaul the same. So, an incident can be a huge turn-off for an airline. We would also see as to how the airlines actually compensates the victims. An accident in general is not borne by the airlines like falling from the edge or aerobridge or getting hit by the vehicles on the ramp or something that has happened in the aircraft purely related with the passengers concern and their lack or attentivity. Airlines compensates and take care of the victims who has suffered in the airlines due to any of the threat or accident. Every airline has different policies to compensate their losses and overcoming them. Accidents are not always manual but most of the time it comes down to airline staff inefficiency to hold the trouble off. For example hijack or bomb threat is definitely not done by the airline staff but it happened due to inadequate security checks and lethargic way of work. Bird strike can happen but it was airline's duty to make the runway obstacle-free before landing and take-off. Air accidents is usually followed incompetence of aviation staffs and public suffering and this study works on the suggestions and perceptions that they might have about an airline and ways and means to avoid any of such accidents in future and to provide hassle-free travel all around the world.

2. Literature Review

According to "Simo K. Ekmana Michel Debacker "(2018)

Based on the statistics, risk of accident is low for commercial aircraft. Lethal aircraft rate is about 0.5 per million flights on 1990's and decreased approximately of 1 per 2.75 million flights for every five year period like 2010-15. This result of fatal accidents and their responses are limited, the motive of their study was to enhance the knowledge and evaluate the impact of minimum take-off weight [MTOW], phases of flight and aircraft damage on the occupants during aircraft accidents. They concluded their study by revealing that survivability rate were too low and fatalities rate were substantially higher and the accidents happened at the time of landing phase and smaller aircrafts destroyed completely. **According to "Carolyn Ellis" (2016)** In her article he writes about the narration given by a family in the aftermath of this brother's death in an airplane crash. "that was a true story that fills the gap between the fictions and social science joining the ethnographic and sociological understanding to autobiographies." Her aim was to reposition the readers visions to a vision of authors of text to encourage the readers to "experience and experience" that can show not only how it was for them but also how it could have been for us. **According to "Chen-Wei LI a, Veng Kheang PHUN b, Mio SUZUKI and Tetsuo YAI" (2015)** They did a research on social influence and public perception towards an accidents and airlines. According to them media usually exaggerates resulting in social panic and loss of trust from the general public. They took a study case of an accident that happened in Taiwan in the year July 23, 2014 of an airline named TransAsia Airways GE222. In that study they adopted the study method to observe price fluctuations of stocks and know about the relationship with the media. An online survey was conducted for Taiwanese people to examine their perception towards the airlines considering different cases and while investigating this incident which is GE222 there was one more incident that happened which was GE235 accident. Due to those events both the results from hypotheses and other testing were drastically different from one another because one more accident affected people's safety perception, trust and willingness to use airline services are affected. They think that accidents are rare but crashes are always catastrophic. Safety perception came into consideration due to accident history, airline services, media's influence and rumours. Their research is to know about the degrees that accidents bring consequences of people perceptions and social influences. Passenger traffic was decreased noticeably after the accident due to mistrusts and safety concerns. **According to "Frank Wagener David C Ison" (2014)** The purpose of their study was to extend the courses of previous examination of commercial crew accidents and incidents to access crew resource management (CRM) application in relation with error management during landing/approach phase and find descent phase. Data were collected both from National Transportation Safety Board (NTSB) and federal20 aviation association (FAA) to evaluate the significant connection between 2002 to 2012, 113 accident were witnessed and in total of 57 (50 percent) were related to crew resource management and it was shown in analysis section of the investigation report. **According to "Sverre Roed-Larsena and JohnStoop" (2012)** These days, investigation is often termed as advocated approach rather than an umbrella concept. They say there are different system levels and different approaches according to the levels. Starting from transport aviation accidents to genocide, natural disasters and health conditions and last but not the least economic fraud. Investigation has to be distinctive and it was confidential to it's credibility and quality in front of professionals, politically strong people and the general public. Based on historical data of the accidents it was revealed that performance of leading investigations and practical experiences of major accidents and changes were made in operating conditions a SWOT analysis discovered several issues in internal and external challenges in the later period of investigation. This research is to improve investigation practices for the accidents. **According to "panel Paul O' Connora Angela O' Deab Quinn Kennedy c Samuel E. Buttre" (2011)** In their research they reviewed 23 studies who have investigated safety climate within military aviation and commercial aviation. Safety climate has always been a major issue in aviation.

They researched on aviation safety climate questionnaire which were consistent with the safety climate in non-aviation high reliability organisations. It was concluded that aviation climate safety had some tools which were time constraint that is, measuring the questionnaire, in the amount it was intended to measure. But not enough studies are done to compare those safety tools at different levels of safety performances of the organisations or personnel. It was suggested that rather than creating more such conducts and questionnaire. They should focus on different methods of existing measures to understand safety climate with relation to other dynamics of safety performances. It was acknowledged that aviation accidents today are so rare to provide any crucial safety performance evaluation. However, they have other measures to collect such information from the airlines. They concluded with a note that it is impossible to have a concrete relationship between safety climate and other measures of safety performance to be established in future. However, with all these aviation regulatory bodies like federal aviation authorities (FAA), EASA etc. it may be possible to find out safety performance data and the possibility to detect the accidents and preventing it.

3. Objectives of the Study

Primary Objectives

- To know public perceptions towards Airlines after aviation crisis or accidents.
- To suggest this study to all the airlines to keep customer's reactions and their feelings in mind and improve their security systems to provide safe and secured travel.

Secondary Objectives

- To improve the management and providing a proper communication channel between the staffs and with solid crew resource management training given to them so their responses are quick against the disaster.
- To provide compensation and offers to the passengers which will help in earning their trust back on the airlines without causing much troubles.
- To reduce the aviation crisis using technological advancements.

Research Methodology

In this study we have used Google forms to collect answers from the passengers through online and a total of 100 sample data's have been collected.

Hypothesis of the Study

Customer Perception

H0: There is no significant relationship between customer perception and lost trust.

H1: There is a significant relationship between customer perception and lost trust.

Reduced Travel

H0: There is no significant relationship between customer perception and reduced travel.

H1: There is a significant relationship between customer perception and reduced travel.

Fall In Economy

H0: There is no significant relationship between air accidents and fall in economy.

H1: There is a significant relationship between air accidents and fall in economy.

4. Analysis and Interpretation

Hypothesis 1 – Chi-Square

Statistical Analysis on Customer Perception and Lost Trust

AIM: To test the significant relation between customer perception and lost trust.

X=Customer perception

Y=Lost trust

The Chi-Square analysis between customer perception and lost trust

HO: There is no significant relationship between customer perception and lost trust.

H1: There is a significant relationship between customer perception and lost trust.

Respondents opinion on customer perception and lost trust

X	48	16	37	0	1	102
Y	22	41	21	4	14	102
Total	70	57	58	4	15	204

Chi-square:

Formula:
$$x^2 = \sum \frac{(O-E)^2}{E}$$

O = Observed frequency E = Expected frequency

$$E = \frac{\text{Row total} \times \text{Column Total}}{\text{Grand Total}}$$

O	E	O-E	(O - E)²	$\frac{(O - E)^2}{E}$
48	35	13	169	4.82
16	28.5	-12.5	156.25	5.48
37	29	8	64	2.20
0	2	-2	4	2
1	7.5	-6.5	42.25	5.63
22	35	-13	169	4.82
41	28.5	12.5	156.25	5.48
21	29	-8	64	2.20
4	2	2	4	2
14	7.5	6.5	42.25	5.63

$x^2=39.72$ = Calculated value
39.72=Calculated value

Degrees of freedom: (r-1) (c-1) =(2-1) (5-1) =(1) (4) =4

$$\sum \frac{(O - E)^2}{E} = 39.72$$

Degree of freedom 4 at 5% significant level tabulated value=9.49

If T.V < C.V Reject Ho.

If T.V > C.V Accept Ho

Results,

Hence, 9.49 < 39.72

There is a no significant relationship between customer perception and lost trust.

Statistical Analysis on Air Accidents and Fall in Economy

AIM: To test the significant relationship between air accidents and fall in economy.

The Chi-Square analysis between air accidents and fall in economy.

H0: There is no significant relationship between air accidents and fall in economy.

H1: There is a significant relationship between air accidents and fall in economy.

Respondent’s opinion on air accidents and reduced travel

X	22	41	21	4	14	102
Y	28	43	28	2	1	102
	50	84	49	6	15	204

Formula:

$$x^2 = \sum \frac{(O-E)^2}{E}$$

O= Observed frequency
 E= Expected frequency

$$E = \frac{\text{Row total} \times \text{Column Total}}{\text{Grand Total}}$$

Respondents opinion on air accidents and fall in economy

O	E	(O-E)	(O - E) ²	$\frac{(O - E)^2}{E}$
22	25	-3	9	0.36
41	42	-1	1	0.02
21	24.5	-3.5	12.25	0.5
4	3	1	1	0.3
14	7.5	6.5	42.25	5.63
28	25	3	9	0.36
43	42	1	1	0.02
28	24.5	3.5	12.25	0.5
2	3	-1	1	0.33
1	7.5	-6.5	42.25	5.63

$$\text{Chi-Square} = \sum \frac{(O-E)^2}{E} = 13.65$$

Degree of freedom= (r - 1) (c - 1) = (2-1) (5-1) = 4

Degree of freedom is 4 at 5% significant level

Tabulated value= 9.49

If T.V > C.V Reject Ho

If T.V < C.V Accept H1

So here T.V < C.V = 9.49 < 13.65 Reject the Ho

Hence, There is a significant relationship between air accidents and fall in economy.

Correlation: Statistical Analysis on Customer Perception and Reduced Travel

AIM: To test the scientific relation between customer perception and reduced travel.

X= Customer perception

Y= Reduced travel

Correlation:

H0: There's no significant relationship between customer perception and reduced travel.

H1: There's a significant relationship between customer perception and reduced travel.

Respondent's opinion on customer perception and reduced travel

X	48	16	37	0	1	102
Y	27	31	36	2	6	102
	75	47	73	2	7	204

$$\text{Formula: } r = \frac{\sum XY}{\sqrt{\sum x^2 \sum y^2}}$$

x= Customer perception

y= Reduced travel

x	Y	X	Y	XY	X ²	Y ²
48	27	27.6	6.6	182.16	761.76	43.56
16	31	-4.4	10.6	-46.64	19.36	112.36
37	36	16.6	15.6	258.96	275.56	243.36
0	2	20.4	-18.4	-375.36	416.16	338.56
1	6	-19.4	-14.4	279.36	376.36	207.36
102	102			298.48	1849.2	945.2

$$X = (x - \bar{x})$$

$$Y = (y - \bar{y})$$

\bar{x} = Total of x \bar{y} = Total of y

Calculation

$$r = \frac{298.48}{\sqrt{18492 \times 945.2}} = 0.225$$

r value should lie between -1 to +1 = 0.924 = Perfectly correlated

Hence, There is a perfect correlation between customer perception and reduced travel.

5. Conclusion

The results support the hypothesis that air accidents make people lose their trust for a time being but eventually it gets back and people starts to fly again. People do not know much about the compensation policy of airlines in case of accidents. So, awareness should be created among them regarding different policies rather than just focussing on safety aspects of the industry. Media aspects should work on providing a reliable information of aviation and air accident coverage and should not hide clips or footages of some important news and crucial aspects.

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