In-flight Aggression:

A Cabin Crew and Passenger Perspective

By

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I certify that this thesis does not incorporate without any acknowledgement any material previously submitted for a degree or diploma in any university; and that to best my knowledge and belief it does not contain any material previously published or written by another person where due reference is not made in the text.

Abstract

In-flight aggression is the term used to describe aggressive behaviour during flights. The dangers such behaviour pose are evident when the lives of passengers and cabin crew are threatened. In the worst case scenario, passenger/s will barged into the cockpit and interfere with flight controls, causing the aircraft to crash while losing all lives onboard. This study investigates the magnitude of in-flight aggression and some of the triggers that lead passengers to it. It also examines the effectiveness of some measures and the environment which in-flight aggression manifest. The results showed that cabin crew were exposed to the serious dangers of in-flight aggression 6 times more than an average passenger. After September 11th, passengers became more aware of the dangers of in-flight aggression and were more willing to assist cabin crew should the need arise. Alcohol was found to be the top trigger of in-flight aggression and cabin crew intervention of such behaviour is most effective compared to other measures such as flight crew, other passengers, legislation, etc. Some aspects of airline policies and procedures related to the management of in-flight aggression require attention. Pre-flight and in-flight procedures and policies were only moderately effective and experienced cabin crew found them disappointing. Airlines encourages their crew to report incidents and have high safety standards which they expect cabin crew to adhere to strictly, failing which cabin crew are likely to face disciplinary actions. However the cabin crew were seldom informed about outcome of incidents and lessons drawn from incidents seldom led to policy or procedural improvements. Cabin crew believed that both physical and psychological passenger management techniques should be incorporated in training and many would like to be trained in self-defence although many airlines do not provide such training. There is some evidence that profiles of passenger and cabin crew can be used to predict a potential perpetrator and the effectiveness of a cabin crew managing an incident. Based on the finding, several recommendations were made to better manage in-flight aggression.

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Chapter 1

Introduction

1.0 Introduction

Media coverage, coupled with increasing public concern, has focussed a large amount of attention on the phenomenon of air rage. In the 1990's air rage became a major problem when a 400% increase in the number of incidents was observed between 1993 and 1998 (Sheffer, 2000). A number of near accidents caused by air rage demonstrated its potential danger (Berkley & Ala, 2001; Schwab, 2002; Sheffer, 2000). Statistics show air rage incidents peaking in the United Kingdom between 2000-2001 with 652 recorded incidents, then declining to 528 incidents in the subsequent year, probably due to the September 11th incident (DfT, 2003).

Berkley & Ala (2001) described air rage as the number one security concern in the airline industry prior to September 11th. Post September 11th however saw air rage take a back seat, while terrorism took centre stage. Since the September 11th incidents took place, security efforts to date have remained focused on eliminating the threats posed by deliberate sabotage or terrorism. However these efforts do not eliminate threats posed by air rage.

Some may argue that the defence system in place to tackle terrorism will be sufficient to manage aggressive passengers. However, such a view is difficult to sustain. Firstly, while terrorism is a premeditated act, in-flight aggression is not; passengers do not plan to get aggressive with other passengers or cabin crew prior to their trips. Thus profile screening and management methods for the two groups of threats will be different. Secondly, while excessive force may be required to apprehend suspects of terrorism, incidents of in-flight aggression can often be managed without using physical force. Airlines are businesses and good relationships with customers are essential. Inadequate management of incidents may deter

passengers from flying on the same airline again. In other words, aggressive passengers should not be treated like terrorist suspects.

Aggressive passengers are dangerous. In extreme cases they can cause the loss of an aircraft, but more often they cause injury to other passengers or cabin crew. Cabin crew travel more often than passengers and are therefore more likely to be exposed to the dangers of such aggression. Air rage in the context of cabin crew is a health or occupational hazard and should be treated with seriousness.

Air rage has been treated like a new phenomena, however scientific studies of aggression were done as far back as 1939 (Dollard, Miller, Doob, 1939 cited in Franzoi, 1996). One of the early 'air rage' incidents was recorded in 1947 (Sheffer, 2000). Despite this long history and recent up-surge in interest, few studies have been done on air rage.

This study examines the 'air rage' phenomenon or in-flight aggression in three areas; the triggers which seem to provoke the incidents, the measures applied to cope with the problem, and the environmental factors that influence such behaviour. Additionally it will study the relationship between demographics and in-flight aggression.

Chapter 2

Literature Review

2.0 Introduction

Research in 'air rage' had mainly revolved around establishing causes and finding appropriate solutions. This research usually discusses the influence of external factors in relation to the occurrences of 'air rage'. Numerous causes are cited in the research, from flight delays to unpleasant encounters with other passengers or cabin crew. However these causes are like the leaves on a tree, we need to follow the branches to lead us to the root of the phenomena.

The phenomena 'air rage' is a social issue related to violence that has been transferred into the cabin environment; it is aggression in air travel. This study starts from the position that an act of aggression is a conscious choice by passengers and external factors influence rather than cause the decision.

Research in aggression has a rich history, with one of the earliest theories, the frustration-aggression hypothesis, being developed in 1939 (Franzoi, 1996b). By leveraging on the long history of research in aggression, the phenomena of 'air rage' can be better understood and the identification of appropriate solutions can be more efficiently controlled.

Air rage is still a relatively recent phenomenon and consequently little has been done in a co-ordinated way to attack the problem. Studies providing insight into the problem are relatively rare so airlines and regulatory authorities have taken an ad hoc approach, dealing with problems as they arise. Consequently, there has not yet been an integrated, systematic approach to dealing with the issue. Airlines in particular have been ambivalent about how to deal with the problem. In 2002 alone, they spent 5 billion dollars on new security regulations (Bisignani, 2003). However, according to the ITF (2001) staff were discouraged from reporting incidents in case they offended

customers. Additionally, their survey found that only half (54%) of the airlines surveyed had policies to tackle the growing problem of air rage.

2.1 Definitions

Several key phrases used in this research are discussed in this section. These key words include, In-flight misbehaviour (IFMI), In-flight aggression, environment, stimulus, measures, defence and defence system.

2.1.1 Defining In-flight Misbehaviour and In-flight Aggression

This section discusses the need for a definition of the phenomena 'air rage'. It proposes the terms 'In-flight misbehaviour and In-flight aggression' as alternatives to 'air rage', to more accurately describe the behaviour under discussion and move away from the emotional hype associated with the term 'air rage'.

2.1.1.1 Inadequacy of the term 'Air Rage'

Air rage is a term created by the media around 1999 to describe violent passenger behaviours onboard an aircraft (Beeks 2000). Other terms used to describe similar behaviours include "disruptive behaviour", 'unruly behaviour' and 'passenger "misconduct". According to Elliot (1999) 'road rage' being a catchy label, is used more often by the media and in much of the current literature and the same can be said for the use of the term "air rage".

As there is no consensus on the constituents of air rage, there is no single definition for the term used. Some definitions offered are simple, while others are more complex. Beeks (2000, p. 5) defined air rage as "violent and uncontrollable anger". Schwab (2000, p. 404) on the other hand defined it as "behaviours that disturb the good order and discipline onboard an aircraft and behaviours that fail to respect the rules and conduct or follow the instructions of crew members on board an aircraft." Several other studies cited examples where cabin crew and/or other passengers have been assaulted resulting in serious injuries to explain the term air rage (see for example, Fogg, 2001; Rolfe, 2000). Other labels used to describe similar behaviour of airline passengers include 'disruptive' and 'unruly'. ICAO described an unruly or disruptive passenger as 'anyone who fails to respect the rules of conduct onboard an aircraft' (Huang, 2001, p.18).

Road rage, a phenomenon similar to air rage, has been described as a range of anti-social behaviours, and/or acts of aggression (Elliot, 1999). In the study of road rage, Elliott (1999) held that there was no scientific definition for the term. Similar to road rage, 'air rage' has no scientific definition. Without a definition there is no reference point for researchers to study the problem effectively. It is tempting to define air rage to resolve the problem, however, upon closer examination; the term does not reflect accurately the range of behaviours that it seeks to describe.

Firstly the word 'air' is ambiguous as to where or in what environment the phenomena should be studied. It pose questions like 'should the phenomena be studied from the moment the aircraft lifts off the ground till it touches ground or should it begin the moment the aircraft leaves the gate or when passengers check in at the counters? The term 'rage' can also be misleading because researchers may find anger the salient aspect for investigation while overlooking other areas of the phenomena, for instance fear and pain. This is evident in Beeks (2000) where the study measured the level of frustration and stress. Berkowitz (1969, 1989 cited in Franzoi, 1996) suggested that there is more than one trigger to aggression. For example, they included frustration, pain, extreme temperatures, and encountering disliked people. As can be seen, a less emotive term with broader connotations may provide a more useful working base.

2.1.1.2 Derivation of the terms In-flight Misbehaviour and In-flight Aggression

The term "air" is defined as 'the space around things above the ground' in Collins Cobuild Dictionary (1987) and is therefore not helpful in determining exactly when the phenomena of "air rage" should be measured. On the other hand, the word 'in-flight' is defined as the moment the aircraft doors are closed following embarkation till the moment the doors are opened for disembarkation (Tokyo Convention, 1963). This term provides a clearer time frame and so is used instead of "air".

Similarly, the word 'rage', defined as 'a feeling of extremely strong anger' Collins Cobuild Dictionary (1987) misleads people into thinking that the unruly behaviour stems only from anger. In social psychology, the concept of 'aggression' matches 'air

rage' behaviour best as it focuses on the act itself, rather than the emotion that may be driving the behaviour. Smith and Mackie (1999, p.504) define aggression as "behaviour intended to harm someone else", likewise, Franzoi (1996, p.432) defined aggression as "any form of behaviour that is intended to harm or injure some person, oneself, or an object". As illustrated, the term aggression is a more comprehensive word to use. Therefore the term 'rage' is replaced with 'aggression'. In summary, the term in-flight aggression is a more useful description of the phenomena than 'air rage' and thus will be used in this study.

In-flight aggression is the most obvious example of misbehaviour onboard an aircraft. However, there are other behaviours which may also disrupt the safe operation of the aircraft (see Table 2.1) or be unacceptable. To cover the complete span of such behaviours the term "in-flight misbehaviour" is suggested. This includes "in-flight aggression", "hijacking, "breech of aviation safety and security regulations" and "other unlawful act". Examples of these behaviours are illustrated in table 2.1.

Table 2.1: Examples of Behaviours in Various Categories of In-flight Misbehaviour

Categories of In-flight Misbehaviour	Examples
Hijacking	Using force to take command of an aircraft
In-flight Aggression	Inflicting harm to cabin crew or other passengers
Breech of Aviation Safety & Security Regulations	Refuse to fasten seat belt, smoking in toilets
Other Unlawful Acts	Sexual harassment, theft, vandalism

2.1.1.3 Definition of In-flight Aggression

A working definition for the term "in-flight aggression" is needed to further the discussion of the phenomena. Thus, the term in-flight aggression is developed by combining Franzoi's (1996) definition of 'aggression' and Tokyo's definition of 'in-flight'. In-flight aggression is thus defined as "Behaviour of aircraft passengers that is intended to harm or injure another person, oneself or an object after the aircraft door has closed following embarkation till the moment the doors are opened for disembarkation, the behaviour is however not premeditated prior to embarkation."

2.1.1.4 Categorising In-flight Aggression

Unwanted behaviours of different magnitude and types can occur during a flight. A system of categorising these incidents enables policy and procedures for dealing with incidents to be developed and applied consistently. In this section, the categorising of aggressive behaviours by Continental Airlines Hill (1997), FAA (1996) and Geen (2001) are examined. Geen's categories are built around the three dimensions of intent, foreseeability and seriousness and are of particular interest.

Hill (1997) explained how Continental Airlines developed a procedure that differentiates the magnitude of passenger aggression. In summary, Hill (1997) described the use of a two level system whereby the disruptive passengers would be informed that their behaviour was against federal regulations. Cabin crew at Continental Airlines were trained to diffuse minor disturbances, which were mostly related to smoking, alcohol and crewmember interference, by explaining the regulations. If this failed, a written warning was issued and the disturbance classified as 'Level 1' where documentation was necessary. If the disturbance persisted after the written warning, the incident would be upgraded to Level 2 where the presence of law enforcement officers would be requested upon landing. Level 2 disturbances or serious disturbances, were described as "any incident that is considered a serious threat to safety of flight or a violation of a flight regulation resulting in the need to involve law enforcement authorities" (Hill, 1997). She also describes how the magnitude of aggressive behaviour can be categorised and how appropriate responses by cabin crew could be matched to the different categories of aggression (See Table 2.2).

However, there is one problem with this approach. Not documenting behaviours that cease prior to a written warning deprives an organisation of useful data. Every passenger that ceases their disruptive behaviour is an indication of a successful intervention. Not recording these incidents reduces feedbacks on the 'success rate' of measures implemented; in such cases the management would only receive the 'bad news' and be unaware of which strategies were most effective. More about the feedback loop will be mentioned during the discussion of a defence system in the following sections.

Table 2.2 Steps in Categorising of Unwanted Behaviour

Steps	Level or Category	Description of unwanted behaviour	Cabin Crew Response
1	Nil	Passenger violates a federal regulation	The flight attendant attempts to educate the passenger on the non compliant behaviour in a non-adversarial and professional manner
2	1 (Minor)	Continued non-compliant behaviour	Flight attendant will provide the passenger with written warning.
3	2 (Serious)	Continued non-compliant behaviour after a verbal warning and written warning	The law enforcement authorities are requested to meet the flight to obtain a positive identification.

Source: Hill, A. (1997). *Passenger Non-compliance, How Much is Too Much?* Paper presented at the Proceedings of the 14th Annual International Aircraft cabin Safety Symposium, Torrance, CA: Southern California Safety Institute.

The US Federal Aviation Authority (FAA, 1996) also use a categorising system similar to Hill (1997). It defines passenger misconduct as belonging to one of three categories (see Table 2.3). However, similar to Hill (1997), the administration does not require the documentation of behaviours that fall under category 1.

Table 2.3 Passenger Misconduct Defined by the FAA

Category 1	A flight attendant request compliance with crewmember instructions and the passenger complies with the request. No further action is required by the flight attendant nor does it warrant report to the cockpit, the carrier, or the FAA.
Category 2	A flight attendant requests the passenger to comply, but the passenger continues disturbance which interferes with cabin safety such as verbal abuse or continuing refusal to comply with the federal regulations. (i.e. to fasten a seat belt when sign is illuminated, use of unauthorised electronic equipment, etc)
Category 3	A crew member's duty are disrupted by continuing passenger interference, or a passenger or crew member is injured or subjected to a credible threat of injury, or an unscheduled landing is made and/or restraints such as flex cuffs are used.

Both the FAA (1996) and Hill (1997) used types of behaviours as the basis for the categories. However a different approach is taken by Geen, (2001) who uses three dimensions of aggression as the basis of his categories. Geen's system of categorising harm along the dimensions of intention, motive and foreseeability (see table 2.4) is instructive. Geen (2001, p.395) claimed that "the two types of harm for which a person is held most responsible are the intentional-malicious and unintentional-foreseeable, with the former more serious than the latter". If we examine the FAA categories closely, all the misconduct described fall within the two categories of intentional-malicious and unintentional-foreseeable.

When passengers are given verbal warnings, the authorities are actually trying to eliminate non-intentional behaviours, for example not fastening seatbelts. Thereafter the passengers are aware of the dangers they pose thus any repetition of behaviour is intentional. This can perhaps explain why the previously described systems did not require documentation of incidents prior to initial warnings.

However, discriminating between intentional and non intentional behaviours is not sufficient on its own to form a categorising system. Consider two incidents where the first involves continual refusal to fasten seat belt and the second involves continual refusal to stop operating electronic equipments. While the first incident would merely jeopardize the safety of an individual, the second incident can cause aircraft instruments to fail and eventually the loss of the aircraft. As illustrated a third dimension 'seriousness' is necessary to categorise behaviours.

As observed, both the FAA (1996) and Hill (1997) determine the seriousness of incidents by using two variables; speed of compliance and the nature of behaviour. Where compliance with cabin crew requests is fast the incidents are usually considered minor and vice versa. Behaviours resulting in physical injuries are usually considered more serious than behaviours that do not produce such injuries. Behaviours that threaten the safety of the aircraft are also considered even more serious.

Table 2.4 Examples of Harm Doing Along Dimensions of Intent, Motive and Foreseeability

No.	Intention	Motive	Example
01	Intentional	Malicious	Premeditated Murder
02	Intentional	Not Malicious	Restraint of Mugger
03	Not Intentional	Foreseeable	Injury due to Drunk Driving
04	Not Intentional	Not foreseeable	Injury due to unknown mechanical failure

Source: Geen, R. G. (2001b). Human Aggression (2nd ed., pp. 395). Buckingham, Philadelphia: Open University Press.

2.2 Aggression

It is sometimes difficult to distinguish between aggressive behaviour and non aggressive behaviour. Franzoi (1996a) created a fictitious scenario to demonstrate some important aspects of the definition. The same strategy is used here in the context of air travel is used to illustrate the problem of making these distinctions. The narrative below describes a scenario on board an aircraft.

"Passenger A who had too much alcohol tried to hit a cabin crew with a food tray when denied a refill of alcohol but missed. Passenger A continues to behave violently and Passenger B who was on the way to the lavatory, afraid of being hurt, ran down the aisle and knocked down Passenger C. In a state of fury and knowing Passenger B was not at fault, Passenger C vented anger by smashing his fist in to a seat. Passenger C sustained a fracture and the seat was damaged as a result."

With reference to the example above, Passenger A was aggressive despite missing the target and not hurting anyone in the process, as it was the intention of Passenger A to inflict harm. Passenger B hurt Passenger C, but was not guilty of aggression because there was no intention to hurt. Passenger C was guilty of aggression when he/she intentionally inflicted harm on himself/herself. Passenger C was also aggressive

although the aggression was directed at an inanimate object, in this case the smashing of the seat.

This highlights several things; firstly, the behaviour of a perpetrator must be intentional. Secondly, 'in-flight aggression' behaviour involves harm or intended harm on another person, oneself or an object. Thirdly, aggression has different levels of seriousness. In the above example, Passenger C who smashed the seat may be less aggressive than Passenger A, who tried to hit a cabin crew with a tray.

Aggression depends on the way an individual perceives and interprets other's behaviour, an event or a situation (Smith and Mackie, 2000). Aggression takes shape in many forms under numerous conditions. In the field of social psychology, two main categories or patterns related to the triggering of aggression can be identified. They are instrumental aggression and hostile aggression (Franzoi, 1996b); Smith & Mackie, 2000). These patterns of aggression will be discussed extensively in the next sections because they provide insight into the possible reasons passengers choose to behave aggressively. Other issues that will be discussed include the roles of gender, norms and culture in aggression.

2.2.1 Instrumental Aggression

As mentioned in the previous section, aggression can be triggered by two categories of motivation. One is 'instrumental aggression'; the intentional use of harmful behaviour to achieve specific goals (Franzoi, 1996; Smith and Mackie, 2000), for example, when passengers become aggressive to obtain more alcohol or a seating preference. Franzoi (1996a, p.447) suggests that instrumental aggression involves people being "pulled" toward acting aggressively in anticipation of a desirable outcome.

Smith & Mackie (2000) held that a situation that appears to offer opportunities for gain increases the motivation for instrumental aggression. They also argued that the motivation behind instrumental aggression depends on people's perception of potential rewards and costs. The factors influencing the perception of costs and

rewards will be discussed in the following sections. Also to be discussed is the way people learn how, when and whom to behave aggressively towards.

2.2.1.1 Rewards of Aggression

People adept at instrumental aggression develop a sharp sense for appropriate opportunities (Smith & Mackie, 2000). When aggression is rewarded, or reinforced, reoccurrence becomes more likely (Bandura, 1973; G.R. Patterson, Littman & Bricker, 1967, cited in Smith and Mackie, 2000). Rewards can be material such as money, social such as praise, or increased status and self esteem (Branscombe & Wann, 1994; Geen & Stonner, 1971; Walters & Brown, 1963, cited in Franzoi, 1996, p. 447). On the other hand if aggression is not rewarded or punishment is metered out, the frequency of the behaviour will be reduced (Franzoi, 1996; Smith and Mackie, 2000). However Franzoi (1996) pointed out that when people are rewarded inconsistently, they show greater resistance to the extinction of behaviour than when they were rewarded consistently

2.2.1.2 Perceived Cost and Instrumental Aggression

People weigh cost and rewards before engaging in instrumental aggression. Thus when the cost of aggression outweighs rewards, aggressive behaviour is inhibited. However if rewards outweigh the potential cost, aggression precedes. The perceived cost for aggression varies across individuals (Smith & Mackie, 2000).

People large in size or skilled in martial arts find aggression less costly and if they are successful in gaining rewards, they are more likely to repeat such behaviour (Smith & Mackie, 2000). Men also find aggression more rewarding and less costly than women (Smith & Mackie, 2000). When men's self-esteem and integrity are challenged, they believe aggression can help them exercise control over others, which in turn neutralises the challenge to their esteem (Franzoi, 1996b). Women on the other hand perceive their aggression as being stress–induced and precipitated by a loss of control, resulting in antisocial behaviour (Franzoi, 1996b). Men look upon aggression as a positive experience while women perceive it as a negative experience. Instrumental aggression is associated more with male behaviour, while hostile aggression is more

characteristic of women. Hostile aggression tends to be spontaneous and unplanned whereas instrumental aggression is more planned and calculated (Franzoi, 1996b).

2.2.1.3 Instrumental and Hostile Aggression in Air Travel

An average passenger would want a hassle free flight and would be satisfied to arrive at their destination on time and safely. There are, however, groups that expect more from their flight experience for example, receive upgrades and enjoy multiple servings of alcohol. . It is this group of people who are particularly prone to aggressive behaviour.

Bor, Russell, Parker, & Papadopolous (2001) asked respondents to rank a range of possible causes related to in-flight misbehaviour from the most to the least significant. Figure 2.5 summarises their findings. As illustrated in table 2.5, carry-on baggage, passengers' expectations too great and passengers denied upgrades were ranked 7th, 8th and 10th respectively. These three possible causes may be reward driven and thus may be more closely related to instrumental aggression than other causes. The remaining causes on the other hand may be more related to hostile aggression as they are more likely to trigger negative affects.

However it is difficult to determine accurately from Bor et al. (2001) if the causes in their study are hostile or instrumental aggression because the information necessary to do so is not available. For example, in incidents related to denial to upgrades of seats, passengers can become aggressive because they wanted the upgrade very much or because they were angered by the treatment they received during the procedure. The former would be a case of instrumental aggression while the latter would be a case of hostile aggression. Hostile aggression seems to be more significant in in-flight aggression (Bor et al., 2001). This will be discussed further in Section 2.2.3.

Table 2.5 Possible Causes and their Significance

Ranking	Possible Causes	Percentage of Sample	More Related to Instrumental or Hostile Aggression
01	Too much alcohol consumed by passengers	88%	Hostile Aggression
02	Personality of the passenger (e.g. demanding/intolerant)	81%	Hostile Aggression
03	Time table delays	78%	Hostile Aggression
04	Stress of air travel	75%	Hostile Aggression
05	Smoking ban on many airlines	70%	Hostile Aggression
06	Cramp conditions in the aircraft cabin	66%	Hostile Aggression
07	Passengers denied carry on baggage	59%	Instrumental Aggression
08	Passenger expectations too great	57%	Instrumental Aggression
09	Crew mismanagement of passenger's problem	51%	Hostile Aggression
10	Passengers denied upgrade	48%	Instrumental Aggression

Source: Bor, R., Russell, M., Parker, J., & Papadopolous, L. (2001). *Managing Disruptive Passengers: A Survey of the World's Airlines*. London: London Guildhall University.

2.2.1.4 Learning Aggression

Previous sections have discussed how people can learn to behave aggressively after being rewarded directly. This section focuses on observational learning. In air travel passengers are often in close contact with each other; from check-ins through to the flight. Thus passengers' demands for rewards rarely go unnoticed by other passengers. If such behaviour is rewarded eventually, other passengers may be encouraged to do the same.

According to Franzoi (1996) people can learn aggressive behaviour through direct reinforcement or by watching and imitating others. Franzoi (1996) also held that observing someone getting punished for aggression does not prevent the learning of aggression but inhibits the expression under certain circumstances. If rewards are certain, the inhibition would diminish.

2.22 Hostile Aggression

The intentional use of harmful behaviour in which the goal is to simply cause injury or death to the victim is known as hostile aggression (Franzoi, 1996, p. 443). Hostile aggression is also called emotional aggression by Smith and Mackie (2000). Baron, (1983a, cited in Smith and Mackie, 2000) held that people sometimes act aggressively without regard to the likelihood of immediate punishment when propelled by "blind" fury. An example of this would be the assault of cabin crew over perceived disrespect. Baumeister, (1997, cited in Smith and Mackie, 2000) believe that angry feelings and impulses to exhibit emotional aggression are usually provoked by a threat to self-esteem and status. Thus the motivation behind emotional aggression is the need to maintain connectedness and respect (Smith and Mackie 2000).

People react differently to self-esteem threats but people with high self-esteem and fragile self-regard commit aggression more often (Smith and Mackie, 2000). People with unstable self-esteem, which fluctuates with each new episode of social praise or rejection, also react most strongly with anger and aggression. Anger however is not the only trigger for aggression. Berkowitz (1969, 1989, cited in Franzoi, 1996) asserts that other aversive factors such as pain, extreme temperatures and encountering disliked people can also have a negative effect. It is the negative affect and not frustration itself that stimulates the inclination to be aggressive (Franzoi, 1996, p. 442).

Tomkins and Nathanson (cited in Lynch, 2003) claimed that all people experience nine "affects" and these affects have a biological basis. The nine affects are illustrated in table 2.6. As can be seen among the nine affects two are positive affects, one is a neutral affect and six are negative affects. Only after we become conscious of an affect do we experience feelings and only then can people take action about the

situation (Lynch, 2003). Lynch (2003) also suggested that peoples' history and memory determine their responses to these affects and feelings and thus different people can react differently towards a same stimulus.

Table 2.6 Name and Types of Affects

No.	Name of affect	Type of Affect
1.	Joy	Positive
2.	Interest	Positive
3.	Surprise	Neutral
4.	Fear	Negative
5.	Disgust	Negative
6.	Dismell	Negative
7.	Anger	Negative
8.	Distress	Negative
9.	Shame	Negative

A person in a given situation can be inclined to behave aggressively but that does not necessarily mean that they will. Often frustration tendencies generated by negative feelings are modified by higher thinking (Berkowitz, 1994 cited in Franzoi, 1996). In simple terms, an angry person may try to make sense of the situation and if nobody was to be blame or if an aggressive response is deemed inappropriate, then anger will subside (Franzoi, 1996). Smith and Mackie (2001, p.518) show the model of multiple factors that influence aggression (see Figure 2.1) which illustrates Franzoi's model as a process.

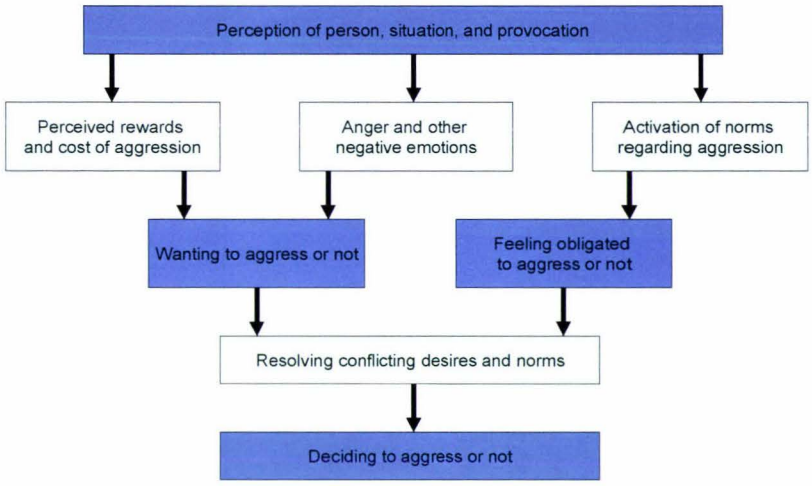

Figure 2.1 Multiple Factors Influence Aggression

Source: Smith, E. r., & Mackie, D. M. (2000). *Social Psychology* (2nd ed.). Philadelphia, USA: Psychology Press.

2.2.2.1 Excitation and Aggression

Excitation transfer occurs when arousal caused by one stimulus is transferred and added to arousal elicited by another stimulus. For an example a passenger who has just had an argument with his spouse is in a state of elevated arousal and may be more readily provoked by the tone of a cabin crew member, resulting in an angry interaction with that person. Studies have shown that activities that produce heightened excitation can energize whatever aggressive urges people have at the moment (Barclay, 1971; Geen & O'neal, 1969; Zillmann 1983, Zillmann, Katcher, & Milavsky, 1972 cited in Franzoi, 1996). Other stimuli such as loud noise, vigorous music and sexual scenes can lead to increased aggression through excitation transfer (Franzoi, 1996).

2.2.2.2 Alcohol and Aggression

The consumption of alcohol has become part of people's social life. Alcohol beverages are readily available at many places such as clubs, bars, restaurants and even convenience stores. Although alcohol is widely available and its consumption socially acceptable, it is associated with many social problems, such as assaults, rapes,

burglaries and homicides (Desmond, 1987; Wolfgang & Strohm, 1956, cited in Smith and Mackie, 2000).

People who are intoxicated tend respond more strongly to provocations than people who drink non alcoholic beverage (Bushman & Cooper, 1990; Gustafson, 1992; Hull& Bond, 1986 cited in Franzoi, 1996). There are several reasons for this heightened level of aggression.

Firstly, alcohol provides direct biochemical stimulus to aggression, for example increased heart rate and discomfort (Franzoi, 1996). From the psychological perspective, disinhibition or the weakening of people's restraints to avoid aggression occurs because alcohol interferes with people's ability to process and respond to the meaning of complex and subtle situational cues (Hull & Van Treuren, 1986; Steele & Josephs, 1988, cited in Franzoi, 1996). Therefore intoxicated people base their actions on what is most immediately obvious (Steele & Joseph, 1990, cited in Smith and Mackie, 2000). In addition to a restricted capacity to process cues, alcohol lessens people's concern for factors that ordinarily restrains aggression, which include social norms that constrain aggression, potential costs, the dangers of aggressive acts and aggression inhibitory cues such as the expression of pain from the victim (Baumeister, 1997, Schmutte & Taylor, 1980 cited in Smith and Mackie, 2000, p.517).

Franzoi (1996) also suggested that people may turn to aggression because they believe that inappropriate behaviour can be excused when performed under the influence of alcohol. Franzoi (1996) termed this tendency as 'learned disinhibition'. In other words, consuming alcohol does not invariably lead to aggression but because people themselves expect to become aggressive when intoxicated they behave in that manner. Smith and Mackie (2000) pointed out that people can become jolly or weepy when they drink if the cues push them in those directions. Thus perhaps by changing passengers' beliefs regarding the effects of alcohol it would be possible to bring about more a more responsible attitude.

2.2.3 Hostile Aggression in Air Travel

Negative emotions are closely related to aggression. Passengers who are frustrated by failing to catch a connecting flight may become aggressive towards other passengers or the cabin crew. A sports team may be agitated by the loss of a game and assault other passengers who were supporters of the other team.

In section 2.2.1 it was mentioned that hostile aggression is seemingly more significant in air travel than instrumental aggression. However it is difficult to tell if a passenger is guilty of instrumental or hostile aggression unless a detailed documentation of the incident is available. Despite of this difficulty, by looking at the types of incidences reported some inferences may be able to be made on the type of aggression involved.

2.2.4 Gender and Aggression

Aggression is more often chosen as a course of action by men because they find it more rewarding and less costly than women (Smith and Mackie, 2000). Similarly, Eagly & Steffen (1986, cited in Franzoi, 1996) found that aggression which produces pain or physical injury is more likely to be committed by men than women. However, men and women behave in a similar fashion when it comes to verbal aggression (Averill, 1982; Tavris, 1989 cited in Franzoi, 1996). Thus it might be expected that men are more likely to commit serious in-flight aggression than females while the number of minor in-flight aggression incidents are more likely to be evenly distributed between men and women.

Another significant difference between men and women in the context of aggression is that they experience aggression differently (Franzoi, 1996). Men tend to perceive acts of aggression as a positive experience, whereby they get to exercise control over others when provoked by a challenge to their self-esteem or integrity (Campbell & Muncer, 1987, cited in Franzoi, 1996). On the other hand, women tend to perceive their acts of aggression as a negative experience and attribute aggression to their stress levels and loss of self control (Campbell & Muncer, 1987, cited in Franzoi, 1996). Consequently, men more often take planned and calculated actions (instrumental aggression) while women are more spontaneous and unplanned (hostile aggression) in their actions (Campbell, Muncer & Coyle, 1992, cited in Franzoi, 1996).

Understanding the differences between how men and women experience aggression, may assist in formulating more effective conflict resolution techniques for cabin crew. For example, a cabin crew who encountered an incident with a female passenger understands that the source of problem may be more likely to be caused by stress induced than gains motivated, i.e. upgrades, thus the cabin crew may be able to use select their style of approach more effectively.

2.2.4.1 Gender of Cabin Crew and Performance during Aggressive Encounters

Females compared to males are usually physically smaller in size and thus it is more costly for them to be aggressive. Female cabin crew may therefore be at a physical disadvantage when they encounter violent passengers. However according to Willerman (1979), women are also more emotional and sympathetic than men and this may allow them to empathise and reduce potential conflict better than male cabin crew. Thus male cabin crew may perform better when incidents are related to hostile aggression and female crew may perform better when managing incidents related to instrumental aggression.

2.2.5 Norms and Aggression

Norms can either inhibit or promote aggression. The norms of a person stem from the society and environment they come from. It is clearly too time consuming and costly to identify the norms of each passenger in order to predict their potential risk of aggression, however, two areas of norm will be discussed here because more research has been conducted in these areas.

Firstly, the norm of family privacy; this norm may insulate family life from public standards of behaviour thus often increasing violence within home (Berk & Newton, 1985; L.W.Shermand and Berk, 1984, cited in Smith & Mackie, 2000). On an aircraft, when family members get into a dispute with each other, the result can be more extreme than if strangers are involved. For example, an incident involving two Michigan twin sisters saw the two sisters use profanities as they fought each other. In the process they injured the nose of a flight attendant who tried to intervene, punched several passengers, screamed and even tried to open a door to the aircraft

(ClickOnDetroit.com, 2001). Another incident occurred onboard a Britannia Airways flight where a mother became abusive towards her daughter and as a result of the incident the aircraft was forced to divert (Airwise, 2001). Incidents resulting from family disputes are rare but the magnitude of such incidents can be extreme.

Secondly, according to Smith & Mackie (2000), the "culture of honour" dictates a ready response of violence to insults and threats of material loss. Thus passengers who come from these cultures are more likely to respond aggressively than other cultures (Smith & Mackie, 2000). For example Cohen & Nisbett (1997, cited in Smith & Mackie, 2000) argued that Southern white males in USA, compared to those from other regions are more likely to endorse aggression in defence of property or in retaliation to insults.

Norms on the other hand can also inhibit the use of aggression, for example the Chinese norm of non-violence can be reflected in the expression "peaceful co-existence is precious". However, according to Smith & Mackie (2000) norms are most effective when limiting aggression against in-group members for two reasons. Firstly, group membership promotes liking and fellow feeling and secondly groups usually strictly control aggression within the group in order to maintain cohesion (Smith & Mackie, 2000). These norms however do not protect those outside the group. Therefore a misbehaving group of passengers are more likely to harm those outside the group then those within.

2.2.6 Fear of Flight and Aggression

A study by Lufthansa (cited in Dahlberg, 2001), found 55 percent of the passengers surveyed suffer from fear of flying. Another study by Boeing (cited in Dahlberg, 2001) claims that 10 to 20 percent of passengers experience medium discomfort while 5 to 10 percent experience severe symptoms.

Passengers who have a fear of flying have a reduced capacity to process information because they become hypersensitive towards their surroundings and/or become preoccupied with negative thoughts about the flight. For example, passengers surveyed by Van Gerwen, Spinhoven, Van Dyck, & Diekstra (1999) owned up to

listening to every sound the aircraft made and having difficulty concentrating because they were worrying about having an accident.

According to Smith & Mackie (2000), threat and emotional arousal can reduce people's capacity to process information carefully. They also found that when people are aroused by threats, they shift into short term thinking thereby seeking the immediate rewards of aggression while discounting long term costs. Thus when passengers are fearful, they may act aggressively when provoked because of their reduced information processing capability

2.2.7 Group Aggression

Often airlines find themselves carrying passengers in groups, be it an orchestra, a football team or a club. According to Dahlberg (2001), an increase in group in-flight misbehaviour is a global trend. The DfT (2002) reported 9 cases of group incidents among the 648 incidents reported. Compared to individual incidents group incidents are less frequent, however, they can be more of a problem.

According to Smith & Mackie (2000) group conflicts are more often related to social rewards such as respect and esteem than material ones. They also found that groups are more aggressive and produce stronger responses than individuals.

2.3 In-flight Alcohol and Aggression

In-flight intoxication is involved in many IFMI incidents (Bor, Russell, Parker & Papadopoulos, 2000; Berkley & Ala, 2001 & Sheffer, 2000). Singapore Airlines reported ten cases of drunken and disorderly behaviour in 1996. They recorded a total of only 18 incidents in 1996, therefore alcohol accounted for more than half (55.5%) of the total incidents. The high frequency of incidents related to intoxication led Dr. Graham Lucas, a psychologist who advises Britain's Civil Aviation Authority, to call for a ban of alcohol on all flights (Lee, 2002).

Airlines are in a good position to rectify the problems caused by alcohol because, by and large, they control the flow of alcohol. Airlines can control passengers' intake of alcohol by utilising portion control, for example packing liquor in small bottles. Other reactive measures include diluting the drinks and cutting off the supply of alcohol completely (Peterson, 1997). However, in-flight alcohol is not he only source of alcohol and this complicates management.

According to the International Transport Worker's Federation (ITF, 2001) the problem begins at the front desk. Passengers whose flights are cancelled may be offered free alcohol vouchers. For those who have checked in, various lounges offering alcohol while waiting and it is here where some business class passengers are served free alcohol. Lounges at airports are not required to limit sales of alcohol to those who are travelling. Passengers are not discouraged from consuming alcohol excessively nor advised that it may be illegal to board the aircraft while drunk (ITF, 2001). With alcohol readily available, it is unrealistic to hope that no passengers would become too drunk for their flight.

Airlines push to maximise load factors of each flight to minimise cost in order to survive (ITF, 2001). In other words, airlines can attract passengers and increase revenue by offering alcohol and in order to lower costs they have to attempt to pack the aircraft with the maximum number of passengers. It is illegal to board passengers who are already intoxicated or, if boarded, alcohol must not be served; however the financial imperatives put pressure on this rule (FSF, 1997).

Airline management's concern over costs is not the only pressure to board intoxicated passengers. Ground staff may be eager to board intoxicated and disruptive passengers to be relieved of the burden of having to handle them. In such cases they may not inform cabin crew of the situation. Hunt (1998) found that the interface between teams or crews tended to be a major source of conflict or problems in the aviation industry. While team members are trained to work together, they often have little appreciation of the needs and responsibilities of other teams. Ground staff therefore may not fully understand the seriousness of problems that are created for cabin crew when intoxicated passengers are allowed to proceed to boarding.

Some airlines may serve alcohol to first class passengers upon boarding and according to Berkley & Ala (2001) such practice should be eliminated. Consuming alcohol prior to food may trigger hypoglycaemia which in turn may cause sudden changes of mood or behaviour (Beeks, 2000). Passengers may also have to drink quickly because the cabin crew have to collect the glasses before take off, intensifying the effects of the alcohol (Berkley & Ala, 2001).

Another source of alcohol is duty free shops. Liquor bought at duty free shops is easily brought into the cabin and can be consumed without attracting the attention of busy cabin crew.

Managing in-flight intoxication is difficult because passengers have so many opportunities to consume alcohol. On the other hand, it is difficult to ban alcohol onboard flights because of legislative and commercial implications. National laws have jurisdiction boundaries and thus do not have the power to impose an international ban. International aviation authorities such as the ICAO can only propose legislations to ban alcohol on flights. However, the effectiveness of the legislation depends on the number of members who agrees to it (Schwab, 2002). A ban on alcohol would also deny the airlines and airports a lucrative source of revenue (ITF, 2001).

If banning of alcohol is not feasible then it must be managed. Besides controlling the source which seems difficult given the numerous sources, understanding passenger habits, their perception of behaviours, the effects of cabin environment and demographics in relation to intoxication may provide new insight on preventing and managing in-flight intoxication

Excessive drinking can also be linked to genetic factors. Europeans find drinking alcohol a more pleasurable experience than Asians and many Polynesians (Chambers cited in New Zealand Herald, 2002). A gene, which makes alcohol consumption unpleasant, in Asians and most Polynesians make them less likely to become alcoholic than Europeans. Asians and Polynesians thus are less likely to drink excessively (Chambers cited in New Zealand Herald, 2002). Looking beyond ethnicity, patterns of alcohol consumption by specific categories of people, for

example, age groups, gender and type of flight (long haul or short haul) can be identified and such identification may suggest strategies for dealing with passengers who are more likely to create problems

Passengers can get intoxicated despite consuming less alcohol than usual. According to Elliot (cited in Foggs, 2001) the effects of alcohol increases with altitude and people are not aware that intoxication occurs more quickly at altitude. Thus if passengers drink to their limits judging by what they consume during an average social occasion they are likely to become intoxicated.

Lastly, learned disinhibition mentioned in section 2.2.2 can influence passengers to behave aggressively despite not being intoxicated. They behaved aggressively because that is what they expect themselves to be after consuming alcohol (Franzoi, 1996b).

2.4 Statistics

Good statistical data related to in-flight misbehaviour are difficult to find for several reasons. Firstly, there is no one standardised reporting format and system amongst airlines or regulating agencies. Different airlines have different reporting requirements and consequently some airlines produce more useful statistics than others. For example an airline may note the level of aggression and phase of flight during incidents, while another airline may not have such requirements.

Secondly, aviation authorities such as the FAA only record serious incidents. While the frequency of serious incidents reflects the health of security in air travel, it does not reflect the size or frequency of the phenomena accurately. Incidents usually escalate progressively from minor to serious incidents. If intervention is successful, serious incidents are avoided and the event is usually not recorded. Every incident regardless of the level of seriousness should be recorded to provide a more accurate account of incidents.

Thirdly, the lack of consensus as to what constitutes 'air rage' makes it difficult for reporting purposes (Bor, 1999). For example should aggressive behaviours such as verbal abuse and shoving be considered air rage or should more serious behaviours such as assault or damaging of critical instruments only be considered air rage?

According to Huang (2001) a survey of contracting states, conducted in 2000, indicated an increase in the number of reported incidents involving unruly passengers. Similarly an increase in the number of unruly behaviour was also indicated by (Bor et al., 2001).

The FAA too, reported 321 incidents in the year 2000, up from 146 incidents in 1995 (FAA, 2002). This represents about a 120% increase over a period of 6 years. However the figures for 2000 and 2001 remained unchanged at 321 and a decrease in the number of incidents was observed in the year 2002 where only 216 incidents were recorded. The decrease in incidents is most likely due to the effects of the September 11th. September 11th caused a dip in air traffic volume, heightened air travel security world wide and altered passenger behaviour. However since air traffic is set to increase it may be that improved passenger behaviour may revert to its previous level. In view of this, the figures may rise again before long

The UK (DfT, 2003) which actively analyses disruptive behaviour on board UK flights provided substantial statistical data in recent reports (see table 2.7). As observed, the upward trend from 1999 to 2000 reversed in the years 2001-2002 (a 15.6% decrease in incidents). This indicates the impact of the September 11th incident. The years 2002-2003 showed greater decrease but the method of data collection differed from previous years, in that the department from June 2002 asked airlines to report only incidents which were likely to be classed as serious or significant, and thus they may not fully reflect the actual changes. Looking at the number of passengers carried per serious incident the phenomenon seems to be on declining trend. As mentioned before it may be too early to judge because passengers' behavioural changes may be temporary.

Leaving out the year 2002-2003, the percentage for incidents in the 'other' category, which involved incidents related to general disruptiveness and verbal abuse either to

cabin crew or other passengers, ranges from about 51% to 45% (DfT, 2003). The percentage of significant incidents ranges from 43% to 50% (DfT, 2003). Serious incidents only account for about 5% to 6% of the total incidents (DfT, 2003).

The department also reported that in the year 2002-2003 the majority of offenders aged between 30 and 40 and 74% of the offenders are males. Only 25% of the offenders were travelling alone and 9 incidents involved groups of 10 or more (1.38%).

Table 2.7 Comparison of key data for disruptive behaviour on board UK aircrafts

	1999-2000	2000-2001	2001-2002	2002-2003
Total incident reports	1205	1250	1055	648 [2]
Serious Incidents	74 (6%)	63 (5%)	52 (5%)	35 (5%)
Significant Incidents	519 (43%)	595 (48%)	528 (50%)	613 (95%) [3]
Other	612 (51%)	652 (47%)	475 (45%)	-
Number of flights per serious incident	15,000	17,000	22,000	36,000
Number of passengers carried per serious incident	1.3 million	1.7 million	2 million	3 million

1. Some incidents involve more than 1 perpetrator
2. From June 2002 airlines were asked to report only incidents which are likely to be classed as serious or significant
3. The rise in 'significant' incidents may be accounted for by the change in the classification of certain types of incidents

Source: Department for Transport, UK (2003).

2.5 Current Defences

The health of aviation security came to public attention on September 11th 2001 when several planes were hijacked and destroyed during the incidents. Prior to the

September 11th, the aviation industry enjoyed 10 years bliss, following February 1991, of not having an airline hijacking incident in the United States (Rumerman). In this section the study discusses changes in security climate of aviation after September 11th, the incompatibility of measures used to manage hijacking on in-flight aggression and current measures involved in managing in-flight aggression.

Aviation security saw several changes after the September 11th with most radical changes taking place in the United States. On November 19 2001 the President of United States signed into law the Aviation and Transportation Security Act (ATSA) and the Transport Security Administration (TSA) was established within the U. S. Department of Homeland Security established (GAO, 2003). According to the United States General Accounting office (GAO, 2003) TSA focused much of its efforts on the following tasks.

(1) Developing and implementing a comprehensive risk management approach
(2) Paying for increased aviation security needs and controlling costs
(3) Establishing effective coordination among the many entities involved in aviation security
(4) Strategically managing its workforce
(5) Building a results-oriented culture within the new Department of Homeland Security.

Similarly, across the globe, efforts to reinforce security at airports were clearly visible. However these efforts mainly focus on preventing hijacking and sabotage. Although hijacking and in-flight aggression are similar, in that they both threaten the safety of flight, hijacking is more extreme and organised. In-flight aggression on the other hand is not a premeditated act prior to flight.

Another difference between hijacking and in-flight aggression is while hijacking involves hard core criminals, in-flight aggression involves common people. As such a different approach is necessary for preventing and managing in-flight misbehaviour.

There is no doubt that a security system built to manage hijackers would assist in-flight aggression. However there are complications in using measures developed to

handle hijacking to deal with in-flight aggression. Measures developed for hijacking are usually 'cold' and forceful and thus are not useful for managing in-flight aggression. For example, air marshals trained to subdue hijackers with arms and considerable amount of force may react the same way towards passengers without attempting to negotiate a peaceful resolution. Flight attendants may also be tempted to utilise the air marshal instead of negotiation. In the highly competitive aviation industry, airlines and airports need to maintain good relationship with its passengers; overly harsh measures for managing passenger threats may turn passengers away to competitors and thus is unpleasant in business sense

The organised nature of hijacking also influence the way measures are developed. For example preventing weapons from being brought into the aircraft cabin is a major task in preventing hijacking. Unlike the organised nature of hijacking, in-flight aggression takes place without a plan and thus the focus of preventing in-flight aggression may involve identifying passengers who show signs of intoxication or unruly behaviour.

2.51 Defences in in-flight aggression

Yates Harkey (1999) foresee more violence-inducing factors in the future and air passengers are more likely to become more stressed following increase in air traffic. Yates Harkey (1999) also commented in relation to the causes of passenger misconduct that *"Once the trigger factors are understood, the airlines can work someway towards ensuring that these are not an issue"*

The comments suggest that trigger factors have not been scientifically established and thus imply that current defences are built with little understanding of in-flight aggression. Another problem with managing in-flight aggression is that it is manifest in so many places and forms. Passengers behave aggressively from airport gates to aircraft toilets and triggers can range from smoking to upgrade of seats. If measures are to be developed based solely on types of incidents and where they happen countless measures would be needed to deal with the phenomenon. Cost is a concern in implementing measures and thus effectiveness is important

Measures also seem to be developed in a "plug the hole" fashion. For example when alcohol related incidents rise, proposals to ban it on flights surfaced, or when passengers become violent they are punished to serve as warning to others. Although these measures may seem to be effective, they alone will not resolve the problem. Passengers can still turn violent without consuming alcohol and during incidents of hostile aggression punishments may not deter the perpetrator. Therefore a pre-requisite for developing measures is to understand the nature of the phenomena.

It is unclear as to how effective many current measures are because of a lack of feedback on these measures. As long as defence systems are judged by how many times they fail, there will be no clue on how successful measures are and this will eventually dampen the security climate within the aviation industry. A good system would measure both its success and failures and improve on its effectiveness and efficiency.

2.52 Types of Defences against In-flight Aggression

Many measures were developed to manage passenger behaviour, from screening at checkpoints to alcohol control during flights. However there are no studies that categorises these measures. Categorising can assist individual organisations in understanding their role in relations to in-flight aggression. It will help answer questions such as 'which area of in-flight aggression does the law enforcement agency influence and are their efforts preventive or reactive'.

Berkley & Ala (2001) believes that effective security must be both proactive as well as reactive. In managing in-flight aggression it is important to prevent it from occurring in the first place and if prevention fails there must be plans to manage the incident safely and effectively. Miller & Jones (1997) on the other hand while describing procedures used in managing assaults on flight attendants, classified the procedures into three major categories, namely pre-flight, in-flight and post-flight procedures. Crew members and authorities are involved in different kinds of work during different phases of flight and thus it makes sense to classify measures according to the phase of flight. Base on these variables, 6 major classifications of measures are developed (see table 2.8).

Table 2.8 Categorisation of Measures

Variables	Pre-flight	In-flight	Post-flight
Proactive	Proactive Pre-flight Measures	Proactive In –flight Measures	Proactive Post-flight Measures
Active	Active Pre-flight Measures	Active In-flight Measures	Active Post-flight Measures

Categorisation of measures is useful when developing new measures as it provides direction and scope. For example, an airport developing alcohol control related measures would understand that it is a proactive pre-flight measure and thus would not go on to discuss about alcohol control measures in-flight. Together with other measures in the same classification these measures combine to form a pro-active pre-flight defence.

Categorisation is also important for performance analysis. Instead of denouncing the effectiveness of a defence system when an incident occurs, underperforming defences can be identified. For example if an intoxicated a passenger was allowed to board an aircraft but the cabin crew managed resolve the conflict peacefully, all proactive measures would have failed but active in-flight measure was successful. Thus an incident will not discredit the entire defence system.

The list of measures under these categories is extensive. For example, measures under the categorisation of 'proactive pre-flight measures' includes screening at check in desk, profiling, visual screening by gate agents and cabin crew, etc. However by consolidating the work of Berkley & Ala (2001), several broad areas of measures in relation to in-flight aggression were identified. They are as follow:

1) Legislation
2) Airport Screening
3) Cabin Crew and negotiating skills
4) Flight Crew
5) Passengers

While extensive writing on legislation, i.e. (Huang, 2001; Schwab, 2002), and crew member training, (Hunt, 1998; FSF, 1997) can be found, less has been written about screening for passenger potential of aggression. Thus the next section would discuss screening processes in air travel.

2.5.2.1 Screening of Passenger for Potential Aggression

While screening methods can range from profiling to baggage screening, this section focuses solely on visual screening by cabin crew.

Cabin crew are required to serve gate duties where they first greet passengers and verify their boarding pass. This is cabin crew's first opportunity to pick up indications of any potential hazard a passenger may pose during flights. The question is what items should cabin crew focus on to find out what they need to know.

Berkley & Ala (2001) listed several indicators for identifying potentially aggressive passengers. Renfrew (1997) on the other hand also gathered a list of indicators based on empirical studies. In table 2.9, the items are compared and a general name is given to them. However those indicators listed by Renfrew (1997) that cannot be detected by visual screening are not included.

Table 2.9 Comparison of Indicators of Potentially Violent Passengers

No.	Berkley & Ala (2001)	Renfrew (1997)	Short Description
01.	Loud, boisterous & profane	Verbally abusive where tone, pitch and speed of speech can change. (judgement should include comparison to the person's normal way of speech of)	The way people speak
02.	When communicating with cabin crew they are rude, argumentative with unreasonable demands		
03.	Aggressive towards friends and family	threatening of violence or peer group pressure to behave in a violent manner	Attitude
04.	Attempt to board out-of-sequence or with excessive luggage; Create disturbance during boarding and attract attention	Expects to be rewarded materially or socially through violence	

05.	Dressed "aggressively" i.e. greasy tank tops exposing tattoos, gang attire, baggy pants, biker attire and boots.		Style of dressing or appearance
06.	Tense or angry faces	Physiological signs of high arousal such as display of flushed skin reflecting raised blood pressure, perspiration, increased muscle tension, heightened respiratory rate and pulse, nausea loss of colour and great stillness	Facial expression or distressed and anxious behaviour
07.	Expressed fear of flight		
08.	Signs of Intoxication (i.e. slurred speech and loss of coordination	The person is disinhibited through drugs, alcohol, de-individualisation, physical illness such as brain damage, etc.	Erratic behaviour
09.	Signs of drug influence includes unreasonable display of distraught or any inappropriate behaviour		
10.		Member of a group or subculture where physical violence is the norm. Thus practicing violence leads to no loss of face and thus may benefit from violence.	Ethnicity and race
11.		Non-verbal signs of imminent violence (i.e. uncomfortable staring, rapid unpredictable arm movements such as the clenching and unclenching of teeth or fist	Body language and forceful gestures

Sources: 1) Renfrew, J. W. (1997). *Aggression and its Causes: A Biopsychosocial Approach*. New York: Oxford University Press.

2) Berkley, B. J., & Ala., M. (2001). Identifying and Controlling Threatening Airline Passengers. *Cornell Hotel and Restaurant Administration Quarterly*(August), 6-22.

As can be seen from table 2.9, cabin crew can focus on several indicators which provide vital information on passengers' potential for violence. However Renfrew (1997) warned that there are no fixed rules for predicting specific occurrences of

violence. Renfrew (1997) also held that clues to violence are not always present and if present it will be up to individuals to identify the cues.

In-flight aggression will be used by this study to replace the common term "Air rage". As discussed there can be dozens of factors leading to aggressive behaviours and sometimes it is a combination of these factors that lead to the outburst of violence. To further illustrate, a passenger trapped in a traffic jam became frustrated and poor airport service further aggravates the emotions and with a few alcoholic drinks before boarding the passenger became aggressive when the cabin crew denied alcohol. The denial of alcohol is not a cause but the trigger while the causes are accumulated frustration fuelled by alcohol. It is difficult to trace all the factors and thus this study will focus on the triggers and will also approach the research based on the foundation laid by studies related to aggression. In the next section, the study discusses the methodology used in this study to examine the triggers, environment and profile of passengers in relation to in-flight aggression.

Chapter 3

Research Methodology

3.0 Introduction

This chapter reviews the methodology used in this study of in-flight misbehaviour. It discusses the methodology, the population, the sample, the data collection method, the development of the questionnaires (Appendix B) and the treatment of data.

In the literature review, it was argued that the failure to integrate efforts of aviation organisations and the lack of an overall plan exacerbated the prevalent occurrence and increase of incidents onboard aircrafts. If the frequency of incidents were to be reduced or eliminated, every component of the aviation system must work in an organised and structured fashion. It was also argued that incidents occur at the production end of the aviation system where two main groups of people are involved; namely the passengers and cabin crew. Thus this study chose to focus on the production component of the aviation system where these two groups of people are examined.

It was also suggested that according to psychological principles, passengers' aggressive behaviour can be categorised; for instance hostile aggression and instrumental aggression. It was also proposed that both passengers and cabin crew play an active role in the final result of in-flight aggression.

To complete the study, the situation, causes and solutions of in-flight aggression would be identified.

The specific research questions to be answered are:

1) How often does in-flight misbehaviour occur at different levels of seriousness?
2) What is the profile of a typical passenger who engages in IFMI behaviour?

3) How does environmental factors influence the way cabin crew manage in-flight misbehaviour?
4) How do environmental factors influence the way passengers react towards provocation or triggers of aggressive behaviour.
5) What are the possible contributors towards in-flight aggression?
6) What are the possible solutions to IFMI?
   a) What are the proactive measures available?
   b) How can these proactive measures be implemented efficiently?
   c) What are the active measures available?
   d) How can the active measures be implemented efficiently?
   e) What are the environmental factors that restrains or encourage the successful implementation of measures?

3.1 Overview of Methodology

This research adopts the quantitative methodology and was carried out in 3 stages. The first two draft questionnaires were developed from a review of literature. The first questionnaire was developed to survey the views of cabin crew while the second surveys passengers. An expert focus group then reviewed the questionnaires and suggested some modifications. The cabin crew questionnaire was sent via mail to the cabin crew of several airlines and these were completed and returned by mail. Cabin crew were asked to identify their perception on issues related to in-flight aggression. The passenger questionnaire were distributed to passengers awaiting for their flights at Auckland international airport and was also available on a website for surveying the general public who met the criteria of having been a passenger within the previous 2 years. The Skyrage foundation assisted in this research by publicising the survey website and by placing a link on the foundation's website. Responses from airport passengers were collected upon their completion while the responses from the internet were sent to an e-mail address for retrieval.

Questions in the cabin crew questionnaire and passenger questionnaire were similar. This allows the research to compare differences between cabin crew and passengers.

3.2 Population

There were two intended population in this study. The first population was airline cabin crew in the Asian Pacific region, however due to the lack of support from Asian organisations, only New Zealand based cabin crew were included in the final population.

The second targeted population for study was the general passengers. The span of 2 years was chosen because literature research has shown that passengers' encounter with serious incidents can be rare (Rolfe, 2000). If the span is longer than 2 years, respondents may have found it difficult to recall accurately.

3.3 Sample

The first sample comprised of 127 cabin crew from New Zealand based airlines. The second sample comprised 123 passengers. Of these passengers 80 were airport passengers while others were passengers who responded over the internet. The full demographic breakdowns of the cabin crew and passenger samples are illustrated in section 3.31.

3.31 Statistical Information on Demographic Variables

This section presents the statistical data for demographic variables of the total sample passengers and cabin crew.

The variables flight route, aircraft type and length of flight are similar to each other, and thus there are areas that overlaps. For example, most international flight is long and thus length of flight is longer and international aircrafts would most probably be used. However are some differences to these variables thus they would be defined to prevent ambiguity. Flight route refers to the flight path taken by the aircraft. Here distinction is made between international flights and domestic flights. International flight involves the crossing of the geographical boundaries of a country and it does

not matter how long the flight is. For example, a flight from Jakarta to Singapore is an International flight despite the short duration.

Thus another variable, length of flight was incorporated to capture the duration of flights. Another variable, 'aircraft type' refers to the models of aircrafts. It is different from the other variables because it provides information such as the amount of room the aircraft provides and the level of comfort passengers get. Here distinction is made between international aircraft and domestic aircraft. International aircrafts refers to wide bodied jets such as the B747, B767, A340 and A320. Commuter aircrafts includes the B737, Friendship, Fokker 27, DC8 and DC10.

Table 3.1 Gender of Respondents

Gender	Total Sample	Cabin Crew	Overall Passengers	Airport Passengers	Internet Passengers
Male	112	52	60	34	26
Female	133	73	60	45	15
Missing	5	2	3	1	2
Total	250	127	123	80	43

Table 3.2 Ethnicity of Respondents

Ethnicity	Total Sample	Cabin Crew	Overall Passengers	Airport Passengers	Internet Passengers
Asians	55	7	48	24	24
Caucasians	174	112	62	46	16
Polynesians	12	5	7	6	1
Missing Data	9	3	6	4	2
Total	250	127	123	80	43

Table 3.3 Ages of Respondents

Age	Total Sample	Cabin Crew	Overall Passengers	Airport Passengers	Internet Passengers
< 24	46	5	41	21	20
25 -29	34	16	18	6	12
30 - 34	43	26	17	13	4
35 - 39	25	18	7	7	4
40 - 44	38	29	9	5	1
45 - 49	21	13	8	7	41
> 50	39	20	19	19	20
Missing	4	0	4	2	2
Total	250	127	123	80	43

Table 3.4 Average Length of Flight

Length of Flight	Total Sample	Cabin Crew	Overall Passengers	Airport Passengers	Internet Passengers
< 2 hrs	38	20	18	9	9
2 – 5 hrs	41	5	36	33	3
5 – 9 hrs	30	20	10	7	3
> 9 hrs	135	81	54	28	26
Missing	6	1	5	3	2
Total	250	127	123	80	43

Table 3.5 Route travelled by Respondents

Route	Total Sample	Cabin Crew	Overall Passengers	Airport Passengers	Internet Passengers
Domestic	36	20	19	13	6
International	167	5	68	43	25
Combined Domestic & International	40	20	30	21	9
Missing Data	7	1	6	3	2
Total	250	127	123	80	43

Table 3.6 Airlines Respondents Travelled on

Airlines	Total Sample	Cabin Crew	Overall Passengers	Airport Passengers	Internet Passengers
American	9	0	9	4	5
European	133	91	42	34	8
Asian	36	0	36	14	22
Pacific	34	24	10	4	6
Others	31	11	20	20	0
Missing	4	1	6	2	2
Total	250	127	123	80	43

Table 3.7 Educational Level of Respondents

Education	Total Sample	Cabin Crew	Overall Passengers	Airport Passengers	Internet Passengers
Attended high school	73	46	27	22	5
Attended Polytechnic (Diploma)	47	39	8	7	1
Starting University	47	14	33	16	17
Obtained Degree from Polytechnics, Universities or University Diploma	66	28	38	26	12
Completed Masters Degree or PHD	9	0	9	5	4
Missing	8	0	8	4	4
Total	250	127	123	80	43

Table 3.8 Experience of Cabin Crew

Experience	Cabin Crew
< 2	4
2 - 5	19
6 - 10	32
11 - 15	19
16 -20	23
21 - 25	8
26 - 30	15
> 30	7
Missing	0
Total	127

Table 3.9 Aircraft Type Cabin Crew Operates on

Aircraft Type	Cabin Crew
International	90
Commuter	10
Both International and Commuter	27
Missing	0
Total	127

Table 3.10 Position of Cabin Crew

Position	Cabin Crew
Senior	39
Junior	84
Missing	4
Total	127

Table 3.11 Passenger Frequency of Travel

Frequency of travel	Overall Passengers	Airport Passengers	Internet Passengers
< 11	99	72	27
11 - 20	7	1	6
21 - 29	4	1	3
> 30	6	2	4
Missing	7	4	3
Total	123	80	43

3.4 Data Collection Method

Two separate questionnaires were used in this study and the data collection method differs. Cabin crew were contacted with the assistance of the Flight Attendants & Related Services Association (New Zealand) (FARSA). The survey forms were distributed along with two cover letters and a stamped envelope; the first letter was issued by FARSA, explaining its support for participation and encouraging its members to participate. The second letter was issued to explain the aims of this research, the rights of participants and the contact details of the researchers. The questionnaires were distributed to 500 randomly selected cabin crew members at FARSA. A total of 127 responses were received, this is about 25.4%. Given that the questionnaire was a little lengthy, this response rate was considered quite good.

The passenger questionnaire was collected via two methods. In the first method; the questionnaires were filled up by waiting passengers or members of the public at Auckland International Airport (New Zealand). They were asked if they had flown on a commercial flight in the past 2 years before they were asked to continue with the survey. Deliberate efforts were made to balance gender ratio during the selection process. About 80 passengers and members of public responded out of the 130 approached. Most passengers who turned down the survey felt that they had too little time to spare prior to departure while 5 of the potential respondents did not qualify because they have not flown on a commercial flight for the last 2 years. In the second method, the questionnaire was made available on the University's website. A link

was posted on the website of Air Rage Foundation and respondents took part by a self selection process. Forty four passengers responded through this method while however one of the respondents was disqualified for inconsistency of responses.

3.5 Development of Questionnaires

The first drafts of the questionnaires were developed from a review of the literature. The structure and organisation used was chosen to allow respondents to understand and answer the questions easily.

Due to limited time and funds, a pilot study was not feasible thus an expert focus group was used as a convenience pilot group. The group which comprises of experienced cabin crew, worked through the questionnaire as if filling it in. Upon completing the questionnaire, they made some helpful comments on improving the instrument. Some changes were made to the wordings and the phrasing of sentences. Additionally, a group of undergraduates were used to fill the in passenger questionnaire. The average time needed to fill in was noted and feedback was also taken note of. Upon consulting the research's supervisor, the necessary changes were made. Changes made were mainly grammatical.

The final version of the questionnaire was developed and sent to the supervisor of this research for approval.

The passenger questionnaire comprises 14 questions while the cabin crew questionnaire comprises of 16 questions. Two main sections exist in the questionnaires; the first section comprises of questions that investigates the environment related to IFMI, the possible causes of IFMI and the possible solutions of IFMI. The second section probes the biological data of respondents.

An additional question (Have you ever intimidated a cabin crew to achieve your goals), which was important was added to the web based questionnaire. The same question was however omitted for the surveys at the airport because of additional cost.

3.51 Section 1 Main Questions

Environment Related to IFMI

In the literature review, it was mentioned that the aviation environment is a set of cultures, values and opinions that surround the air transportation system. This study recognises the existence of subcultures within a culture and the difficult task of defining one. The culture/s influencing both passengers and cabin crew surveyed here can be influenced by larger cultures such as the national culture. However to facilitate this study, it is assumed that the cultures measured here are sub cultures of the aviation culture.

This section was designed to capture the cultural aspects of the cabin crew work environment; they include gender and organisational issues. Additionally, aspects related to September 11th were also included in this section for both cabin crew and passengers because the event had changed several important aspects of air travel, for example security.

Possible Causes

A literature search provided source for a list of possible causes. Questions in this section were designed from theories of aggression. Two basic types of aggression namely instrumental and hostile aggression were measured here. Berkowitz (1969, 1989, cited in (Franzoi, 1996) believed that frustration, and other aversive factors such as fear and encountering disliked people can cause negative effect and it is this negative effect that increases the inclination to aggress. Thus this section also included items that capture information in these areas. Lastly, alcohol was a contributory factor to increased aggression in various studies thus information on passengers' behaviour related to alcohol consumption would be included in the passenger questionnaire.

Possible Measures

As for causes, probable measures were derived from literature research. Two major categories of measures were incorporated into the questionnaires. The first category comprises of proactive measures which include items such as legislation, airport screening and public education. The second category consists of active measures

such as cabin crew, flight crew, other passengers and physical restraints. The specific interest in cabin crew led to the decision to include aspects related to their training needs.

3.52 Section 2 Demographic Questions

This section contained 9 questions for the passenger questionnaire and 11 questions for the cabin crew questionnaire. Questions included in the cabin crew questionnaire asked for information related to age, gender, ethnicity, experience, position as a flight attendant, highest level of education, average length of flight, type of route, type of aircraft and type of airline. The passenger questionnaire asked for information related to age, gender, ethnicity, frequency of travel, highest level of education, length of flight, route of flight and type of airline.

3.6 Treatment of Data

Upon receiving the completed survey forms, they were numbered according to their groups. For example cabin crew forms are number C1, C2... while airport passengers were numbered A1, A2...and those obtained from the internet were numbered I1, I2.... The completed questionnaires were checked for errors and sabotage. A case of sabotage was found on the internet. It was revealed when finish this section off.

Chapter 4

Results

4.0 Introduction

This chapter presents results from the analysis of the questionnaires. Several types of statistics will be used, they include, descriptives, ANOVA, t-tests and principal component analysis. Descriptive statistics are used to provide a summary of the results while ANOVA and t-tests are used to identify the differences between groups. Principal component analysis is used in one section for data reduction purposes. The results are presented in twelve sections:

- Frequency and magnitude of individual and group disruptive incidents
- Possible causes of in-flight misbehaviour
- Identification of potential disruptive passenger
- Gender in conflict resolution
- Effective measures for inhibiting in-flight misbehaviour
- Identification of airline policies, standard operating procedures (SOP) and practices
- Training needs of cabin crew
- Airline organizational culture
- Effect of September 11th on passenger and cabin crew behaviour
- Willingness of passengers to assist cabin crew in violent situations
- Passengers' apprehension of flying
- Passengers' alcohol consumption pattern

These sections report the relevant results of the following groups.

i) Combined results of cabin crew and passengers

ii) Passengers cabin crew

iii) Cabin crew

4.1 Frequency and Magnitude of Individual and Group Disruptive Incidents

This section presents results for the total sample and the subgroups of passengers and cabin crew in relation to their exposure to IFMI incidents. Respondents were asked how many disruptive incidents they encountered in the last two years and they were asked to categorise these encounters according to the level of seriousness, namely minor, moderate and serious. Respondents may have witnessed the incidents or have been involved in the incidents themselves. Results were analysed for their means and ANOVA or t-test were conducted to examine group differences based on demographic variables such as gender, age, the type of route, frequency of travel and ethnicity.

4.1.1 Total Sample

In this section, respondents were asked to identify the number of disruptive incidents they have encountered in the last two years. Figure 4.1 shows the incidents means and standard deviations for individual and group disruptive incidents. It can be seen from figure 4.1 that the frequency of incidents declines as the seriousness of the incidents rises. This is true for both individual and group incidents; however the number of group incidents compared to individual incidents is smaller.

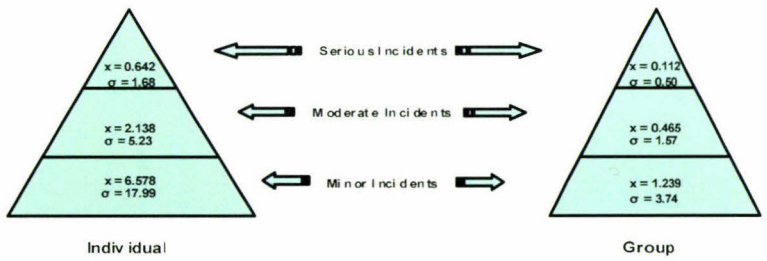

Fig 4.1 Incident Means and Standard Deviation for Individuals and Group (Total Sample)

Demographics and In-flight Incidents

Using t-test and ANOVA the data was examined to see if demographic variables were associated with the frequency or seriousness of the incidents. Tests showed significance for gender in serious individual incidents. This suggest that males ($x = 0.871$, $\sigma = 0.416$) encountered more serious incidents involving individual passengers than females ($x = 0.412$, $\sigma = 0.110$) (See Table 4.1a).

Age was a significant factor at some levels of individual and group incidents (See table 4.1). The age variable encompasses the following category; under 24, 25 to 39, 30 to 34, 35 to 39, 40 to 44, 45 to 50 and above 50. Those in the age group of under 24 ($x = 3.272$, $\sigma = 7.775$) experienced fewer minor incidents involving individuals than those between the age of 40 to 44 ($x = 18.105$, $\sigma = 37.908$). The age group of under 24 ($x = 1.000$, $\sigma = 1.909$) also experienced fewer moderate incidents involving individuals than the age group of 40 to 44 ($x = 5.237$, $\sigma = 10.552$). The age group of 40 to 44 ($x = 3.419$, $\sigma = 8.517$) experienced more incidents than those in the age group of more than 50($x = 0.405$, $\sigma = 1.039$). Those under 24 or over 50 are less likely to be in the workforce and perhaps less likely to travel than people between 24 and 49.

The airline variable is made up of American airlines, Asian airlines, Australasian airlines, European airlines, Pacific Airlines and mixed categorical airlines. However there were no any significant differences for either individual or group incidents.

Table 4.1a T-Tests and ANOVA Tests Demographics and IFMI Incidents (Total Sample)

Incidents	**Gender** *Male and Female* *(df 240)*	**Age** *Under 24, 25to 29, 30 to34, 35 to 39,40 to 44, 45 to 50 & above 50* *(df 242)*	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours* *(df 240)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and Mixed categorical airlines* *(df 240)*
Minor Individual Incidents	$p \leq .662$, $t = 0.438$	Age group of under 24 experience less incidents than those in the age group of 40 to 44 ** $p \leq .002$, $F = 3.583$, $Ms = 1102.878$	$p \leq .293$, $F = 1.248$	$p \leq .288$, $F = 1.255$
Moderate Individual Incident	$p \leq .429$, $t = 0.793$	Age group of under 24 experienced less incidents than those in the age group of 40 to 44 ** $p \leq .008$, $F = 3.007$, $Ms = 79.254$	$p \leq .266$, $F = 1.329$	$p \leq .069$, $F = 0.069$
Serious Individual Incidents	Male encounters more serious individual incidents than females *$p \leq .031$, $t = -2.175$, $MD = -0.458$	$p \leq .187$, $F = 1.475$	$p \leq .086$, $F = 2.221$	$p \leq .314$, $F = 1.195$
Minor Group Incidents	$p \leq .668$, $t = 0.430$	Age group of over 50 experienced less incidents than those in the age group of 40 to 44 * $p \leq .012$, $F = 2.790$, $Ms = 37.661$	$p \leq .074$, $F = 2.341$	$p \leq .220$ $F = 1.445$
Moderate Group Incident	$p \leq .958$, $t = -0.752$	$p \leq .064$, $F = 2.018$	$p \leq .196$, $F = 1.5772$	$p \leq .193$, $F = 1.535$
Serious Group Incidents	$p \leq .167$, $t = -1.385$	$p \leq .469$, $F = 0.938$	$p \leq .812$, $F = 0.319$	$p \leq 0.612$, $F = 0.672$

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Tests also revealed significant differences between ethnicity groups at all levels of individual incidents (See table 4.1b). The components of this variable are Asians, Caucasians and Polynesians. As can be seen, Caucasians ($x = 8.659$, $\sigma = 20.971$)

experienced more minor incidents than Asians ($x = 0.880$, $\sigma = 1.299$). As for minor incidents, there is some suggestion that Caucasians ($x = 2.821$, $\sigma = 6.077$) experienced more moderate incidents than Asians ($x = 0.352$, $\sigma = 0.804$). In the category of serious incidents, Caucasians ($x = 0.806$, $\sigma = 1.918$) experienced more incidents than Asians ($x = 0.111$, $\sigma = 0.462$).

The length of flight and education were found to be unrelated to the frequency and magnitude of IFMI incidents.

Table 4.1b ANOVA Tests for Demographics and IFMI Incidents (Total Sample)

Incidents	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 239)*	**Route** *Domestic, International, Combined domestic and international (df 240)*	**Ethnicity** *Asians, Caucasians and Polynesians (df 237)*
Minor Individual Incidents	*p ≤ .483, F = 0.870*	*p ≤ .227, F = 1.491*	Caucasian experience more minor individual incidents than Asians ** p ≤ .021, F = 3.917, Ms = 1272.417*
Moderate Individual Incident	*p ≤ .105, F = 1.940*	*p ≤ .227, F = 1.491*	Caucasian experience more moderate individual incidents than Asians *** p ≤ .010, F = 4.702, Ms = 128.499*
Serious Individual Incidents	*p ≤ .088, F = 2.054,*	*p ≤ .119, F = 2.150,*	Caucasian experience more moderate serious incidents than Asians **p ≤ .025, F = 3.728, Ms = 10.681*
Minor Group Incidents	*p ≤ .236, F = 1.395*	*p ≤ .250, F = 1.393*	*p ≤ .115, F = 2.186*
Moderate Group Incident	*p ≤ .118, F = 1.421*	*p ≤ .109, F = 2.235*	*p ≤ .156, pt = 1.871*
Serious Group Incidents	*p ≤ .587, F = 0.708*	*p ≤ .848, F = 0.165*	*p ≤ .254, p = 1.380*

** p ≤ 0.05, ** p ≤ 0.01, *** p≤ 0.001*

4.1.2 Cabin Crew

This section examines the experience of in-flight incidents of cabin crew. They were asked to identify the number of disruptive incidents they had experienced or witnessed in the last two years. Figure 4.2 shows the mean and standard deviation of incidents for individual and group. For both group and individual incidents, the frequency of incidents declined as the level of seriousness rises. The frequencies at all levels were also higher than that of total sample because cabin crew spent more time in the aircraft environment than the passengers. As can be seen from table 4.2, cabin crew also experienced between 5 to 6 times more individual incidents than group incidents.

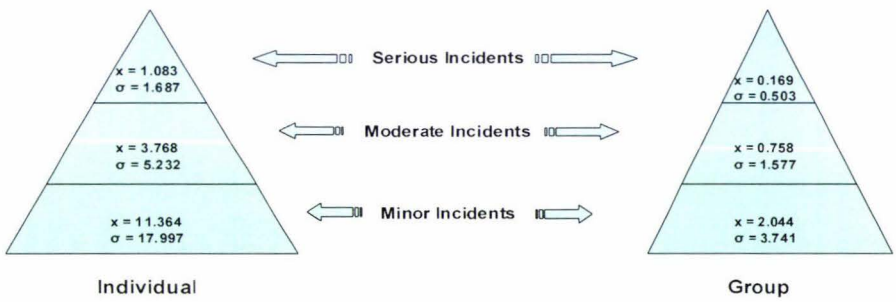

Fig 4.2 Incident means and standard deviation for individual and groups (Cabin Crew)

Table 4.2 Cabin Crew Individual and Group Incidents Ratio

Individual vs group	Mean Frequency of Individual Incidents	Mean Frequency of Group Incidents	Ratio Individual: group
Serious	1.083	0.169	6.41
Moderate	3.768	0.758	4.97
Minor	11.368	2.044	5.56

Demographics and In-flight Incidents

The data was examined to see if demographic variables were associated with the frequency or seriousness of incidents. Tests showed significance for gender in serious individual incidents (See table 4.3a). This suggest that male cabin crew ($x = 1.587$ *and* $\sigma = 3.001$) had higher serious incidents involving individuals than females ($x = 0.653$ *and* $\sigma = 0.937$). Other levels of individual and group incidents on the other hand did not show any significance.

The type of route was found to be significant at several levels of individual and group incidents (See table 4.3a). This variable has three components; they include international, domestic and combined international and domestic. Moderate incidents were found to have been experienced more often by cabin crew who flew both international and domestic routes ($x = 8.100$, $\sigma = 15.139$) than cabin crew who flew solely on domestic routes ($x = 1.088$, $\sigma = 1.889$). The type of route was also found to be related to group incidents. Cabin crew flying on both domestic and international routes ($x = 7.500$, $\sigma = 15.218$) were found to have higher number of minor incident than those who flew solely on domestic routes ($x = 1.676$, $\sigma = 1.944$) and international routes ($x = 1.552$, $\sigma = 2.444$). As for minor group incidents, there was suggestion that cabin crew flying on both domestic and international routes ($x = 3.400$, $\sigma = 6.077$) experienced more moderate incident than those who flew solely on domestic routes ($x = 0.294$, $\sigma = 0.686$) and international routes($x = 0.577$, $\sigma = 1.147$). Higher number of incidents could have been due to the effects caused by switching between international and domestic routes. However the sample size of the combined domestic and international group is 10, which is rather small as compared to other categories.

Aircraft type was found to be related to group incidents (See table 4.3a). Two main groups made up this variable, the groups include international aircraft and commuter aircraft. Cabin crew operating on international aircraft ($x = 1.318$, $\sigma = 2.037$) and cabin crew operating on both international and commuter aircraft ($x = 2.596$, $\sigma = 3.406$) experienced fewer incidents than those operating on commuter aircraft. Same applies to moderate group incidents where cabin crew who operated on international aircraft ($x = 0.500$, $\sigma = 1.044$) and cabin crew who operated on both international and

commuter aircraft ($x = 0.704$, $\sigma = 1.234$) experienced fewer incidents than those who operated on commuter aircraft ($x = 3.200$, $\sigma = 6.178$).

Airlines were found to be related to in-flight incidents. Airlines were grouped according to their geographical origins. The categories include American airlines, Asian airline, European airlines, Pacific airlines and mixed categorical airlines. There is some suggestion that cabin crew working for European airlines ($x = 0.961$, $\sigma = 1.480$) encountered higher number of incidents than those working for mixed categorical airlines ($x = 2.636$, $\sigma = 5.835$). There were no significant differences between other airline groups (See table 4.3b).

Experience, length of flight and education were not related to all levels of individual and group incidents (See table 4.3b).

Table 4.3a: T-Tests and ANOVA Tests for Demographics and In-flight Incidents (Cabin Crew)

Incidents	**Gender** *Male and Female df (125)*	**Route** *Domestic, International, Combined domestic and international df (124)*	**Ethnicity** *Caucasians, Asians, Polynesians df (123)*	**Age** *Under 24, 25to 29, 30 to34, 35 to 39,40 to 44, 45 to 50 & above 50 df (126)*	**Aircraft Type** *International, Commuter, Combined International and Commuter df (124)*
Minor individual incidents	$p \leq .728$, $t = 0.348$	$p \leq .217$, $F = 2.095$	$p \leq .527$, $F = 0.643$	$p \leq .057$, $F = 2.107$	$p \leq .735$, $F = .470$
Moderate individual incidents	$p \leq .324$, $t = -0.990$	Combined domestic and international have more incidents than domestic flights $*p \leq .037$, $F = 3.374$, $Ms = 154.851$	$p \leq .502$, $F = 0.694$	$p \leq .233$, $F = 1.369$	$p \leq .198$, $F = 1.639$
Serious individual incidents	Males experienced more incidents than females $*p \leq .014$, $t = -2.481$, MD = -0.934	$p \leq .253$, $F = 1.392$	$p \leq .451$, $F = 0.801$	$p \leq .464$, $F = 0.947$	$p \leq .288$, $F = 1.259$

Minor group incidents	*p ≤ .636, t = 0.474*	Combined domestic and international more incidents than International flights and Domestic flights ***** p ≤ .001, F = 7.148, Ms = 161.958*	*p ≤ .605, F* = 0.504	*p ≤ .266, F = 1.293*	Cabin crew operating on commuter aircraft experienced more incidents than those operating on international aircraft and those operating on both international and domestic aircraft. ****p ≤ .002, F = 6.629 Ms = 149.953*
Moderate group incidents	*p ≤ .946, t =-0.068*	Combined domestic and international have more incidents than International flights and Domestic flights ***** p ≤ .000, F = 10.003, Ms = 38.341*	*p ≤ .801, F = 0.223*	*p ≤ .258, F = 1.310*	Cabin crew operating on commuter aircraft experienced more incidents than those operating on international aircraft and those operating on both international and domestic aircraft. *****p ≤ .000, F = 8.423*
Serious group incidents	*p ≤ .302, t =1. 036*	*p ≤ .301, F = 1.213*	*p ≤ .682, F = 0.385*	*p ≤ .424, F = 1.007*	*p ≤ .349, F = 1.063*

**P ≤ .05, **P ≤ .01, *** p ≤ .005, **** P ≤ .001*

Table 4.3b: T-Tests and ANOVA Tests for Demographics and In-flight Incidents (Cabin Crew)

Incidents	Experience *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years df (126)*	Length of Flight *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours df (125)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD df (126)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines df (125)*	Position *Senior Cabin Crew, Junior Cabin Crew df (126)*
Minor individual incidents	*p ≤ .324, F = 1.172*	*p ≤ .293, F = 1.248*	*p ≤ .748, F = 0.609*	*p ≤ .735, F = 0.308*	*p ≤ .504, F = -0.670*
Moderate individual incidents	*p ≤ .469, F = 0.953*	*p ≤ .266, F = 1.329*	*p ≤ .968, F = 0.261*	*p ≤ .159, F =1865*	*p ≤ .815, F = -0.235*
Serious individual incidents	*p ≤ .218, F = 1.385*	*p ≤ .086, F =2.221*	*p ≤ .729, F = 0.631*	Cabin crew working for European Airlines encountered higher number of incidents than those working for mixed categorical airlines **p ≤ .037, F = 3.383*	*p ≤ .888, F = -0.141*
Minor group incidents	*p ≤ .063, F = 1.983*	*p ≤ .074, F = 2.341*	*p ≤ .901, F = 0.399*	*p ≤ .194, F = 1.662*	*p ≤ .757, F = -0.311*
Moderate group incidents	*p ≤ .341, F = 1.143*	*p ≤ .196, F = 1577*	*p ≤ .936, F = 0.336*	*p ≤ .615, F = 0.488*	*p ≤ .959, F = -0.052*
Serious group incidents	*p ≤ .687, F =0.683*	*p ≤ .812, F = 0.319*	*p ≤ .614, F = 0.770*	*p ≤ .586, F = 0.537*	*p ≤ .770, F = -0.292*

**P ≤.05, **P ≤ .01, *** p ≤ .005, **** P ≤.001*

4.1.3 Passengers

This section examined the experience of in-flight incidents of passengers. They were asked to identify the number of disruptive incidents they had encountered in the last two years. As can be seen from figure 4.3, the frequency of incidents declines as the seriousness of the incidents rises. This is true for both individual and group incidents. The numbers of incidents were significantly smaller at all levels, compared to the number of incidents of cabin crew (See figure 4.2 & 4.3). Table 4.4a shows the mean and standard deviation of individual and group disruptive incidents and passengers experienced between 3 to 4 times more group incidents than individual incidents. Comparing the mean number of incidents passengers and cabin crew experienced, it can be seen that cabin crew experienced about 8 times more moderate incidents (individual) than passengers (see table 4.4b). They also experienced about 6 times more serious incidents (individual) than passengers.

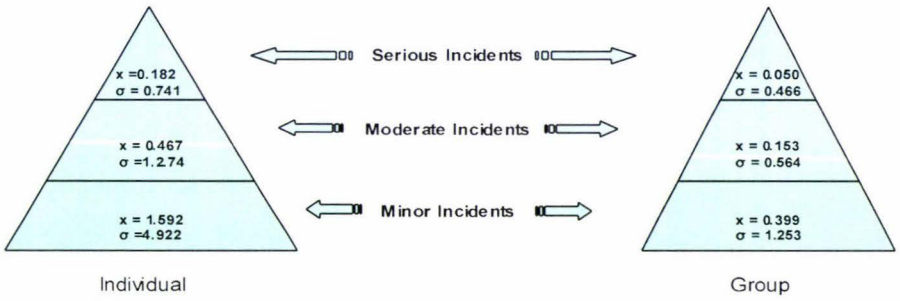

Fig 4.3 Mean and standard deviation of Individual and Group Incidents (Passengers)

Table 4.4a Passengers Individual and Group Incidents Ratio

Individual vs. group	Mean Frequency of Individual Incidents	Mean Frequency of Group Incidents	Ratio Individual: group
Serious	0.182	0.050	3.64
Moderate	0.467	0.153	3.05
Minor	1.592	0.399	3.99

Table 4.4b Passengers Individual and Group Incidents Ratio

Individual vs Group	Individual Incident Ratio (cabin crew: passengers)	Group Incident Ratio (cabin crew: passengers)
Serious	5.95	3.38
Moderate	8.07	4.95
Minor	7.14	5.12

Demographics and In-flight Incidents

The data was examined to see if demographic variables were associated with the frequency or seriousness of the incidents. Frequency of travel was found to be related to in-flight incidents at all levels of individual and group incidents (See table 4.5a). Examination of data on individual incidents suggests that those who travels less than 11 times in the last two years ($x = 0.918$, $\sigma = 1.881$) and those who travels between 21 to 30 times ($x = 1.250$, $\sigma = 0.957$) experienced less minor incidents than those who travelled more than 30 times ($x = 10.667$, $\sigma = 19.531$). Likewise, experience of moderate incidents were also fewer in passengers who travelled less than 11 times ($x = 0.273$, $\sigma = 0.651$) than those who travelled more than 30 times ($x = 2.500$, $\sigma = 3.885$). There were also fewer serious incidents for passengers who travelled less than 11 times ($x = 0.51$, $\sigma = 0.221$) and those who travelled 11 to 20 times ($x = 0.143$, $\sigma = 0.378$) experienced fewer incidents than those who travelled more than 30 times ($x = 1.667$, $\sigma = 2.065$). Not surprisingly, the more frequent a passenger travels the more likely they are to experience disruptive behaviour by other individuals.

As for individual incidents, frequency of travel was found to be related to in-flight incidents at all levels of seriousness. Those who travelled less than 11 times ($x = 0.227$, $\sigma = 0.822$), those who travelled 11 to 20 times ($x = 0.143$, $\sigma = 0.378$) and those who travelled 21 to 30 times ($x = 0.250$, $\sigma = 0.500$) experienced less incidents than those who travelled more than 30 times ($x = 2.917$, $\sigma = 3.720$). Likewise, moderate incidents were experienced less by passengers who travelled less than 11 times ($x = 0.073$, $\sigma = 0.390$) than those who travelled 11 to 20 times ($x = 0.714$, $\sigma = 1.112$). As predicted the more frequent a passenger travels the more likely they are to experience disruptive behaviour by other individuals.

The type of airlines was found to be related to in-flight incidents (See table 4.5b). All levels of individual incidents showed no significant differences. The type of airline was also found to be related to serious group incidents. Passengers who travelled by European airlines experienced less incidents than those who travelled on Pacific airlines ($x = 1.581$, $\sigma = 0.500$).

Education was found to be related to in-flight incidents (See table 4.5a). Examination of the data found passengers who had obtained a Masters Degree or PhD ($x = 6.556$, σ

= *16.500*) experienced more incidents than those who only had high school education (*x* = *0.654*, *σ* = *1.468*). The post hoc test (Scheffe), did not manage to identify the differences between groups for moderate incidents. However the largest mean differences were between those who had obtained a Masters Degree or PhD (*x* = *1.667*, *σ* = *3.535*) and those who only had high school education (*x* = *0.222*, *σ* = *0.698*).

There were suggestions that ethnicity was related to in-flight incidents (See table 4.4b). Polynesians (*x* = *1.000*, *σ* = *1.549*) was found to have experienced more moderate group incidents than Asians (*x* = *0.104*, *σ* = *0.424*) and Caucasians (*x* = *0.117*, *σ* = *0.454*).

Examination of other variables, gender, age, length of flight and route was found not to be related to in-flight incidents (See table 4.5a and 4.5b).

Table 4.5a T-Tests and ANOVA Tests for Demographic and In-flight Incidents (Passengers)

Incidents	**Gender** *Male, Female* *df (116)*	**Frequency of travel** *Less than 11, 11 to 20, 21 to 30, more than 30* *df (113)*	**Age** *Under 24, 25to 29, 30 to34, 35 to 39,40 to 44, 45 to 50 & above 50* *df (116)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD* *df (112)*
Individual minor incidents	*p* ≤ *.134*, *t* = *-1.508*	The category of less than 11 and the 21 to 30 category, experience less incidents than and the more than 30 category *****p* ≤ *.000*, *F* = *8.987*, *Ms* = *188.700*	*p* ≤ *.478*, *F* = *.928*	Passengers who had obtained a Masters Degree or PhD experienced more incidents than those who only had high school education **p* ≤ *.041*, *F* = *2 .593*
Individual moderate incidents	*p* ≤ *.136*, *t* = *-1.502*	The category of less than 11, experience less incidents than and the more than 30 category	*p* ≤ *.204*, *F* = *1.445*	Differences between groups cannot be identified by post hoc test (Scheffe) **p* ≤ *.046*,

		****p ≤.000, F = 8.089, Ms = 11.452		F = 2 .511
Individual serious incidents	p ≤.340, t =-0.958	The category of less than 11 and the 11 to 20 category, experience less incidents than and the more than 30 category ****p ≤.000, F = 15.776, Ms = 11.452	p ≤ .598 F = 0 .766	p ≤.655, F = 0.612
Group minor incidents	p ≤.201, t = -1285	The category of less than 11, the category of 11 to 20 and the category of 21 to 30, experienced less incidents than the category of more than 30 ****p ≤.000, F = 11.154, Ms = 13.772	p ≤ .530 F =0 .856	p ≤.365, F = 1.090
Group moderate incidents	p ≤.342, t = 0.954	The less than 11 category, experienced less incidents than the category of 11 to 20 ***p ≤.002, F = 5.231, Ms = 1.411	p ≤ .156 F =1 593	p ≤.041, F = 2 .593
Group serious incidents	p ≤.240, t =1.181	The category of less than 11, the category of 11 to 20 and the category of 21 to 30, experienced less incidents than the category of more than 30 ****p ≤.000, F = 6.947, Ms = 1.136	p ≤ .455 F =0 .961	p ≤.784, F = .434

*P ≤.05, **P ≤.01, *** p ≤.005, **** P ≤.001

Table 4.5b ANOVA Tests for Demographics and In-flight Incidents (Passengers)

Incidents	Airline *American airlines, Asian airlines, Australasian airlines, European airlines, Pacific airlines and mixed categorical airlines df (114)*	Ethnicity *Asian, Caucasians & Polynesians df (114)*	Route *International, Domestic and Combined international and domestic df (114)*	Length of Flight *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours df (115)*
Individual minor incidents	*p ≤.731, F = 0.506*	*p ≤.344, F = 1.076*	*p ≤.711 F = 0. 342*	*p ≤.531 F = 0.739*
Individual moderate incidents	*p ≤.739, F = 0.496*	*p ≤.240, F = 1.447*	*p ≤.832 F = 0. 184*	*p ≤.579 F = 0.658*
Individual serious incidents	*p ≤.463, F = 0.906*	*p ≤.052, F = 3.039*	*p ≤.706 F = 0. 350*	*p ≤6.73 F = 0. 514*
Group minor incidents	*p ≤.731, F = 0.507*	*p ≤.428, F = 0.854*	*p ≤.850 F = 0. 162*	*p ≤.635 F = 0. 571*
Group moderate incidents	*p ≤.136, F = 1.792*	Polynesians experienced more moderate group incidents than Asians and Caucasians *****p ≤.001, F = 7.639*	*p ≤.631 F = 0. 463*	*p ≤.187 F = 1.626*
Group serious incidents	Passengers who travelled by European airlines experienced less incidents than those who travelled on Pacific airlines **p ≤.040, F = 2.595 Ms = 0.554*	*p ≤.762, F = 0.273*	*p ≤.104 F = 2. 311*	*p ≤.178 F = 1.6662*

**P ≤.05, **P ≤.01, *** p ≤.005, **** P ≤.001*

The two groups of passengers presented quite a different experience, probably due to the nature of selection. Passengers selected randomly at the airport are likely to differ from self selected passengers visiting the Skyrage foundation website. Thus the following present results of the two passenger groups.

Differences between Passengers and Cabin Crew

Further tests confirmed that cabin crew were significantly different from airport passengers (See table 4.6). They were also found to be different from Internet passengers at all levels of individual and group incidents except for serious individual and group incidents. As can be seen from table 4.6, the two passenger groups were not significantly different from one another although the mean differences seem wide (See figure 4.2 and 4.3).

Table 4.6 Mean Differences (MD) of incident frequency between cabin crew, airport passengers and Internet passengers (T-test)

Individual Incidents			
Level of Incidents/Groups	Cabin Crew & Airport Passengers *df (245)*	Cabin Crew & Internet Passengers *df (245)*	Airport Passengers & Internet Passengers *df (245)*
Minor Incident	****$p \leq 0.000$ MD = 10.806	*$p \leq 0.042$ MD = 7.852	$p \leq 0.672$ MD = - 2.954
Moderate Incidents	****$p \leq 0.000$ MD = 7.129	**$p \leq 0.007$ MD = -2.816	$p \leq 0.738$ MD = - 0.740
Serious Incidents	****$p \leq 0.000$ MD = 1.033	$p \leq 0.080$ MD = 0.655	$p \leq 0.479$ MD = - 0.378
Group Incidents			
Level of Incidents/Groups	Cabin Crew & Airport Passengers *df (244)*	Cabin Crew & Internet Passengers *df (244)*	Airport Passengers & Internet Passengers *df (244)*
Minor Incident	****$p \leq 0.003$ MD = 1.807	*$p \leq 0.130$ MD = 1.337	$p \leq 0.801$ MD = - 0.470
Moderate Incidents	****$p \leq 0.008$ MD = 0.706	**$p \leq 0.330$ MD = -0.416	$p \leq 0.628$ MD = - 0.290
Serious Incidents	****$p \leq 0.065$ MD = 0.169	$p \leq 0.968$ MD = 0.023	$p \leq 0.318$ MD = - 0.146

*$P \leq .05$, **$P \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.1.3.1 Airport Passengers

In this section, airport passengers were asked to identify the number of disruptive incidents that they have encountered in the last two years. Figure 4.4 showed that the mean number of incidents encountered by airport passengers declined as the level of seriousness rose. The frequency of group incidents was also fewer at all levels of seriousness compared to individual incidents. Airport passengers seem to experience less individual and group incidents than self selected passengers surveyed through the internet (See Fig. 4.4 and Fig. 4.5).

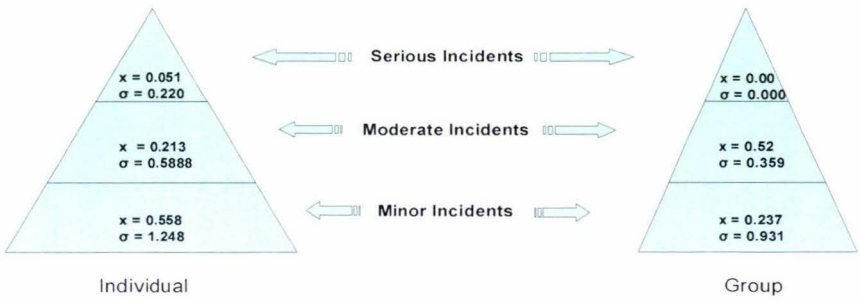

Fig 4.4 Incident means and standard deviation for individuals and groups (Airport Passengers)

4.1.3.2 Internet Passengers

In this section, internet passengers were asked identify in the number of disruptive incidents that they have experienced in the last two years. Figure 4.5 shows the mean number of passenger surveyed at the airport. As can see the both individual and group incidents decline as the level of seriousness increases. The frequency of group incidents

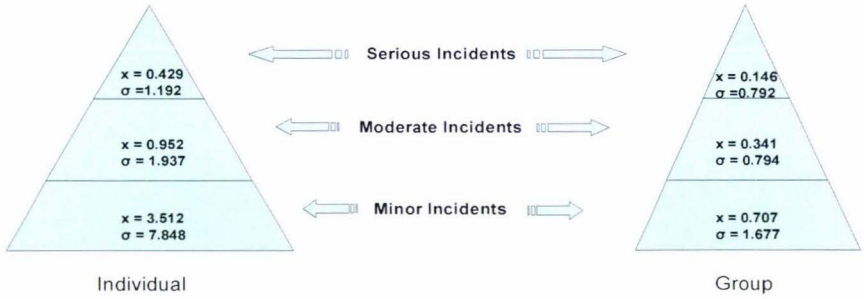

Fig 4.5 Incident means and standard deviations for individual and group incidents (Internet Passengers)

4.2 Possible Causes of In-flight Misbehaviour

Respondents were asked to rank a list of possible causes of in-flight misbehaviour according to the frequency of occurrence on a Likert scale of 1 to 5, where 1 is very rarely and 5 is very often. The items include alcohol, smoking, seat assignment, carry-on-luggage, food service, disputes with other passengers, fear of flight and discomfort. Table 4.7 and 4.8 shows the summarised results of possible causes for individual and group in-flight misbehaviour. The causes are ranked according to their means. These incidents may have been witnessed by the cabin crew or passengers, or they may have been involved in the incident themselves.

Table 4.7: Ranking of possible causes of in-flight misbehaviour involving an individual (Means and standard deviations)

Individual Incidents					
Rank	**All Combined**	**Cabin Crew**	**All Passenger**	**Airport Passengers**	**Internet Passengers**
1	Alcohol $x = 3.645$, $\sigma = 1.256$	Alcohol $x = 4.048$, $\sigma = 0.961$	Alcohol $x = 3.163$, $\sigma = 1.394$	Alcohol $x = 2.952$, $\sigma = 1.453$	Alcohol $x = 3.476$, $\sigma = 1.294$
2	Carry-on-luggage $x = 3.086$, $\sigma = 1.121$	Seat Assignments $x = 3.424$, $\sigma = 0.969$	Carry-on-luggage $x = 2.857$, $\sigma = 1.555$	Discomfort $x = 2.770$, $\sigma = 1.101$	Carry-on-luggage $x = 3.286$, $\sigma = 1.174$
3	Seat Assignments $x = 3.061$, $\sigma = 1.114$	Carry-on-luggage $x = 3.270$, $\sigma = 1.061$	Discomfort $x = 2.767$, $\sigma = 1.156$	Carry-on-luggage $x = 2.571$, $\sigma = 1.058$	Seat Assignments $x = 2.976$, $\sigma = 1.199$
4	Discomfort $x = 2.760$, $\sigma = 1.046$	Food Service $x = 2.790$ $\sigma = 1.046$	Seat Assignments $x = 2.625$, $\sigma = 1.125$	Seat Assignments $x = 2.387$, $\sigma = 1.013$	Discomfort $x = 2.762$, $\sigma = 1.245$
5	Food Service $x = 2.608$, $\sigma = 1.064$	Discomfort $x = 2.754$ $\sigma = 1.947$	Food Service $x = 2.388$, $\sigma = 1.105$	Food Service $x = 2.246$, $\sigma = 0.994$	Cabin Crew Service / Dispute with other passengers $x = 2.690$, $\sigma = 1.047$ / $x = 2.690$, $\sigma = 1.158$
6	Smoking $x = 2.377$, $\sigma = 1.204$	Smoking $x = 2.715$ $\sigma = 1.170$	Dispute with other passengers $x = 2.343$, $\sigma = 1.125$	Dispute with other passengers $x = 2.049$, $\sigma = 0.994$	Not Applicable
7	Cabin Crew Service $x = 2.186$, $\sigma = 0.926$	Cabin Crew Service $x = 2.112$ $\sigma = 0.834$	Cabin Crew Service $x = 2.282$, $\sigma = 1.203$	Fear of Flight $x = 2.108$, $\sigma = 0.994$	Food Service $x = 2.595$, $\sigma = 1.105$
8	Dispute with other passengers $x = 2.126$, $\sigma = 0.978$	Fear of Flight $x = 2.095$ $\sigma = 0.950$	Fear of Flight $x = 1.981$, $\sigma = 1.057$	Cabin Crew Service $x = 2.000$, $\sigma = 1.108$	Smoking $x = 2.083$, $\sigma = 1.079$
9	Fear of Flight $x = 2.044$, $\sigma = 0.999$	Dispute with other passengers $x = 1.944$ $\sigma = 0.796$	Smoking $x = 1.948$, $\sigma = 1.112$	Smoking $x = 1.869$, $\sigma = 1.132$	Fear of Flight $x = 1.927$, $\sigma = 0.984$

Table 4.8: Ranking of possible causes of in-flight misbehaviour involving a group (Means and Standard Deviations)

	Group Incidents				
Rank.	**All Combined**	**Cabin Crew**	**All Passenger**	**Airport Passengers**	**Internet Passengers**
1	Alcohol $x = 3.454$ $\sigma = 1.288$	Alcohol $x = 3.655$ $\sigma = 1.218$	Alcohol $x = 3.345$ $\sigma = 1.288$	Alcohol $x = 3.145$ $\sigma = 1.339$	Alcohol $x = 3.278$ $\sigma = 1.344$
2	Dispute with other passengers $x = 2.510$ $\sigma = 1.139$	Seat Assignments $x = 2.325$ $\sigma = 1.057$	Dispute with other passengers $x = 2.510$ $\sigma = 1.139$	Carry-on-luggage $x = 2.604$ $\sigma = 1.006$	Dispute with other passengers $x = 3.057$ $\sigma = 1.258$
3	Seat Assignments $x = 2.488$ $\sigma = 1.135$	Dispute with other passengers $x = 2.310$ $\sigma = 1.035$	Seat Assignments $x = 2.488$ $\sigma = 1.136$	Dispute with other passengers $x = 2.585$ $\sigma = 1.167$	Seat Assignments $x = 3.029$ $\sigma = 1.248$
4	Carry-on-luggage $x = 2.410$ $\sigma = 1.088$	Carry-on-luggage $x = 2.265$ $\sigma = 1.045$	Carry-on-luggage $x = 2.410$ $\sigma = 1.088$	Discomfort $x = 2.529$ $\sigma = 1.137$	Carry-on-luggage $x = 3.029$ $\sigma = 1.248$
5	Discomfort $x = 2.177$ $\sigma = 1.047$	Smoking $x = 2.069$ $\sigma = 1.010$	Discomfort $x = 2.177$ $\sigma = 1.047$	Seat Assignments $x = 2.491$ $\sigma = 1.137$	Discomfort $x = 2.400$ $\sigma = 1.332$
6	Smoking $x = 2.143$ $\sigma = 1.055$	Food Service $x = 2.034$ $\sigma = 0.880$	Smoking $x = 2.143$ $\sigma = 1.055$	Smoking $x = 2.231$ $\sigma = 1.198$	Food Service $x = 2.314$ $\sigma = 0.993$
7	Food Service $x = 2.127$ $\sigma = 0.914$	Discomfort $x = 1.957$ $\sigma = 0.844$	Food Service $x = 2.127$ $\sigma = 0.914$	Food Service $x = 2.208$ $\sigma = 0.927$	Smoking $x = 2.257$ $\sigma = 0.980$
8	Fear of Flight $x = 1.646$ $\sigma = 0.788$	Fear of Flight $x = 1.504$ $\sigma = 0.612$	Fear of Flight $x = 1.646$ $\sigma = 0.788$	Fear of Flight $x = 1.802$ $\sigma = 0.992$	Fear of Flight $x = 1.882$ $\sigma = 0.879$

The results to be included for this section are the total sample, cabin crew and overall passengers. However, as can be seen from tables 4.7 and 4.8 the results of internet passengers and airport passengers were quite different for some items. Thus prior to presenting the results a test was conducted to see if internet passengers rated the causes of in-flight incidents differently from the airport passengers (See table 4.9). The test showed that internet passengers responded differently only for items in individual incidents. The items are listed as follow.

- Smoking in individual incidents
- Seating arrangements in individual incidents
- Carry on luggage in individual incidents
- Cabin crew service in individual incidents
- Disputes with other passengers in individual incidents

Due to significant differences in some items, this section would discuss the results of internet passengers and airport passengers.

Table 4.9 Differences between cabin crew, internet passengers and airport passengers (T-test)

Individual Incidents			
Level of Incidents/Groups	Cabin Crew & Airport Passengers *df (245)*	Cabin Crew & Internet Passengers *df (245)*	Airport Passengers & Internet Passengers *df (245)*
Alcohol in Individual Incidents	****$p \leq 0.000$ MD = 1.097	*$p \leq 0.025$ MD = 0.572	$p \leq 0.082$ MD = - 0.525
Smoking in Individual Incidents	****$p \leq 0.000$ MD = 0.847	*$p \leq 0.016$ MD = 0.632	$p \leq 0.673$ MD = - 0.740
Carry on Luggage in Individual Incidents	****$p \leq 0.000$ MD = 0.698	$p \leq 0.997$ MD = -0.016	***$p \leq 0.005$ MD = - 0.714
Seat Assignment in Individual Incidents	****$p \leq 0.000$ MD = 1.037	$p \leq 0.052$ MD = 0.448	*$p \leq 0.017$ MD = - 0.589
Food Service in Individual Incidents	***$p \leq 0.004$ MD = 0.544	*$p \leq 0.579$ MD = 0.195	$p \leq 0.250$ MD = - 0.349
Cabin crew service in Individual Incidents	$p \leq 0.727$ MD = 0.112	*$p \leq 0.002$ MD = -0.578	$p \leq 0.001$ MD = - 0.690
Disputes with other Passengers in Individual Incidents	$p \leq 0.519$ MD = 0.167	****$p \leq 0.000$ MD = -0.746	**$p \leq 0.009$ MD = - 0.579
Fear of flight in Individual Incidents	$p \leq 0.878$ MD = 0.079	$p \leq 0.646$ MD = 0.168	$p \leq 0.907$ MD = - 0.089
Discomfort in Individual Incidents	$p \leq 0.995$ MD = -0.016	$p \leq 0.999$ MD = -0.008	$p \leq 0.999$ MD = 0.009

Group Incidents			
	Cabin Crew & Airport Passengers *df (244)*	Cabin Crew & Internet Passengers *df (244)*	Airport Passengers & Internet Passengers *df (244)*
Alcohol in Individual Incidents	$p \leq 0.053$ MD = 0.510	$p \leq 0.301$ MD = 0.377	$p \leq 0.889$ MD = 0.132
Smoking in Individual Incidents	$p \leq 0.657$ MD = -0.162	$p \leq 0.654$ MD = -0.188	$p \leq 0.994$ MD = - 0.026
Carry on Luggage in Individual Incidents	$p \leq 0.169$ MD = -0.339	$p \leq 0.276$ MD = -0.335	$p \leq 1.000$ MD = -0.004
Seat Assignment in Individual Incidents	$p \leq 0.667$ MD = -0.166	$***p \leq 0.005$ MD = -0.704	$p \leq 0.087$ MD = -0.538
Food Service in Individual Incidents	$p \leq 0.519$ MD = -0.173	$p \leq 0.283$ MD = 0.280	$p \leq 0.866$ MD = - 0.107
Disputes with other Passengers in Individual Incidents	$p \leq 0.169$ MD = -0.339	$p \leq 0.276$ MD = -0.335	$p \leq 1.000$ MD = -0.004
Fear of flight in Individual Incidents	$p \leq 0.071$ MD = 0.298	$p \leq 0.046$ MD = 0.378	$p \leq 0.894$ MD = -0.080
Discomfort in Individual Incidents	$***p \leq 0.004$ MD = -0.572	$p \leq 0.081$ MD = -0.443	$p \leq 0.846$ MD = -0.129

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.2.1 Total Sample

This section discusses the results of the possible causes of in-flight incidents. Alcohol was rated the top cause for both individual and group incidents and fear of flight was rated the least possible cause in both individual and group incidents (See Tables 4.8 and 4.9). There were great differences in the ranking of dispute with other passengers, food service, carry on luggage. Dispute with other passengers ranked 8th in individual incidents, however it was ranked 2nd in group incidents. Food service ranks 5th in individual incidents and 7th in group incidents. Carry on luggage ranked 2nd in individual incidents and was ranked 4th in group incidents.

Demographics and Causes of In-flight Incidents (Total Sample)

The data was analysed to see if demographics were related to the causes of in-flight misbehaviour (IFMI). All demographics were found to have an effect on the causes of in-flight incidents (See table 4.10a and 4.10b).

Age was also found to be related to the causes of individual and group in-flight incidents (See table 4.10a). Alcohol, cabin crew service and disputes with other passengers were found to be related to the age of passengers in individual incidents while alcohol and seat assignments were found to be related to age in group incidents. Respondents under 24 ($x = 3.047$, $\sigma = 1.214$) experienced more individual incidents that were related to cabin crew service than those whose age were above 50 ($x = 1.765$, $\sigma = 0.741$). Individual incidents involving disputes with other passengers were also more frequently experienced by respondents who were under 24 ($x = 2.595$, $\sigma = 1.037$) than respondents whose age were above 50 ($x = 1.853$, $\sigma = 0.821$). Alcohol was found to be significant in both individual and group incidents; however the post hoc test (Scheffe) was not able to identify the groups that were different. The greatest mean differences for individual incidents were between the groups of above 50 ($x = 3.206$, $\sigma = 1.629$) and the group of 40 to 44 ($x = 4.222$, $\sigma = 1.045$). As for group incidents, the largest mean differences were between the group of under 24 ($x = 2.976$, $\sigma = 1405$) and the group of 30 to 34 ($x = 3.931$, $\sigma = 1.029$). There were also indications that respondents whose age were under 24 ($x = 4.222$, $\sigma = 1.045$) experienced more seat assignment related group incidents than those whose age were above 50 ($x = 1.900$, $\sigma = 0.923$).

Ethnicity was also found to have an effect on the causes of in-flight incidents (See table 4.10a). Asians ($x = 2.577$, $\sigma = 0.977$) experienced more individual incidents related to cabin crew service than Caucasians ($x = 2.069$, $\sigma = 0.894$). Asians ($x = 2.577$, $\sigma = 1.193$) were also found to have experienced more individual incidents related to disputes with other passengers than Caucasians ($x = 2.069$, $\sigma = 0.894$). Alcohol related group incidents was experienced more often by Caucasians ($x = 3.613$, $\sigma = 1.244$) than Asians ($x = 3.020$, $\sigma = 1.285$). Asians ($x = 2.960$, $\sigma = 1.177$) also experienced more group incidents that were related to seat assignments than Caucasians ($x = 2.336$, $\sigma = 1.103$). Group incidents related to disputes with other passengers were also experienced more often by Asians ($x = 2.900$, $\sigma = 1.965$) than Caucasians ($x = 2.388$, σ

= *1.134*). There were also indications that group discomfort was related to the causes of in-flight incidents. Asians (x = *2.540*, σ = *1.265*) were found to experience more incidents related to discomfort than Caucasians (x = *2.080*, σ = *0.959*).

Gender was also found to be related to baggage related group incidents (See table 4.10a). There were indications that male respondents (x = *2.237*, σ = *1.057*) experienced fewer incidents related to carry on baggage than female respondents (x = *2.560*, σ = *1.066*).

Education was found to be related to the causes of in-flight incidents (See table 4.10a). Cabin crew service and disputes with other passengers were significant for individual incidents. The post hoc test (Scheffe) was not able to identify the groups that were different for cabin crew service. The largest mean difference cabin crew service is between the groups who attended high school (x = *2.000*, σ = *0.817*) and those who obtained post graduate degree(x = *2.833*, σ = *0.983*). Respondents who had started a university education (x = *2.565*, σ = *1.167*) experienced more individual incidents related to disputes with other passengers than those who had only attended high school (x = *1.912*, σ = *0.786*) and those who obtained a Diploma (x = *1.913*, σ = *0.838*).

Education was also found to be related to food service and disputes with other passengers for group incidents Group differences could not be identified for food service during the post hoc tests (Scheffe). The largest mean differences for food service were between those who had attended highs school (x = *1.881*, σ = *0.881*) and those who had obtained a postgraduate degree (x = *2.833*, σ = *0.753*). Likewise post hoc test (Scheffe) could not identify the group differences for 'disputes with other passengers', the largest mean differences however were between those who had attended highs school (x = *2.288*, σ = *1.099*) and those who had obtained a postgraduate degree (x = *3.500*, σ = *0.837*).

Table 4.10a T-Tests and ANOVA Tests for Demographics and Causes of IFMI (Total Sample)

Individual Incidents				
Incidents	**Gender** *Male and Female df (214)*	**Ethnicity** *Asian, Caucasians & Polynesians d f (209)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 df (214)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD df (212)*
Alcohol in Individual Incidents	*p ≤ .099, t = -1.655*	*p ≤ .143, F = 1.963*	Differences between groups were not identified during post hoc test (Scheffe) **p ≤ .007, F = 3.063, Ms = 4.935	*p ≤ .454, F = 0.918*
Smoking in Individual Incidents	*p ≤ .207, t = -1.266*	*p ≤ .058, F = 2.894*	p ≤ .197, F = 1.449	*p ≤ .633, F = 0.641*
Carry on Luggage in Individual Incidents	*p ≤ .987, t = -0.016*	*p ≤ .949, F = 0.053*	p ≤ .767, F = 0.554	*p ≤ .501, F = 0.840*
Seat Assignments in Individual Incidents	*p ≤ .262, t = 1.124*	*p ≤ .572, F = 0.560*	p ≤ .198, F = 1.445	*p ≤ .146, F = 1.724*
Food Service in Individual Incidents	*p ≤ .998, t = -0.003*	*p ≤ .924, F = 0.079*	p ≤ .285, F = 1.244	*p ≤ .527, F = 0.799*
Cabin crew service in individual incidents	*p ≤ .460, t = -0.741*	Asians experienced more incidents related to cabin crew service than Caucasians. ***p ≤ .003, F = 6.146, Ms = 5.083	Respondents under 24, experienced more incidents involving cabin crew service than those who were above 50 ***p ≤ .003, F = 3.487, Ms = 2.802	Differences between groups were not identified during post hoc test (Scheffe) *p ≤ .039, F = 2.576, Ms = 2.413
Disputes with other passengers in individual incidents	*p ≤ .171, t = - 1.372*	Asians experienced more individual incidents related to disputes with other passengers than Caucasians ****p ≤ .000, F = 8.739,	Respondents under 24, experienced more incidents involving disputes with other individual passenger than those who were	Respondents who started university education experienced more incidents related to disputes with other passengers than those who

		Ms = 7.906	above 50 ***$p \leq .003$, $F = 3.420$, Ms = 3.095	have attended high school ***$p \leq .003$, *F = 4.058,* *Ms = 3.738*
Fear of Flight in individual incidents	*$p \leq .157$,* *t = 1.419*	$p \leq .645$, $F = 0.440$	*$p \leq .096$,* *F = 1.821*	*$p \leq .416$,* *F = 0.986*
Discomfort	*$p \leq .820$,* *t = 0.228*	*$p \leq .480$,* *F = 0.737*	*$p \leq .675$,* *F = 0.668*	*$p \leq .995$,* *F = 0.053*
Group Incidents				
Alcohol in group incidents	*$p \leq .982$,* *t = -0.22*	Alcohol related group incidents was experienced more often by Caucasians than Asians *$p \leq .017$,* *F = 4.148,* *Ms = 6.614*	Differences between groups were not identified during post hoc test (Scheffe) *$p \leq .022$,* *F =2.525,* *Ms = 4.027*	*$p \leq .614$,* *F = 0.670*
Smoking in Group Incidents	*$p \leq .381$,* *t = -0.878*	*$p \leq .984$,* *F =0.016*	*$p \leq .332$,* *F =1.155,* *Ms = 1.287*	*$p \leq .800$,* *F = 0.412*
Seat Assignments in group incidents	*$p \leq .137$,* *t = 1.493*	Asians also experienced more group incidents that were related to seat assignments than Caucasians ***$p \leq .003$,* *F =5.846,* *Ms = 7.227*	Respondents under 24 experienced more group incidents involving seat assignments than those whose age were above 50 *$p \leq .033$,* *F =2.349,* *Ms = 2.905*	*$p \leq .293$,* *F = 1.244*
Carry on baggage in Group Incidents	Female respondents experienced more alcohol related incidents than female respondents *$p \leq .032$,* *t = -2.155,* *MD = 0.323*	*$p \leq .096$,* *F =2.377*	*$p \leq .465$,* *F =0.943,* *Ms = 1.115*	*$p \leq .442$,* *F =0.976*
Food Service in group incidents	*$p \leq .196$,* *t = 1.296*	*$p \leq .102$,* *F =2.313*	*$p \leq .366$,* *F =1.095,* *Ms = 0.912*	Differences between groups were not identified during post hoc test (Scheffe) *$p \leq .045$,* *F = 2.487* *Ms = 2.024*

Dispute with other Passengers in group incidents	$p \leq .070$, $t = -1.821$	Incidents related to disputes with other passengers were experienced more often by Asians $*p \leq .024$, $F = 3.822$, $Ms = 4.883$	$p \leq .067$, $F = 2.001$, $Ms = 2.513$	Differences between groups were not identified during post hoc test (Scheffe) $**p \leq .006$, $F = 3.693$, $Ms = 4.568$
Fear of Flight in group incidents	$p \leq .664$, $t = 0.435$	$p \leq .097$, $F = 2.359$	$p \leq .361$, $F = 1.104$, $Ms = 0.685$	$p \leq .268$, $F = 1.308$
Discomfort in group incidents	$p \leq .623$, $t = 0.492$	Asians were found to experience more incidents related to discomfort than Caucasians $*p \leq .024$, $F = 3.781$, $Ms = 4.082$	$p \leq .395$, $F = 1.050$, $Ms = 1.115$	$p \leq .658$, $F = 0.607$

$*p \leq .05$, $**p \leq .01$, $*** p \leq .005$, $**** P \leq .001$

The route of flight was also found to be related to the causes of individual and group in-flight incidents (See table 4.10b). Respondents on international flights ($x = 3.846$, $\sigma = 1.197$) experienced more alcohol related incidents than individuals who travelled frequently on both domestic and international route ($x = 3.029$, $\sigma = 1.339$). There was also an indication that smoking related incidents that involve individuals, were experienced more often by respondents who travelled frequently on international flights ($x = 2.613$, $\sigma = 1.229$) than those who travelled frequently on domestic flights ($x = 1.690$, $\sigma = 0.967$) and those who travel on both domestic and international flights ($x = 1.875$, $\sigma = 0.870$). As for individual incidents, smoking was found to be related to the causes of group incidents. Smoking related incidents were experienced more often by respondents who travelled on international flights ($x = 1.690$, $\sigma = 1.003$) than those who travelled on domestic flights.

The length of flight was also found to be related to the causes of individual in-flight incidents (See table 4.10b); however there were no significant differences for group incidents (See table 4.10b). Alcohol related incidents were experienced more often by respondents whose flight duration was more than 9 hours ($x = 3.868$, $\sigma = 1.175$) than those whose flights were between 2 to 5 hours ($x = 3.061$, $\sigma = 1.413$). Smoking incidents was also found to have been experienced less often by respondents who

travelled on flights that were between 2 to 5 hours ($x = 1.710$, $\sigma = 0.863$) than those whose flights were between 5 to 9 hours ($x = 2.552$, $\sigma = 1.055$) and above 9 hours ($x = 2.664$, $\sigma = 1.244$). Seat assignment was related to the causes of In-flight incidents. Respondents who travelled on flights of 2 to 5 hours ($x = 2.500$, $\sigma = 1.191$) experienced fewer seat assignment related incidents than those who were on flights of less than 2 hours ($x = 3.286$, $\sigma = 1.202$) and longer than 9 hours ($x = 3.147$, $\sigma = 1.054$). Food service was also found to be related to in-flight incidents, where respondents whose flights were between 2 to 5 hours ($x = 2.094$, $\sigma = 0.962$) experienced fewer food service related incidents than those whose flight duration was more than 9 hours ($x = 2.734$, $\sigma = 1.090$). There was an indication that cabin crew service was related to the causes of in-flight incidents, where respondents whose flights were between 2 to 5 hours ($x = 1.750$, $\sigma = 0.762$) experienced fewer cabin crew service related incidents than those whose flights were longer than 9 hours ($x = 2.281$, $\sigma = 0.947$).

The type of airline was also found to be related to the cause of individual and group in-flight incidents (See table 4.10b). Passengers who travelled on Asian airlines ($x = 2.647$, $\sigma = 1.177$) experienced more individual incidents related to disputes with other passengers than those who travelled on European airlines ($x = 2.000$, $\sigma = 0.795$). Alcohol was also found to be related to the causes of individual in-flight incidents; however the post hoc test (Scheffe) was not able to identify the groups that were different. The largest mean differences were between those who had travelled on American ($x = 2.714$, $\sigma = 1.380$) and those who had travelled on Pacific airlines ($x = 3.970$, $\sigma = 0.384$). Post hoc test (Scheffe) was also not able to identify the groups that were different for fear of flight and discomfort in group incidents. The largest difference for fear of flight were between those who had travelled on European airlines ($x = 1.518$, $\sigma = 0.636$) and those who had travelled on American airlines ($x = 2.286$, $\sigma = 1.380$). The largest difference for discomfort were between those who had travelled on Pacific airlines ($x = 1.875$, $\sigma = 0.793$) and those who had travelled on mixed categorical airlines ($x = 2.700$, $\sigma = 0.923$).

Table 4.10b ANOVA Tests for Demographics and Causes of IFMI (Total Sample)

Individual Incidents			
Incidents	**Route** *International, Domestic and Combined international and domestic df(212)*	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours df(212)*	**Airline** *American airlines, Asian airlines, Australasian airlines, European airlines, Pacific airlines and mixed categorical airlines df(212)*
Alcohol in Individual Incidents	Respondents who frequently travel on international flights experienced more incidents than those who travel on both domestic flights and international *****p ≤ .001, F = 7.248 Ms = 10.707*	Respondents who frequently travel on flights with duration of more than 9 hours experienced more incidents than those who travel on flights with duration of 2 to 5 hours ****p ≤ .002, F = 4.977 Ms = 7.397*	Differences between groups could not be identified by post hoc test (Scheffe) ***p ≤ .006, F = 3.728 Ms = 5.476*
Smoking in Individual Incidents	Respondents who frequently travel on international flights experienced more incidents than those who travel on both domestic and international flights and those who travel on domestic flights *****p ≤ .000, F = 11.457 Ms = 15.195*	Respondents who frequently travel on flights with duration of 2 to 5 hours experienced less incidents than those who travel on flights with durations of 5 to 9 hours and above 9 hours *****p ≤ .000, F = 9.683 Ms = 12.522*	*p ≤ .066, F = 2.237*
Carry on Luggage in Individual Incidents	*p ≤ .098, F = 2.346*	*p ≤ .057, F = 2.541*	*p ≤ .974, F = 0.124*
Seat Assignments in Individual Incidents	*p ≤ .324, F = 1.131*	Respondents who frequently travel on flights with duration of 2 to 5 hours experienced less incidents than those who travel on flights with durations of less than 2 hours and above 9 hours **p ≤ .012, F = 3.759 Ms = 4.443*	*p ≤ .498 F = 0.846*
Food Service in Individual Incidents	*p ≤ .965, F = 0.036*	Respondents who frequently travel on flights with duration of 2 to 5 hours experienced less incidents than those	*p ≤ .199, F = 1.513*

		who travel on flights with durations of more than 9 hours *$p \leq .021$, $F = 3.311$ $Ms = 3.657$	
Cabin crew service in individual incidents	$p \leq .826$, $F = 0.191$	Respondents who frequently travel on flights with duration of 2 to 5 hours experienced less incidents than those who travel on flights with durations of more than 9 hours *$p \leq .018$, $F = 3.420$ $Ms = 2.833$	$p \leq .062$, $F = 2.276$
Disputes with other passengers in individual incidents	$p \leq .998$, $F = 0.002$	$p \leq .280$, $F = 1.285$	Respondents flying on Asian airlines experienced more incidents than those flying on European *$p \leq .012$, $F = 3.283$ $Ms = 3.049$
Fear of Flight in individual incidents	$p \leq .120$, $F = 2.142$	$p \leq .113$, $F = 2.015$	$p \leq .649$, $F = 0.619$
Discomfort	$p \leq .258$, $F = 1.364$	$p \leq .797$, $F = 0.339$	$p \leq .117$, $F = 1.870$
Group Incidents			
Alcohol in group incidents	$p \leq .078$, $F = 2.588$	$p \leq .187$, $F = 1.616$	$p \leq .211$, $F = 1.471$
Smoking in group incidents	Respondents who frequently travel on international flights experienced more incidents than those who travel on domestic flights *$p \leq .023$, $F = 3.839$ $Ms = 4.163$	$p \leq .055$, $F = 2.581$	$p \leq .849$, $F = 0.342$
Carry on Luggage in group incidents	$p \leq .977$, $F = 0.023$	$p \leq .797$, $F = 0.339$	$p \leq .295$, $F = 1.242$
Seat Assignments in group incidents	$p \leq .948$, $F = 02.054$	$p \leq .756$, $F = 0.396$	$p \leq .077$, $F = 2.144$
Food Service in group incidents	$p \leq .498$, $F = 0.700$	$p \leq .895$, $F = 0.201$	$p \leq .256$, $F = 1.342$

Dispute with other Passengers in group incidents	$p \leq .151$, $F = 1.906$	$p \leq .353$, $F = 1.093$	$p \leq .196$, $F = 1.528$
Fear of Flight in group incidents	$p \leq .691$, $F = 0.370$	$p \leq .801$, $F = 0.334$	Differences between groups could not be identified by post hoc test (Scheffe) $**p \leq .010$, $F = 3.410$ $Ms = 2.008$
Discomfort in group incidents	$p \leq .490$, $F = 0.716$	$p \leq .925$, $F = 0.157$	Differences between groups could not be identified by post hoc test (Scheffe) $*p \leq .012$, $F = 3.293$ $Ms = 3.430$

$*p \leq .05$, $**p \leq .01$, $***p \leq .005$, $****P \leq .001$

4.2.2 Cabin Crew

This section discusses the causes of in-flight incidents from the cabin crews' perspective. Cabin crew were asked to rate the causes of in-flight incidents according to the frequency of occurrences. They rated alcohol and seat assignments the top and second cause respectively for both individual and group incidents (See tables 4.7 and 4.8) Disputes with other passengers was ranked last for individual incidents but was ranked third in group incidents. Food service was ranked 4th for individual incidents and ranked lower at 6th in group incidents.

Demographics and Causes of In-flight Incidents (Cabin crew)

The data was examined to see if demographic variables were related to the causes of in-flight incidents. It was found that that age, route, gender and the type of aircraft have an effect on the causes of individual and group incidents.

Route was found to be related to the causes of individual and group in-flight misbehaviour (See table 4.11a). Alcohol, smoking, seat assignment, carry on luggage and fear of flight were significant for individual incidents. Alcohol related incidents were experienced more often by cabin crew serving on international flights ($x = 4.186$, $\sigma = 0.916$) than those on domestic flights ($x = 4.186$, $\sigma = 0.873$). Smoking related incidents were experienced more often by cabin crew serving international routes

than those on domestic routes and those who served both domestic and international routes. Cabin crew operating on domestic ($x = 4.000$, $\sigma = 0.707$) route also experienced more seat assignment related incidents than those on international flights ($x = 3.268$, $\sigma = 0.963$). Likewise, incidents related to carry on baggage were experienced more often by cabin crew operating on domestic flights ($x = 4.000$, $\sigma = 1.000$) than those operating on international flights ($x = 3.102$, $\sigma = 1.030$). Incidents related to fear of flight were also experienced more often by cabin crew on domestic flights ($x = 2.824$, $\sigma = 1.014$) than those who served on international flights ($x = 1.939$, $\sigma = 0.871$). Alcohol, smoking and fear of flight were tested significant in the group category. Alcohol related incidents was found to have been experienced more often by cabin crew on international flight ($x = 3.775$, $\sigma = 1.187$) than those on domestic flights ($x = 2.938$, $\sigma = 1.123$). Incidents related to smoking were also more experienced by cabin crew on international flights ($x = 2.261$, $\sigma = 1.045$) than those on domestic flight ($x = 1.412$, $\sigma = 0.618$). Incidents related to fear of flight were experienced more often by cabin crew on domestic flights ($x = 1.882$, $\sigma = 0.600$) than those on international flights ($x = 1.425$, $\sigma = 0.583$).

Aircraft type was also found to be related top the causes of in-flight incidents (See table 4.11a). Alcohol, smoking and seat assignment were found to be significant for individual incidents while discomfort and smoking were found to be significant for group incidents. Smoking related individual incidents were found have been experienced less often by cabin crew who operated on commuter aircrafts ($x = 1.444$, $\sigma = 0.527$) than cabin crew who operated on international aircraft ($x = 2.875$, $\sigma = 1.048$) and cabin crew who operated on both international and commuter aircraft ($x = 2.615$, $\sigma = 1.444$). Cabin crew operating on commuter aircraft ($x = 4.100$, $\sigma = 0.994$) experienced more seat assignment related incidents than those who operated on both international and commuter aircraft ($x = 3.154$, $\sigma = 0.967$). Carry on luggage related incidents was also experienced more often by cabin crew operating on commuter aircraft ($x = 4.200$, $\sigma = 0.919$) than those who operated on international aircraft ($x = 3.213$, $\sigma = 0.994$) and those who operated on both international and commuter aircraft ($x = 3.111$, $\sigma = 1.187$). In group incidents, discomfort and smoking were the only items significant. Discomfort related incidents were experienced more often by cabin crew who operated on commuter aircrafts ($x = 2.900$, $\sigma = 0.738$) than those who operated on international aircraft ($x = 1.915$, $\sigma = 0.849$) and those who operated on

international and commuter aircrafts *(x = 1.720, σ = 0.613)*. Smoking related incidents were also experienced more often by those who operated on international aircrafts *(x = 2.247, σ = 1.055)* than those who operated on both international and commuter *(x = 1.720, σ = 0.842)*.

The length of flight was found to be related to the causes of in-flight incidents (See table 4.11a). Alcohol, smoking, seat assignment, carry on luggage and fear of flight had an effect on individual incidents. Alcohol related incidents was found to have been experienced more often by cabin crew on flights of more than 9 hours (*x = 4.241, σ =0.894)* than those who operated on flights that were less than 2 hours (*x = 3.421, σ = 1.107)*. Smoking related incidents were experienced more often by cabin crew on flights of 5 to 9 hours (*x = 2.750, σ = 0.850)* and more than 9 hours (*x = 3.026, σ = 1.104)* than those who operated on flights of less than 2 hours (*x = 1.579, σ = 1.017)*. Seat assignment related incidents were experienced more often by cabin crew on flights of less than 2 hours than (*x = 3.950, σ = 0.999)* those whose flight were more than 9 hours (*x = 3.125, σ = 1.072)*. Carry on luggage related incidents were experienced more often by cabin crew whose flights were less than 2 hours (*x = 3.950, σ = 0.998)* than cabin crew whose flights were more than 9 hours (*x = 3.125, σ = 1.071)*. Incidents related to fear of flight were also experienced more often by cabin crew on flights that were less than 2 hours (*x = 2.700, σ = 1.128)* than those on flights that were more than 9 hours (*x = 1.913, σ = 0.874)*. Smoking was the only item that was found to have an effect on group incidents. Smoking related incidents were experienced more often by cabin crew who operated on flights of more than 9 hours (*x = 2.260, σ = 1.041)* than those who operated on flights of less than 2 hours (*x = 1.450, σ = 0.604)*.

Table 4.11a ANOVA Tests for Demographics and Causes of IFMI (Cabin Crew)

Individual Incidents				
Incidents	**Route** *International, Domestic and Combined international and domestic* df(91)	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours* df(88)	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines* df()	**Aircraft Type** *International, Commuter and Combined International and Commuter* df(123)
Alcohol in Individual Incidents	Cabin Crew who frequently travel on international flights experienced more incidents than those who travel on both domestic flights and international ****p ≤ .005, F = 6.549 Ms = 5.550*	Alcohol related incidents was found to have been experienced more often by cabin crew operating on flight of more than 9 hours than those who operated on flights that were less than 2 hours ****p ≤ .003, F = 4.959 Ms = 4.178*	*p ≤ .772, F = 0.260*	*p ≤ .146, F = 1.953*
Smoking in Individual Incidents	Cabin Crew who frequently travel on international flights experienced more incidents than those who travel on both domestic and international flights and those who travel on domestic flights *****p ≤ .001, F = 16.439 Ms = 17.900*	Smoking related incidents were experienced more often by cabin crew who operated on flights of 5 to 9 hours and more than 9 hours than those who operated on flights of less than 2 hours *****p ≤ .000, F = 11.041 Ms = 12.082*	*p ≤ .551, F = 0.600*	Smoking related individual incidents were found have been experienced less often by cabin crew who operated on commuter aircrafts than cabin crew who operated on international aircraft ****p ≤ .002, F =6.816 Ms = 8.520*
Carry on Luggage in Individual Incidents	Incidents related to carry on baggage were experienced more often by cabin crew operating on domestic flights than those operating on international flights *****p ≤ .001, F = 16.439, Ms = 17.900*	Carry on luggage related incidents were experienced more often by cabin crew whose flights were less than 2 hours than cabin crew whose flights were more than 9 hours ***p ≤ .008, F = 4.1201 Ms = 4.300*	*p ≤ .846, F = 0.167*	Carry on luggage related incidents was experienced more often by cabin crew operating on commuter aircraft than those who operated on international aircraft, and those who operated on both international and

				commuter aircraft *$p \leq .013$, $F = 4.507$ $Ms = 4.807$
Seat Assignments in Individual Incidents	Cabin crew operating on domestic route experienced more seat assignment related incidents than those serving international flights ***$p \leq .005$, $F = 6.518$, $Ms = 5.658$	Seat assignment related incidents were experienced more often by cabin crew on flights of less than 2 hours than those whose flight were more than 9 hours *$p \leq .019$, $F = 3.426$ $Ms = 3.060$	$p \leq .827$, $F = 0.190$	Cabin crew operating on commuter aircraft experienced more seat assignment related incidents than those who operated on both international and commuter aircraft *$p \leq .031$, $F = 3.585$ $Ms = 3.234$
Food Service in Individual Incidents	$p \leq .994$, $F = 0.006$ $Ms = 0.007$	$p \leq .903$ $F = 0.189$	$p \leq .580$, $F = 0.547$	$p \leq .325$, $F = 1.134$ $Ms = 1.238$
Cabin crew service in individual incidents	$p \leq .927$, $F = 0.076$ $Ms = 0.054$	$p \leq .933$, $F = 0.144$	$p \leq .084$, $F = 2.524$	$p \leq .298$, $F = 1.221$ $Ms = 0.848$
Disputes with other passengers in individual incidents	$p \leq .260$, $F = 1.364$ $Ms = 0.866$	$p \leq .229$, $F = 1.460$	$p \leq .493$, $F = 0.711$	$p \leq .635$, $F = 0.456$ $Ms = 0.292$
Fear of Flight in individual incidents	Incidents related to fear of flight were experienced more often by cabin crew who served domestic flights than those who served on international flights ****$p \leq .001$, $F = 8.070$, $Ms = 6.522$	Fear of flight related incidents experienced more often by cabin crew who operated on flights were less than 2 hours than those who operated on flights that were more than 9 hours ***$p \leq .002$, $F = 5.067$ $Ms = 4.154$	$p \leq .804$, $F = 0.219$	$p \leq .069$, $F = 2.738$ $Ms = 2.405$
Discomfort in individual incidents	$p \leq .309$, $F = 1.185$	$p \leq .895$, $F = 0.202$	$p \leq .067$, $F = 2.771$	$p \leq .160$, $F = 1.859$ $Ms = 1.645$
Group Incidents				
Alcohol in group incidents	Alcohol related incidents was found to have been experienced more often by cabin crew on international	$p \leq .064$, $F = 2.484$	$p \leq .055$, $F = 2.975$	$p \leq .381$, $F = 0.972$ $Ms = 1.444$

	flight than those on domestic flights *$p \leq .05$, $F = 3.353$ $Ms = 4.770$			
Smoking in group incidents	Respondents who frequently travel on international flights experienced more incidents than those who travel on domestic flights *$p \leq .001$, $F = 6.919$ $Ms = 6.395$	Smoking related incidents were experienced more often by cabin crew who operated on flights of more than 9 hours **$p \leq .009$, $F = 4.006$ $Ms = 3.825$	$p \leq .927$, $F = 0.076$	Smoking related incidents were experienced more often by those who operated on international aircrafts than those who operated on both international and commuter *$p \leq .012$, $F = 4.602$ $Ms = 4.423$
Carry on Luggage in group incidents	$p \leq .977$, $F = 0.023$	$p \leq .183$, $F = 1.646$	$p \leq .490$, $F = 0.718$	$p \leq .474$, $F = 0.751$ $Ms = 0.824$
Seat Assignments in group incidents	$p \leq .238$, $F = 1.454$	$p \leq .613$, $F = 0.605$	$p \leq .096$, $F = 2.394$	$p \leq .883$, $F = 0.124$ $Ms = 0.141$
Food Service in group incidents	$p \leq .192$ $F = 1.672$	$p \leq .132$, $F = 1.991$	$p \leq .828$, $F = 0.190$	$p \leq .168$, $F = 1.814$ $Ms = 1.386$
Dispute with other Passengers in group incidents	$p \leq .121$, $F = 2.149$	$p \leq .139$, $F = 1.868$	$p \leq .985$, $F = 0.016$	$p \leq .455$, $F = 0.792$ $Ms = 0.853$
Fear of Flight in group incidents	Incidents related to fear of flight were experienced more often by cabin crew serving domestic flights than those who served international flights * $\leq .050$, $F = 4.310$	$p \leq .100$, $F = 2.131$	$p \leq .956$, $F = 0.045$	$p \leq .547$, $F = 0.606$ $Ms = 0.229$
Discomfort in group incidents	$p \leq .109$, $F = 2.261$	$p \leq .637$, $F = 0.568$	$p \leq .226$, $F = 1.507$	Discomfort related incidents were experienced more often by cabin crew who operated on commuter aircrafts than those who operated on international

				aircraft and those who operated on international and commuter aircrafts ****p ≤ .000,* *F =8.229* *Ms = 5.222*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Gender was found to be related to the causes of in-flight incidents (See table 4.11b). Alcohol and seat assignments were found to be significant for individual incidents. Male cabin crew, *(x = 4.288, σ = 0.800)* experienced more cases of alcohol induced incidents than female cabin crew *(x = 3.886, σ = 1.015)*. Seat assignments related incidents were also found to have been experienced more often by female cabin crew *(x = 3.577, σ = 0.995)* than male cabin crew *(x = 3.212, σ = 0.914)*. Seat assignment was also found to be significant for group incidents. Male cabin crew *(x = 2.085, σ = 0.951)* experience less seat assignment incidents than female cabin crew *(x = 2.515, σ = 1.099)*.

Table 4.11b T-tests and ANOVA Tests for Demographics and Causes of In-flight Incidents (Cabin Crew)

Individual Incidents				
Incidents	**Gender** *Male and Female* df(107)	**Ethnicity** *Asian, Caucasians & Polynesians* df(99)	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50* df(93)	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD* df(93)
Alcohol in Individual Incidents	Male cabin crew experienced more alcohol related incidents than female cabin crew **p ≤ .020,* *t = -2.366* *MD = 0.403*	*p ≤ .735,* *F = 0.308*	*p ≤ .093,* *F = 1.863*	*p ≤ .603* *F = 0.621*
Smoking in Individual Incidents	*p ≤ .481,* *t= 0.707* *Ms = -0.151*	*p ≤ .256,* *F = 1.378*	*p ≤ .447,* *F = 0.973*	*p ≤ .849,* *F = 0.267*

Carry on Luggage in Individual Incidents	$p \leq .148$, $t = 2.084$ $MD = 0.366$	$p \leq .742$, $F = 0.299$	$p \leq .988$, $F = 0.082$	$p \leq .075$ $F = 2.358$
Seat Assignments in Individual Incidents	Seat assignments related incidents was also found to have been experienced more often by female cabin crew than male cabin crew $*p \leq .039$, $t = 1.454$ $MD = 0.279$	$p \leq .828$, $F = 0.188$	$p \leq .196$, $F = 1.466$	$p \leq .741$, $F = 0.417$
Food Service in Individual Incidents	$p \leq .774$, $t = 0.288$	$p \leq .235$, $F = 1.465$	$p \leq .492$, $F = 0.908$	$p \leq .821$ $F = 0.308$
Cabin crew service in individual incidents	$p \leq .308$, $t = 1.023$	$p \leq .238$, $F = 1.454$	$p \leq .254$, $F = 1.320$	$p \leq .659$, $F = 0.653$
Disputes with other passengers in individual incidents	$p \leq .806$, $t = - -0.247$	$p \leq .692$, $F = 0.370$	$p \leq .977$, $F = 0.198$	$p \leq .861$ $F = 0.250$
Fear of Flight in individual incidents	$p \leq .381$, $t = 0.879$	$p \leq .545$ $F = 0.610$	$p \leq .147$, $F = 1.662$	$p \leq .508$ $F = 0.779$
Discomfort	$p \leq .258$, $t = 1.364$	$p \leq .494$, $F = 0.709$	$p \leq .854$, $F = 0.436$	$p \leq .432$ $F = 0.924$
Group Incidents				
Alcohol in group incidents	$p \leq .706$, $t = 0.378$	$p \leq .248$, $F = 1.411$	$p \leq .443$, $F = 0.994$	$*p \leq .176$ $F = 1.678$
Smoking in group incidents	$p \leq .991$, $t = 0.012$	$p \leq .115$, $F = 2.209$	$p \leq .643$, $F = 0.708$	$p \leq .720$ $F = 0.447$
Carry on Luggage in group incidents	$p \leq .143$, $t = 1.473$	$p \leq .979$, $F = 0.021$	$p \leq .592$, $F = 0.774$	$p \leq .651$ $F = 0.548$
Seat Assignments in group incidents	Male cabin crew experience less seat assignment incidents than female cabin crew $*p \leq .032$, $t = 2.174$	$p \leq .275$, $F = 1.308$	$p \leq .548$ $F = 0.831$	$p \leq .457$ $F = 0.874$
Food Service in group incidents	$p \leq .107$, $t = 1.643$	$p \leq .932$, $F = 0.070$	$p \leq .951$, $F = 0.267$	$p \leq .766$ $F = 0.382$

Dispute with other Passengers in group incidents	$p \leq .177$, $t = -1.360$	$p \leq .934$, $F = 0.629$	$p \leq .666$, $F = 0.680$	$p \leq .228$ $F = 1.464$
Fear of Flight in group incidents	$p \leq .092$, $t = 1.699$	$p \leq .801$, $F = 0.068$	$p \leq .896$, $F = 0.371$	$p \leq .896$ $F = 0.201$
Discomfort in group incidents	$p \leq .347$, $t = 0.945$	$p \leq .905$, $F = 0.100$	$p \leq .279$, $F = 1.266$	$p \leq .723$ $F = 0.443$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

The position of cabin crew was found to be related to the causes of in-flight incidents (See table 4.11c). Junior cabin crew ($x = 2.073$, $\sigma = 0.813$) were found to have experienced more individual incidents related to disputes with other passengers than senior cabin crew ($x = 1.718$, $\sigma = 0.723$). No relations other relationships were identified for other items for individual incidents. Carry on luggage and fear of flight was found to be related to group incidents. Junior cabin crew ($x = 2.416$, $\sigma = 1.030$) also experienced more incidents related to carry on baggage than senior cabin crew ($x = 1.917$, $\sigma = 0.937$). There were also indications that junior cabin crew ($x = 1.573$, $\sigma = 0.640$) experienced more incidents related to fear of flight than senior cabin crew ($x = 1.333$, $\sigma = 0.478$).

The type of airlines, age, education, experience and ethnicity were found not to be related to the causes at all levels of individual and group incidents (See table 4.11a, 4.911 and 4.11c).

Table 4.11c T-Tests and ANOVA Tests for Demographics and Causes of In-flight Incidents (Cabin Crew)

Individual Incidents		
Incidents	**Position** *Senior cabin crew and Junior cabin crew* df(121)	**Experience** *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years* df(112)
Alcohol in Individual Incidents	$p \leq .193$, $t = -1.309$	$p \leq .675$, $F = 0.696$
Smoking in Individual Incidents	$p \leq .810$, $t = 0.242$	$p \leq .190$, $F = 1.457$

Carry on Luggage in Individual Incidents	$p \leq .186$, $t = 1.330$	$p \leq .418$, $F = 1.025$
Seat Assignments in Individual Incidents	$p \leq .107$, $t = 1.626$	$p \leq .129$, $F = 1.647$
Food Service in Individual Incidents	$p \leq .357$, $t = 0.926$	$p \leq .701$, $F = 0.665$
Cabin crew service in individual incidents	$p \leq .087$, $t = 1.727$	$p \leq .142$, $F = 1.599$
Disputes with other passengers in individual incidents	Junior cabin crew were found to have experienced more individual incidents related to disputes with other passengers than senior cabin crew $*p \leq .022$, $t = -2.324$	$p \leq .317$, $F = 1.185$
Fear of Flight in individual incidents	$p \leq .295$,, $t = 1.052$	$p \leq .124$ $F = 1.668$
Discomfort	$p \leq .150$, $t = 1.447$	$p \leq .278$, $F = 1.257$
Group Incidents		
Alcohol in group incidents	$p \leq .425$, $t = 0.801$	$p \leq .555$, $F = 0.842$
Smoking in group incidents	$p \leq .828$, $t = -0.218$	$p \leq .431$ $F = 1.007$
Carry on Luggage in group incidents	Junior cabin crew also experienced more incidents related to carry on baggage than senior cabin crew $*p \leq .015$, $t = 2.466$	$p \leq .804$ $F = 0.538$
Seat Assignments in group incidents	$p \leq .070$, $t = 1.832$	$p \leq .314$, $F = 1.190$
Food Service in group incidents	$p \leq .059$, $t = 1.908$	$p \leq .471$, $F = 0.950$
Dispute with other Passengers in group incidents	$p \leq .282$, $t = -1.081$	$p \leq .764$, $F = 0.588$

Fear of Flight in group incidents	Junior cabin crew experienced more incidents related to fear of flight than senior cabin crew *$p \leq .048$, $t = 1.996$	$p \leq .870$, $F = 0.434$
Discomfort in group incidents	$p \leq .078$,, $t = 1.778$	$p \leq .182$, $F = 1.481$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.2.3 Passengers

This section discusses the causes of in-flight incidents in relation to passengers. They were asked to rate the causes of in-flight incidents according to the frequency of occurrences. Similar to cabin crew, alcohol was rated by passengers as the top cause for individual incidents (See tables 4.7 and 4.8). Carry on luggage was ranked second for individual incidents, however it was ranked 4th in group incident. There were also differences for discomfort, it was ranked 3rd for individual incidents but was ranked 5th for group incidents. Similarly, food service was ranked 5th for individual incidents but was ranked 7th for group incidents. Disputes with other passengers showed the greatest differences. It was ranked 6th for individual incidents while being ranked 2nd for group incidents. This could be due to the fact that passengers in groups feel that they have less to loose in a conflict and thus are less concerned about inhibiting their behaviour. Smoking was ranked 9th in individual incidents while it was ranked 7th in group incidents.

Compared to cabin crew, passengers rated the causes for individual and group incidents quite differently (See tables 4.7 and 4.8). For individual incidents, seat assignment was ranked 2nd by cabin crew while passengers ranked it 4th. Discomfort was ranked 5th by cabin crew and 2nd by passengers. Smoking also showed differences. It was ranked 6th by cabin crew and 9th by passengers. Disputes with other passengers was ranked 9th while passengers ranked it 6th. The disparity shown suggests that cabin crew perceived passenger needs and problems quite differently.

Demographics and Causes of In- fight Incidents (Passengers)

This section examines the data to determine if demographic variables were related to the causes of individual and group in-flight incidents. Gender was found to have an

effect on the causes of group incidents (See table 4.12a). Female passengers (x = *2.878*, σ = *1.144*) experienced more incidents related to carry on baggage than male passengers (x = *2.391*, σ = *1.043*).

Age was found to have an effect on the causes of individual incidents (See table 4.12a). Passengers whose age was between 35 and 39 (x = *3.400*, σ = *1.140*) experienced more individual incidents related to fear of flight than those above 50 (x = *1.417*, σ = *0.668*). Alcohol related incidents were also experienced more often by those whose age was between 30 and 34 (x = *3.667*, σ = *1.112*) than those who were above 50 (x = *1.929*, σ = *1.384*). Food service and disputes with other passengers were also significant for individual incidents; however the differences between groups could not be identified by post hoc test (Scheffe). The largest mean differences between groups for food services were between those who aged between 30 and 34 (x = *2.813*, σ = *1.223*) and those who aged 40 to 44 (x = *1.714*, σ = *0.755*). The largest mean differences between groups for disputes with other passengers were between those who aged under 24 (x = *2.842*, σ = *1.220*) and those who above 50 (x = *1.786*, σ = *0.893*).

Smoking, seat assignment and dispute with other passengers were found to be significant for group incidents (See table 4.12a). Passengers in the age group above 50 (x = *1.583*, σ = *0.996*) experienced less incidents related to smoking than passengers aged between 30 and 34 (x = *3.182*, σ = *0.981*) and those whose age were between 40 and 44 (x = *3.500*, σ = *1.048*). This could be due to health concerns of the elderly which discourages smoking. Differences between groups cannot identify for incidents related to seat assignment and dispute with other passengers during the post hoc test (Scheffe). The largest mean differences between groups for seat assignments were between those who aged between 35 and 39 (x = *3.333*, σ = *0.577*) and those who aged 40 to 44 (x = *1.750*, σ = *0.866*). The largest mean differences between groups for disputes with other passengers were between those who aged between 30 and 34 (x = *3.545*, σ = *0.934*) and those who aged above 50 (x = *1.833*, σ = *0.835*).

Education was found to be related to individual and group in-flight incidents (See table 4.12a). Carry on baggage; disputes with other passengers and cabin crew service were also significant for individual incidents. Passengers who had obtained a

Diploma ($x = 1.286$, $\sigma = 4.880$) experienced less incidents related to cabin crew service than those who obtained their degrees ($x = 2.576$, $\sigma = 1.031$). Passengers who started their university education ($x = 2.906$, $\sigma = 1.174$) experienced more incidents related to disputes with other passengers than those who attended high school ($x = 1.864$, $\sigma = 0.941$) and those who obtained a Diploma ($x = 1.857$, $\sigma = 0.900$). Passengers who had obtained a Diploma ($x = 1.286$, $\sigma = 4.880$) also experienced less incidents related to carry on luggage than those who obtained their degrees ($x = 3.265$, $\sigma = 0.963$). Food services and disputes with other passengers were found to be significant for group incidents. Those who attended Polytechnic ($x = 1.429$, $\sigma = 0.534$) experienced fewer incidents related to disputes with other passengers than those who completed their post graduate Degree ($x = 3.500$, $\sigma = 0.836$). Differences between groups cannot be identified for food services during post hoc test (Scheffe). The largest mean differences however were between those who had obtained a post graduate degree ($x = 2.833$, $\sigma = 0.753$) and those who had only attended high school ($x = 1.750$, $\sigma = 0.774$).

Ethnicity was found to be related to the causes of individual in-flight incidents, items in group incidents on the other hand showed no significance (See table 4.12a). Asians passengers ($x = 2.578$, $\sigma = 0.965$) were found to have experienced more incidents related to cabin crew service than Caucasian passengers ($x = 2.061$, $\sigma = 1.049$). Incidents related to disputes with other passengers were also experienced more often by Asian passengers ($x = 2.696$, $\sigma = 1.171$) than Caucasian passengers ($x = 1.980$, $\sigma = 0.958$).

Table 4.12a T-Tests and ANOVA Tests for Demographics and causes of in-flight Incidents (Passengers)

Individual Incidents				
Incidents	**Gender**	**Ethnicity**	**Age**	**Education**
	Male and Female df(92)	*Asian, Caucasians & Polynesians* df(860)	*Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50* df(93)	*Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD* df(89)

Alcohol in Individual Incidents	*p ≤ .248, t = -1.161*	*p ≤ .615, F = 0.489*	Alcohol related incidents were also experienced more often by those whose age was between 30 and 34 than those who were above 50 **p ≤ .016, F = 2.764*	*p ≤ .399, F = 1.023*
Smoking in Individual Incidents	*p ≤ 083, t= 1.753*	*p ≤ .520 F = 0.658*	*p ≤ .531, F = 0.856*	*p ≤ .729, F = 0.509*
Carry on Luggage in Individual Incidents	*p ≤ .148, t= 2.084*	*p ≤ .514, F = 0.671*	*p ≤ .141, F = 1.655*	Passengers who had obtained a Diploma also experienced less incidents related to carry on luggage than those who obtained their degrees **p ≤ .037, F = 2.662 Ms = 3.410*
Seat Assignments in Individual Incidents	*p ≤ .385, t= -.872*	*p ≤ .084, F = 2.541*	*p ≤ .580, F = 0.790*	*p ≤ .373 F = 1.076*
Food Service in Individual Incidents	*p ≤ .070, t = -1.832*	*p ≤ .455, F = 0.795*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .041, F = 2.294*	*p ≤ .212, F = 1.489 Ms = 1.622*
Cabin crew service in individual incidents	*p ≤ .087, t= -1.727*	Asians passengers were found to have experienced more incidents related to cabin crew service than Caucasian passengers **p ≤ 045, F = 3.199 Ms = 3.186*	*p ≤ .055, F = 2.151*	Passengers who attended Polytechnic experienced less incidents related to cabin crew service than those who completed their degrees *****p ≤ .001 F = 5.143 Ms = 4.601*
Disputes with other	*p ≤ .249, t = -1.159*	Incidents related to disputes with	Differences between groups	Passengers who started their

passengers in individual incidents		other passengers were experienced more often by Asian passengers than Caucasian passengers **p ≤ .006,* *F = 5.425* *Ms = 6.469*	cannot be identified by post hoc test (Scheffe) **p ≤ .031,* *F = 2.437* *Ms = 2.888*	university education experienced more incidents related to disputes with other passengers than those who attended high school and Polytechnic ****p ≤ .002* *F = 4.662* *Ms = 5.322*
Fear of Flight in individual incidents	*p ≤ .307* *t = 1.028*	*p ≤ .674* *F = 0.396*	Passengers whose age were between 35 to 39 experienced more individual incidents related to fear of flight than those above 50 **p ≤ .012,* *F = 2.895* *Ms = 2.938*	*p ≤ .461* *F =0.911*
Discomfort	*p ≤ .866,* *t = 0.169*	*p ≤ .328,* *F = 1.127*	*p ≤ .665,* *F = 0.681*	*p ≤ .604* *F =0.686*
Group Incidents				
Alcohol in group incidents	*p ≤ .367,* *t = -0.906*	*p ≤ .295,* *F = 1.238*	*p ≤ .262,* *F = 1.310*	*p ≤ .238* *F =1.410*
Smoking in group incidents	*p ≤ .310,* *t = 1.021*	*p ≤ .778,* *F = 0.252*	Passengers in the age group of above 50 experienced less incidents related to smoking than passengers whose age were between 30 to 34 and those whose age were between 40 to 44 *****p ≤ .000,* *F = 4.706* *Ms = 4.580*	*p ≤ .642* *F = 0.631*
Carry on Luggage in group incidents	Female passengers experienced more incidents related to carry on baggage than male passengers **p ≤ .041,* *t = 2.075*	*p ≤ .381,* *F = 0.976*	*p ≤ .273,* *F = 1.286*	*p ≤ .840* *F = 0.354*
Seat Assignments in group	*p ≤ .681,* *t =2.174*	*p ≤ .175,* *F = 1.780*	Differences between groups cannot be	*p ≤ .212* *F = 1.495*

incidents			identified by post hoc test (Scheffe) *$p \leq .042$ $F = 2.301$ $Ms = 3.026$	
Food Service in group incidents	$p \leq .626$, $t = 0.489$	$p \leq .424$, $F = 0.867$	$p \leq .312$, $F = 1.206$	Differences between groups cannot be identified by post hoc test (Scheffe) *$p \leq .046$ $F = 2.541$
Dispute with other Passengers in group incidents	$p \leq .427$, $t = -0.799$	$p \leq .154$, $F = 1.911$	Differences between groups cannot be identified by post hoc test (Scheffe) *$p \leq .033$, $F = 2.425$ $Ms = 3.238$	Those who attended Polytechnic experienced less incidents than those who completed their masters degree or PHD *$p \leq .016$ $F = 3.232$
Fear of Flight in group incidents	$p \leq .810$, $t = -0.241$	$p \leq .661$, $F = 0.416$	$p \leq .177$, $F = 1.538$	$p \leq .554$ $F = 0.760$
Discomfort in group incidents	$p \leq .633$, $t = 0.479$	$p \leq .636$, $F = 0.456$	$p \leq .323$, $F = 1.185$	$p \leq .360$ $F = 1.106$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

Frequency of travel was found to be related to the causes of in-flight incidents (See table 4.12b). Carry on luggage, cabin crew service, fear of flight and discomforts were found to be significant for individual incidents. Passengers who travelled more than 30 times ($x = 3.400$, $\sigma = 1.516$) in the last 2 years, experienced more incidents related to fear of flight than those who travelled less than 11 times ($x = 1.938$, $\sigma = 0.953$). Passengers who travelled more than 30 times ($x = 4.200$, $\sigma = 1.303$) experienced more discomfort related incidents than those who travelled between 11 and 20 ($x = 2.143$, $\sigma = 1.464$) times in the last 2 years. Passengers how travelled less than 11 times ($x = 2.771$, $\sigma = 1.119$) also experienced fewer incident related to carry on luggage than those who travelled more than 30 times ($x = 4.200$, $\sigma = 0.836$). Passengers who travelled less than 11 times ($x = 2.771$, $\sigma = 1.119$) experienced fewer

incidents related to cabin crew service than those who travelled more than 30 times ($x = 2.771$, $\sigma = 1.119$).

Seat assignments, fear of flight and discomfort were found to be related to the causes of group incidents (See table 4.12b). Passengers who travelled more than 30 times ($x = 4.500$, $\sigma = 0.577$) in the last 2 years, experienced more incidents related to seat assignments than those who travelled less than 11 times ($x = 2.676$, $\sigma = 1.131$) and those who travelled between 11 and 20 times ($x = 2.000$, $\sigma = 0.816$). Incidents related to fear of flight were also experienced more often by those who travelled more than 30 times ($x = 3.250$, $\sigma = 1.500$) in the last 2 years than those who travelled less than 11 times ($x = 2.220$, $\sigma = 0.938$. Those who travelled more than 30 times ($x = 3.400$, $\sigma = 1.516$) in the last 2 years also experienced more discomfort related incidents than those who travelled less than 11 times ($x = 2.507$, $\sigma = 1.145$) and those who travelled between 11 and 20 times ($x = 1.800$, $\sigma = 1.303$).

Length of flight was found to be related to the causes of individual in-flight incidents (See table 4.12b). Passengers whose flights were more than 9 hours ($x = 2.960$, $\sigma = 1.105$) experienced more seat assignment related incidents than those whose flight were less than 2 hours ($x = 2.400$, $\sigma = 1.183$). Passengers whose flights were more than 9 hours ($x = 2.592$, $\sigma = 0.977$) and passengers whose flights were between 5 and 9 hours ($x = 2.778$, $\sigma = 1.202$) experienced more cabin crew service related incidents than those whose flights were between 2 and 5 hours ($x = 1.667$, $\sigma = 0.784$). Items in group incidents on the other hand were not significant.

The type of airlines and the type of route had no effect on the causes of in-flight incidents (See tables 4.12a and 4.12b)

Table 4.12b ANOVA Tests for Demographics and Causes of In-flight Incidents (Passengers)

Individual Incidents				
Incidents	**Route** *International, Domestic and Combined international and domestic* *df(97)*	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours* *df(98)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines* *df(91)*	**Frequency of Travel** *Less than 11, 11 to 20, 21 to 30, more than 30* *df(90)*
Alcohol in Individual Incidents	*p ≤ .141, F = 1.996*	*p ≤ .866, F = 0.680*	*p ≤ .266, F = 1.325*	*p ≤ .444 F = 0.900*
Smoking in Individual Incidents	*p ≤ .880, F = 0.128*	*p ≤ .565 F = 0.683*	*p ≤ .300, F = 1.240*	*p ≤ .149, F = 1.819*
Carry on Luggage in Individual Incidents	*p ≤ .986, F = 0.014*	*p ≤ .480, F = 0.831*	*p ≤ .442, F = 0.944*	Incidents related to carry on luggage were experienced more often by those who travelled more than 30 than those who travelled less than 11 times **p ≤ .039 F = 2.903 Ms = 3.633*
Seat Assignments in Individual Incidents	*p ≤ .445, F= 0.816*	Passengers whose flights were more than 9 hours experienced more seat assignment related incidents than those whose flight were less than 2 hours ** ≤ .033, F = 3.027 Ms = 3.584*	*p ≤ .392, F = 1.037*	*p ≤ .429, F = 0.932*
Food Service in Individual Incidents	*p ≤ .602, F = 0.511*	*p ≤ .076, F = 2.363*	*p ≤ .118, F = 1.891*	*p ≤ .071 F = 2.420 Ms = 2.569*
Cabin crew service in individual incidents	*p ≤ .601, F= 0.513*	Passengers whose flights were more than 9 hours and passengers whose flights were between 5 and 9 hours experienced more cabin crew service related	*p ≤ .133, F = 1.810*	Incidents related to cabin crew service were experienced more often by those who travelled more than 30 times than those who travelled less than 11 times

		incidents than those whose flights were between 2 and 5 hours *****p* ≤ .001, *F* = 6.418 *Ms* = 5.736		**p* ≤ .020, *F* = 3.435 *Ms* = 3.320
Disputes with other passengers in individual incidents	*p* ≤ .347, *F* = 1.070	*p* ≤ .162, *F* = 1.749	*p* ≤ .148, *F* = 1.739	*p* ≤ .279 *F* = 1.300 *Ms* = 1.667
Fear of Flight in individual incidents	*p* ≤ .778 *F* = 0.251	*p* ≤ .738 *F* = 0.421	*p* ≤ .719, *F* = 0.522	Passengers who travelled more than 30 times in the last 2 years, experienced more incidents related to fear of flight than those who travelled less than 11 times and those who travelled between 11 and 20 times **p* ≤ .015 *F* = 3.670 *Ms* = 3.880
Discomfort	*p* ≤ .671, *F* = 0.400	*p* ≤ .596, *F* = 0.632	*p* ≤ .604, *F* = 0.685	Passengers who travelled more than 30 times experienced more discomfort related incidents than those who travelled between 11 and 20 **p* ≤ .019 *F* = 3.461 *Ms* = 4.354
Group Incidents				
Alcohol in group incidents	*P* ≤ .943, *F* = 0.059	*p* ≤ .446, *F* = 0.898	*p* ≤ .665, *F* = 0.598	*p* ≤ .393 *F* = 1.009
Smoking in group incidents	*p* ≤ .811, *F* = 0.210	*p* ≤ .524, *F* = 0.753	*p* ≤ .294, *F* = 1.257	*p* ≤ .543 *F* = 0.720
Carry on Luggage in group incidents	*P* ≤ .117, *F* = 2.201	*p* ≤ .390, *F* = 1.015	*p* ≤ .812, *F* = 0.394	*p* ≤ .062 *F* = 2.542
Seat Assignments in group incidents	*P* ≤ .172, *F* = 1.797	*p* ≤ .268, *F* = 1.336	*p* ≤ .622, *F* = 0.659	Passengers who travelled more than 30 times in the last 2 years, experienced more

				incidents related to seat assignments than those who travelled less than 11 times *$p \leq .014$ $F = 3.769$ $Ms = 4.963$
Food Service in group incidents	$P \leq .864$, $F = 0.146$	$p \leq .140$, $F = 1.874$	$p \leq .358$ $F = 1.108$	$p \leq .795$ $F = 0.342$
Dispute with other Passengers in group incidents	$P \leq .335$, $F = 1.109$	$p \leq .117$, $F = 2.024$	$p \leq .904$, $F = 0.259$	$p \leq .230$ $F = 1.466$
Fear of Flight in group incidents	$P \leq .226$, $F = 1.516$	$p \leq .624$, $F = 0.588$	$p \leq .113$, $F = 1.936$	Incidents related to fear of flight were also experienced more often by those who travelled more than 30 in the last 2 years than those who travelled less than 11 times *$p \leq .019$ $F = 3.505$ $Ms = 2.847$
Discomfort in group incidents	$P \leq .238$, $F = 1.460$	$p \leq .552$, $F = 0.704$	$p \leq .661$, $F = 0.603$	Passengers who travelled more than 30 times in the last 2 years also experienced more discomfort related incidents than those who travelled less than 11 times and those who travelled between 11 and 20 times *$p \leq .012$ $F = 3.884$ $Ms = 5.218$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.2.4 Airport Passengers

As discussed in 4.2, airport passengers differed from passengers surveyed via the Internet. This section discusses the results of the questionnaire by airport passengers. Alcohol was rated the top cause for both individual and group in-flight incidents (See tables 4.7 and 4.8). There were differences between individual and group incidents related to discomfort, food service, smoking and disputes with other passengers. Group incidents related to disputes with other passengers ranked 3rd in group incidents and was ranked 6th for individual incidents. Incidents related to smoking ranked 9th for individual incidents but was ranked 6th for group incidents. Food service ranked 5th for individual incidents and was ranked 7th for group incidents. Discomfort related incidents was ranked 2nd for individual incidents but was ranked 4th for group incidents.

Demographics and Causes of In-flight Incidents (Airport Passengers)

This section examines the data to see if demographic variables were related to the causes of in-flight incidents. Ethnicity was found to be related to the causes of in-flight incidents See table (4.13a and 4.13b) Seat assignment related incidents were experienced more often by Asian passengers ($x = 2.773$, $\sigma = 0.972$) than passengers who were Caucasians ($x = 2.097$, $\sigma = 0.907$). Asian passengers ($x = 2.545$, $\sigma = 1.184$) also experienced more incidents related to disputes with other passengers than Caucasian passengers ($x = 2.476$, $\sigma = 0.983$). Cabin crew service related incidents was also experienced more often by Asian passengers ($x = 1.667$, $\sigma = 0.784$) than Caucasian passengers ($x = 1.727$, $\sigma = 0.761$).

Age was found to be related to the causes of individual in-flight incidents (See table 4.13a). Food service related incidents were significant; however, the differences between groups could not be identified during the post hoc test (Scheffe).

Education was found to be related to the causes of individual in-flight incidents (See table 4.13a). Passengers obtained their degree ($x = 3.227$, $\sigma = 0.869$) experienced more incidents related to carry on baggage than those who had only started University ($x = 2.071$, $\sigma = 0.917$). Passengers who had obtained their degree ($x = 2.636$, $\sigma = 0.953$) also experienced more incidents related to food services than those who had only attended high school ($x = 1.625$, $\sigma = 0.806$). Passengers who had obtained a degree ($x = 2.476$, σ

= *1.078)* also experienced more incidents related to cabin crew service than those who had only been to high school (*x* = *1.625*, *σ* = *0.718)*. Disputes with other passengers and discomfort were also significant for individual incidents; however, differences could be identified during the post hoc test (Scheffe). The largest mean differences for disputes with other passengers were between those who had obtained a diploma (*x* = *1.500*, *σ* = *0.547)* and those who had obtained a degree (*x* = *2.733*, *σ* = *0.869)*. The largest mean differences for discomfort were between those who had obtained a degree (*x* =*3.227*, *σ* = *1.066)* and those who had obtained a postgraduate degree (*x* = *1.500*, *σ* = *0.707)*. Education was found to be unrelated to group incidents.

Table 4.13a T-Tests and ANOVA Tests for Demographics and Causes of In-flight Incidents

Individual Incidents				
Incidents	**Gender** *Male and Female df(54)*	**Ethnicity** *Asian, Caucasians & Polynesians df(51)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 df(48)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD df(46)*
Alcohol in Individual Incidents	*p* ≤ *.697*, *t* = *0.391*	*p* ≤ *.203*, *F* = *1.639*	*p* ≤ *.173*, *F* = *1.658*	*p* ≤ *.751*, *F* = *0.479*
Smoking in Individual Incidents	*p* ≤ *089*, *t* = *-1.732*	*p* ≤ *.428* *F* = *0.863*	*p* ≤ *.281*, *F* = *1.301*	*p* ≤ *.749*, *F* = *0.482*
Carry on Luggage in Individual Incidents	*p* ≤ *.062*, *t* = *-1.905*	*p* ≤ *.413*, *F* = *0.898*	*p* ≤ *.727*, *F* = *0.513*	Passengers who completed their degree at Polytechnics and Universities experienced more incidents than those who started University ****p* ≤ *.004*, *F* = *4.400*, *Ms* = *3.990*
Seat Assignments in Individual Incidents	*p* ≤ *.691*, *t* = *-.399*	Seat assignment related incidents were experienced more often by Asian passengers than passengers	*p* ≤ *.263*, *F* = *1.351*	*p* ≤ *.541* *F* = *0.784*

		who were Caucasians $**p \leq .008$, $F = 5.208$ $Ms = 4.486$		
Food Service in Individual Incidents	$p \leq .340$, $t = -0.962$	$p \leq .100$, $F = 2.399$	Differences between groups cannot be identified by post hoc test (Scheffe) $*p \leq .026$, $F = 3.013$	Passengers who completed their degrees at Polytechnics and Universities also experienced more incidents related to food services than those who attended high school $*p \leq .033$, $F = 2.833$ $Ms = 2.509$
Cabin crew service in individual incidents	$p \leq .663$, $t = -0.438$	Asian passengers experienced more cabin crew related incidents than Caucasians $**p \leq 009$, $F = 5.070$ $Ms = 3.674$	$p \leq .297$, $F = 1.259$	Passengers who had obtained a degree also experienced more incidents related to cabin crew service than those who had only been to high school $*p \leq .011$, $F = 3.599$ $Ms = 2.540$
Disputes with other passengers in individual incidents	$p \leq .606$, $t = 0.518$	Asian passengers also experienced more incidents related to disputes with other passengers than Caucasian passengers $*p \leq .043$, $F = 3.318$ $Ms = 3.500$	$p \leq .193$ $F = 1.578$	Differences between groups cannot be identified by post hoc test (Scheffe) $*p \leq .038$ $F = 2.732$ $Ms = 2.744$
Fear of Flight in individual incidents	$p \leq .373$ $t = 0.897$	$p \leq .272$ $F = 1.334$	$*p \leq .030$ $F = 2.905$ $Ms = 3.177$	$p \leq .474$ $F = 0.893$
Discomfort	$p \leq .539$, $t = 0.618$	$p \leq .266$, $F = 1.358$	$p \leq .140$, $F = 1.810$	Differences between groups cannot be identified by post hoc test (Scheffe) $*p \leq .050$, $F = 2.536$ $Ms = 2.709$

Group Incidents				
Alcohol in group incidents	$p \leq .941$, $t = 0.074$	$p \leq .180$, $t = 1.772$	$p \leq .681$, $F = 0.576$	$p \leq .522$ $F = 0.815$
Smoking in group incidents	$p \leq .839$, $t = -0.205$	$p \leq .981$, $t = 0.019$	$p \leq .270$, $F = 1.338$	$p \leq .325$ $F = 1.197$
Carry on Luggage in group incidents	$p \leq .080$, $t = 1.787$	$p \leq .577$, $F = 0.555$	$p \leq .273$, $F = 1.286$	$p \leq .315$ $F = 1.220$
Seat Assignments in group incidents	$p \leq .276$, $t = 1.102$	$p \leq .319$, $F = 1.171$	$p \leq .063$ $F = 2.398$	$p \leq .331$ $F = 1.182$
Food Service in group incidents	$p \leq .647$, $t = 0.461$	$p \leq .070$, $F = 2.809$	$p \leq .052$, $F = 2.542$	$p \leq .358$ $F = 1.221$
Dispute with other Passengers in group incidents	$p \leq .855$, $t = 0.183$	$p \leq .199$, $F = 1.671$	$p \leq .051$, $F = 2.562$	$p \leq .124$ $F = 1.915$
Fear of Flight in group incidents	$p \leq .656$, $t = 0.448$	$p \leq .854$, $F = 0.159$	$p \leq .107$, $F = 2.020$	$p \leq .579$ $F = 0.725$
Discomfort in group incidents	$p \leq .555$, $t = 0.595$	$p \leq .692$, $F = 0.371$	$p \leq .058$, $F = 2.465$	$p \leq .078$ $F = 2.253$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

Flight route was found to be related to causes of group incidents (See table 4.13b). Carry on baggage was the only item significant; however, the post hoc test (Scheffe) could not identify the differences between groups. The largest mean difference for carry on baggage was between passengers who travelled on international routes ($x = 2.967$, $\sigma = 0.928$) and those who travelled on both international and domestic($x = 2.267$, $\sigma = 0.912$).

The type of airlines was found to be related to the causes of group incidents. Incidents related to fear of flight was found to be significant. Passengers who had travelled on American airlines ($x = 3.500$, $\sigma = 2.212$) and those who had travelled on European. ($x = 1.500$, $\sigma = 0.633$) The type of airlines was however not related to the causes of individual incidents.

Frequency of travel was found to be related to the causes of individual in-flight incidents (See table 4.13b). Fear of flight and discomfort were found to be significant, however, the differences between groups could not be identified by the post hoc test (Scheffe), as the some groups are too small to obtain any results. The largest mean difference for fear of flight was however between those who travelled more than 30 times ($x = 5.000$) and those who travelled between 16 and 20 times ($x = 1.000$). The largest mean difference for discomfort was between those who travelled between 16 and 20 times ($x = 1.000$) and those who travelled between 21 and 30 times ($x = 5.000$) or those who travelled more than 30 times ($x = 5.000$). Frequency of travel was also found to be related to the causes of group incidents. Fear of flight was also found to be significant; however but the size of groups were too small to obtain any results. The largest mean differences however were between passengers who had travelled more than 30 times ($x = 5.000$) and those who had travelled between 16 and 20 times ($x = 1.000$).

Length of flight and gender were found to be unrelated to the causes of in-flight incidents.

Table 4.13b T-Tests and ANOVA Tests for Demographics and Causes of In-flight Incidents

Individual Incidents				
Incidents	**Route** *International, Domestic and Combined international and domestic* *df(50)*	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours* *df (47)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines* *df (51)*	**Frequency of Travel** *Less than 11, 11 to 20, 21 to 30, more than 30* *df (52)*
Alcohol in Individual Incidents	*p ≤ .534, F = 0.635*	*p ≤ .902 F = 0.192*	*p ≤ .199, F = 1.558*	*p ≤ .272 F = 1.315*
Smoking in Individual Incidents	*p ≤ .518, F = 0.666*	*p ≤ .752, F = 0.402*	*p ≤ .303, F = 1.245*	*p ≤ .813, F = 0.448*
Carry on Luggage in Individual Incidents	*p ≤ .777, F = 0.253*	*p ≤ .820 F = 0.307*	*p ≤ .713, F = 0.532*	*p ≤ .540, F = 0.822*
Seat Assignments in	*p ≤ .247, F = 1.436*	*p ≤ .492, F = 0.814*	*p ≤ .514, F = 0.827*	*p ≤ .665 F = 0.647*

Individual Incidents				
Food Service in Individual Incidents	*p ≤ .535, F = 0.632*	*p ≤ .173 F = 1.722*	*p ≤ .104, F = 2.027*	*p ≤ .866 F = 0.372*
Cabin crew service in individual incidents	*p ≤ .899, F= 0.107*	*p ≤ .066, F = 2.539*	*p ≤ .685, F = 0.571*	*p ≤ .684, F = 0.622*
Disputes with other passengers in individual incidents	*p ≤ .211, F = 1.597*	*p ≤ .754 F = 0.399*	*p ≤ .489, F = 0.869*	*p ≤ .375 F = 1.093*
Fear of Flight in individual incidents	*p ≤ .406 F= 0.916*	*p ≤ .637 F = 0.570*	*p ≤ .152, F = 1.753*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .013, F = 3.221 Ms = 3.392*
Discomfort	*p ≤ .713, F = 0.341*	*p ≤ .375, F = 1.056*	*p ≤ .291, F = 1.277*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .037 F = 2.585 Ms = 2.744*
Group Incidents				
Alcohol in group incidents	*P ≤ .948, F = 0.054*	*p ≤ .629, F = 0.582*	*p ≤ .670, F = 0.592*	*p ≤ .282 F = 1.295*
Smoking in group incidents	*p ≤ .150, F = 1.975*	*p ≤ .554, F = 0.705*	*p ≤ .563 F = 0.750*	*p ≤ .261 F = 1.353*
Carry on Luggage in group incidents	Differences between groups cannot be identified by post hoc test (Scheffe) **P ≤ .027, F = 3.889 Ms = 3.300*	*p ≤ .778 F = 0.366*	*p ≤ .812, F = 0.394*	*p ≤ .604 F = 0.731*
Seat Assignments in group incidents	*P ≤ .172, F = 1.797*	*p ≤ .556, F = 0.701*	*p ≤ .278, F = 1.316*	*p ≤ .203 F = 1.521*
Food Service in group incidents	*P ≤ .444, F = 0.826*	*p ≤ .434, F = 0.930*	*p ≤ .194, F = 1.584*	*p ≤ .706, F = 0.592*
Dispute with other Passengers in group	*P ≤ .300, F = 1.234*	*p ≤ .143, F = 1.900*	*p ≤ .932, F = 0.209*	*p ≤ .430, F = 0.998*

incidents				
Fear of Flight in group incidents	*P ≤ .670, F = 0.404*	*p ≤ .269, F = 1.352*	Passengers who travelled on American Airlines experienced more incidents related to fear of flight than those who travelled by European airlines ***p ≤ .008, F = 3.962, Ms = 3.192*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .012, F = 3.338, Ms = 2.664*
Discomfort in group incidents	*P ≤ .326, F = 1.149*	*p ≤ .553, F = 0.706*	*p ≤ .600, F = 0.695*	*p ≤ .139, F = 1.776*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

4.2.5 Internet Passengers

As discussed in section 4.2, airport passengers differed from passengers surveyed via the Internet. This section discusses the results of the questionnaire by internet passengers. Alcohol was rated the top cause for both individual and group in-flight incidents (See tables 4.7 and 4.8). Fear of flight was rated the last for both individual and group incidents. Seat also assignment was also rated 3rd for both individual and group incidents. There were great differences for incidents related to disputes with other passengers. Incidents related to disputes with other passengers ranked 2nd in group incidents but was ranked 5th in individual incidents. Incidents related to carry on luggage ranked 2nd for individual incidents but was ranked 4th for group incidents.

Airport passengers and internet passengers agreed that alcohol was the top cause for both individual and group incidents and they agreed that fear of flight is the least likely cause of group incidents (See tables 4.7 and 4.8). As shown in table 4.7, airport passengers (ranked 7th) felt that fear of flight occurred more often than internet passengers (ranked 9th) for individual incidents. Airport passengers (ranked 2nd) also felt that discomfort was a bigger problem than internet passengers (ranked 4th) for individual incidents. As for discomfort, food service was also rated a bigger problem by airport passengers (ranked 5th) than internet passengers (ranked 7th) for

individual incidents. Cabin crew service was also rated very differently by the two groups of passengers. Cabin crew service was ranked 8th by airport passengers and it was ranked 5th by internet passengers. For group incidents, carry on baggage was ranked 2nd for airport passengers but was ranked 4th by internet passengers. Seat assignment ranked 5th by airport passengers and was ranked 3rd by internet passengers.

Demographics and Causes of In-flight Incidents (Internet Passengers)

This section examines the data to see if demographic variables are related to the causes of individual and group in-flight incidents (See table 4.14a and 4.14b). With some of the analysis, the resultant groups were too small to obtain results from. Collapsing categories were considered to obtain larger groups but the results would then not be able to be compared to other results.

Gender was found to be related to the causes of individual incidents (See table 4.14a). Alcohol related incidents were experienced more often by male passengers ($x = 3.769$, $\sigma = 1.106$) than female passengers ($x = 2.933$, $\sigma = 1.387$). Gender was found to be unrelated to the causes of group incidents

Ethnicity was found to be related to individual incidents (See table 4.14a). Disputes with other passengers was found to be significant, however, the difference between groups could not be identified during the post hoc test (Scheffee). Ethnicity, however, was not related to the causes of group incidents.

Age was found to be related to the causes of group incidents (See table 4.14a). Smoking was found to be significant for group incidents, however the post hoc test could not be conducted as some group sizes were too small. Age was found to be unrelated to individual incidents.

Education was found to be related to the causes of individual and group incidents (See table 4.14a). Fear of flight was found to be significant for individual incidents while food services were found to be significant for group incidents. However post hoc test could not be conducted some group size were too small.

Table 4.14a T-Tests and ANOVA Tests for Demographics and Causes of In-flight Incidents

Individual Incidents				
Incidents	**Gender** *Male and Female df(38)*	**Ethnicity** *Asian, Caucasians & Polynesians df(34)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 df(35)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD df(34)*
Alcohol in Individual Incidents	Alcohol related incidents were experienced more often by male passengers than female passengers *$p \leq .040$, $t = -2.122$ MD = -0.863	*$p \leq .135$, $F = 2.113$	*$p \leq .534$, $F = 0.798$	*$p \leq .212$, $F = 1.542$
Smoking in Individual Incidents	*$p \leq .717$, $t = -0.365$	*$p \leq .683$ $F = 0.386$	*$p \leq .768$, $F = 0.456$	*$p \leq .312$, $F = 1.250$
Carry on Luggage in Individual Incidents	*$p \leq .870$, $t = .164$	*$p \leq .966$, $F = 0.034$	*$p \leq .995$, $F = 0.051$	*$p \leq .357$ $F = 1.135$
Seat Assignments in Individual Incidents	*$p \leq 1.000$ $t = 0.000$	*$p \leq .768$, $F = 0.266$	*$p \leq .738$, $F = 0.497$	*$p \leq .411$ $F = 1.021$
Food Service in Individual Incidents	*$p \leq .728$ $t = 0.350$	*$p \leq .683$, $F = 0.385$	*$p \leq .545$, $F = 0.780$	*$p \leq .539$ $F = 0.792$
Cabin crew service in individual incidents	*$p \leq .198$, $t = -1.311$	*$p \leq .793$, $F = 0.233$	*$p \leq .688$, $F = 0.567$	*$p \leq .340$, $F = 1.174$
Disputes with other passengers in individual incidents	*$p \leq .084$, $t = -1.774$	Differences between groups cannot be identified by post hoc test (Scheffe) *$p \leq .048$, $F = 3.293$ Ms = 4.054	*$p \leq .418$, $F = 1.005$	*$p \leq .388$ $F = 1.066$
Fear of Flight in individual incidents	*$p \leq .732$ $t = 0.345$	*$p \leq .551$ $F = 0.605$	*$p \leq .265$ $F = 1.368$	Differences between groups cannot be identified by post

				hoc test (Scheffe) $**p \leq .007$ $F = 4.213$ $Ms = 3.114$
Discomfort	$p \leq .539$, $t = 0.618$	$p \leq .821$, $F = 0.198$	$p \leq .863$, $F = 0.319$	$p \leq .429$, $F = 0.984$
Group Incidents				
Alcohol in group incidents	$p \leq .150$, $t = -1.473$	$p \leq .324$, $F = 1.166$	$p \leq .436$, $F = 0.974$	$p \leq .142$ $F = 1.874$
Smoking in group incidents	$p \leq .123$, $t = -1.583$	$p \leq .197$, $F = 1.710$	Differences between groups cannot be identified by post hoc test (Scheffe) $*p \leq .019$, $F = 3.456$ $Ms = 2.578$	$p \leq .164$ $F = 1.767$
Carry on Luggage in group incidents	$p \leq .260$, $t = 1.146$	$p \leq .422$, $F = 0.866$	$p \leq .588$, $F = 0.716$	$p \leq .381$ $F = 1.089$
Seat Assignments in group incidents	$p \leq .919$, $t = 0.103$	$p \leq .455$ $F = 0.732$	$p \leq .746$ $F = 0.486$	$p \leq .268$ $F = 1.374$
Food Service in group incidents	$p \leq .753$, $t = 0.318$	$p \leq .692$, $F = 0.372$	$p \leq .853$ $F = 0.334$	Differences between groups cannot be identified by post hoc test (Scheffe) $*p \leq .037$, $F = 1.221$ $Ms = 2.447$
Dispute with other Passengers in group incidents	$p \leq .305$ $t = -1.041$	$p \leq .893$, $F = 0.113$	$p \leq .790$, $F = 0.424$	$p \leq .359$, $F = 1.137$
Fear of Flight in group incidents	$p \leq .329$, $t = -0.991$	$p \leq .609$, $F = 0.504$	$p \leq .756$, $F = 0.471$	$p \leq .183$ $F = 1.684$
Discomfort in group incidents	$p \leq .959$, $t = -0.052$	$p \leq .547$, $F = 0.614$	$p \leq .747$, $F = 0.484$	$p \leq .572$ $F = 0.740$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

Frequency of travel was found to be related to the causes of group incidents (See table 4.14b). Fear of flight and discomfort were found to be significant, however post hoc test could not be conducted as some groups were too small. Frequency, on the other hand was to be unrelated to individual incidents. Length of flight, the type of airlines and route was found to be unrelated to the causes of in-flight incidents (See table 4.14b).

Table 4.14b ANOVA Tests for Demographics and Causes of In-flight Incidents

Individual Incidents				
Incidents	**Route** *International, Domestic and Combined international and domestic* *df(36)*	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours* *df(37)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines* *df(36)*	**Frequency of Travel** *Less than 11, 11 to 20, 21 to 30, more than 30* *df(38)*
Alcohol in Individual Incidents	*p ≤ .204, F = 1.662*	*p ≤ .607 F = 0.619*	*p ≤ .649, F = 0.553*	*p ≤ .606 F = 0.761*
Smoking in Individual Incidents	*p ≤ .713, F = 0.343*	*p ≤ .920, F = 0.164*	*p ≤ .726, F = 0.441*	*p ≤ .142, F = 1.811*
Carry on Luggage in Individual Incidents	*p ≤ .894, F = 0.192*	*p ≤ .914 F = 0.172*	*p ≤ .537, F = 0.736*	*p ≤ .756, F = 0.564*
Seat Assignments in Individual Incidents	*p ≤ .765, F= 0.265*	*p ≤ .073, F = 2.517*	*p ≤ .877, F = 0.227*	*p ≤ .820 F = 0.478*
Food Service in Individual Incidents	*p ≤ .694, F = 0.369*	*p ≤ .827, F = 0.198*	*p ≤ .813, F = 0.317*	*p ≤ .416 F = 0.915*
Cabin crew service in individual incidents	*p ≤ .268, F= 1.366*	*p ≤ .082 F = 2.410*	*p ≤ .451, F = 0.900*	*p ≤ .139, F = 1.757*
Disputes with other passengers in individual incidents	*p ≤ .877, F = 0.131*	*p ≤ .744 F = 0.414*	*p ≤ .843, F = 0.275*	*p ≤ .268 F = 1.339*
Fear of Flight in individual incidents	*p ≤ .774 F= 0.258*	*p ≤ .534 F = 0.742*	*p ≤ .051, F = 2.840*	*p ≤ .256, F = 1.372*
Discomfort	*p ≤ .711, F = 0.344*	*p ≤ .990 F = 0.037*	*p ≤ .385, F = 1.044*	*p ≤ .168 F = 1.637*
Group Incidents				
Alcohol in group	*P ≤ .983, F = 0.017*	*p ≤ .617 F = 0.604*	*p ≤ .631, F = 0.582*	*p ≤ .858 F = 0.422*

incidents				
Smoking in group incidents	$p \leq .883$, $F = 0.125$	$p \leq .957$ $F = 0.105$	$p \leq .469$, $F = 0.866$	$p \leq .268$ $F = 1.356$
Carry on Luggage in group incidents	$P \leq .297$, $F = 1.262$	$p \leq .366$ $F = 1.094$	$p \leq .973$, $F = 0.075$	$p \leq .709$ $F = 0.625$
Seat Assignments in group incidents	$P \leq .127$, $F = 2.122$	$p \leq .731$ $F = 0.433$	$p \leq .976$, $F = 0.070$	$p \leq .137$ $F = 1.800$
Food Service in group incidents	$P \leq .416$, $F = 0.903$	$p \leq .367$ $F = 1.093$	$p \leq .907$, $F = 0.183$	$p \leq .455$ $F = 0.984$
Dispute with other Passengers in group incidents	$P \leq .722$, $F = 0.329$	$p \leq .969$ $F = 0.083$	$p \leq .488$ $F = 0.829$	$p \leq .791$ $F = 0.516$
Fear of Flight in group incidents	$P \leq .210$, $F = 1.645$	$p \leq .117$ $F = 2.135$	$p \leq .901$, $F = 0.191$	Differences between groups cannot be identified by post hoc test (Scheffe) $*p \leq .026$ $F = 2.912$ $Ms = 1.624$
Discomfort in group incidents	$P \leq .525$, $F = 0.657$	$p \leq .140$ $F = 1.962$	$p \leq .634$, $F = 0.577$	Differences between groups cannot be identified by post hoc test (Scheffe) $*p \leq .044$ $F = 2.551$ $Ms = 3.520$

$*p \leq .05$, $**p \leq .01$, $***p \leq .005$, $****P \leq .001$

4.3 Passengers' Use of Intimidation against Cabin Crew

This section examines the frequency of passengers who used intimidation to get what they wanted from cabin crew. They were asked the number of times they intimidated cabin crew to achieve what they want on a Likert Scale of 1 to 4 where 1 represented 'never', 2 represented 1 to 3 times, 3 represented 4 to 6 times and 4 represented more than 6 times. This question was included after the questionnaires were printed and distributed. Thus only the questionnaire posted on the Internet was amended to include this question. A total of 41 passengers responded to the question.

Most respondents (92.7%) claimed not to have used intimidation against cabin crew to get what they want (See figure 4.6). Only 7.3% of the respondent admitted the use of intimidation.

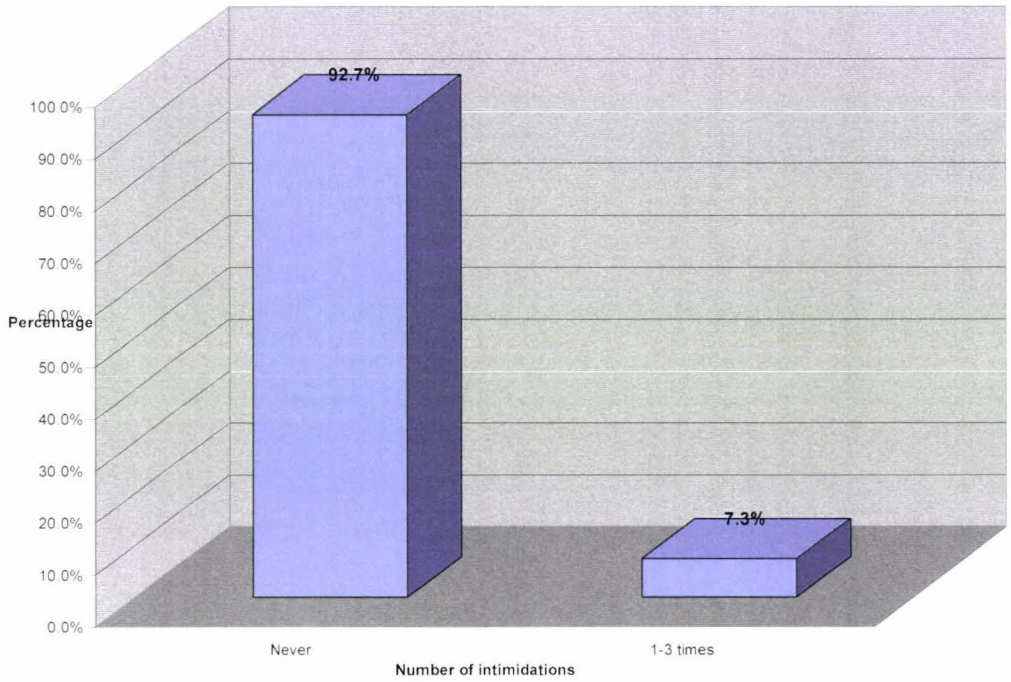

Figure 4.6 Percentage of Passengers who Used Intimidation

Demographics and Intimidation of Cabin Crew

This section examines the data to see if the demographic variables had an effect on passengers' use of intimidation on cabin crew.

As can be seen from tables 4.15a and 4.15b, all demographic variables were found to be unrelated to passengers' use of intimidation against cabin crew. However the small sample size could have prevented the establishment of relationships between the demographic variables and passengers' use of intimidation.

Table 4.15a T-Tests and ANOVA Tests for Demographics and Passengers' Use of Intimidation

Passenger behaviour	Gender *Male and Female (df 40)*	Ethnicity *Asian, Caucasians & Polynesians (df 40)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 40)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 40)*
Use of Intimidation	*p≤.180, t = -1.364*	*p≤.936, F = 0.066*	*p ≤.691, F = 0.563*	*p ≤.407, F = 0.207*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.15b ANOVA Tests for Demographics and Passengers' Use of intimidation

Passenger behaviour	Route *International, Domestic and Combined international and domestic (df 40)*	Frequency of Travel *Less than 11, 11 to 20, 21 to 30, more than 30 (df 40)*	Airline *American airlines, Asian airlines, European Airlines, Pacific airlines and mixed categorical airlines (df 40)*	Length of Flight *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs (df 40)*
Use of Intimidation	*p ≤.733, F = 0.313*	*p ≤.809, F = 0.526*	*p ≤.619, F = 0.600*	*p ≤.892, F = 0.205*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

4.4 Identification of Potentially Disruptive Passenger

Cabin crew were asked to rate how easily they could identify potential disruptive passengers. They were also asked to rate the usefulness of items such as style of dressing, overall appearance, body language, facial expressions, forceful gestures, ethnicity or race, the way passengers speak, distressed or anxious behaviour, erratic behaviour and attitude in identifying these passengers. The results of these would be presented in the sections below.

4.4.1 Ease in of Identifying Potentially Disruptive Passengers

Cabin crew believed that they could identify a potentially disruptive passenger quite easily *(x = 3.709, σ = 0.771)*. As can be seen in figure 4.7, some cabin crew (27%) believed that they had difficulty identifying potentially disruptive passengers. However a majority of 63.3% percent found identifying potentially disruptive passengers easy or very easy.

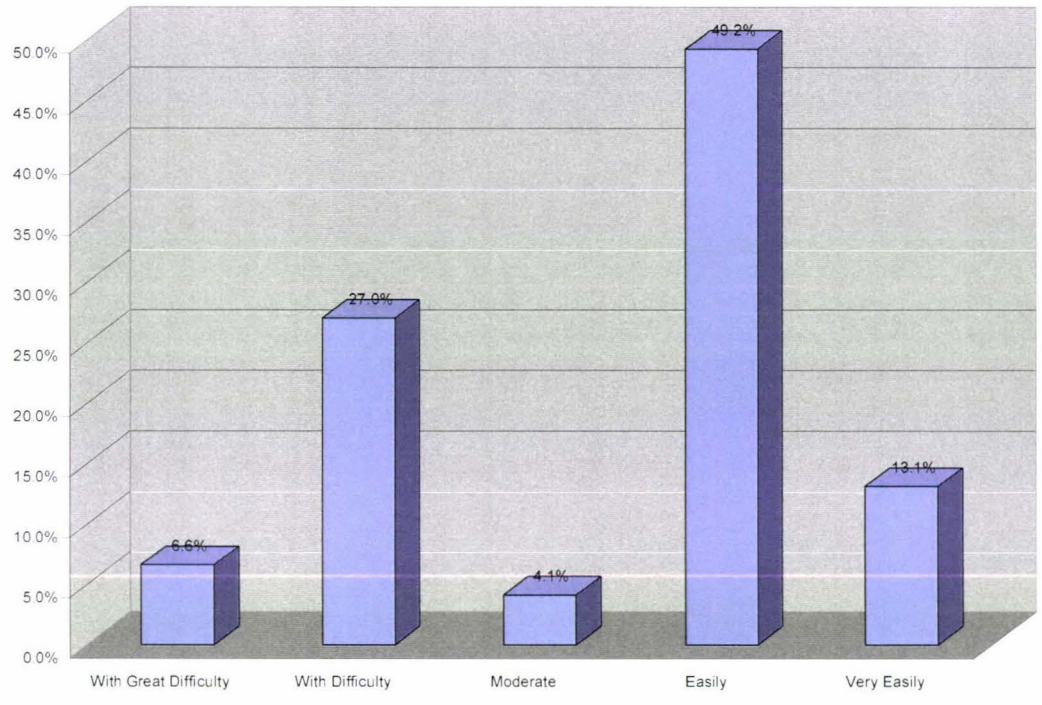

Figure 4.7 Percentage for Ease of identifying Potentially Disruptive Passengers

Demographics and Ease of Identifying Potentially Disruptive Passengers

This section examines the data to see if the demographic variables were related to how cabin crew rated the ease of identifying potentially disruptive passengers.

Ethnicity was found to be related to cabin crew ease of identifying potentially disruptive passengers (See table 4.16a). Asian cabin crew *(x = 3.000, σ = 1.000)* found more difficulty in identifying potentially disruptive passengers than Caucasian cabin crew *(x = 3.736, σ = 0.747)* or Polynesian cabin crew*(x = 4.200, σ = 0.447)*.

All other demographic variables were found to be unrelated to the way cabin crew rated the ease of identifying potentially disruptive passengers (See table 4.16a, 4.16b and 4.16c).

Table 4.16a T-Tests and ANOVA Tests for Demographics and Ease of Identifying Potentially Disruptive Passengers

Cues for Identifying Potentially Disruptive Passengers	**Gender** *Male and Female (df 118)*	**Ethnicity** *Asian, Caucasians & Polynesians (df 120)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 122)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 120)*
Ease of identifying potentially disruptive passengers	*p ≤ .944, t = 0.070*	Asian cabin crew found body it more difficult to identify potentially disruptive passengers predictor than Caucasian and Polynesian cabin crew **p ≤ .017, F = 4.223 Ms = 2.401*	*p ≤ .453, F =0.964*	*p ≤ .661 F = 0.532*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Table 4.16b Demographics and Ease of Identifying Potentially Disruptive Passengers

Cues for Identifying Potentially Disruptive Passengers	**Position** *Senior cabin crew and Junior cabin crew (df 118)*	**Experience** *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 40)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 120)*
Ease of identifying potentially disruptive passengers	*p ≤ .434, t = -0.784*	*p ≤ .514, F = 0 .894*	*p ≤ .631, F = 0.463544*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Table 4.16c Demographics and Ease of Identifying Potentially Disruptive Passengers

Cues for Identifying Potentially Disruptive Passengers	**Type of aircraft** *International, Commuter and Combined international and Commuter (df 122)*	**Route** *International, Domestic and Combined international and domestic (df 118)*	**Length of flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 120)*
Ease of identifying potentially disruptive passengers	$p \leq .701$, $F = 0.356$	$p \leq .869$, $F = -0.141$	$p \leq .800$, $F = 0.335$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.4.2 Usefulness of Cues in Identifying Potentially Disruptive Passengers

This section examines the usefulness of a list of cues which cabin crew use to identify potentially disruptive passengers. The items include

- Style of dressing
- Overall appearance
- Body Posture
- Facial Expression
- Forceful gestures
- Ethnicity or Race
- The way passengers speack i.e. tone and volume
- Distressed or anxious behaviour
- Erratic behaviour
- Attitude

Cabin crew were asked to rate the usefulness of the items above on a Likert scale of 1 to5 where 1 is not useful at all and 5 is very useful. As can be seen, the number of items is large, thus principal component analysis (CPA) was used to reduce the data. The Kaiser-Meyer-Olkin measure of sampling adequacy test was 0.763 and Barlett's test of sphericity ($p \leq .000$) established the appropriateness of the correlation matrix for component analysis (Norusis, 1990) (See Table 4.17). Three components were extracted and were named body language, behaviour and visual appearance; the items were computed to obtain the means (See Table 4.18).

The first component 'body language' as the name suggest, covers a wide range of body language and it encompassed body posture, facial expression etc. The second component 'behaviour' is the way passengers conduct themselves. It encompassed distressed, anxious and erratic behaviour and also attitude. The last component 'visual appearance' is the visual impact of passengers, it includes items 'ethnicity/race', 'appearance' and 'style of dressing'. These three components were then used for further analysis.

As can be seen from table 4.17, body language *(x = 4.30, σ = 0.55)* and behaviour *(x = 4.29, σ = 0.57)* were rated more useful by cabin crew than visual appearance *(x = 2.72, σ = 0.80)*.

Table 4.17 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.763	
Bartlett's Test of Sphericity	Approx. Chi-Square	389.674
	df	45
	Sig.	.000

Table 4.18 Rotated Component Matrix

Component 1: Body Language	**I**	**II**	**III**
Body Posture	.83	.15	.156
Facial Expression	.82	.15	.02
Forceful Gesture	.56	.52	-.02
Speak (tone, volume, abusive language)	.66	.16	.03
Component 2: Behaviour	**I**	**II**	**III**
Distressed/Anxious Behaviour	.26	.82	.05
Erratic Behaviour	.08	.90	.02
Attitude	.43	.48	.08
Component 3: Visual Appearance	**I**	**II**	**III**
Style of dressing	-.07	.08	.87
Overall Appearance	.13	.07	.87
Ethnicity/Race	.11	-.04	.72
Eigenvalues			
% of variance	35.10	19.53	10.81
Reliability Coefficient	.77	.72	.76
Mean	4.30	4.29	2.72
Standard Deviation	.55	.57	.80

* Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Demographics and Identification of Potentially Disruptive Passengers

This section examines the data to identify the demographic differences in identifying potentially disruptive passengers. Gender, age, position, experience, flight route, length of flight and aircraft type was found to be unrelated to the identification of potentially disruptive passengers (See table 4.19a, 4.19b and 4.19c). Only education and ethnicity were found to be related to the identification of potentially disruptive passengers.

Table 4.19a ANOVA Tests for Demographics and Identification of potentially disruptive passengers

	Demographic Variables			
Cues for Identifying Potentially Disruptive Passengers	**Route** *International, Domestic and Combined international and domestic (df 125)*	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 125)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 124)*	**Aircraft Type** *International, Commuter and Combined International and Commuter (df 125)*
Body Language	*p ≤ .720, F = 0.330*	*p ≤ .294, F = 1.25*	*p ≤ .548, F = 0.605*	*p ≤ .604, F = 0.506*
Behaviour	*p ≤ .590, F = 0.530*	*p ≤ .082, F = 2.290*	*p ≤ .739, F = 0.303*	*p ≤ .749, F = 0.290*
Visual Appearance	*p ≤ .720, F = 0.329*	*p ≤ .923, F = 0.160*	**p ≤ .031, F = 3.584 Ms = 2.156*	*p ≤ .493, F = 0.712*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Education was found to be related to the identification of potentially disruptive passengers (See table 4.19b). Cabin crew who started their university education *(x = 2.310, σ = 0.606)* believed that visual appearance is less useful than those who had only been to high school *(x = 2.953, σ = 0.754)*.

Ethnicity was also found to be related to the identification of potentially disruptive passengers (See table 4.19b). Asian cabin crew *(x = 3.857, σ = 0.643)* found body language a less useful predictor than Polynesian cabin crew *(x = 4.650, σ = 0.487)*.

Table 4.19b T-Tests and ANOVA Tests for Demographics and Identification of potentially disruptive passengers

	Demographic Variables			
Cues for Identifying Potentially Disruptive Passengers	**Gender** *Male and Female (df 122)*	**Ethnicity** *Asian, Caucasians & Polynesians (df 121)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 124)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 125)*
Body Language	*p ≤ .155, t = 1.431*	Asian cabin crew found body language less a less useful predictor than Polynesian cabin crew **p ≤ .032, F = 3.529 Ms = 1.003*	*p ≤ .807, F =0.500*	*p ≤ .166 F = 1.722*
Behaviour	*p ≤ .154 t = 1.434*	*p ≤ .446, F = 0.812*	*p ≤ .571, F = 0.801*	*p ≤ .175, F = 1.636*
Visual Appearance	*p ≤ .475, t= -.0.716*	*p ≤ .089, F = 2.474*	*p ≤ .811, F = 0.495*	Cabin crew who started their university education believed that visual appearance is less useful than those who had only been to high school **p ≤ .019 F = 3.545 Ms = 2.029*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Table 4.19c T-Tests and ANOVA Tests for Demographics and Identification of potentially disruptive passengers

	Demographic Variables	
Cues for Identifying Potentially Disruptive Passengers	**Position** *Senior cabin crew and Junior cabin crew (df 120)*	**Experience** *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 125)*
Body Language	$p \leq .811$, $t = 0.240$	$p \leq .477$, $F = 0.942$
Behaviour	$p \leq .617$, $t = -.0.501$	$p \leq .521$, $F = 0.852$
Visual Appearance	$p \leq .931$ $t = -0.87$	$p \leq .189$, $F = 1.457$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.5 Gender in Conflict Resolution

This section examines the role of gender in passenger management by cabin crew. Differences between males and females are presented in relation to moderate and serious incidents. The cabin crew population surveyed encompassed 40.9% males and 57.5% females (See Fig. 4.8).

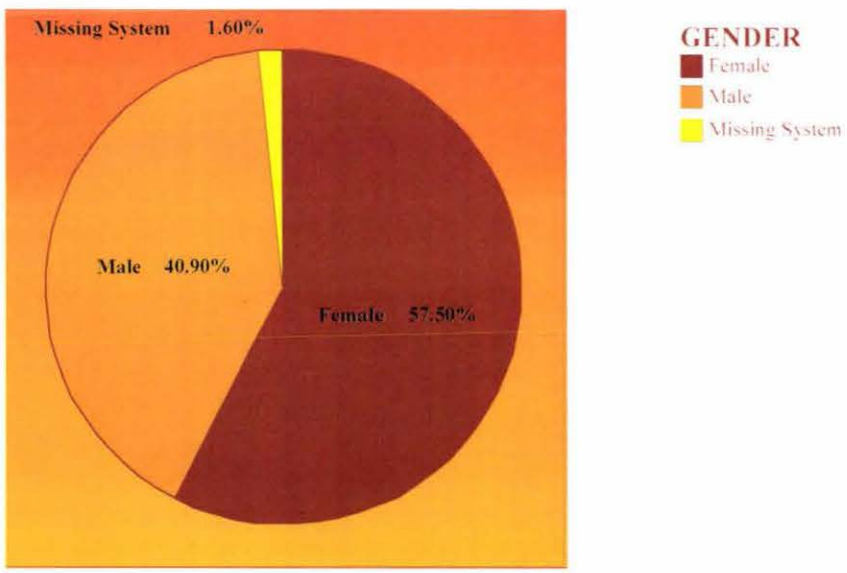

Figure 4.8 Cabin Crew Gender Populations

4.5.1 Male and Female Cabin Crew in Moderate Conflicts

Cabin crew were asked to rate the usefulness of male flight attendants during moderate conflicts. As can be seen from figure 4.9, 81.3% of the cabin crew believed that male colleagues were useful or very useful. In contrast only 52.4% believed that female cabin crew were very useful and 41.7% believed they were useful.

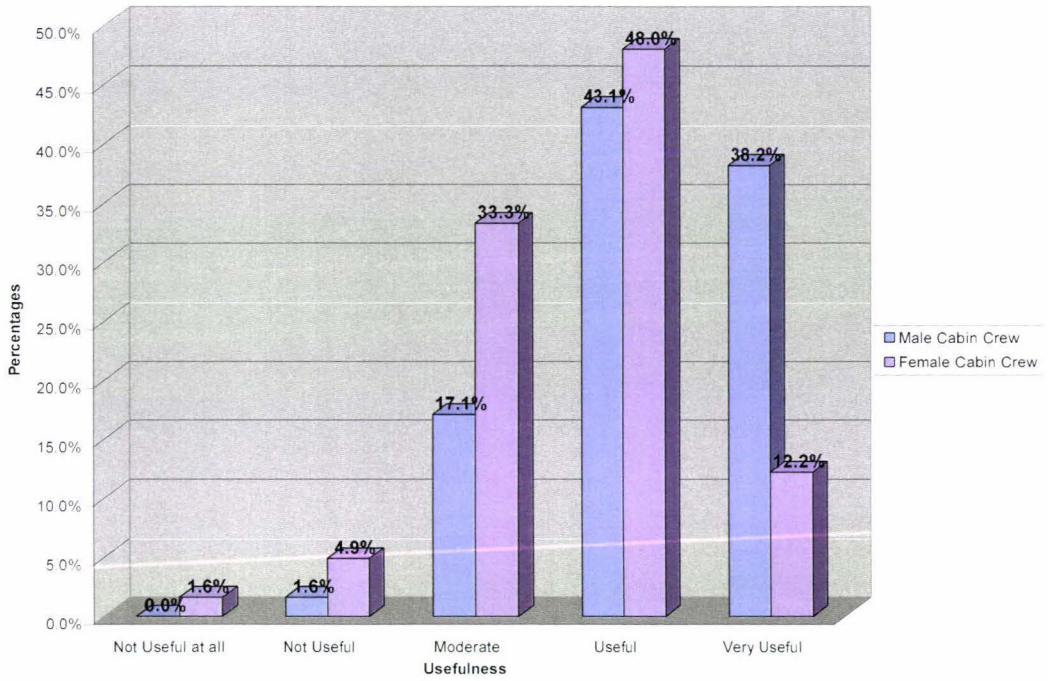

Figure 4.9 Usefulness of Male and Female Cabin Crew in Moderately Serious Incidents

4.5.3 Male Cabin Crew in Violent Incidents

Cabin crew were asked to rate the usefulness of male flight attendants in serious incidents. Most cabin crew believed that male were useful or very useful (91.0%) (See Fig. 4.10). In contrast only 27.8% of them believed that female cabin crew were useful or very useful during serious incidents (See Fig. 4.10).

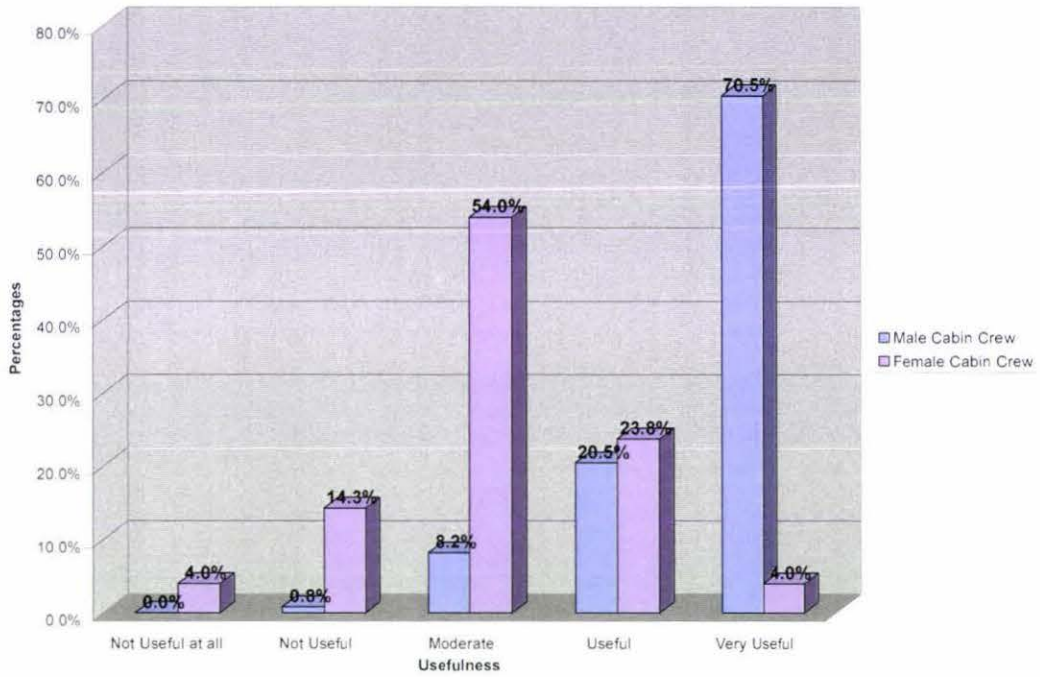

Figure 4.10: Usefulness of Male and Female Cabin Crew in Violent incidents

Demographics and the Role of Gender in Moderate and Serious Incident

The data was analysed to see if the demographic variables have an effect on the way cabin crew rated the usefulness of male and female cabin crew in moderate and serious incidents.

Age was found to have an effect on the way cabin crew perceive the role of gender in a moderate conflict. Cabin crew in the age group of 45 and 49 *(x = 2.923, σ = 0.862)* found male cabin crew less useful than those in the age group of above 50 *(x = 3.944, σ = 0.539)* (See table 4.20a).

Gender was also found to have an effect on the way cabin crew perceive the role of gender in a moderate conflict. Male cabin crew *(x = 3.441, σ = 0.962)* found female cabin crew less useful than female cabin crew *(x = 3.764, σ = 0.663)* themselves. There were also differences in the category of serious incidents, male cabin crew *(x = 2.663, σ = 0.745)* rated female cabin crew less useful than female cabin crew *(x = 3.410, σ = 0.761)* themselves (See table 4.20a).

Table 4.20a: T-Tests and ANOVA Tests for Demographics and the Role of Gender in Moderate and Serious Incident

Individual Incidents				
Incidents	**Gender** *Male and Female (df 121)*	**Ethnicity** *Asian, Caucasians & Polynesians (df 121)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 123)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 123)*
Male Cabin Crew in Moderate Incidents	*p ≤ .067, t = -1.857*	*p ≤ .142, F = 1.982*	*p ≤ .642, F = 0.710*	*p ≤ .641, F = 0.563*
Female Cabin Crew in Moderate Incidents	Male cabin crew found female cabin crew less useful than female cabin crew themselves **p ≤ .031, t= 2.186*	** ≤ .022 F = 3.955*	Cabin crew in the age group of 45 and 49 found male cabin crew less useful than those in the age group of above 50 ***p ≤ .003, F t= 3.534 Ms = 2.106*	*p ≤ .539, F = 0.725*
Male Cabin Crew in Serious Incidents	*p ≤ .979, t= 0.027*	*p ≤ .389, F = 0.951*	*p ≤ .160, F = 1.576*	*p ≤ .612, F = 0.607*
Female Cabin Crew in Serious Incidents	Male cabin crew rated female cabin crew less useful than female cabin crew themselves. ****p ≤ .000, t = 5.432*	*p ≤ .442, F = 0.822*	*p ≤ .545, F = 0.582*	*p ≤ .490 F = 0.811 Ms = 0.566*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Route of flight was found to have an effect on the way cabin crew perceive the role of gender in moderate or serious incidents (See table 4.18b). Cabin crew flying on international route *(x = 4.313, σ = 7.154)* believed that male cabin crew were more useful in moderate incidents than those who were flew on domestic routes *(x = 3.813, σ = 0.834)* and those who flew on both international and domestic routes *(x = 3.500, σ = 0.707)*. Cabin crew who flew on international routes *(x = 4.705, σ = 0.633)* also

believed that male cabin crew were more useful in serious incidents than those who flew on both international and domestic route ($x = 4.100$, $\sigma = 0.738$).

Table 4.20b: ANOVA Tests for Demographics and the Role of Gender in Moderate and Serious Incident

Individual Incidents				
Incidents	**Route** *International, Domestic and Combined international and domestic (df 121)*	**Experience** *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 123)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 123)*	**Position** *Senior cabin crew and Junior cabin crew (df 122)*
Male Cabin Crew in Moderate Incidents	Cabin crew flying on international route believed that male cabin crew were incidents more useful in moderate than those who were flew on domestic routes and those who flew on both international and domestic routes *****p ≤ .001, F = 7.929 Ms = 4.235*	*p ≤ .693, F = 0.675*	*p ≤ .100, F = 2.345*	*p ≤ .255, t = -1.145*
Female Cabin Crew in Moderate Incidents	*p ≤ .659, F = 0.418*	*p ≤ .864, F = 0.456*	*p ≤ .755, F = 0.281*	*p ≤ .206, t = 1.273*
Male Cabin Crew in Serious Incidents	Cabin crew who flew on international routes also believed that male cabin crew were more useful in serious incidents than those who flew on both international and domestic route ****p ≤ .004, F = 5.741, Ms = 2.437*	*p ≤ .123, F = 1.673*	*p ≤ .106, F = 2.283*	*p ≤ .555, t =0.592*
Female Cabin Crew in Serious Incidents	*p ≤ .181, F = 1.735 Ms = 1.201*	*p ≤ .918 F = 0.370*	*p ≤ .998, F = 0.002*	*p ≤ .155, t =1.431*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Length of flight was found to be related to affect the way cabin crew perceive the role of gender in handling moderate or serious incidents. Cabin crew who operated on flights of less than 2 hours ($x = 3.737$, $\sigma = 0.872$) believed that male cabin crew less useful during moderate incidents than those who were on flight that were more than 9 hours ($x = 4.295$, $\sigma = 0.701$) . Cabin crew who operated on flights that were between 2 and 5 hours ($x = 3.400$, $\sigma = 0.548$) believed that male cabin crew were less useful during serious incidents than those who operated on flight that were between 5 and 9 hours ($x = 3.800$, $\sigma = 0.768$) or more than 9 hours ($x = 3.615$, $\sigma = 0.901$).

Aircraft type was also found to be related to affect the way cabin crew perceive the role of gender in handling serious incidents. Cabin crew who operated on commuter aircrafts ($x = 4.100$, $\sigma = 0.738$) believed that male cabin crew were less useful during serious incidents than those who operated on those who operated on international aircraft ($x = 4.667$, $\sigma = 0.676$).

As can be seen from Table 4.18a, 4.18b and 4.18c ethnicity, education, the type of airline and experience did not affect the way cabin crew perceive the role of gender in handling moderate or serious incidents.

Table 4.20c: T-Tests and ANOVA Tests for Demographics and the Role of Gender in Moderate and Serious Incident

Individual Incidents		
Incidents	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 122)*	**Aircraft Type** *International, Commuter and Combined International and Commuter (df 121)*
Male Cabin Crew in Moderate Incidents	Cabin crew who operated on flights of less than 2 hours believed that male cabin crew less useful during moderate incidents than those who were on flight that were more than 9 hours $**p \leq .006$, $F = 4.333$ $Ms = 2.337$	$p \leq .394$, $F = 0.938$
Female Cabin Crew in Moderate Incidents	$p \leq .746$, $F = 0.411$	$p \leq .611$, $F = 0.494$
Male Cabin Crew in Serious Incidents	Cabin crew who operated on flights that were between 2 and 5 hours believed that male cabin crew were less useful during serious incidents than those who operated	Cabin crew who operated on commuter aircrafts believed that male cabin crew were less useful during serious incidents than those who operated on those who

	on flight that were between 5 and 9 hours or more than 9 hours $**p \leq .008$, $F = 4.117$, $Ms = 1.772$	operated on international aircraft $*p \leq .041$, $F = 3.282$ $Ms = 1.441$
Female Cabin Crew in Serious Incidents	$p \leq .186$, $F = 1.630$ $Ms = 1.125$	$p \leq .410$ $F = 0.898$

$*p \leq .05$, $**p \leq .01$, $***$ $p \leq .005$, $****$ $P \leq .001$

4.6 Culture in Managing In-flight Misbehaviour

This section is presented in two parts; the first examines the role of understanding cultures in managing in-flight misbehaviour while the second examines the organisational culture at airlines in relation to IFMI.

4.61 Importance of Understanding Passengers' Culture

Cabin crew were asked to rate the usefulness of understanding passenger culture in conflict resolution. Most cabin crew (72.2%) believed that understanding the culture of passengers is useful or very useful when resolving a conflict (See figure 4.11).

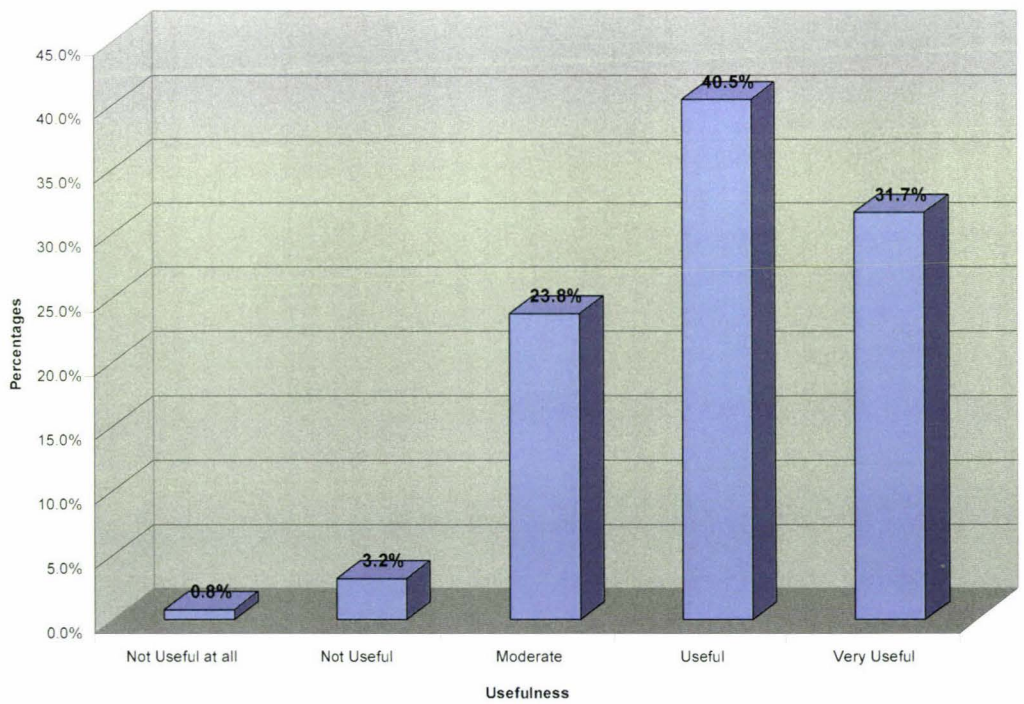

Figure 4.11 Understanding of Culture in Managing In-flight Incidents

Demographics and the role of Understanding Passenger Culture

This section examines the data to see if the demographic variables have an effect on the way cabin crew perceive the role of culture understanding in resolving in-flight conflicts.

The type of aircraft was found to be related to the way cabin crew perceive the role of culture understanding in resolving in-flight conflicts. Cabin crew who operated on international aircraft ($x = 4.112$, $\sigma = 0.818$) believed that the understanding of culture was more useful than those who operated on both commuter and international aircraft ($x = 3.667$, $\sigma = 0.912$). As can be seen from table 4.21a, 4.21b and 4.21c the demographic all other variables have no effect on the way cabin crew perceive the role of culture understanding in resolving in-flight conflicts.

Table 4.21a T-Tests and ANOVA Tests for Demographics and the Role of Culture in Conflict Resolution

	Gender *Male and Female (df 122)*	**Ethnicity** *Asian, Caucasians & Polynesians*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD*
Understanding Culture of Passengers	$p \leq .763$, $t = 0.302$	$p \leq .322$, $F = 1.145$	$p \leq .642$, $F = 0.710$	$p \leq .293$, $F = 1.255$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

Table 4.21b ANOVA Tests for Demographics and the Role of Culture in Conflict Resolution

Incidents	**Route** *International, Domestic and Combined international and domestic (df 123)*	**Experience** *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 124)*	**Airline** *American airlines, Asian airlines, Australasian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 124)*	**Position** *Senior cabin crew and Junior cabin crew (df 120)*
Understanding Culture of Passengers	$p \leq .911$, $F = 0.093$	$p \leq .863$, $F = 0.458$	$p \leq .877$, $F = 0.131$	$p \leq .623$, $F = 0.493$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

Table 4.21c T-Tests and ANOVA Tests for Demographics and the Role of Culture in Conflict Resolution

Individual Incidents		
Incidents	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours*	**Aircraft Type** *International, Commuter and Combined International and Commuter (df 122)*
Understanding Culture of Passengers	*p ≤ .419,* *F = 0.950*	Cabin crew who operated on international aircraft believed that the understanding of culture was more useful than those who operated on both commuter and international aircraft **p ≤ .050,* *F = 3.069* *Ms = 2.258*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

4.62 Airline Organisational Culture

This part discusses the cultural climate at airlines in relation to IFMI. Cabin crew were asked to rate the level of truth in the statements on a Likert scale of 1 to 5 where 1 represents not true at all and represents very true.

- Must adhere to rules, regulations and policies
- Take disciplinary actions for errors
- Communicates its safety policies and procedures clearly and effectively
- The management encourages fearless reporting of incidents
- Freedom to take initiative
- Warm, friendly & collaborative work environment
- Open communication between management and staff about safety issues
- Most staff are happy with the safety standards of this organisation
- The management usually informs staff of incidents and their outcomes
- The management takes action reported safety issues
- The knowledge gained from incident reviews is usually put into practice

Table 4.22 Means and Standard Deviation for Airline Organisational Culture

Ranking	Policy	Means	Standard Deviation
01	Adhere to Policies	4.119	0.744
02	Communicate Policies	3.896	0.878
03	Disciplinary Actions	3.843	0.806
04	Safety Standard at Organisation	3.397	0.880
05	Encourage Reporting	3.361	1.080
06	Management takes action	3.309	0.877
07	Warm and friendly environment	3.208	0.910
08	Freedom for Initiative	3.183	0.939
09	Open Communication	3.171	0.978
10	Knowledge gained from incidents put to good use	3.160	0.928
11	Inform Staff of outcome	2.683	0.985

As can be seen from table 4.22, cabin crew strongly agree that they need to adhere to policies strictly and that disciplinary actions would be taken for errors made. However, they felt that they possess some freedom to take initiatives.

Airlines were found to have been effective in communicating their policies and procedures to their cabin crew and the cabin crew were comfortable with the standards of safety at their airline.

Cabin crew viewed their work environment as moderately warm, friendly and collaborative and communication with the management is only moderately open.

Although the management encourages fearless reporting, and takes action for reported incidents, cabin crew believed that they were not informed of the outcome and the experience is not always used to improve safety procedures.

Demographics and Airlines Organisational Culture

This section examines the data in relation to cabin crews' perception of their airlines organisational culture.

Age was found to be related to cabin crews' perspective of airlines' organisational culture (See table 4.23a). Cabin crew were found to have differed in views on the

level of encouragement management gives in reporting incidents. Differences between the groups cannot be identified during the post hoc test (Scheffe), however the largest mean difference were between those who aged between 35 and 39 *(x = 2.833, σ = 1.150)* and those who aged below 24 *(x = 4.400, σ = 0.548)*. Cabin crew were also found to have differed in their perception towards their working environment being warm and friendly. Likewise, the differences between the groups cannot be identified during the post hoc test (Scheffe), however the largest mean difference were between those who aged between 40 and 44 *(x = 2.931, σ = 1.132)* and those who aged below 24 *(x = 4.000, σ = 1.000)*. Thus there were also indications that younger cabin crew believe their working environment is warm, friendly and a collaborative one.

Education was also found to be related to cabin crews' perspective of airlines' organisational culture (See table 4.23a). The level of adherence to rules, regulations and policies was found to differ among cabin crew. Those who just started their university education believed more strongly *(x = 4.500, σ = 0.650)* than those who already possess a degree *(x =3.821, σ = 0.905)* that they need to adhere strictly to airlines' rules, regulation and procedures. The same groups also differed in believe that their airlines communicate safety policies and procedures clearly and effectively. Those who just started their university education believed more strongly *(x = 4.429, σ = 0.646)* than those who already possess a degree *(x =3.607, σ = 0.786)* that their airlines communicated safety policies and procedures clearly and effectively.

Table 4.23a T-Tests and ANOVA Tests for Demographics and Airline Organisational Culture

Policies	**Gender** *Male and Female (df 119)*	**Ethnicity** *Asian, Caucasians & Polynesians (df 120)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 122)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 119)*
Adhere to Policies	*p ≤ .276, t = 1.093*	*p ≤ .538 F = 0.623*	*p ≤ .711 F = 0.624*	Those who just started their university education

				believed more strongly than those who already possess a degree that they need to adhere strictly to airlines' rules, regulation and procedures *$p \leq .037$ $F = 2.908$ $Ms = 1.540$
Disciplinary Actions	$p \leq .844$, $t = -0.197$	$p \leq .428$, $F = 0.854$	$p \leq .194$, $F = 1.471$	$p \leq .247$, $F = 0.901$
Communicate Policies	$p \leq .282$, $t = 1.082$	$p \leq .860$, $F = 0.151$	$p \leq .123$, $F = 1.717$	*$p \leq .038$, $F = 2.892$ $Ms = 2.133$
Encourage Reporting	$p \leq .909$, $t = -0.114$	$p \leq .452$, $F = 0.799$	Differences between groups cannot be identified by post hoc test (Scheffe) *$p \leq .018$, $F = 2.684$ $Ms = 2.896$	$p \leq .118$, $F = 2.000$
Freedom for Initiative	$p \leq .713$, $t = 0.368$	$p \leq .479$ $F = 0.741$	$p \leq .739$ $F = 0.588$	$p \leq .276$ $F = 1.306$
Warm and friendly environment	$p \leq .141$, $t = 1.482$	$p \leq .708$, $F = 0.346$	Differences between groups cannot be identified by post hoc test (Scheffe) *$p \leq .022$, $F = 2.586$ $Ms = 1.987$	$p \leq .290$, $F = 1.263$
Open Communicati on	$p \leq .962$, $t = 0.048$	$p \leq .427$, $F = 0.857$	$p \leq .711$, $F = 0.624$	$p \leq .472$, $F = 0.844$
Safety Standard at Organisation	$p \leq .563$, $t = -0.580$	$p \leq .840$, $F = 0.174$	$p \leq .992$, $F = 0.132$	$p \leq .544$, $F = 0.716$
Inform Staff of outcome	$p \leq .764$, $t = -0.301$	$p \leq .446$, $F = 0.813$	$p \leq .196$, $F = 1.464$	$p \leq .880$, $F = 0.223$
Management takes action	$p \leq .826$, $t = -0.220$	$p \leq .904$, $F = 0.101$	$p \leq .795$, $F = 0.517$	$p \leq .764$, $F = 0.385$
Knowledge gained from incidents put to good use	$p \leq .679$, $t = -0.415$	$p \leq .199$, $F = 1.634$	$p \leq .771$, $F = 0.548$	$p \leq .985$, $F = 0.051$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

Experience was also found to be related to cabin crews' perspective of airlines' organisational culture (See table 4.23b). Cabin crew differed in beliefs that their airlines communicate safety policies and procedures clearly and effectively. The differences between groups cannot be identified during the post hoc test (Scheffe), however the largest mean difference were between those who had less than 2 years of experience *(x =5.000, σ = 0.000)* and those who had 16 to 20 years of experience *(x =3.565, σ = 1.080)* and those with more than 30 years of experience *(x =3.571, σ = 0.976)*. Cabin crew also differed in their beliefs related to their environment. Those who had experience of less than 2 years *(x =4.500, σ = 1.000)* believed strongly that their work environment was a warm friendly and collaborative one than those who had more than 30 years of experience *(x =2.714, σ = 0.488)*. Cabin crew also differed in their beliefs related to being informed the outcome of incidents by management. Differences between the groups cannot be identified during the post hoc test (Scheffe), however the largest mean differences were between those who had less than 2 years of experience *(x =3.750, σ = 0.500)* and those who had 11 to 15 years of experience *(x =2.316, σ = 0.946)*

Table 4.23b T-Tests and ANOVA Tests for Demographics and Airline Organisational Culture

Policies	**Route** *International, Domestic and Combined international and domestic (df 120)*	**Experience** *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 120)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 121)*	**Position** *Senior cabin crew and Junior cabin crew (df 119)*
Adhere to Policies	*p ≤ .142* *F = 1.985*	*p ≤ .826,* *F = 0.509*	*p ≤ .834,* *F = 0.182*	*p ≤ .220,* *t = 1.234*
Disciplinary Actions	*p ≤ .903,* *F = 0.102*	*p ≤ .485,* *F = 0.932*	*p ≤ .432,* *F = 0.847*	*p ≤ .156,* *t = 1.429*
Communicate Policies	*p ≤ .381,* *F = 0.973*	Differences between the groups cannot be identified during the post hoc test (Scheffe) **p ≤ .025,* *F = 2.406* *Ms = 1.720*	*p ≤ .646,* *F = 0.438*	*p ≤ .251,* *t = 1.154*

Encourage Reporting	$p \leq .458$, $F = 0.785$	$p \leq .065$, $F = 1.969$	$p \leq .345$, $F = 1.074$	$p \leq .385$, $t = 0.872$
Freedom for Initiative	$p \leq .939$ $F = 0.063$	$p \leq .088$, $F = 1.830$	$p \leq .560$, $F = 0.583$	$p \leq .374$, $t = 0.893$
Warm and friendly environment	$p \leq .278$, $F = 1.295$	Those who had experience of less than 2 years believed strongly that their work environment was a warm friendly and collaborative one than those who had more than 30 years of experience $***p \leq .003$, $F = 3.288$ $Ms = 2.409$	$p \leq .704$, $F = 0.352$	$p \leq .217$, $t = 1.242$
Open Communication	$p \leq .350$, $F = 1.058$	$p \leq .060$, $F = 2.007$	$p \leq .301$, $F = 1.214$	$p \leq .970$, $t = 0.038$
Safety Standard at Organisation	$p \leq .445$, $F = 0.816$	$p \leq .216$, $F = 1.051$	$p \leq .564$, $F = 0.575$	$p \leq .467$, $t = 0.729$
Inform Staff of outcome	$p \leq .053$, $F = 3.000$	Differences between the groups cannot be identified during the post hoc test (Scheffe) $*p \leq .021$, $F = 2.476$ $Ms = 2.219$	$p \leq .114$, $F = 2.214$	$p \leq .094$, $t = 1.686$
Management takes action	$p \leq .331$, $F = 1.117$	$p \leq .270$, $F = 0.963$	$p \leq .755$, $F = 0.281$	$p \leq .581$, $t = -0.554$
Knowledge gained from incidents put to good use	$p \leq .274$, $F = 1.310$	$p \leq .270$, $F = 1.079$	$p \leq .632$, $F = 0.461$	$p \leq .127$, $t = 1.535$

$*p \leq .05$, $**p \leq .01$, $*** p \leq .005$, $**** P \leq .001$

Aircraft type was found to be related to cabin crews' perspective of airlines' organisational culture (See table 4.23c). Cabin crew differ in views related to freedom to take initiative. Those who operated on international aircraft ($x = 3.317$, $\sigma = 0.907$) believed they had more freedom to take initiatives than those who operated on both international and domestic aircrafts ($x = 2.83$, $\sigma = 1.001$).

All other variables were found to be unrelated to cabin crews' perspective of airlines' organisational culture (See tables 4.23a, 4.23b & 4.23c).

Table 4.23c ANOVA Tests for Demographics and Airline Organisational Culture

Policies	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 122)*	**Aircraft Type** *International, Commuter and Combined International and Commuter (df 120)*
Adhere to Policies	*p ≤.357, F = 1.089*	*p ≤.874, F = 0.135*
Disciplinary Actions	*p ≤.656, F = 0.540*	*p ≤.802, F = 0.222*
Communicate Policies	*p ≤.370, F = 1.058*	*p ≤.654, F = 0.426*
Encourage Reporting	*p ≤.243, F = 1.409*	*p ≤.561, F = 0.581*
Freedom for Initiative	*p ≤.877, F = 0.228*	Cabin crew who operated on international aircraft believed they had more freedom to take initiatives than those who operated on both international and domestic aircrafts **p ≤.029, F = 3.344 Ms = 2.844*
Warm and friendly environment	*p ≤.382, F = 1.030*	*p ≤.622, F = 0.476*
Open Communication	*p ≤.234, F = 1.443*	*p ≤.298, F = 1.222*
Safety Standard at Organisation	*p ≤.346, F = 1.114*	*p ≤.836, F = 0.180*
Inform Staff of outcome	*p ≤.087, F = 2.242*	*p ≤.599, F = 0.514*
Management takes action	*p ≤.522, F = 0.753*	*p ≤.635, F = 0.455*
Knowledge gained from incidents put to good use	*p ≤.551, F = 0.704*	*p ≤.119, F = 2.168*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

4.7 Measures Inhibiting IFMI Behaviour

This section sought to understand the effectiveness of strategies for coping with IFMI from cabin crew and passenger perspectives. They were asked to rate a list of measures and their effectiveness on a scale of 1 to 5 where 1 is not effective at all and 5 very effective. The measures included cabin crew, flight crew, airport screening, negotiation skills, physical restraints, other passengers and public education. 'Negotiation skills' and 'passengers' were excluded on the passenger questionnaire and 'public education' was omitted for cabin crew questionnaire.

Results for subgroups, airport passengers and Internet passengers were reported because the two groups were found to have rated several an items differently (See Table 4.24). As can be seen, Internet passengers rated physical restraints differently from the airport passengers.

Table 4.24 Differences between Cabin Crew, Airport Passengers and Internet Passengers in rating Measures Related to IFMI (T-Test)

Individual Incidents			
Level of Incidents/Groups	Cabin Crew & Airport Passengers *(df 237)*	Cabin Crew & Internet Passengers *(df 237)*	Airport Passengers & Internet Passengers *(df 237)*
Legislation	***p ≤.009* MD = 0.470	*p ≤.069* MD = 0.435	*p ≤ 0.985* MD = - 0.035
Airport Screening	*p ≤.396* MD = -0.211	*p ≤.847* MD = 0.111	*p ≤ .299* MD = - 0.323
Physical Restraints	*****p ≤.000* MD = 0.580	*p ≤.987* MD = -0.027	****p ≤.004* MD = - 0.607
Cabin Crew	*****p ≤.000* MD = 0.536	*****p ≤.000* MD = 0.701	*p ≤.551* MD = - 0.164
Flight Crew	**p ≤.019* MD = 0.490	*p ≤ 0.070* MD = -0.491	*p ≤ 1.000* MD = - 0.001

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.25 summarises the means and standard deviation of measures inhibiting IFMI for each of the group. The table also ranked the items in descending order

according to their. In the following sections, the results for each group would be discussed.

Table 4.25: Means of Effectiveness of Measures

Ranking	Total Sample	Cabin crew	All Passengers	Airport Passengers	Internet Passengers
01	Negotiation Skills $x = 4.232$ $\sigma = 0.792$	Cabin Crew $x = 4.433$ $\sigma = 0.649$	Cabin Crew $x = 3.839$ $\sigma = 0.896$	Cabin Crew $x = 3.896$ $\sigma = 0.820$	Physical Restraints $x = 3.875$ $\sigma = 0.728$
02	Cabin Crew $x = 4.145$ $\sigma = 0.831$	Negotiation Skills $x = 4.232$ $\sigma = 0.792$	Flight Crew $x = 3.707$ $\sigma = 0.904$	Flight Crew $x = 3.707$ $\sigma = 0.850$	Cabin Crew $x = 3.732$ $\sigma = 1.025$
03	Physical Restraints $x = 3.678$ $\sigma = 0.939$	Physical Restraints $x = 3.848$ $\sigma = 0.986$	Airport Screening $x = 3.504$ $\sigma = 0.964$	Airport Screening $x = 3.615$ $\sigma = 0.856$	Flight Crew $x = 3.707$ $\sigma = 1.006$
04	Passengers $x = 3.651$ $\sigma = 0.934$	Passengers $x = 3.651$ $\sigma = 0.934$	Physical Restraints $x = 3.486$ $\sigma = 0.848$	Public Education $x = 3.438$ $\sigma = 0.881$	Public Education $x = 3.488$ $\sigma = 1.003$
05	Flight Crew $x = 3.458$ $\sigma = 1.190$	Legislation $x = 3.630$ $\sigma = 1.136$	Public Education $x = 3.456$ $\sigma = 0.923$	Physical Restraints $x = 3.268$ $\sigma = 0.769$	Airport Screening $x = 3.293$ $\sigma = 1.123$
06	Airport Screening $x = 3.453$ $\sigma = 1.076$	Airport Screening $x = 3.404$ $\sigma = 1.175$	Legislation $x = 3.172$ $\sigma = 0.916$	Legislation $x = 3.160$ $\sigma = 0.855$	Legislation $x = 3.195$ $\sigma = 1.030$
07	Legislation $x = 3.408$ $\sigma = 1.058$	Flight Crew $x = 3.217$ $\sigma = 1.374$			

4.7.1 Total Sample

This section examines how the total sample rated the effectiveness of a list of measures (See table 4.25). The list of measures includes legislation, airport screening, public education, cabin crew, flight crew, passengers and physical restraints. The respondents believed that negotiation skill were the most important while legislation was the least effective. As can be seen measures that could be

utilized on the aircraft environment itself were rated more effective than measures more distant from the incidents; in this case legislation and airport screening .

Demographics and Measures Inhibiting IFMI

This section examines the data to see if the demographic variables have an effect on the way cabin crew rate the effectiveness of measures.

Education was found to be related to the way cabin crew rated the effectiveness of measures (See table 4.26a). Respondents who attended high school *(x = 4.296, σ = 0.782)* found cabin crew more effective than those who had obtained a degree *(x = 0.388, σ = 0.927)*. Flight crew was also found to be significant. Differences between groups could not be identified during the post hoc test (Scheffe). The largest mean difference was between those who had obtained a postgraduate degree *(x = 3.163, σ = 1.257)* and those who had obtained a Diploma *(x = 4.333, σ = 0.707)*.

Ethnicity was also found to be related to the way respondents rated the effectiveness of measures (See table 4.26a). Asian respondents *(x = 3.891, σ = 0.854)* found cabin crew less effective than Caucasian respondents *(x = 4.208, σ = 0.818)*.

Age was found to be related to the way respondents rated the effectiveness of measures (See table 4.26a). Respondents aged between 25 and 29 *(x = 4.125, σ = 0.833)* rated flight crew more effective than those who were aged between 35 and 49 *(x = 2.805, σ = 1.226)*. Age was also found to be significant for public education, but the groups cannot be identified during the post hoc test (Scheffe). The largest mean difference, however, was between respondent who were aged between 25 and 29 (x = 3.944, σ = 0.802) and those who were aged between 45 and 49 *(x = 2.714, σ = 0.488)*.

Gender was also found to be related to the way respondents rated the effectiveness of measures (See table 4.26a). Male respondents *(x = 3.264, σ = 1.237)* found flight crew less useful than female respondents *(x = 3.620, σ = 1.133)*.

Table 4.26a T-Tests and ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	Gender *Male and Female (df 221)*	Ethnicity *Asian, Caucasians & Polynesians (df 217)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 222))*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 218))*
Legislation	*p ≤ .357, t = -0.923*	*p ≤ .427, F = 0.854*	*p ≤ .311, F = 1.192*	*p ≤ .570, F = 0.734*
Airport Screening	*p ≤ .520, t = 0.545*	*p ≤ .073, F = 2.640*	*p ≤ .067, F = 1.997*	*p ≤ .085, F = 2.073*
Negotiation Skills	*p ≤ .704, t = -0.380*	*p ≤ .885, F = 0.123*	*p ≤ .097, F = 1.839*	*p ≤ .087, F = 2.239*
Restraint Kits	*p ≤ .113, t = -1.593*	*p ≤ .145, F = 1.945*	*p ≤ .465, F = 0.943*	*p ≤ .438, F = 0.946*
Cabin crew	*p ≤ .138, t = 1.487*	*p ≤ .031, F = 3.518 Ms =2.372*	*p ≤ .570, F = 0.801*	Respondents who attended high school found cabin crew more effective than those who had obtained a degree **p ≤ .011, F = 3.317 Ms = 2.217*
Flight Crew	Male respondents found flight crew less useful than female respondents **p ≤ .023, t = 2.293 MD = 0.356*	*p ≤ .193, F = 1.659*	Respondents aged between 25 and 29 rated flight crew more effective than those who were aged between 35 and 49 *****p ≤ .000, F = 4.569 Ms = 5.934*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .035, F = 2.638 Ms = 3.689*
Passengers	*p ≤ .247, t = 1.162*	*p ≤ .770, F = 0.262*	*p ≤ .373, F = 1.089*	*p ≤ .651, F = 0.547*
Public Education	*p ≤ .283, t = 1.080*	*p ≤ .828, F = 0.819*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .035, F = 2.369 Ms = 1.905*	*p ≤ .838, F = 0.358*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

The type of airlines was found to be related to the way cabin crew rated the measures (See table 4.24b). Respondents who travelled on Asian airlines *(x = 3.722, σ = 1.003)* rated cabin crew less effective than those who travelled on European airlines *(x = 4.269, σ = 0.729)*. Legislation was found to be significant, but the groups cannot be identified during the post hoc test (Scheffe). The largest mean difference was between those who had travelled on American airlines *(x = 2.778, σ = 1.202)* and those who had travelled on European airlines *(x = 4.000, σ = 1.732)*.

Flight route and length of flight was found to be unrelated to the way respondents rated the effectiveness of measures (See table 4.24b).

Table 4.26b ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	**Route** *International, Domestic and Combined international and domestic (df 227))*	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 228)*	**Airline** *American airlines, Asian airline, European airlines, Pacific airlines and mixed categorical airlines (df 225)*
Legislation	*p ≤ .410, F = 0.894*	*p ≤ .722 F = 0.444*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .031, F = 2.718 Ms = 3.008*
Airport Screening	*p ≤ .238, F = 1.446*	*p ≤ .605, F = 0.616*	*p ≤ .877, F = 0.301*
Negotiation Skills	*p ≤ .078, F = 2.608*	*p ≤ .366, F = 1.067*	*p ≤ .551, F = 0.598*
Restraint Kits	*p ≤ .243, F = 1.424*	*p ≤ .079, F = 2.291*	*p ≤ .359, F = 1.097*
Cabin crew	*p ≤ .177, F = 1.745*	*p ≤ .689, F = 0.491*	Respondents who travelled on Asian airlines rated cabin crew less effective than those who travelled on European airlines **p ≤ .008, F =3.516 Ms = 2.343*
Flight Crew	*p ≤ .232 F = 1.471*	*p ≤ .075, F = 2.328*	*p ≤ .638, F = 0.635*
Passengers	*p ≤ .988, F = 0.012*	*p ≤ .877, F = 0.228*	*p ≤ .559, F = 0.584*
Public Education	*p ≤ .664, F = 0.411*	*p ≤ .915, F = 0.172*	*p ≤ .806, F = 0.403*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

4.7.1 Cabin Crew

Cabin crew ranked themselves as the most effective measure in preventing and resolving in-flight incidents (See table 4.25). They also rated flight crew the least effective measure. Also to note, cabin crew rated active measures such as cabin crew, negotiation skills, physical restraints and passengers as more effective than pro-active measures such as airport screening and legislation.

The biggest disparity between cabin crew and passengers is flight crew intervention with in-flight incident (See table 4.25). Cabin crew rated flight crew as the least effective measure while passengers ranked it 2nd. Passengers also differed from cabin crew on the effectiveness of airport screening. Cabin crew rated airport screening less effective (6th) than passengers (3rd). However they do agree that cabin crew is the most effective measure.

Demographics and Measures Inhibiting IFMI

This section examines the data to see if the demographic variables have an effect on the way cabin crew rate the effectiveness of measures. The results are summarised in table 4.27a and 4.27b.

Age was found to have an effect on the way cabin crew rated the effectiveness of the measures. Cabin crew in the age group of 25 to 29 *($x = 4.467$, $\sigma = 0.743$)*, found flight crew more effective than those in the age groups of 35 to 39 *($x = 2.750$, $\sigma = 1.416$)* and 45 to 49 *($x = 2.692$, $\sigma = 1.315$)* (See table 4.27a).

Gender was also found to have an effect on the way cabin crew rated the effectiveness of the measures (See table 4.27a). Female cabin crew *($x = 3.463$, $\sigma = 1.330$)* rated flight crew more effective than male cabin crew *($x = 2.890$, $\sigma = 1.4044$)*.

Table 4.27a T-Tests and ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	Gender *Male and Female (df 121)*	Ethnicity *Asian, Caucasians & Polynesians (df 121)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 122)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 124)*
Legislation	*p ≤ .967, t = -0.041*	*p ≤ .981, F = 0.756*	*p ≤ .650, F = 0.700*	*p ≤ .635, F = 0.571*
Airport Screening	*p ≤ .556, t = 0.590*	*p ≤ .885, F = 0.123*	*p ≤ .203, F = 1.447*	*p ≤ .057, F = 2.577*
Negotiation Skills	*p ≤ .704, t = -0.380*	*p ≤ .678, F = 0.390*	*p ≤ .097, F = 1.839*	*p ≤ .087, F = 2.239*
Restraint Kits	*p ≤ .182, t = -1.343*	*p ≤ .703, F = 0.353*	*p ≤ .696, F = 0.643*	*p ≤ .270, F = 1.322*
Cabin crew	*p ≤ .690, t = 0.400*	*p ≤ .442, F = 0.822*	*p ≤ .668, F = 0.678*	*p ≤ .243, F = 1.409*
Flight Crew	Female cabin crew rated flight crew more effective than male cabin crew **p ≤ .026, t = 2.259 MD = 0.573*	*p ≤ .770, F = 0.262*	Cabin crew in the age group of 25 and 29, found flight crew more effective than cabin crew in the age groups of 35 to and 45 to 49 ***p ≤ .003, F = 1.530 Ms = 5.915*	*p ≤ .728, F = 0.435*
Passengers	*p ≤ .247, t = 1.162*	*p ≤ .322, F = 1.145*	*p ≤ .373, F = 1.089*	*p ≤ .651, F = 0.547*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Position was found to be related to the way cabin crew rated the effectiveness of the measures. Junior cabin crew *(x = 3.951, σ = 0.904)*, believed that airport screening was more effective than senior cabin crew *(x = 3.692, σ = 1.079)*. Senior cabin crew *(x = 2.684, σ = 1.397)* also believed that flight crew was less effective than junior cabin crew *(x = 3.513, σ = 1.309)* (See table 4.27b).

Experience was found to be related to the way cabin crew rated the effectiveness of measures. Cabin crew who worked between 2 to 5 years *(x = 4.059, σ = 1.029)* rated flight crew more effective measure than cabin crew who worked for 16 to 20 years *(x = 2.543, σ = 1.421)* (See table 4.27a).

Types of airline cabin crew operating were found to have an effect on the way they rated the effectiveness of measures. Cabin crew operating on European airlines *(x = 3.505, σ = 1.166)* rated airport screening more effective than those who operated on mixed categorical airlines *(x = 2.591, σ = 0.970)* (See table 4.27b). Legislation was also found to be significant; however differences between groups cannot be identified during post hoc test (Scheffee) (See table 4.27b).However the largest mean difference were between cabin crew who operated on European airlines *(x = 3.794, σ = 1.036)* and those who operated on Pacific airlines *(x = 3.182, σ = 1.296)*.

Ethnicity, education, aircraft type, length of flight and route were found to be unrelated to the way cabin crew rated the effectiveness of measures See tables 4.27a, 4.27b and 4.27c).

Table 4.27b T-Tests and ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	Route *International, Domestic and Combined international and domestic (df 122)*	Experience *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 123)*	Airline *American airlines, Asian airlines, Australasian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 123)*	Position *Senior cabin crew and Junior cabin crew (df 119)*
Legislation	*p ≤ .067, F = 2.758*	*p ≤ .741 F = 0.617*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .034, F = 3.489 Ms = 4.349*	*p ≤ .810, t = 0.242*
Airport Screening	*p ≤ .148, F = 1.944*	*p ≤ .124, F = 1.664*	Cabin crew operating on European airlines rated airport screening more effective than those who operated on mixed categorical airlines **p ≤ .050, F = 3.064 Ms = 4.121*	Junior cabin crew believed that airport screening was more effective than senior cabin crew ***p ≤ .008, t = 2.686 Ms = 0.604*
Negotiation Skills	*p ≤ .078, F = 2.608*	*p ≤ .536, F = 0.865*	*p ≤ .551, F = 0.598*	*p ≤ .863, t = -0.173*
Restraint Kits	*p ≤ .218, F = 2.541*	*p ≤ .593, F = 0.795*	*p ≤ .053, F = 3.017*	*p ≤ .170, t = 1.381*
Cabin crew	*p ≤ .265, F = 1.344*	*p ≤ .788, F = 0.558*	*p ≤ .206, F = 1.601*	*p ≤ .740, t = 0.333*
Flight Crew	*p ≤ .557 F = 0.588*	Cabin crew who worked between 2 to 5 years rated flight crew more effective measure than cabin crew who worked for 16 to 20 years ***p ≤ .009, F = 2.857 Ms = 4.687*	*p ≤ .449, F = 0.807*	Senior cabin crew believed that flight crew was less effective than junior cabin crew ****p ≤ .002, t = 3.130 Ms =0.829*
Passengers	*p ≤ .988, F = 0.012*	*p ≤ .163, F = 1.532*	*p ≤ .559, F = 0.584*	*p ≤ .174, t = 1.368*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Table 4.27c ANOVA Tests for Demographics and Measures Inhibiting IFMI

Individual Incidents		
Incidents	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 125)*	**Aircraft Type** *International, Commuter and Combined International and Commuter (df 124)*
Legislation	$p \leq .722$, $F = 0.444$	$p \leq .287$ $F = 1.260$
Airport Screening	$p \leq .605$, $F = 0.616$	$p \leq .418$, $F = 0.877$
Negotiation Skills	$p \leq .366$, $F = 1.067$	$p \leq .825$, $F = 0.193$
Restraint Kits	$p \leq .079$, $F = 2.291$	$p \leq .737$, $F = 0.306$
Cabin crew	$p \leq .689$, $F = 0.491$	$p \leq .757$, $F = 0.279$
Flight Crew	$p \leq .075$ $F = 2.328$	$p \leq .370$ $F = 1.003$
Passengers	$p \leq .877$ $F = 0.228$	$p \leq .985$ $F = 0.015$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.7.3 Overall Passengers

This section examines how the overall passenger group rated the effectiveness of a list of measures (See table 4.25). Overall passengers responded to this section by ranking cabin crew the most effective measure and legislation the least effective measure. As for cabin crew, passengers rated active measures such as cabin crew, flight crew more effective than proactive measures such as legislation and public education. However they rated physical restraint (4^{th}), an active measure less effective than airport screening (3^{rd}) which is a pro-active measure.

Demographics and Measures inhibiting IFMI (Passengers)

This section examines the data to find out if the demographic variables have an effect on the way passengers rate the effectiveness of the measures.

Gender was found to have an effect on the way passengers rate the measures (See table 4.28a). Female passengers *($x = 3.000$, $\sigma = 0.809$)* were found to have rated legislation less effective than male passengers *($x = 3.339$, $\sigma = 0.993$)*.

Ethnicity was also found to have an effect on the way passengers rate the measures (See table 4.28a). Caucasian passengers *(x = 2.932, σ = 0.980)* rated legislation less effective than Polynesians *(x = 4.000, σ = 0.894)* and Asians *(x = 3.337, σ = 0.761)*. Caucasians *(x = 3.328, σ = 1.044)* were also found to have rated airport screening less effective than Polynesians *(x = 4.500, σ = 0.548)*.

Age was found to have an effect on the way passengers rate the measures (See table 4.28a) Public education was found to be significant and the differences between groups cannot be identified during the post hoc test (Scheffe) (see table 4.28a). However, the largest mean differences were between those aged between 35 and 39 *(x = 4.000, σ = 0.633)* and those who aged between 45 and 49 *(x = 3.143, σ = 1.069)*.

Education was also found to be related to the way cabin crew rated the effectiveness of the other cabin crew and flight crew (See table 4.28a). The differences between groups cannot be identified during the post hoc test (Scheffe). The largest mean differences for cabin crew were between those who completed their degree *(x = 3.568, σ = 1.015)* and those who completed their Masters degree or PhD *(x = 4.333, σ = 0.707)*. The largest mean difference for flight crew were between also between those who completed their degree *(x = 3.378, σ = 0.924)* and those who completed their Masters Degree or PhD

Table 4.28a T-Tests and ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	Gender *Male and Female*	Ethnicity *Asian, Caucasians & Polynesians*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 112)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PhD (df 091)*
Legislation	Female passengers found legislation less effective than male passengers *$p \leq .048$, $t = -2.000$ $MD = -0.339$	Passengers rated legislation less effective than Polynesians and Asians **$p \leq .003$, $F = 5.995$ $Ms = 4.741$	$p \leq .234$, $F = 1.368$	$p \leq .690$, $F = 0.563$
Airport Screening	$p \leq .705$, $t = 0.379$	Caucasians were also found to have rated airport screening less effective than Polynesians *$p \leq .013$, $F = 4.530$ $Ms = 4.063$	$p \leq .337$, $F = 1.153$	$p \leq .701$, $F = 0.548$
Cabin Crew	$p \leq .328$, $t = 0.982$	$p \leq .469$, $F = 0.762$	$p \leq .584$, $F = 0.785$	Differences between groups cannot be identified by post hoc test (Scheffe) *$p \leq .040$, $F = 2.597$ $Ms = 2.015$
Flight Crew	$p \leq .190$, $t = 1.320$	$p \leq .385$, $F = 0.964$	$p \leq .374$, $F = 1.089$	Differences between groups cannot be identified by post hoc test (Scheffe) *$p \leq .019$, $F = 3.104$ $Ms = 2.397$
Physical Restraint	$p \leq .179$, $t = -1.351$	$p \leq .828$, $F = 0.189$	$p \leq .106$, $F = 1.802$	$p \leq .977$, $F = 0.114$
Public Education	$p \leq .283$, $t = -1.080$	$p \leq .608$, $F = 0.500$	Differences between groups cannot be identified by post hoc test (Scheffe) *$p \leq .035$, $F = 2.369$ $Ms = 1.905$	$p \leq .838$, $F = 0.358$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

The length of flight was found to have an effect on how passengers rate cabin crew as a measure. Cabin crew was found to be significant; the differences between groups cannot be identified during the post hoc test (Scheffe) (See table 4.28b). However, the largest mean differences were between those who travelled between 2 to 5 hours *(x = 4.091, σ = 0.678)* and those who travelled between 5 to 9 hours*(x = 3.200, σ = 1.353)*.

The type of airlines, the frequency which passengers travel and route were found to have no effect on the way cabin crew rated the effectiveness of measures.

Table 4.28b ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	**Route** *International, Domestic and Combined international and domestic (df 111)*	**Length of Flight** *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 112)*	**Airline** *American airlines, Asian airlines, Australasian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 111)*	**Frequency of flight** *Less than 11, 11 to 20, 21 to 30, more than 30 (df 112)*
Legislation	*p ≤ .508, F = 0.681*	*p ≤ .440, F = 0.908*	*p ≤ .202, F = 1.520*	*p ≤ .923, F = 0.325*
Airport Screening	*p ≤ .918, F = 0.086*	*p ≤ .761, F = 0.389*	*p ≤ .756, F =0.473*	*p ≤ .183, F = 1.507*
Cabin Crew	*p ≤ .574, F = 0.557*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .029 F = 1.773 Ms = 2.388*	*p ≤ .706, F = 0.539*	*p ≤ .398, F = 1.050*
Flight Crew	*p ≤ .803, F = 0.220*	*p ≤ .157, F = 2.088*	*p ≤ .432, F = 0.961*	*p ≤ .214, F = 1.419*
Physical Restraint	*p ≤ .546, F = 0.609*	*p ≤ .106, F = 1.773*	*p ≤ .512, F = 0.816*	*p ≤ .156, F = 1.598*
Public Education	*p ≤ .664, F = 0.411*	*p ≤ .915, F = 0.172*	*p ≤ .806, F = 0.403*	*p ≤ .787, F = 0.527*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

4.7.2.1 Airport Passengers

This section examines how the airport passenger group rated the effectiveness of a list of measures (See table 4.25). Airport passengers believed that cabin crew was the

best measure when dealing with in-flight incidents and legislation was the least effective. From table 4.25, it can be seen that airport passengers the top two most effective measures are cabin crew and flight crew, which falls into the category of active measures. This could be due to the fact that passengers rely on both the cabin crew flight crew for their safety during flight.

Demographics and Measures Inhibiting IFMI (Airport Passengers)

This section examines the data to find out if the demographic variables had an effect on the way airport passengers rated the effectiveness of the measures. Table 4.29a and 4.29b summarises the results of this section.

Age was found to be related to how airport passengers rated the effectiveness of measures (See table 4.29a). Public education was found to be significant. However, the differences between groups cannot be identified during the post hoc test (Scheffe).

Table 4.29a T-Tests and ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	Gender *Male and Female (df 73)*	Ethnicity *Asian, Caucasians & Polynesians (df 72)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 72)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 70)*
Legislation	*p≤.209, t = -1.069*	*p ≤.077, F = 2.661*	*p ≤.335, F = 1.165*	*p ≤.515, F = 0.823*
Airport Screening	*p ≤.948, t = -0.065*	*p ≤.078, F = 2.645*	*p ≤.235, F = 1.380*	*p ≤.829, F = 0.371*
Cabin Crew	*p ≤.785, t = 0.274*	*p ≤.646, F = 0.440*	*p ≤.108, F = 1.822*	*p ≤.317, F = 1.203*
Flight Crew	*p ≤.399, t = 0.849*	*p ≤.369, F = 1.011*	*p ≤.282, F = 1.273*	*p ≤.139, F = 1.801*
Physical Restraint	*p ≤.779, t = 0.282*	*p ≤.861, F = 0.150*	*p ≤.298, F = 1.241*	*p ≤.693, F = 0.560*
Public Education	*p ≤.203, t = -1.284*	*p ≤.229, F = 1.506*	**p ≤.041, F = 2.347*	*p ≤.927, F = 0.218*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

The length of flight was found to be related to the way airport passengers rated the effectiveness of the measures (See table 4.29b). Cabin crew was found to be significant; however, the differences between groups cannot be identified during the post hoc test (Scheffe).

The type of airline was found to be related to the way airport passengers rated the effectiveness of the measures (See table 4.29b). Passengers who travelled with American airlines *(x = 2.000, σ = 1.154)* rated legislation less effective than those passengers who travelled with mixed categorical airlines *(x = 3.611, σ = 0.607)*.

Ethnicity, gender, education and route were found to be unrelated to how airport passengers rated the effectiveness of measures.

Table 4.29b ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	Route *International, Domestic and Combined international and domestic (df 71)*	Length of Flight *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 72)*	Airline *American airlines, Asian airlines, Australasian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 70)*	Frequency of flight *Less than 11, 11 to 20, 21 to 30, more than 30 (df 73)*
Legislation	*p ≤ .321, F = 1.155*	*p ≤ .331, F = 1.162*	Passengers who travelled with American airlines rated legislation less effective than those passengers who travelled with mixed categorical airlines ***p ≤ .009, F = 3.668 Ms = 2.423*	*p ≤ .134, F = 1.923*
Airport Screening	*p ≤ .770, F = 0.263*	*p ≤ .860, F = 0.252*	*p ≤ .322, F = 1.193*	*p ≤ .297, F = 1.253*
Cabin Crew	*p ≤ .434, F = 0.846*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤ .041 F = 2.890 Ms = 1.805*	*p ≤ .842, F = 0.351*	*p ≤ .927, F = 0.154*
Flight Crew	*p ≤ .754, t = 0.284*	*p ≤ .115, F = 2.049*	*p ≤ .995, F = 0.052*	*p ≤ .214, F = 1.419*
Physical Restraint	*p ≤ .898, F = 0.108*	*p ≤ .768, F = 0.379*	*p ≤ .679, F = 0.579*	*p ≤ .052, F = 2.710*
Public Education	*p ≤ .759, F = 0.277*	*p ≤ .850, F = 0.265*	*p ≤ .545, F = 0.776*	*p ≤ .212, F = 1.269*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

4.7.2.2 Internet Passengers

This section examines how the Internet passenger group rated the effectiveness of a list of measures (See table 4.25). Internet passengers believed that physical restraint was the best measure when dealing with in-flight incidents and legislation was the least effective. There was great disparity for the ranking of physical restraint between the two passenger groups. Internet passengers rated physical restraints 1st while airport passengers rated it 5th. This could be due to the fact that the internet

passengers encompassed self selected group from the website of Skyrage Foundation. Thus their view of measures differed from those respondents from the airport. They also differed in rating airport screening. Internet passengers ranked airport screening 5th while airport passengers ranked it 3rd, they however agreed on the effectiveness of legislation (6th) and public education (4th).

Demographics and Measures Inhibiting IFMI (Internet Passengers)

This section examines the data to find out if the demographic variables had an effect on the way airport passengers rated the effectiveness of the measures. Table 4.30a and 4.30b summarises the results.

Ethnicity was found to have an effect on the way internet passengers rated the effectiveness of the measures (See table 4.30a). Legislation and physical restraints were found to be significant. However several groups were too small for post hoc test to be conducted thus the differences between groups cannot be identified.

Table 4.30a T-Tests and ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	Gender *Male and Female (df 39)*	Ethnicity *Asian, Caucasians & Polynesians (df 40)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 40)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 38)*
Legislation	*p≤.122, t = -1.580*	**p ≤.023, F = 4.149 Ms = 3.803*	*p ≤.613, F = 0.678*	*p ≤.632, F = 0.649*
Airport Screening	*p ≤.863, t = 0.174*	*p ≤.066, F = 2.926*	*p ≤.973, F = 0.124*	*p ≤.176, F = 1.685*
Cabin Crew	*p ≤.345, t = 0.955*	*p ≤.118, F = 2.257*	*p ≤.902, F = 0.230*	*p ≤.119, F = 1.983*
Flight Crew	*p ≤280, t = 1.095*	*p ≤.373, F = 1.013*	*p ≤.799, F = 0.412*	*p ≤.138, F = 1.870*
Physical Restraint	*p ≤.115, t = -1.611*	**p ≤.023, F = 4.159 Ms = 2.604*	*p ≤.371, F = 1.102*	*p ≤.456, F = 0.934*
Public Education	*p ≤.920, t = -0.101*	*p ≤.248, F = 1.447*	*p ≤.619, F = 0.667*	*p ≤.472, F = 0.905*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Frequency of flight, route, the length of flight, gender, education and the type of airlines were found to be unrelated to the way internet passengers rated the measures (See tables 4.28a and 4.28b)

Table 4.30b ANOVA Tests for Demographics and Measures Inhibiting IFMI

Measures	Route *International, Domestic and Combined international and domestic (df 39)*	Length of Flight *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 40)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 40)*	Frequency of flight *Less than 11, 11 to 20, 21 to 30, more than 30 (df 39)*
Legislation	$p \leq .936$, $F = 0.066$	$p \leq .770$, $F = 0.377$	$p \leq .888$, $F = 0.211$	$p \leq .548$, $F = 0.718$
Airport Screening	$p \leq .375$, $F = 1.088$	$p \leq .909$, $F = 0.180$	$p \leq .607$, $F = 0.620$	$p \leq .113$, $F = 2.132$
Cabin Crew	$p \leq .057$, $F = 3.093$	$p \leq .621$ $F = 0.597$	$p \leq .365$, $F = 1.092$	$p \leq .598$, $F = 0.634$
Flight Crew	$p \leq .163$, $t = 1.905$	$p \leq .805$, $F = 0.328$	$p \leq .059$, $F = 2.710$	$p \leq .193$, $F = 1.660$
Physical Restraint	$p \leq .429$, $F = 0.867$	$p \leq .334$, $F = 1.173$	$p \leq .475$, $F = 0.852$	$p \leq .139$, $F = 1.955$
Public Education	$p \leq .854$, $F = 0.159$	$p \leq .813$, $F = 0.317$	$p \leq .500$, $F = 0.804$	$p \leq .300$, $F = 1.267$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.8 Airline Operational Procedures

This section examines the presence and the effectiveness of airline policies, standard operating procedures, and practices with regard to preventing and coping with IFMI incidents. Cabin crew were asked to rate the following items on a Likert scale of 1 to 6, where 1 is no policy, 2 is totally ineffective and 6 is very effective.

- Procedures related to communication with ground staff on potentially disruptive passengers
- Procedures to screen and stop potentially disruptive passengers prior to boarding the aircraft
- Policies on In-flight alcohol control
- Policies or practices that requires cabin crew to be trained in conflict resolution
- Policies or practices that requires cabin crew to be trained in self-defence
- SOPs for flight crew intervention with in-flight incidents

- SOPs and policies for the use of restraint kits
- SOPs for deplaning passengers
- SOPs for controlling passenger in groups
- Practices and procedures for incident reports

As can be seen the number of items is quite large thus principle component analysis was used to reduce the data. The Kaiser-Meyer-Olkin measure of sampling adequacy test was 0.653 and Barletlett's test of sphericity (166.47; $p \leq .000$) indicated that the data was suitable for such analysis (See table 4.31). Three components were extracted and were named pre-flight procedures and in-flight procedures and post-flight procedures (See table 4.32).

Table 4.31 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.653	
Bartlett's Test of Sphericity	Approx. Chi-Square	166.472
	df	45
	Sig.	.000

Table 4.32 Rotated Component Matrix

Component 1: In-flight Procedures *(x - Mean)*		**I**	**II**	**III**
In-flight alcohol control	*(x = 4.583)*	.64	.30	-.02
Conflict resolution	*(x = 4.012)*	.56	-.40	.15
Self-defence	*(x = 2.772)*	.55	-.49	.24
Assistance from flight crew	*(x = 3.425)*	.55	-.21	-.14
Restraint kits	*(x = 4.780)*	.43	-.37	-.37
Group control	*(x = 3.995)*	.60	.11	.42
Incident reports	*(x = 4.360)*	.63	-.10	-.06
Component 2: Pre-flight Procedures		**I**	**II**	**III**
Communications with ground staff	*(x = 4.336)*	.44	.66	-.08
Pre-flight screening of passengers	*(x = 3.964)*	.50	.59	-29
Component 3: Post Flight procedures		**I**	**II**	**III**
Deplaning of passengers	*(x = 4.795)*	.09	.23	.80.
Eigenvalues		2.71	1.52	1.15
% of variance		27.13	15.23	11.46
Reliability Coefficient		.69	.70	NA
Mean		4.00	4.16	4.80
Standard Deviation		.75	.95	1.27

Pre-flight procedures encompassed SOPs, procedures and policies that require cabin crew to take actions in preventing potentially disruptive passengers from boarding the aircraft. In-flight procedures refer to SOPs, procedures and policies that guide cabin crew in handling in-flight incidents. Post-flight procedure encompassed SOPs, procedure and policies relating to the handling of IFMI perpetrators when the aircraft is ready for disembarking. The three components would be used for further analysis.

As can be seen from table 4.30, post-flight policies were rated more effective than pre-flight policies. Figure 4.12 show the percentages of cabin crew who believed that their airline had no policies in areas such as those listed in section 4.8 Thirty two percent of the cabin crew believed that there were no policies, procedures or SOPs related to self defence at their airlines. On the other hand, only 1.6% of the cabin crew believed that there were no policies, SOPs and procedures related to alcohol control at their airlines.

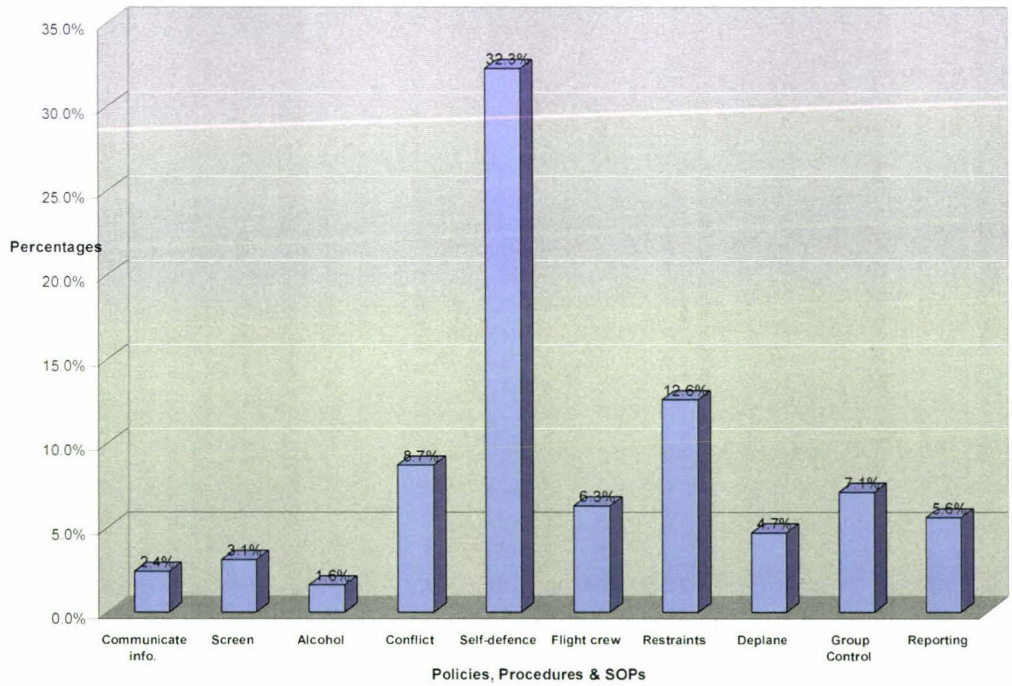

Figure 4.12 Percentages of cabin crew who believed that their airline had no such policies

Demographics and Airline Policies Procedures and SOPs

This section examines the data to see if demographic variables were related to airline policies procedures and SOPs.

Education was also found to be related to the effectiveness of airline policies, procedures and SOPs (See table 4.33a). Cabin crew who obtained a degree *($x = 3.721$, $\sigma = 0.755$)* believed that in-flight procedures were less effective than those who had been to high school *($x = 4.165$, $\sigma = 0.686$)*.

Table 4.33a T-Tests and ANOVA Tests for Demographics and Policies, SOPs and Practices in IFMI Management

Measures	Gender *Male and Female (df 126)*	Ethnicity *Asian, Caucasians & Polynesians (df 119)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 122)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 124)*
Pre-flight Procedures	$p \leq .265$, $t = 1.121$	$p \leq .803$, $F = 0.220$	$p \leq .062$, $F = 2.066$	$p \leq .071$, $F = 2.398$
In-flight procedures	$p \leq .225$, $t = 1.218$	$p \leq .254$, $F = 1.386$	$p \leq .913$, $F = 0.342$	Cabin crew who obtained a degree believed that in-flight procedures were less effective than those who had been to high school *$p \leq .029$, $F = 3.105$ $Ms = 1.557$
Post-flight Procedures	$p \leq .796$, $t = -0.259$	$p \leq .375$, $F = 0.990$	$p \leq .792$, $F = 0.520$	$p \leq 0.103$, $F = 1.206$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

Position was found to be related to the effectiveness of airline policies, procedures and SOPs (See table 4.33b). Junior cabin crew *($x = 4.111$, $\sigma = 0.759$)* found in-flight procedures more effective than senior cabin crew *($x = 3.768$, $\sigma = 0.608$)*.

Table 4.33b T-Tests and ANOVA Tests for Demographics and Policies, SOPs and Practices in IFMI Management

Measures	Route *International, Domestic and Combined international and domestic (df 124)*	Length of Flight *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 120)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 119)*	Position *Senior cabin crew and Junior cabin crew (df 118)*
Pre-flight Procedures	*p ≤ .082, F = 2.558*	*p ≤ .506, F = 0.782*	*p ≤ .865, F = 0.145*	*p≤ .935, t = -0.082*
In-flight procedures	*p ≤ .240, F = 1.442*	*p ≤ .525, F = 0.749*	*p ≤ .550, F = 0.600*	Junior cabin crew found in-flight procedures more effective than senior cabin crew **p ≤ .014, t = 2.481 MD = 0.344*
Post-flight Procedures	*p ≤ .097, F = 2.379*	*p ≤ .395, F = 1.001*	*p ≤ .538 F = 0.623*	*p ≤ .089, t = -1.715*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Experience was found to be related to the effectiveness of policies, procedures and SOPs (See table 4.33c). Pre-flight procedures were found to be significant, but the differences between groups could not be identified during the post hoc test (Scheffe). The largest mean differences were between those who had less than 2 years of experience *(x = 5.375, σ = 0.479)* and those who had 16 to 20 years of experience *(x = 3.695, σ = 1.074)*.

Aircraft type was found to be related to airline policies, procedures and SOPs (See table 4.33c). Cabin crew operating on both international and domestic aircrafts *(x = 3.722, σ = 0.906)* believed that pre-flight procedures were less effective than those who only operated on commuter aircraft *(x = 4.600, σ = 0.937)* or international aircraft *(x = 4.267, σ = 0.906)*.

Ethnicity, age, gender, route, length of flight and type of airlines were found to be unrelated to airline policies, procedures and SOPs.

Table 4.33c ANOVA Tests for Demographics and Policies, SOPs and Practices in IFMI Management

Measures	Experience *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 122)*	Aircraft Type *International, Commuter and Combined International and Commuter (df 123)*
Pre-flight Procedures	Differences between groups cannot be identified by post hoc test (Scheffe) *$*p \leq .044$, $F = 2.146$ $Ms = 1.814$	Cabin crew operating on both international and domestic aircrafts believed that pre-flight procedures were less effective than those who only operated on commuter aircraft or international aircraft *$*p \leq .010$, $F = 4.774$ $Md = 4.049$
In-flight procedures	$p \leq .797$, $F = 0.548$	$p \leq .453$, $F = 0.798$
Post-flight Procedures	$p \leq .123$, $F = 1.671$	$p \leq .141$, $F = 1.992$

$*p \leq .05$, $**p \leq .01$, $*** p \leq .005$, $**** P \leq .001$

4.9 Cabin Crew Training in Managing IFMI

This section examines the types of training cabin crew would need to manage IFMI. Cabin crew were asked to rate the importance of training in areas such as body language, negotiation skills, the use of physical restraints, passenger group control, self-defence techniques, understanding of cultures, coping with fear of flight, communication skills and the calming and comforting of upset passengers. On a Likert scale of 1 to 5, where 1 represents totally unimportant and 5 representing very important.

Principle component analysis was used to reduce the data. The Kaiser-Meyer-Olkin measure of sampling adequacy test was 0.707 and Barletlett's test of sphericity (237.25; *$p \leq .000$)* indicated that the data was suitable for such analysis (See table 4.34). Two components were extracted and were named psychological techniques and physical techniques (See table 4.35).

Table 4.34 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.707	
Bartlett's Test of Sphericity	Approx. Chi-Square	237.252
	df	36
	Sig.	.000

Table 4.35 Rotated Component Matrix

Component 1: Psychological Techniques *(x – Mean)*		**I**	**II**
Body language	*(x = 4.004)*	.63	-.148
Negotiation skill	*(x = 4.524)*	.57	-.40
Group control techniques	*(x = 3.851)*	.64	-.44
Understanding of culture	*(x = 3.892)*	.54	-.05
Coping with fear of flight	*(x = 3.772)*	.62	.11
Communication skills	*(x = 4.706)*	.67	-.36
Calming and comforting upset passengers	*(x = 4.496)*	.66	-.33
Component 2: Physical Techniques		**I**	**II**
Physical Restraints	*(x = 4.224)*	.39	.64
Self defence techniques	*(x = 4.121)*	.32	,66
Eigenvalues		2.961	1.487
% of variance		32.89	16.25
Reliability Coefficient		.74	.57
Mean		4.181	4.179
Standard Deviation		.45	.67

Psychological techniques are strategies used to mentally discourage passengers from continuing or escalating their misbehaviour. The component psychological techniques encompassed body language, negotiation skills, group control techniques, understanding of culture, coping with fear of flight, communication skills and claming and comforting of upset passengers.

Physical technique is the use of tools or people to subdue violent passengers. The component 'physical technique' encompassed physical restraints and self defence techniques.

These components would be used for further analysis. As can be seen from table 4.33, the means suggest that cabin crew rated psychological techniques and physical techniques equally important.

Demographics and Cabin Crew Training Needs

This section examines the data to see if the demographic variables were related to the way cabin crew rated the importance of including psychological and physical techniques as part of their training. Table 4.36a and table 4.36b summarises these results.

Gender was found to be related how cabin crew rated the importance of having particular training needs. Female cabin crew *(x = 4.264, σ = 0.448)* believed that psychological techniques are more important than male cabin crews *(x = 4.069, σ = 0.439)* (See table 4.36a).

Table 4.36a T-Tests and ANOVA Tests for Demographics and Cabin Crew Training Needs

Training Needs	Gender *Male and Female (df 121)*	Ethnicity *Asian, Caucasians & Polynesians (df 122)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 120)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 122)*
Psychological techniques	Female cabin crew believed that psychological techniques are more important than male cabin crews **p≤.0175, t = 2.421 MD = .196*	*p ≤.251, F = 1.396*	*p ≤.6132, F = 0.678*	*p ≤.463, F = 0.862*
Physical techniques	*p ≤.551, t = 0.598*	*p ≤.561, F = 0.582*	*p ≤.973, F = 0.124*	*p ≤.677, F = 0.509*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.36b T-Tests and ANOVA Tests for Demographics and Cabin Crew Training Needs

Training Needs	Route *International, Domestic and Combined international and domestic (df 121)*	Position *Senior cabin crew and Junior cabin crew (df 120)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 123)*	Experience *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 121)*
Psychological techniques	*p ≤ .391, F = 0.945*	*p ≤ .228, t = 1.211*	*p ≤ .368, F = 1.009*	*p ≤ .985, F = 0.199*
Physical techniques	*p ≤ .911, F = 0.094*	*p ≤ .229, t = 1.208*	*p ≤ .730, F =0.315*	*p ≤ .590, F = 0.799*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

The type of aircraft was also found to be related to how cabin crew rated the importance of having particular training needs (See table 4.34c). Cabin crew who operated on commuter aircraft *(x = 4.460, σ = 0.348)* believed that training in psychological techniques were more important than those who operated on both international and commuter aircraft *(x = 3.982, σ = 0.470)*.

All other demographic variables were found to be unrelated to the way cabin crew rate the importance of training needs (See tables 4.34a, 4.34b and table 4.34c).

Table 4.36c ANOVA Tests for Demographics and Cabin Crew Training Needs

Training Needs	Length of Flight *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 125)*	Aircraft Type *International, Commuter and Combined International and Commuter (df 124)*
Psychological techniques	*p ≤ .479, F = 0.831*	Cabin crew who operated on commuter aircraft believed that training in psychological techniques were more important than those who operated on both international and commuter aircraft ***p ≤ .009, F = 4.887 Ms = 0.934*
Physical techniques	*p ≤ .818, F = 0.310*	*p ≤ .240, F = 1.335*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

4.10 Effect of September 11th on Passenger Attitude and Behaviour

This section examines the changes in the attitude and behaviour of passengers after the September 11th incidents. Both Cabin crew and passengers were examined in this section. Cabin crew were asked

- if they were more worried about violent passengers after September11th
- if they were observe passengers more closely after September 11th
- If passengers were more willing to assist them during violent incident after September 11th
- if they were more fearful of travelling by air post September 11th

Passengers were asked

- if they were more willing to assist cabin crew during an incident after September 11th
- if they were more aware of the dangers of in-flight misbehaviour after September 11th
- if they were more afraid to fly after September 11th

They were asked to indicate the accuracy of statements on a Likert scale of 1 to 5 where 1 is the least accurate and 5 the most accurate. The sections below present the results.

4.10.1Cabin Crew

This section examines the attitude and behavioural changes of cabin crew after the September 11th incident as well as their observation on the attitude and behavioural changes in passengers. Cabin crew were moderately worried about violent passengers after September 11th (See table 4.37). Cabin crew believed that passengers were more willing to assist them after the September 11th incident (Also see section 4.12 for further results on this topic). Cabin crew also believed that they were more observant towards passengers' behaviour. They also indicated that passengers were moderately afraid to travel by air than before.

Table 4.37: Mean and Standard Deviation for Post September 11th Attitude and Behavioural Changes (Cabin Crew)

Attitude/Behaviour	Cabin crew
More worried about violent passengers	$x = 3.147$ $\sigma = 1.129$
Observe passengers more closely	$x = 4.103$ $\sigma = 0.798$
Passengers more willing to assist	$x = 4.004$ $\sigma = 0.798$
Passengers fear flying more	$x = 3.228$ $\sigma = 0.906$

Demographics and the post September 11th changes in attitude and behaviour (Cabin crew perspective)

This section examines the data to find out if the demographic variables were related to the attitude and behaviour of cabin crew and passengers after the September 11th incident from the cabin crew's perspective.

As can be seen from tables 4.38a, 4.38b and 4.38c, none of the demographic variables were related to the attitude and behaviour of cabin crew and passengers after the September 11th incident.

Table 4.38a T-Tests and ANOVA Tests for Demographics for Post September 11th Attitude and Behavioural in Passengers and Cabin Crew (Cabin crew Perspective)

Attitude and Behaviour	Gender *Male and Female (df 115)*	Ethnicity *Asian, Caucasians & Polynesians (df 114)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 115)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 112)*
More worried about violent passengers	*p≤.803, t = 0.250*	*p ≤.490, F = 0.717*	*p ≤.385, F = 1.069*	*p ≤.176, F = 1.673*
Observe passengers more closely	*p ≤.827, t = -0.219*	*p ≤.587, F = 0.534*	*p ≤.220, F = 1.400*	*p ≤.167, F = 1.720*
Passengers more willing to assist	*p ≤.664, t = -0.436*	*p ≤.242, F = 1.435*	*p ≤.714, F = 0.620*	*p ≤.936 F = 0.140*
Passengers fear flying more	*p ≤.976, t = -0.030*	*p ≤.467, F = 0.766*	*p ≤.782, F = 0.534*	*p ≤.855, F = 0.259*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.38b T-Tests and ANOVA Tests for Demographics for Post September 11th Attitude and Behavioural in Passengers and Cabin Crew (Cabin crew Perspective)

Attitude and Behaviour	Route *International, Domestic and Combined international and domestic (df 114)*	Position *Senior cabin crew and Junior cabin crew (df 115)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 114)*	Experience *Less than 2, 2 to 5 years, 6 to 10 years, 11 to 15 year, 16 to 20 years, 21 to 24 years, 25 to 30 years and more than 30 years (df 113)*
More worried about violent passengers	*p ≤.546, F = 0.609*	*p ≤.990, t = 0.013*	*p ≤.126, F = 2.109*	*p ≤.097, F = 1.781*
Observe passengers more closely	*p ≤.681, F = 0.385*	*p ≤.432, t = -0.788*	*p ≤.771, F =0.261*	*p ≤.585, F = 0.805*
Passengers more willing to assist	*p ≤.868, F = 0.142*	*p ≤.992 t = -0.010*	*p ≤.658, F = 0.420*	*p ≤.686, F = 0.684*
Passengers fear flying more	*p ≤.054, t = 2.997*	*p ≤.936, t = 0.081*	*p ≤.419, F = 0.876*	*p ≤.186, F = 1.46*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.38c ANOVA Tests for Demographics for Post September 11th Attitude and Behavioural in Passengers and Cabin Crew (Cabin crew Perspective)

Attitude and Behaviour	Length of Flight *Less than 2 hours, 2 to 5 hours, 5 to 9 hours and more than 9 hours (df 115)*	Aircraft Type *International, Commuter and Combined International and Commuter (df 114)*
More worried about violent passengers	$p \leq .534$, $F = 0.734$	$p \leq .933$, $F = 0.069$
Observe passengers more closely	$p \leq .422$, $F = 0.944$	$p \leq .508$, $F = 0.682$
Passengers more willing to assist	$p \leq .671$, $F = 0.518$	$p \leq .902$, $F = 0.103$
Passengers fear flying more	$p \leq .138$, $F = 1.869$	$p \leq .387$, $F = 0.956$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.10.2 Overall Passengers

This section examines the attitude and behaviour of passengers after September 11th. Passengers indicated that they were quite willing to assist cabin crew when assistance was required to deal with unruly passengers (See table 4.39). Passengers also believed that they were more aware of the dangers of in-flight misbehaviour after September 11th. However most disagreed that they were also more afraid to fly after the September 11th incident.

Table 4.39 Mean and Standard Deviation for Post September 11th Attitude and Behavioural Changes (Passengers and Cabin Crew)

Attitude/Behaviour	Passengers
More willing to assist cabin crew	$x = 3.538$ $\sigma = 1.048$
More aware of the dangers of IFMI	$x = 3.746$ $\sigma = 1.087$
More afraid to travel by air	$x = 2.333$ $\sigma = 1.082$

Internet passengers and airport passengers were examined to see if they responded differently to this section. Internet passengers and airport passengers were found to differ in their behaviour and attitude after September 11th (See table 4.40). Airport

passengers *(x = 2.494, σ = 1.072)* were found to be more afraid to fly after September 11th than Internet passengers *(x = 2.025, σ = 1.165)*.

Table 4.40 Differences between internet passengers and airport passengers (T-test)

Attitude and Behaviour	t-test
More willing to assist cabin crew *(df 113)*	*p ≤ .144, t = -1.471, MD = 2.163*
More aware of the dangers of IFMI *(df 113)*	*p ≤ .255, t = -1.143, MD =1.308*
More afraid to fly *(df 113)*	*p ≤ .026, t = 2.259, MD =5.103*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Demographics and the post September 11th changes in attitude and behaviour (Overall Passenger Perspective)

This section examines the data to find out if the demographic variables were related to the attitude and behaviour of cabin crew and passengers after the September 11th incident from the cabin crew's perspective.

Gender was found to be related to the post September 11th attitude and behaviour of passengers. Male passengers *(x = 3.783, σ = 1.059)* were more willing to assist cabin crew than female passengers, *(x = 3.276, σ = 0.987)* (See table 4.41a).

Age was found to be related to the post September 11th attitude and behaviour of passengers. Fear of flying after September 11th was found to be significant (See table 4.41a). Differences between groups cannot be identified during the post hoc test. However, the largest difference was between passengers who age between 25 and 29 *(x = 1.889, σ = 1.023)* and those who aged between 40 and 44 *(x = 3.222, σ = 1.302)*.

Other demographic variables, the length of flight, education, ethnicity, frequency of travel, route, length of flight and the type of airlines, were found to be unrelated to the post September 11th attitude and behaviour of passengers (See tables 4.41a and 4.41b).

Table 4.41a T-Tests and ANOVA Tests for Demographics for Post September 11th Attitude and Behavioural in Passengers and Cabin Crew (passenger perspective)

Attitude and Behaviour	**Gender** *Male and Female (df 115)*	**Ethnicity** *Asian, Caucasians & Polynesians (df 115)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 115)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 111)*
More willing to assist cabin crew	Male passengers were more willing to assist cabin crew than female passengers ***p≤.008, t = -2.690 MD = -0.507*	*p ≤.423, F = 0.867*	*p ≤.103, F = 1.813*	*p ≤.273, F = 1.306*
More aware of the dangers of IFMI	*p ≤.983, t = 0.022*	*p ≤.944, F = 0.057*	*p ≤.568, F = 0.805*	*p ≤.173, F = 1.628*
More afraid to fly	*p ≤.113, t = 1.595*	*p ≤.075, F = 2.648*	Differences between groups cannot be identified by post hoc test (Scheffe) **p ≤.047, F = 2.219 Ms = 2.428*	*p ≤.654 F = 0.613*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.41b T-Tests and ANOVA Tests for Demographics for Post September 11th Attitude and Behavioural in Passengers and Cabin Crew (passenger perspective)

Attitude and Behaviour	Route *International, Domestic and Combined international and domestic (df 113)*	Frequency of Travel *Less than 11, 11 to 20, 21 to 30, more than 30 (df 114)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 114)*	Length of Flight *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs (df 113)*
More willing to assist cabin crew	*p ≤ .119, F = 2.172*	*p ≤ .051, F = 2.665*	*p ≤ .279, F = 1.288*	*p ≤ .060, F = 2.536*
More aware of the dangers of IFMI	*p ≤ .464, F = 0.773*	*p ≤ .802, F = 0.333*	*p ≤ .520, F = 0.812*	*p ≤ .165, F = 1.731*
More afraid to fly	*p ≤ .319, F = 1.153*	*p ≤ .172 F = 1.696*	*p ≤ .288, F = 1.265*	*p ≤ .690, F = 0.489*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

4.11 Effectiveness of Cabin Crew when Dealing with IFMI

This section examines the effectiveness of cabin crew when dealing with IFMI. Passengers were asked to rate the effectiveness of cabin crew when confronted with individual or group incidents on a Likert scale of 1 to 5 where 1 is totally ineffective and 5 is very effective.

As can be seen from figure 4.13, passengers believed that cabin crew were more effective in individual incidents than group incidents; 44.9% of the respondents rated cabin crew effective for individual incidents as compared to 34.9% for group incidents.

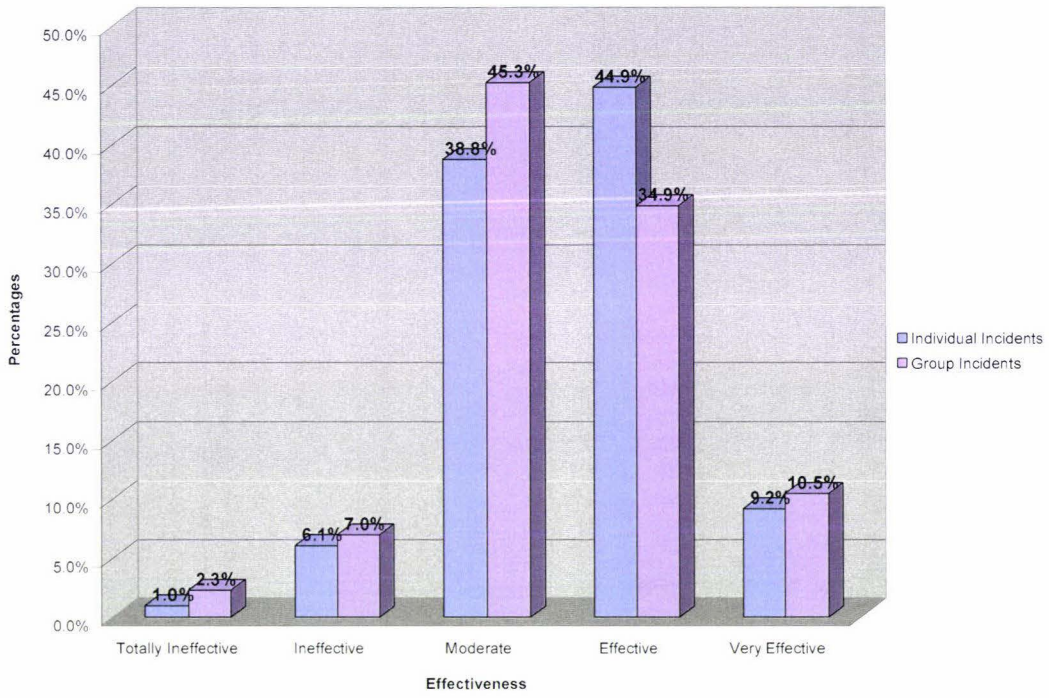

Figure 4.13 Percentages for Effectiveness of Cabin crew in Individual and group incidents

Demographics and the Effectiveness of Cabin Crew during In-flight Incidents

This section examines the data to see if the demographic variables were related to the way passengers rated the effectiveness of cabin crew during in-flight incidents.

As can be seen from table 4.42a and 4.42b, all demographic variables were found to be unrelated to the way passengers rated the effectiveness of cabin crew, except the type of airlines.

Table 4.42a T-Tests and ANOVA Tests for Demographics and the Effectiveness of Cabin Crew during Incidents

Incidents	Gender *Male and Female (df 89)*	Ethnicity *Asian, Caucasians & Polynesians (df 89)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 88)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 88)*
Individual Incidents	$p \leq .285$, $t = 2.076$	$p \leq .220$, $F = 1.541$	$p \leq .655$, $F = 0.694$	$p \leq .158$, $F = 1.697$
Group Incidents	$p \leq .935$, $t = -0.082$	$p \leq .093$, $F = 2.449$	$p \leq .396$, $F = 1.056$	$p \leq .059$, $F = 2.382$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

The type of airline was found to be related to the way passengers rate the effectiveness of cabin crew (See table 4.40a and 4.40b). Passengers who travelled on Pacific airlines ($x = 2.143$, $\sigma = 1.069$) rated cabin crew less effective for group incidents than those who travelled on American airlines ($x = 3.714$, $\sigma = 0.755$), Asian airlines ($x = 3.345$, $\sigma = 0.614$), European airlines ($x = 3.690$, $\sigma = 0.891$) and mixed categorical airlines ($x = 3.750$, $\sigma = 0.622$).

Table 4.42b ANOVA Tests for Demographics and the Effectiveness of Cabin Crew during Incidents

Incidents	Route *International, Domestic and Combined international and domestic (df 88)*	Frequency of Travel *Less than 11, 11 to 20, 21 to 30, more than 30 (df 87)*	Airline *American airlines, Asian airlines, Australasian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 89)*	Length of Flight *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs (df 89)*
Individual Incidents	$p \leq .702$, $F = 0.355$	$p \leq .584$, $F = 0.807$	$p \leq .099$, $F = 2.016$	$p \leq .305$, $F = 1.225$
Group Incidents	$p \leq .862$, $F = 0.148$	$p \leq .792$, $F = 0.552$	Passengers who travelled with Pacific airlines rated cabin crew less effective for group incidents than those who travelled on American airlines, Asian airlines, European airlines and mixed categorical airlines $****p \leq .000$, $F = 6.479$ $Ms = 3.879$	$p \leq .329$, $F = 1.164$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

4.12 Passenger Assistance during Incidents

This section examines the willingness of passengers to assist cabin crew during serious conflicts. Minor and moderate incidents were not measured because it was assumed that cabin crew would not need passenger assistance for conflicts at these levels. Passengers were asked to rate the following statements on a Likert scale of 1 to 5 where 1 is totally disagree and 5 totally agree:

- I am willing to assist cabin crew in restraining a violent passenger
- I am willing to assist cabin crew in restraining a group of violent passengers

As can be seen from table 4.43, the internet passengers and airport passengers responded differently to both of the statements thus this section would discuss the results of the two groups instead of discussing the results for overall passenger.

Table 4.43 Differences between Airport and Internet Passengers (T-test)

Attitude/Behaviour	t-test for Internet and Airport Passengers
More willing to assist cabin crew to restrain a violent passenger *(df 115)*	***p ≤ .007, t = -2.743, MD = -0.609*
More willing to assist cabin crew to restrain a group of violent passengers *(df 115)*	**p ≤ .032, t = -2.168, MD = -0.534*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Figure 4.14 shows the percentage of internet and airport passengers and their willingness to assist cabin crew in restraining a violent passenger. As can be seen, while most internet passengers (43.9% agree) believed that they would offer their assistance when the need arise, only 37.1% of the airport passengers agreed that they would. This disparity could be due to the nature of sampling method used for internet passenger; they were self selected from a specialised website (Skyrage Foundation).

Figure 4.15 shows the percentage of internet and airport passengers and their willingness to assist cabin crew in restraining a group of violent passengers. As can be seen, while most Internet passengers agreed (35%) that they would assist cabin crew to restrain a violent group of passengers, only 15.9% of the airport passengers agreed to do the same. Comparing figure 4.14 and 4.15, it can also be seen that both groups of passengers were more reserved when they were asked to restrain groups of violent passengers as compared to individual violent passenger.

From figure 4.14 and 4.15, it can be seen that both airport and internet passengers were more willing to assist cabin crew when an incident involves an individual rather than a group.

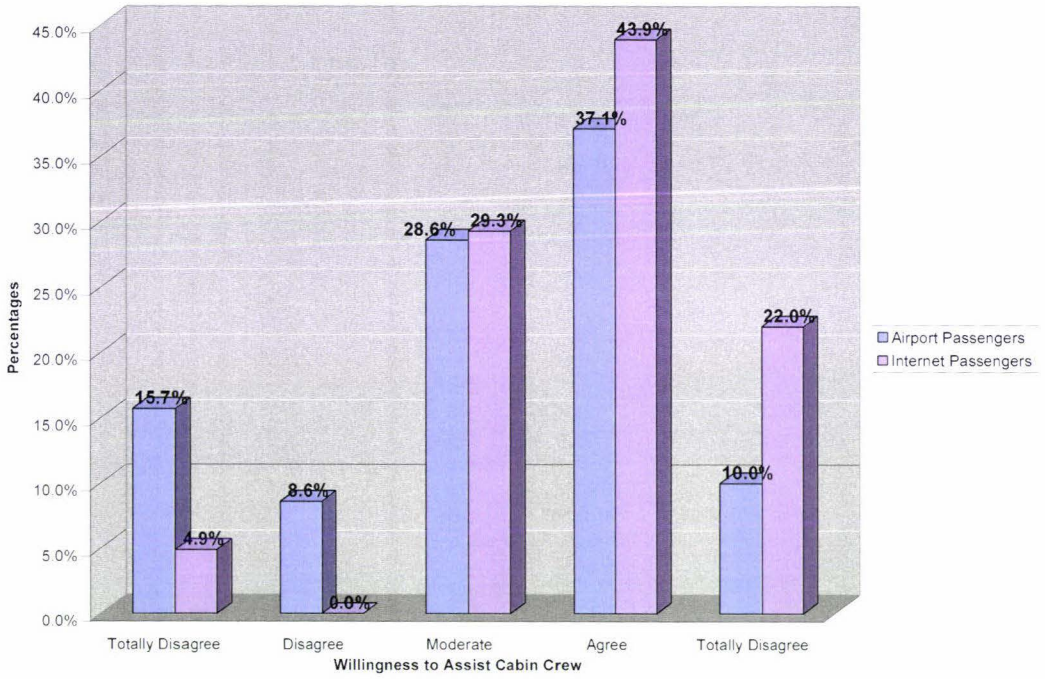

Figure 4.14 Passenger willingness to assist cabin crew in restraining a violent passenger

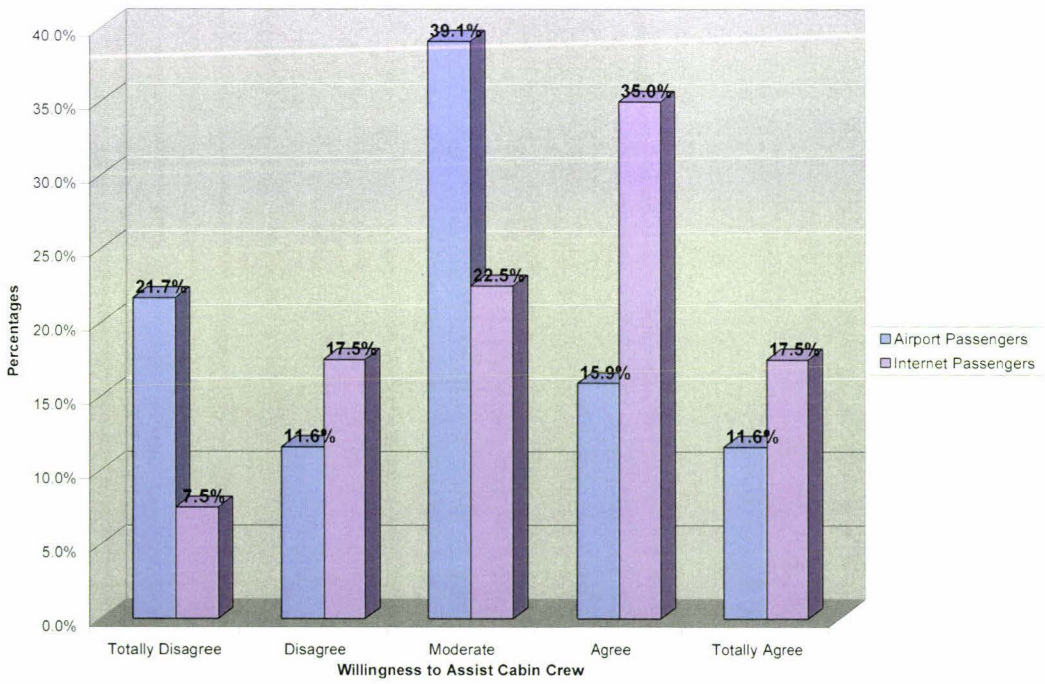

Figure 4.15 Passenger willingness to assist cabin crew in restraining a group of violent passengers

Demographics and Passenger Assistance during Violent Incidents

This section examines the data to see if the demographic variables were related the degree of willingness of passengers in assisting the restraint of other violent passenger/s. This section consists of two parts; the first shows the results obtained from the airport passengers group and the second shows the results of the internet passenger group.

Airport Passenger

Age was found to be related to the willingness of passengers in assisting the restraint of other violent passenger/s (See table 4.44a). Both individual and group incidents were found to be significant. Group difference could not be identified during the post hoc test (Scheffe). However, the largest differences for individual violent incidents were between passengers who aged from 30 to 34 *(x = 3.909, σ = 0.831)* and those who aged from 40 to 44 *(x = 1.750, σ = 1.500)*. For group violent incidents, the largest group differences were also between passengers who aged between 30 and 34 *(x = 3.600, σ = 0.966)* and those who aged between 40 and 44 *(x = 1.250, σ = 0.500)*.

Table 4.44a T-Tests and ANOVA Tests for Demographics and Passenger Assistance during Violent Incidents (Airport Passengers)

Incidents	**Gender** *Male and Female* *(df 67)*	**Ethnicity** *Asian, Caucasians & Polynesians* *(df 68)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50* *(df 65)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD* *(df 68)*
Violent individual Incidents	*****p≤.000, t = - 4.808 MD = -1.233*	*p ≤.202, F = 1.640*	Differences between groups cannot be identified during post hoc test (Scheffe) ***p ≤.008, F = 3.200 Ms = 3.990*	*p ≤.394, F = 1.039*
Violent Group Incidents	*****p ≤.000, t = -4.255 MD = -1.184*	*p ≤.194, F = 1.682*	**p ≤.018 F = 2.802 Ms = 3.933*	*p ≤.203, F = 1.535*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Length of flight was found to be related to the willingness of passengers in assisting the restraint of other violent passenger/s (See table 4.44b). Airport passengers who travelled on flight that were less than 2 hours *($x = 4.000$, $\sigma = 0.756$)* were more willing to assist cabin crew in restraining a violent passenger than those that were travelling on flights that were between 2 and 5 hours *($x = 2.690$, $\sigma = 1.257$)*. Airport passengers who travelled on flight that were less than 2 hours *($x = 4.000$, $\sigma = 0.926$)* were also more willing to assist cabin crew in restraining a violent passenger than those who travelled on flights that were between 2 and 5 hours *($x = 2.379$, $\sigma = 1.178$)*.

As can be seen from table 4.44a and 4.44b all other demographic variables were not related to the willingness of passengers in assisting the restraint of other violent passenger/s.

Table 4.44b ANOVA Tests for Demographics and Passenger Assistance during Violent Incidents (Airport Passengers)

Incidents	Route *International, Domestic and Combined international and domestic* *(df 65)*	Frequency of Travel *Less than 11, 11 to 20, 21 to 30, more than 30* *(df 67)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines* *(df 67)*	Length of Flight *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs* *(df 87)*
Violent individual Incidents	*p ≤ .245, F = 1.438*	*p ≤ .889, F = 0.466*	*p ≤ .410, F = 1.009*	Airport passengers who travelled on flight that were less than 2 hours were more willing to assist cabin crew in restraining a violent passenger than those that were travelling on flights that were between 2 and 5 hours **p ≤ .014, F = 3.795 Ms = 5.030*
Violent Group Incidents	*p ≤ .658, F = 0.421*	*p ≤ .466, F = 0.862*	*p ≤ .101, F =2.032*	Airport passengers who travelled on flight that were less than 2 hours were more willing to assist cabin crew in restraining a violent passenger than those who travelled on flights that were between 2 and 5 hours ***p ≤ .002, F = 5.691 Ms = 7.667*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

Internet Passengers

Frequency of travel flight was found to be related to the willingness of passengers in assisting the restraint of other violent passenger/s. Violent individual incidents were found to be significant. The differences between groups could not be identified during the post hoc test (Scheffe). However the largest mean difference between groups were between those who travelled less than 11 times *($x = 3.593$, $\sigma = 1.010$)* and

those who travelled more than 30 times *(x = 4.750, σ = 0.500)*. As can be seen from table 4.45a and 4.45b, all other demographic variables were not related to the willingness of passengers in assisting the restraint of other violent passenger/s.

Table 4.45a T-Tests and ANOVA Tests for Demographics and Passenger Assistance during Violent Incidents (Internet Passengers)

Incidents	**Gender** *Male and Female* *(df 40)*	**Ethnicity** *Asian, Caucasians & Polynesians* *(df 39)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50* *(df 38)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD* *(df 37)*
Violent individual Incidents	*p≤.923, t = 0.097 MD = -1.233*	*p ≤.271, F = 1.353*	*p ≤.609, F = 0.682*	*p ≤.837, F = 0.358*
Violent Group Incidents	*p ≤.633, t = 0.482*	*p ≤.303, F = 1.234*	*p ≤.856 F = 0.331*	*p ≤.637, F = 0.642*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.45b ANOVA Tests for Demographics and Passenger Assistance during Violent Incidents (Internet Passengers)

Incidents	**Route** *International, Domestic and Combined international and domestic* *(df 40)*	**Frequency of Travel** *Less than 11, 11 to 20, 21 to 30, more than 30* *(df 39)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines* *(df 39)*	**Length of Flight** *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs* *(df 38)*
Violent individual Incidents	*p ≤.212, F = 1.618*	Differences between groups cannot be identified during post hoc test (Scheffe) **p ≤.047, F = 2.924 Ms = 2.377*	*p ≤.212, F = 1.574*	*p ≤.857, F = 0.255*
Violent Group Incidents	*p ≤.525, F = 0.656*	*p ≤.221, F = 1.541*	*p ≤.154, F =1.860*	*p ≤.774, F = 0.372*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

4.13 Alcohol Consumption of Passengers

This section examines the drinking habits of passengers during social occasions and when travelling on by air. Passengers were asked to indicate how often they drink during flights and during social occasions. A Likert scale of 1 of 5 where 1 represents never, 2 represents 1 to 2 drinks, 3 represents 3 to 4 drinks, 4 represents 5 to 6 drinks and 5 represents more than 6 drinks. Internet and Airport passengers were found to have no significant difference between the two groups thus only the results for overall passenger group would be presented (See table 4.46). Figure 4.16 shows that passengers drink less when they fly than they would on a social event. Only 0.9% of the passengers had more than 6 drinks during a flight.

Table 4.46 Differences between Internet passengers and airport passengers (T-Test)

Measures	t-test for Internet and Airport Passengers
Alcohol consumption during flight *(df 112)*	$P \leq .606,\ t = 0.504,\ MD = 0.076$
Alcohol consumption during social occasions *(df 1142)*	$P \leq .689,\ t = 0.401,\ MD = 0.104$

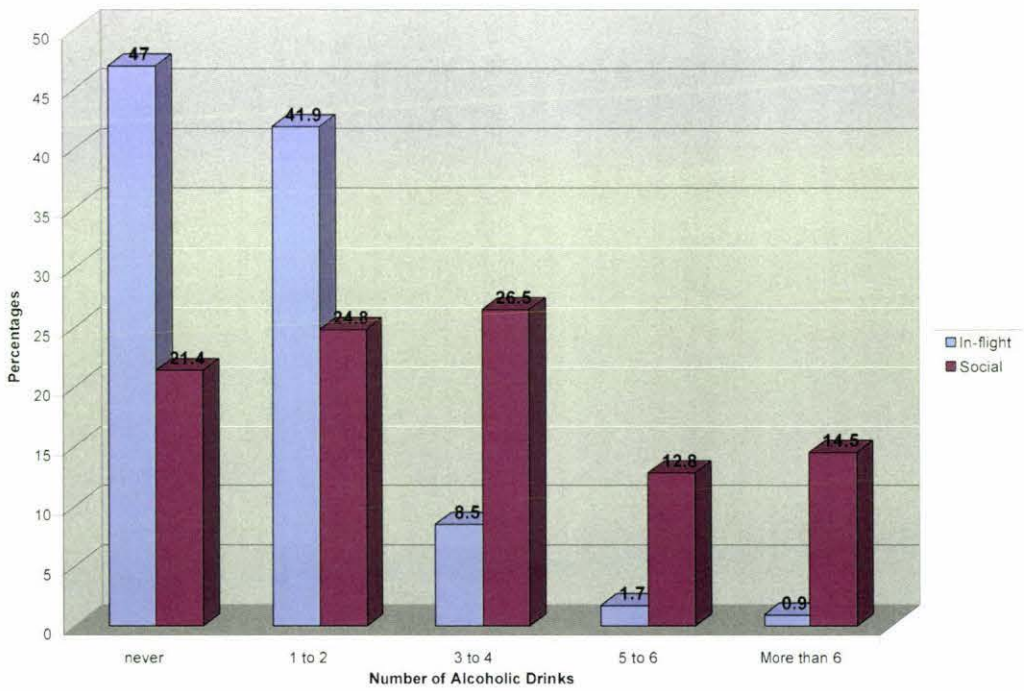

Figure 4.16 Percentages for Number of Alcoholic Drinks Passenger Consumes

Demographics and Passenger Alcohol Consumption

This section examines the data to see if the demographic variables had an effect on the way passengers consume alcohol during a social event and during flights.

Ethnicity was found to have effect on the quantity of alcohol passengers consume during social occasions (See table 4.47a). Caucasian passengers *($x = 3.082$, $\sigma = 1.268$)* were found to have consumed more alcohol than Asians *($x = 2.277$, $\sigma = 1.210$)* during social occasions. However there were no suggestions that there were any difference between groups for alcohol consumption during flight.

Table 4.47a T-Tests and ANOVA Tests for demographics and passengers' alcohol consumption

Attitude and Behaviour	**Gender** *Male and Female (df 114)*	**Ethnicity** *Asian, Caucasians & Polynesians (df 114)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 114)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 110)*
Alcohol consumption during flight	*p≤.250, t = -1.155*	*p ≤.062, F = 2.847*	*p ≤.383, F = 1.073*	*p ≤.775, F = 0.446*
Alcohol consumption during social occasions	*p ≤.349, t = -0.941*	Caucasian passengers were found to have consumed more alcohol than Asians during social occasions ****p ≤.005, F = 5.553, Ms = 9.166*	*p ≤.130, F = 1.690*	*p ≤.490, F = 0.861*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Route was found to have effect on the quantity of alcohol passengers consume during social occasions (See table 4.47b). Domestic *($x = 3.167$, $\sigma = 1.339$)* passengers were found to consume more alcohol during social occasions than those travelling on both domestic and international flights *($x = 2.200$, $\sigma = 1.126$)*. Other demographic variables were found to have no effect on the quantity of alcohol passengers consume.

Table 4.47b ANOVA Tests for demographics and the passenger alcohol consumption

Attitude and Behaviour	Route *International, Domestic and Combined international and domestic (df 113)*	Frequency of Travel *Less than 11, 11 to 20, 21 to 30, more than 30 (df 114)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 113)*	Length of Flight *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs (df 114)*
Alcohol consumption during flight	$p \leq .249$, $F = 1.407$	$p \leq .530$, $F = 0.741$	$p \leq .601$, $F = 0.628$	$p \leq .863$, $F = 0.247$
Alcohol consumption during social occasions	$*p \leq .022$, $F = 3.972$ $Ms = 6.783$	$p \leq .884$, $F = 0.218$	$p \leq .730$, $F = 0.434$	$p \leq .384$, $F = 1.025$

$*p \leq .05$, $**p \leq .01$, $***p \leq .005$, $****P \leq .001$

4.14 Passenger Adherence to Air Travel Policies and Rules

This section examines the level of adherence passengers had towards policies and rules such as baggage limit, smoking bans and restrictions, alcohol restrictions and fastening of seat belts. Passengers were asked to rank these rules and policies on a Likert scale of 1 to 5 where 1 is totally disagree and 5 is totally agree. As there was no significant difference between internet and airport passengers, only the results for overall passenger group would be presented (See table 4.48). Table 4.49 illustrates the ranking of the items by passengers. As can be seen passengers adhere to most air travel rules and policies except baggage limits. However they adhered most strictly to smoking bans and restrictions. The least adhered policy is baggage limits.

Table 4.48 Differences between internet passengers and airport passengers (T-test)

Measures	t-test for Internet and Airport Passengers
Baggage Limit *(df 114)*	$P \leq .836$, $t = -0.208$, $MD = -0.043$
Smoking bans or restrictions *(df 114)*	$P \leq .237$, $t = -1.189$, $MD = -0.180$
Alcohol restrictions *(df 114)*	$P \leq .737$, $t = 0.336$, $MD = 0.063$
Fastening of seat belts *(df 114)*	$P \leq .451$, $t = 0.757$, $MD = 0.117$

*$p \leq .05$, **$p \leq .01$, *** $p \leq .005$, **** $P \leq .001$

Table 4.49: Ranking of Passengers Adherence to Air Travel Rules and Policies (Means)

Ranking	019	02	03	04
Air Travel Rules and Policies	Smoking Bans and Restrictions x = 4.607 σ = 0.776	Fastening of Seat Belts x = 4.402 σ = 0.788	Alcohol Restrictions x = 4.316 σ = 0.952	Baggage Limits x =3.872 σ = 1.055

Demographics and Passenger Adherence to Policies and Rules

This section examines the data to find out if passengers rated the importance of adhering to air travel policies and rules differently.

Gender was found to be related to the adherence of air travel policies and rules (See table 4.50a). Male passengers were found to adhere less to baggage limits *($x = 3.655$, $\sigma = 1.192$)* than female passengers *($x = 4.086$, $\sigma = 0.864$)*.

Education was also found to be related to the adherence of air travel policies and rules (See table 4.50a). Passengers who attended high school *($x = 4.538$, $\sigma = 0.647$)* were more likely to comply with baggage limits than those who started university *($x = 3.625$, $\sigma = .707$)* and those who had completed their degree *($x = 3.486$, $\sigma = 1.304$)*. Thus as can be seen there are suggestions that as educational level rises adherence to baggage limits decreases.

Table 4.50a: T-Tests and ANOVA Tests for demographics and passenger adherence to policies and rules

Adherence to air travel rules and policies	**Gender** *Male and Female (df 114)*	**Ethnicity** *Asian, Caucasians & Polynesians (df 113)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 114)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 110)*
Baggage Limit	Male passengers were found to adhere less to baggage limits than female passengers **p≤.028, t = 2.229 MD = 0.431*	*p≤.222, F = 1.527*	*p ≤.090, F = 2.070*	Passengers who attended high school were more likely to comply with baggage limits than those who started university and those who had completed their degree *****p ≤.001, F = 4.843 Ms = 4.755*
Smoking bans or restrictions	*p ≤.393, t = 0.858*	*p ≤.146, F = 1.961*	*p ≤.775, F = 0.447*	*p ≤.098, F = 2.010*
Alcohol restrictions	*p ≤.923, t = -0.097*	*p ≤.091, F= 2.453*	*p ≤.088, F = 2.081*	*p ≤.143, F = 1.757*
Fastening of seat belts	*p ≤.128, t = 0.176*	*p ≤.496, F= 0.705*	*p ≤.225, F = 1.443*	*p ≤.395, F = 1.031*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

The type of route was also found to be related to the adherence of air travel policies and rules (See table 4.50b). Passengers that usually travelled on domestic routes *(x = 4.778, σ = 0.427)* were found to have adhered more strictly to the rule of fastening seat belts than those who travelled on both international and domestic routes *(x = 4.069, σ = 0.997)*.

All other demographic variables do not have an effect on the adherence of air travel policies and rules (See tables 4.50a and 4.50b).

Table 4.50b: T-Tests and ANOVA Tests for demographics and passenger adherence to policies and rules

Adherence to air travel rules and policies	**Route** *International, Domestic and Combined international and domestic (df 113)*	**Frequency of Travel** *Less than 11, 11 to 20, 21 to 30, more than 30 (df 112)*	**Airline** *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 113)*	**Length of Flight** *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs (df 114)*
Baggage Limit	*p ≤ .051, F = 3.049*	*p ≤ .301, F = 1.222*	*p ≤ .440, F = 0.947*	*p ≤ .336, F = 1.141*
Smoking bans or restrictions	*p ≤ .237, F = 1.458*	*p ≤ 324, F = 1.177*	*p ≤ .580, F =0.721*	*p ≤ .126, F = 1.950*
Alcohol restrictions	*p ≤ .418, F =0.879*	*p ≤ .059, F = 2.105*	*p ≤ .455, F = 0.922*	*p ≤ .216, F = 1.511*
Fastening of seat belts	Passengers that travelled on domestic routes adhered more strictly to the rule of fastening seat belts than those who travelled on both international and domestic routes ***p ≤ .008, F = 4.995 Ms = 2.949*	*p ≤ .055, F = 2.140*	*p ≤ .406, F = 1.009*	*p ≤ .693, F = 0.485*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

4.15 Passenger Fear of Flight

This section examines the extent of fear of flight in passengers. Passengers were asked if they were afraid to fly. Figure 4.17 shows that 11.11% of the respondents were afraid to fly.

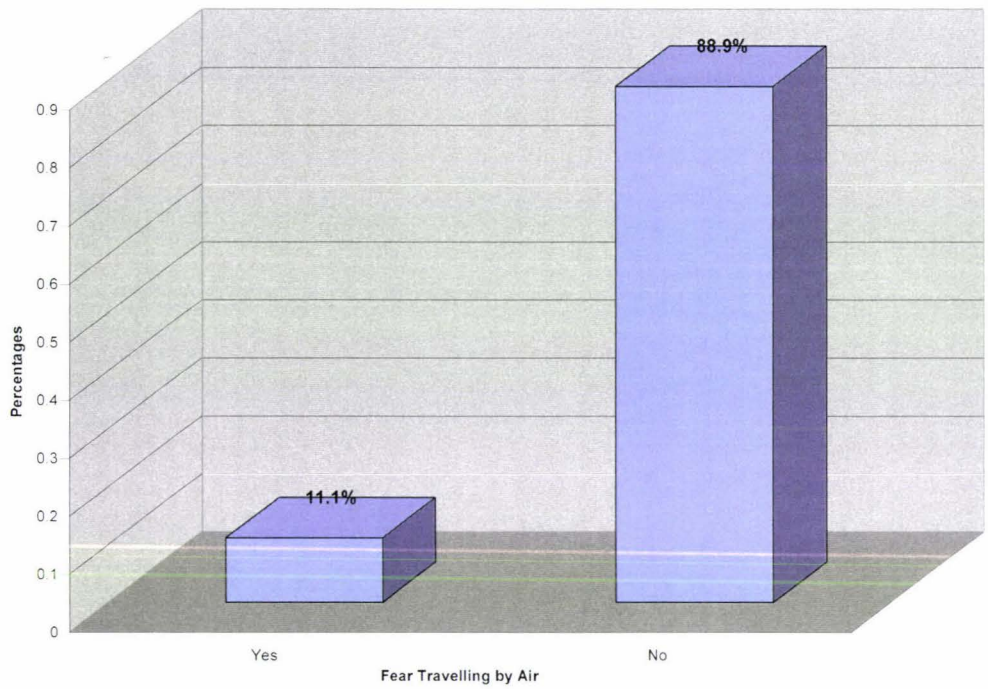

Figure 4.17 Percentage of Passengers who Fear Air Travel

Demographics and Fear of Flying

This section examines the data to see if demographic variables have an effect on passengers' fear of flight.

Education was found to be related to fear of flight (See table 4.51a).Those who obtained a Diploma ($x = 1.625$, $\sigma = 0.517$) were found to be more afraid to fly than those who completed their Degree *($x = 1.973$, $\sigma = 0.164$).*

All other variables were found to be unrelated to passengers' fear of flight (See table 4.51a and 4.51b).

Table 4.51a: T-Tests and ANOVA Tests for demographic variables and passengers' fear of flight

Passenger behaviour	Gender *Male and Female (df 114)*	Ethnicity *Asian, Caucasians & Polynesians (df 114)*	Age *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 114)*	Education *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 110)*
Fear of flight	*p≤.347, t = 0.945*	*p≤.243, t = 1.433*	*p ≤.919, t = 0.233*	Passengers who obtained a Diploma were more afraid to fly than those who completed their Degree **p ≤.011, t = 3.462 Ms =0.286*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.51b T-Tests and ANOVA Tests for demographic variables and passengers' fear of flight

Passenger behaviour	Route *International, Domestic and Combined international and domestic (df 114)*	Frequency of Travel *Less than 11, 11 to 20, 21 to 30, more than 30 (df 112)*	Airline *American airlines, Asian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 113)*	Length of Flight *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs (df 113)*
Fear of flight	*p ≤.652, t = 0.429*	*p ≤.314, t = 1.199*	*p ≤.999, t = 0.108*	*p ≤.226, t = 1.472*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

4.16 Factors Attributing to Passenger Worries about Air Travel

This section examines the factors that cause passengers to worry about flying. Passengers were asked to rate the statements below on a Likert scale of 1 to 5 where 1 is totally disagree while 5 is totally agree.

- Cabin crew do not treat me with respect
- Flight and Cabin crew do not give enough information about flight (i.e. change of flight plans)
- Other inconsiderate passengers
- Little control over own safety
- Possibility of terrorist on aircraft

As can be seen from table 4.52 Internet passengers and airport passengers did not show significant difference in they way they respond to the statements above. Thus the only the results for overall passenger would be presented.

Table 4.52 Differences between Internet passengers and airport passengers (T-test)

Factors for Worries about flying	t-tests for Internet and airport passengers
Treated with respect *(df 113)*	*P ≤ .959, t = -0.056, MD = -0.012*
Given sufficient information *(df 113)*	*P ≤ .230, t =- 1.206, MD = -0.281*
Other inconsiderate passengers *(df 113)*	*P ≤ .090, t = -1.712, MD = -0.354*
Control over own safety *(df 113)*	*P ≤ .985, t = -0.018, MD = -0.004*
Possibility of terrorists on aircraft *(df 113)*	*P ≤ .270, t = -1.110, MD = -0.272*

**p≤.05, **p ≤ .01, *** p ≤ .005, **** P ≤ .001*

From table 4.53 it can be seen that control over own safety was the top factor for passenger worries about air travel. Respectful by treatment by cabin crew was ranked last. The value of the items' means is relatively small indicating that most passengers disagreed that the items caused them to worry about flying. This is

consistent with the fact that only 11.1 % of the passengers indicated they were afraid to fly (See figure 4.17).

Table 4.53 Ranking for worries of passengers when travelling by air (Means)

Ranking	01	02	03	04	05
Air Travel Rules and Policies	Control over own safety $x = 2.972$ $\sigma = 1.203$	Other inconsiderate passengers $x = 2.852$ $\sigma = 1.048$	Possibility of terrorists on aircraft $x = 2.683$ $\sigma = 1.216$	Provided sufficient flight information $x = 2.374$ $\sigma = 1.170$	Treated with respect $x = 2.139$ $\sigma = 1.080$

Demographics and Air Travel Worries of Passengers

This section examines the data to see if the demographic variables had an effect on passengers and their worries about air travel.

Gender was found to be related to passenger's worries about air travel (See table 4.54a). Female passengers *($x = 3.245$, $\sigma = 1.107$)* were felt that they had less control over their own safety than male passengers *($x = 2.722$, $\sigma = 1.250$)*.

Ethnicity was also found to be related passenger's worries about air travel (See table 4.54a). Asian passengers *($x = 2.404$, $\sigma = 1.096$)* felt less respected by cabin crew than Caucasian passengers *($x = 1.849$, $\sigma = 1.027$)*. Asian passengers *($x = 2.787$, $\sigma = 1.178$)* felt less informed about the flight than Caucasian passengers *($x = 2.038$, $\sigma = 1.084$)*.

The length of flight was found to be related to passenger's worries about air travel (See table 4.54a). Passengers travelling on flights that were between 2 and 5 hours *($x = 1.900$, $\sigma = 0.922$)* believe more strongly that they were given sufficient flight information than those travelling on a more than 9 hours flight*($x = 2.680$, $\sigma = 1.202$)*.

Route of flight, frequency of travel, education, age and the type of airlines were found to be unrelated to the air travel worries of passengers (See table 4.54b).

Table 4.54a T-Tests and ANOVA Tests for demographics and the air travel worries of passengers

Worries about air travel	**Gender** *Male and Female (df 105)*	**Ethnicity** *Asian, Caucasians & Polynesians (df 103)*	**Age** *Under 24, 25 to 29, 30 to 34, 25 to 39, 40 to 44, 45 to 49 and above 50 (df 104)*	**Education** *Attended high school, Attended Polytechnic, Completed Polytechnic or University Degree and University Diploma, Completed Masters Degree or PHD (df 100)*
Treated with respect	*p≤.800, t = -.254*	Asians passenger felt less respected by cabin crew than Caucasians passengers ***p≤.010, F = 4.852 Ms = 5.320*	*p ≤.760, F = 0.561*	*p ≤.281, F = 1.286*
Given sufficient information	*p ≤.951, t = 0.062*	Asian passengers felt less informed about the flight than Caucasian passengers ***p ≤.006, F = 5.475 Ms = 6.931*	*p ≤.272, F = 1.237*	*p ≤.271, F = 1.313*
Other inconsiderate passengers	*p ≤.368, t = 0.903*	*p ≤.173, F= 1.787*	*p ≤.856, F = 0.432*	*p ≤.344, F = 1.137*
Control over own safety	Female passengers were felt that they had less control over their own safety than male passengers **p ≤.024, t = 2.289 MD =0.523*	*p ≤.459, F = 0.784*	*p ≤.159, F = 1.587*	*p ≤.456, F = 0.919*
Possibility of terrorists on aircraft	*p ≤.192, t = 1.315*	*p ≤.090, F = 2.465*	*p ≤.875, F = 0.404*	*p ≤.953, F = 0.170*

**p≤.05, **p ≤.01, *** p ≤.005, **** P ≤.001*

Table 4.54b ANOVA Tests for demographics and the air travel worries of passengers

Worries about air travel	**Route** *International, Domestic and Combined international and domestic (df 104)*	**Frequency of Travel** *Less than 11, 11 to 20, 21 to 30, more than 30 (df 102)*	**Airline** *American airlines, Asian airlines, Australasian airlines, European airlines, Pacific airlines and mixed categorical airlines (df 103)*	**Length of Flight** *Less than 2 hrs, 2-5 hrs, 5-9 hrs, more than 9 hrs (df 106)*
Treated with respect	$p \leq .607$, $F = 0.501$	$p \leq .535$, $F = 0.733$	$p \leq .152$, $F = 1.718$	$p \leq .286$, $F = 1.277$
Given sufficient information	$p \leq .987$, $F = 0.013$	$p \leq .801$, $F = 0.333$	$p \leq .176$, $F = 1.616$	$*p \leq .036$, $F = 2.951$ $Ms = 3.858$
Other inconsiderate passengers	$p \leq .624$ $F = 0.473$	$p \leq .994$ $F = 0.028$	$p \leq .080$, $F = 2.153$	$p \leq .163$, $F = 1.744$
Control over own safety	$p \leq .679$, $F = 0.388$	$p \leq .078$, $F = 2.341$	$p \leq .390$, $F = 1.040$	$p \leq .884$, $F = 0.217$
Possibility of terrorists on aircraft	$p \leq .498$, $F = 0.702$	$p \leq .266$, $F = 1.340$	$p \leq .536$, $F = 0.787$	$p \leq .504$, $F = 0.786$

$*p \leq .05$, $**p \leq .01$, $***p \leq .005$, $****P \leq .001$

Chapter 5

Discussion

5.0 Introduction

Prior to September 11th, the aviation industry enjoyed a long period free from terrorism and hijackings. Although there were warnings of problems related to air rage, the damage or potential damage had failed to spark enough interest to substantially change aviation security, especially in the area of passenger management.

This chapter will discuss in-flight aggression in four main areas. First the chapter examines the magnitude of in-flight aggression. Second, it will discuss the frequency of in-flight aggression triggers and demographic factors associated with these. It then discusses the environment surrounding the phenomenon of in-flight aggression. Finally it will examine some preventative measures and their effectiveness.

5.1 The Magnitude of In-flight Aggression

Passengers and cabin crew who travel frequently have a reasonably good chance of being caught up in an in-flight incident. As shown in the results, cabin crew surveyed experienced an average of 11 minor individual incidents over a period of 2 years (see table 4.2). In the same period passengers experienced about 1.6 incidents during the same period (see table 4.4a). They both experienced fewer serious incidents but cabin crew still experienced 6 times more serious incidents than passengers (see table 4.4b). Individual incidents are also more common than group incidents for both cabin crew and passengers.

About 7.3% of the internet passengers were found to have used intimidation to get what they want. If extrapolated, it will amount to 73, 000 per million passengers; the figure no longer seems insignificant. These results suggest that passengers are capable of instrumental aggression. Such incidents can be manifest in many different forms, for

example, demands for upgrades, alcohol, or ignoring baggage limits. As can be seen alcohol, upgrades and baggage limits are merely the triggers or incentive; the real cause is that the passenger's decision to use aggression to achieve his/her goal.

Cabin crew are more likely to be exposed to in-flight aggression because they travel on flights more frequently and their job requires frequent interaction with passengers. The high exposure rate to in-flight aggression indicates a professional hazard and highlights the need to train and protect cabin crew. It is therefore not surprising that organisations such as the International Transport Federation (ITF) are concerned about the phenomena. The ITF organised an anti-air rage campaign on the 6th July 2001, whereby civil aviation trade unions across the world took part in highlighting the need for governments and the air transport industry to take action against disruptive passengers(ITF, 2001b).

The Department for Transport (UK) has published reports on in-flight aggression on an annual basis since 1999. DfT (2002) reported that, for the period of April 2000 to March 2001, 47% of the incidents reported were considered minor, 48% were moderate and 5% serious. DfT (2002) reported that passengers smoking in the aircraft's toilet contributed significantly in the number of moderate incidents. As with the DfT report, this current study found that most incidents were either minor or moderate, and the proportion of serious incidents was similar for both studies (cabin crew reported 6.6% while passengers reported 8.12%, see table 5.1). However, this study found the minor incidents comprised a much higher proportion of all incidents (approximately 70%), and moderate to be lower at 20-23% than the DfT report. This may be a result of slightly differing definitions of moderate and minor. DfT however cited smoking in toilets and disobeying cabin crew instructions as the main triggers for moderate incidents, while this study found cabin crew and passengers to have experienced fewer moderate incidents but more minor incidents (see table 5.1).

Table 5.1 Comparison of Statistics

Study/Seriousness of incidents	Survey Year	Minor	Moderate	Serious
Department for Transport (2002)	1999/2000	51%	43%	6%
Department for Transport (2002)	2000/ 2001	47%	48%	5%
Department for Transport (2002)	2001/2002	45%	50	5%
This survey of Cabin Crew	2000- 2001	70%	23.2%	6.8%
This survey of Passengers	2000- 2001	71%	20.6%	8.4%

5.1.1 Demographics and Experiences of In-flight Aggression

Profiling is not new in aviation however concerns about discriminatory profiling persist despite reassurance from the U.S. Justice Department that race, religion and nationality are not screening factors (*Aviation Security with a Focus on Passenger Profiling*, 2003). Bloom (1999) explained that many people attack the use of racial profiling because of problems related to definition, values, accuracy, implementation and evaluation.

However, since September 11th; the focus has shifted from 'whether profiling should be used' to the 'effectiveness of the current profiling system' (*Aviation Security with a Focus on Passenger Profiling*, 2003). This study identified several demographical factors associated with the experience of in-flight aggression by passengers and cabin crew. It is suggested that on some occasions the profile of those experiencing the aggression may be influential in provoking or aggravating an incident.

5.5.1.1 Gender and Experiences of In-flight Aggression

Gender is one common topic examined in aggression literature (for example Smith & Mackie, 2000; Franzoi, 1996 & Geen, 2001). This section will discuss the role of gender in in-flight aggression specifically in the areas of magnitude and triggering events from two perspective; cabin crew and passengers.

Differences between the two genders may have an effect on the frequency of experiencing in-flight aggression. As discussed in the literature review men were found to be more likely to engage in aggressive behaviour than women. In this study, male respondents were found to been involved with more serious individual incidents than females, supporting the argument of Smith and Mackie (2000).

Male cabin crew also reported encountering more serious incidents that female cabin crew ($p < 0.014$). Possible explanations for these findings are discussed in a later section.

5.5.1.2 Ethnicity and Experiences of In-flight Aggression

The use of ethnicity for profiling purposes often raises ethical concerns. Some claim racial profiling just doesn't work while others maintain that using racial factors offers either no accuracy, unacceptable accuracy, or unacceptable errors in predicting aviation terrorism (Bloom, 1999). The results of this study suggest that if the indicator of 'ethnicity' is used objectively, it can help identify the general culture and value backgrounds of passengers which in turn can assist in predicting potential for aggression.

Caucasians were found to have experienced more incidents of in-flight aggression (involving individuals) in the total sample group compared to other ethnic groups. The results from the passenger sample group on the other hand found Polynesians have experienced more moderate group incidents than Asians and Caucasians ($p<0.002$). The results suggest that Polynesians tend to be more involved incidents when they travel in a group.

5.5.1.3 Age and Experiences of In-flight Aggression

The results strongly suggest that youth predicts a greater potential for aggression. It was found that people aged below 24 experienced minor and moderate in-flight aggression (involving individuals) more often than those aged between 40 and 44 ($p< 0.008$; $p<0.002$). Those in the age group of 40 to 44 were also found to have experienced more minor group incidents than those aged above 50 ($p<0.012$). Similarly here, the elderly group were found to be less frequently involved in incidents than younger passengers. Young people are generally stronger and more agile in movements than the elderly; therefore it is less costly for them to engage in aggression than old people (Anderson & Huesmann, 2003). This finding is in accordance with DfT (2003) who reported that most offenders involved in incidents are in their 20 and 30s.

5.5.1.4 Education and Experiences of In-flight Aggression

People with high educational levels are more likely to have high self-esteem (Hoppe, 1995). Additionally research (Baumeister, 1997; Kernis, Grannemann, & Barclay 1989,

cited in Smith and Mackie, 2000) showed that people with higher self esteem are more likely to be aggressive. This is especially so for people with high but fluctuating and unstable self-esteem (Smith & Mackie, 2000). These findings were replicated in this study which found that passengers with high levels of education were more likely to have been involved or have experienced in-flight aggression than those who had lower levels of education. A person with a Master's Degree or PhD were found to have experienced 10 times more individual minor, and 7.5 times more moderate incidents than those who only had high school education. The more educated a person, the higher their expectations and the more likely they were to be conscious of their "rights". Their education gives them the ability and confidence to articulate their wants and needs, and to argue if they perceive themselves as being thwarted.

This trend is also evident in relation to specific incidents. Respondents who had started university experienced more individual incidents related to disputes with other passengers than those who had only attended high school and those who obtained a Diploma. Passengers who were post graduates also experienced more individual and group incidents related to food services than those who only attended highs school. People with high educational level are more likely to have high self-esteem (Hoppe, 1995).

5.5.1.5 Airlines, Length of Flight, Aircraft Type and Routes

Airlines also vary in their experience of in-flight aggression. This may be related to the nationality of the airline and whether the flight is short or long haul, domestic or international.

Overall, no one airline experienced more incidents than others. However, European airlines seem to experience a higher level of serious incidents than other airlines. This finding supports that of Skytrax (2003), a website run by aviation groups who run continuous airline surveys.

"*Air rage is also a regional problem, and at it's worst when observing passengers from Europe. I have seen many examples of British, Dutch, Danish and German passengers*

(and other nationalities, but space prevents mention) who abuse the onboard complimentary bar service." (Skytrax, 2003)

It was expected that differences would show between domestic and international flights, as the longer flights may be associated with more stress. However, generally this proved not to be the case, apart from a small group of cabin crew who worked on both international and domestic flights. These crews experienced higher levels of incidents than those who work or flew on only domestic or international routes. Additionally, domestic crews reported slightly higher levels of group incidents (minor and moderate) than international crews. It may be that the confined quarters of short haul aircraft is particularly irking for people travelling in a group.

5.5.1.6 Cabin Crew Experience and Position

Cabin crew's experience and position were not found to be significantly related to their experience of in-flight aggression incidents. This suggests that cabin crew regardless of experience of position and experience are equally exposed to in-flight aggression. As such it may also imply that through training it is possible for all cabin crew to be involved in reducing or ameliorating in-flight aggression.

5.2 Triggers of Aggression

There is no single cause of in-flight aggression. For example a simple request to fasten the seat belt can be perceived differently by individuals. Some passengers may simply comply because they believe the request concerns their own safety while others may perceive the request as an offensive order and thus react aggressively. The cause of these differences may be psychological predispositions or sociological conditioning and as such require a level of expertise beyond the scope of this thesis. This study merely identifies those factors or events that were readily apparent at the start of an incident and appeared to be influential as a final trigger to the incident.

The results suggest that triggers appear to be different sometimes for groups and individuals. Cabin crew and passengers also had differing perceptions about which triggers were the most frequent.

5.2.1 Alcohol

Alcohol was the only trigger that both cabin crew and passengers ranked equally and as the most frequent trigger for both individual and group incidents. The unanimous ranking suggests that alcohol has a very strong influence on in-flight aggression. This study's finding is consistent with that of the Department for Transport (UK), where it was found that alcohol was involved in most serious incidents (DfT, 2003). Likewise, Bor, Russell, Parker and Papadopolous (2001) found alcohol to be the most likely cause of in-flight aggression.

Alcohol is highly influential on aggressive behaviour in two ways. Firstly, inhibition is reduced when people become intoxicated. They become less attentive to inhibiting cues such as the provocateur's intent and the consequences of their aggressive behaviour (Hull & Van Treuren, 1986; Steele & Josephs, 1988, cited in Franzoi, 1996). However by providing positive cues, aggressive response can be avoided. For an example, an intoxicated passenger watching a comedy may laugh a lot instead of being aggressive because the cue provided through the movies is non-aggressive. Thus alcohol alone does not necessarily cause aggressive behaviour, but a combination of negative cues or perceived negative cues does.

The second way in which alcohol influences aggression relates to the way people's expectations of their own behaviour after consuming alcohol can sometimes cause disinhibition (Franzoi, 1996). Franzoi (1996) held that when people learn that they can engage in normally inappropriate behaviours because such behaviour is excusable when performed under the influence of alcohol, it is called learned disinhibition. It is not known how many of the incidents involving alcohol intoxication had to do with learned disinhibition, but this study found that passengers deliberately reduce their alcohol consumption during flights. On average they have 1 or 2 drinks less than they would on a social occasion; suggesting that most passengers feel the need to stay in control in this environment.

Demographical Variables and In-flight Alcohol Consumption

Total Sample

Age was found to be related to alcohol related incidents for both individuals and groups. Younger (under 24) and older (over 50) groups were less likely to be involved in these than those from 30 to 44 years old. This middle group are more likely to be travelling on business, in the prime of their careers and therefore more affluent than either of the other two groups. Consequently, are more likely to be found in Business or the First class section where alcohol is more readily available.

In this study, respondents flying Pacific airlines reported more incidents related to in-flight intoxication than those who worked for American airlines *($p \leq .006$)*. The difference may be due to operational and cultural differences between the airlines in relation to in-flight alcohol services.

Cabin Crew Sample

In the cabin crew's course of work, male cabin crew experienced more individual incidents related to alcohol *($p<0.020$)* than their female colleagues. Their experience with group incidents and alcohol however, was not found to be significantly different to those of their female colleagues. The findings suggest that female cabin crew may be more likely to avert alcohol related incidents (individual), though whether this is due to better skills or being more lenient in giving in to requests for alcohol is not clear.

As discussed there are two possible reasons for increased aggression following alcohol consumption; first alcohol reduces people's ability to restrain aggression and secondly through learned disinhibition (Franzoi, 1996). Given the first scenario, the perpetrator disregards the potential cost because they cannot process their thoughts clearly, either because of the influence of intoxicants or because they are overwhelmed by negative emotions. Such behaviour matches the definition of hostile aggression.

> *Hostile aggression means the goal of the intentionally harmful behaviour is to cause injury or death to the victim (Franzoi, 1996, p.433)*

Since more male cabin crew encountered more alcohol related incidents and our discussion suggest that this could be because female cabin crew are in a better position to resolve incidents associated with hostile aggression, this may suggest that more alcohol related incidents are associated with hostile aggression than instrumental aggression. This is because male cabin crew will be expected to better reduce incidents associated with instrumental aggression, where passengers use harmful behaviour to achieve their goal, because men are more autocratic and aggressive in general (Smith & Mackie, 2000).

Cabin crew also found alcohol to have triggered more group incidents, but not individual incidents. Alcohol also triggered more incidents on international flights where flight duration last more than 9 hours. This is probably because more alcohol is served on international long-haul flights and people may drink more in the social atmosphere of a group, particularly knowing they will be taken care of by other members of the group should they become intoxicated.

Passenger Sample

The perceptions of passenger also suggest that age is associated with alcohol related incidents. Passengers from the age groups of between 30 and 34 reported significantly more alcohol related incidents involving individuals than those in aged above 50. According to IAS (1999) alcohol consumption declines with age for reasons connected to changes in life circumstances and attitudes and as people age, ill health grows and lower levels of alcohol toleration.

5.2.2 Smoking

Flights are increasingly non-smoking; these bans are imposed by national regulations or even airlines themselves. For example, the United States Government prohibits smoking on all domestic scheduled-service flights, except for flights over 6 hours from Alaska or Hawaii (C&M, 1997). Several major carriers also ban smoking on all flights, for example Delta Airlines, British Airways and Lufthansa.

Smoking was ranked the 6th most important trigger for both individual and group incidents by the study's total sample. When the sample was divided into crew and passengers, some differences between the groups were found. Passengers ranked

smoking as a less frequent trigger (9^{th}) while cabin crew ranked it 6^{th}. These results suggest it is less important than the DfT report (2003) found that 40% of all recorded incidents to be related to smoking. The reasons for this difference are not clear.

Passengers who are smokers may experience some of the withdrawal symptoms such as irritability, frustration, anger, anxiety, depression, insomnia, difficulty concentrating, and restlessness, thus making them more prone to aggressive behaviour (CNN, 1998).

Demographical Variables and In-flight Smoking

The following sections will discuss the relationships between demographical variables and smoking related incidents for individuals and groups.

Total Sample

Respondents who travelled on international flights which were longer than 9 hours encountered incidents related to smoking more often than domestic and/or shorter flights. This suggests that passengers who are smokers have difficulty managing their nicotine craving over long period of time. Cabin Crew G indicated in a written comment that smoking related incidents usually occurred on Asian flights (see Annex A). However neither ethnicity nor airlines were found to be significant in the quantitative analysis. Passengers above the age of 50 experience fewer smoking incidents than middle aged groups. This may be because the elderly are less likely to smoke than middle aged groups for health reasons.

5.2.3 Seat Assignment

Seat assignment ranked 3^{rd} in the total sample makes it one of the most frequent triggers to in-flight aggression. However cabin crew ranked it as being more frequent than passengers. Cabin crew ranked seat assignment 2^{nd} for both individual and group incidents while passengers ranked seat assignment 4^{th} for individual incidents and 3^{rd} for group incidents.

Female cabin crew reported experiencing more incidents related to seat assignment than males. It may be that they are regarded as an easier target by those who use instrumental aggression to get their own way.

Demographical Variables and Seat Assignment

The following sections will discuss the relationships between demographical variables and seat assignment related incidents for individuals and groups.

Total Sample

Length of flight was found to be significant; more incidents related to seat assignments were reported during shorter flights than longer flights. Also, middle aged passengers travelling in groups were found to have experienced significantly more incidents than passengers in the age group above 50. This may be explained by a related finding from Hunt (1998) who found that premium class passengers (who tend to be middle aged business travellers) flying a domestic flight to their home town after an international flight where the most likely cause of aggressive incidents related to seating and in-flight luggage. Assuming that most international travellers return to the international airport nearest their hometown, domestic flights they take home may be shorter than the average.

5.2.4 Carry-on Luggage

Incidents related to carry-on luggage were ranked quite highly by cabin crew (3^{rd}) and passengers (2^{nd}). Similarly, Bor, Russell, Parker, & Papadopolous (2001) found that 59% of their respondents believed carry-on baggage to be a cause to in-flight aggression. Beeks (2000) on the other hand, found that passengers experience very little stress in finding a place to store their carry-on baggage and no respondents were found to have experienced stress while checking in luggage

These findings support the notion that many passengers do not become aggressive for genuine carry-on baggage problems, but for a significant minority their desire to carry more than allowed triggers very aggressive behaviour. Last minute shopping at airports could be contributing to this problem. Shopping is one of the activities passengers do when they have time and left over foreign currency to spare. Passengers' shopping habits could be observed indirectly through the performance of airports' retail revenue. Jones reported that Hong Kong Airport Authority received 1.82 billion in revenue from its shopping complexes and commercial premises in addition Nuance-Watson, one of

the major retailers at Hong Kong International airport observed sales growth in the year 2002.

Demographical Variables and Carry-on Baggage

The following sections will discuss the relationships between demographical variables and carry-on baggage related incidents for individuals and groups.

Cabin Crew Sample

Cabin crew operating on domestic flights with a duration that is less than two hours, experienced more incidents related to carry-on baggage. Domestic flights usually use smaller aircrafts which may have limited space in the cabin for storage of carry-on baggage, particularly for those coming from an international flight.

Passenger Sample

Female passengers reported experiencing more incidents related to carry-on baggage than males when they travel in a group. Hoffman & Hurst (1990, cited in Smith and Mackie, 2000) found men to be stereotyped as more assertive, forceful and adventurous while women are more considerate, compassionate and nurturing. In view of this, it may be that when people travel in a mixed group, men are more aggressive in snapping up the available storage space leaving women members less.

Passengers, who are graduates from polytechnic or universities, experienced significantly more incidents than those who just attended polytechnics. This is further evidence that the highly educated experience more incidents than those who were less educated. As explained in 5.3.4, such observations could also be due to higher but unstable self esteem, and/or more confidence in articulating complaints.

5.2.5 Food Service

Food service was found to be have triggered more individual incidents than group incidents. It was ranked 5th for individual incidents and 7th for group incidents in the total sample, suggesting that passengers travelling in groups are less particular about food services.

Cabin crew and passengers rated food service marginally different. Cabin crew ranked food service in relation to individual incidents 4th while passengers ranked it 5th. For group incidents cabin crew ranked food service 6th while passengers ranked it 7th. Since there is only a slight difference in ranking, the perceived frequency of food service triggering in-flight aggression incidents would seem to be similar between the two groups.

Demographical Variables and Food Service

The following sections will discuss the relationships between demographical variables and food service related incidents for individuals and groups.

The only variable significant for the total sample was the length of flight. Those who are on flights more than 9 hours encountered more food service related incidents than those taking shorter flights of 2 to 5 hours. Beeks (2000) found food service to be a lower stress event. While passengers may tolerate inadequate or no food on a short flight, over a longer period the issue becomes more important.

Some demographic variables were found to be related to passengers' experience with food service related individual incidents. Younger passengers under the age of 24 experienced more incidents than those aged above 50. This indicates that younger passengers may be more particular in the food they eat. However when they travel in a group such behaviour was not found to be significant.

Passengers with higher education also experienced more food related group incidents than those who with less education. However they do not have such experience with individual incidents. This suggests that passengers with higher education are more particular about food service when travelling in a group.

5.2.6 Cabin Crew Service

Cabin crew service was ranked 7th by both passengers and cabin crew. While a ranking of 7th suggests that cabin crew service related incidents do not occur very often, also it does shows that although cabin crew can prevent and manage incidents, they can also be the trigger of incidents as well.

Demographical Variables and Cabin Crew Service

Asian respondents were found to have experienced more incidents related to cabin crew service than Caucasians respondents. The underlying reasons could be a cultural one. Chan & Ng (2003) in their work suggested that most Asian cultures as compared to Western cultures retain more hierarchical structures and traditions. Also, being frank and straightforward in many Asian social settings is not highly appreciated as this might cause a 'lose of face' situation. Thus if cabin crew ask Asian passengers to fasten their seat belts for example, the passenger may question the cabin crew's authority because of the hierarchical belief that the customer is the 'boss'. In situations where the request is not done subtly the passenger may experience 'loss of face' and thus become aggressive. If the tables are turned around, where a demanding passenger disregards an Asian cabin crew's authority and made them 'lose face' the cabin crew may react in a manner which invites an aggressive response. However the latter is less likely as cultural influences of the organisation will most likely override the personal culture.

Education was also found to be related to cabin crew service; passengers with the high levels of education (master's degree or doctorate degree) experienced significantly more incidents than those who only attended high school. As described in section 5.3.4, high but unstable self esteem could be the reason for such observation. Cabin crew's interacting with such passengers may unknowingly upset their self esteem and thus receives an aggressive response.

Respondents on longer flights also reported experiencing more incidents than those travelling on shorter flights. On longer flights, cabin crew have a higher workload, which may reduce their ability to attend to all the needs of passengers. On the other hand passengers presumably, require more in-flight services to keep them comfortable on a longer flight. Thus cabin crew service may get more strained during longer flights and this provides opportunities for triggering in-flight aggression.

Passengers

Asian passengers were found to have experienced more incidents related to cabin crew service than Caucasians. As explained earlier this may be due to cultural differences.

Servants are much less common in Western households than Eastern so the expectation of personal service may not be as high.

Passengers with degrees were found to have experienced more incidents related to cabin crew service than those who obtained diplomas. Once again there is some indication that the higher educational level the higher the more often they experience incidents of in-flight aggression.

The more often a passenger travels the more often they experience incidents related to cabin crew service. The finding abides by commonsensical reasoning that more exposure equates to higher probability of experiencing incidents.

Passengers travelling on long flights of more than 9 hours are found to have experienced more incidents related to cabin crew service than those travelling on shorter flights of 2 to 5 hours.

5.2.7 Disputes with other Passengers

In a cramped cabin environment, especially in economy class, passengers may find their personal space has shrunk. Sharing facilities in a limited space can be difficult. The findings on this trigger were interesting. Cabin crew and passengers ranked their frequency of experiencing incidents related to disputes between passengers as relatively infrequent for individual incidents (8^{th}), but very much more frequent for group incidents (2^{nd}), suggesting that passengers behave more aggressively towards other passengers when they are in a group than when they travel alone.

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According to Smith and Mackie (2000) group conflicts are often more competitive and more aggressive but they occur for the same reasons; such as material gains, gain of self respect and esteem. They also held that most group conflicts are more attuned towards social gains than material gains. Thus when passengers travel in groups they may become more aggressive than when they travel alone because they want to be part of the group and will take their cue for behaviour from the dominant personality within the group rather than their own personal codes of conduct.

Demographical Variables and Disputes with other Passengers

Total Sample

Asian respondents were found to have experienced more incidents, both individual and group, related to disputes between passengers than Caucasians. Markus & Kitayama, (1991) suggested that people from Asian cultures are more interdependent while Caucasians are more independent. They also held that interdependent people place more emphasises on the group than the individual and interdependent people value harmonious relationship with others and acceptance from their community. From this it would be expected that Asian passengers would tend to avoid conflict more than those with a Western cultural background. One possible explanation for the higher rate of aggression from Asians to other passengers may be that they do not see other passengers as part of their group or community and therefore no need to avoid conflict.

Young respondents also reported experiencing more incidents related to disputes with other passengers than the elderly. As discussed previously, cost of aggression is higher in elderly than those who are young and strong. Thus this observation is in accordance with the literature.

Respondents who are attending universities were found to have experienced more individual incidents than those who only have high school education. Those with postgraduate degree also reported experiencing more incidents related to dispute with other passengers than those who only had high school education. Thus it can be inferred that people with high level of education are more likely to be involved in incidents related to disputes between passengers.

5.2.8 Fear of Flight

Fear of flight was overall ranked the least frequent trigger for both individual and group incidents. Only about 11.1% of the passengers surveyed were afraid to fly. The result is similar to Boeing (cited in Dahlberg, 2001). The results also showed some indication that passengers do not become significantly less fearful of flights when they travel in a group than they travel alone.

Demographical Variables and Fear of Flight

The following sections will discuss the relationships between demographical variables and incidents related to fear of flight for individuals and groups.

Overall, respondents experienced more group incidents related to fear of flight on American airlines than European airlines. This may appear to be related to the September 11th incident, where American airlines were targeted and attacked by terrorists.

Cabin Crew Sample

Cabin crew were found to have experienced more individual and group incidents related to fear of flight when they operate on domestic flights. A number of factors could account for this. Dahlberg (2001) suggested that people from less industrialised countries and with little or no ability to communicate with the crew, experience fear of flying more frequently. It may be that more such passengers have travelled more on domestic flight than on international flights. Additionally, it is reasonable to suppose that those who are afraid of flying may be more easily persuaded to travel on shorter domestic routes than internationally. Finally, domestic aircraft tend to be smaller than international aircraft, which may give passengers a greater feeling of vulnerability.

Passengers who travelled more frequently also experienced more incidents; this observation is congruent with the logic that the more passengers travel on flights the more in-flight incidents they experience.

5.2.9 Discomfort

Several cabin factors can contribute to discomfort of passengers, for example cramped seating arrangements and warm temperatures. Overall, discomfort ranked 4th for individual incidents and 5th for group incidents. However passengers and cabin crew ranked this variable quite differently for individual incidents. Cabin crew ranked discomfort 5th while passengers ranked it 3rd most frequent triggers of in-flight aggression.

According to Dahlberg (2001), the cabin crew is required to be the enforcer of safety regulations, and to provide the expected level of service to satisfy passengers. Dahlberg

(2001) also held that these roles may conflict each other at times. Here the findings provide an insight into such conflicts. Discomfort was ranked highly at the third position by passengers, but cabin crew ranked it fifth appearing to believe it to be significantly less frequent. Similarly for group incidents cabin crew ranked discomfort 7th while passengers ranked it 5th. Cabin crew in their process of work may deliberately ignore passenger comfort to accommodate safety requirements. For example, requiring passengers to belt up when cruising; in such a case passengers may feel uncomfortable but as it is a safety requirement cabin crew may ignore, or not take sufficient notice of the discomfort caused.

Demographical Variables and Discomfort

The following sections will discuss the relationships between demographical variables and discomfort related incidents for individuals and groups.

Total Sample

Asian passengers were found to have experienced more group incidents related to discomfort than Caucasian passengers. According to Markus and Kitayama (1991) Asian cultures, who tend to be more interdependent, have such group cohesiveness that it promotes offensive and rowdy behaviour. Therefore when a member within an Asian group is uncomfortable, this cohesive group may turn aggressive to address the discomfort its member is experiencing.

There were also some indications that group passengers travelling on Pacific airlines experienced more incidents involving discomfort than others. As most Pacific airlines operate smaller aircrafts, level of discomfort compared to carriers operating larger aircrafts may be higher. This feature may be exacerbated by the relatively large build of Pacific Islanders.

Cabin crew who operated on commuter aircraft experienced more incidents related to discomfort than those who operated on both international and commuter routes. Cabin crew who operated on both types of aircraft may have experienced fewer incidents because they also operate on larger aircrafts that provides more space.

Passenger Sample

Passengers were found to have experienced more individual and group incidents related to discomfort when they travel more often. This is congruent with the logic that the more exposed a passenger is to air travel the more incidents they encounter.

5.3 Environmental Factors Related to In-flight Aggression

This section will examine the environmental factors surrounding the phenomena of in-flight aggression. These areas include the in-flight aggression related procedures of airlines, organisational culture and the effects of September 11th.

5.3.1 Airline Operational Procedures and Policies

This section discusses the procedures and policies of airlines from the perspective of cabin crew. The study classified the surveyed policies into 3 general categories; pre-flight policies, in-flight policies and post-flight policies.

Pre-flight procedures here are made up of two components; communication with ground staff and pre-flight screening of passengers. Procedures that require the communication between ground crew and cabin crew can facilitate exchange of information regarding potentially disruptive passengers. Pre-flight screening procedures that require cabin crew to identify potentially disruptive passengers can also help reduce in-flight incidents. The results suggest that cabin crew believe airlines only have moderately effective pre-flight procedures and policies *(x = 4.16)*, suggesting that there are more room for improvement. For example, one cabin crew in response to the questionnaire included a short account of two incidents where aggressive intoxicated passengers were boarded by ground crew without informing cabin crew of an incident that had occurred at the flight lounge (see appendix A).

Cabin Crew A – "*I had a ground staff who boarded a passenger that had a fight in lounge and did not advise crew, as they knew we would deny boarding.* In another incident *airline staff tried to board a woman that was being carried by ground staff as she was too drunk to walk. They do not tell us about unruly behaviour on the ground as they did not*

want to be stuck with the problem. Once the plane leaves, their problems are gone."

In-flight procedures are made up of 7 components. These components are in-flight alcohol control, training in conflict resolution, self-defence training, assistance from flight crew, restraint kits in aircrafts, control of passenger groups and incident reports. In-flight procedures and policies were rated just moderately effective *(x = 4.00)*, suggesting that there is some room for improvement. Examining individual component means showed that self-defence training was ranked the least effective *(x = 2.77)*. One cabin crew pointed out that she feels threatened by passengers who are physically huge and that although self-defence training would be useful they do not receive such training. These factors could have contributed in cabin crew not rating the component highly.

Cabin Crew E - "if sheer strength plays a major role I personally would feel very 'challenged' having to apply handcuffs to a large male."
- "self defence training would be useful but we don't get it these days"

Cabin crew also found assistance from flight crew ineffective *(x = 3.43)*. This could be due to the fact that flight crew have different duties related to the aircraft and cabin crew are reluctant to call on them except in extreme circumstances. It may also be influenced by the imbalance of power between cabin crew and flight crew (Chute, 1995). Chute (1995) found that cabin crew were reluctant to take their problems to the flight crew for fear of negative responses.

On the other hand cabin crew believe they have effective procedures and policies with regard to alcohol control *(x = 4.58)* and the use of restraint kits on aircrafts *(x = 4.78)*. Despite having effective procedures in alcohol control, alcohol was still reported as the most common trigger during incidents. This suggests that other factors such as passengers drinking before flights and them bringing their own alcohol onto aircrafts may have contributed towards many of the incidents.

Post-flight procedures, which involved deplaning restrained passengers, were rated quite effective *(x = 4.80)*. The finding suggests that airlines have relatively effective procedures and policies in place for the most serious incidents such as deplaning aggressive passengers and handing them to relevant authorities.

Demographical Variables and Airline Procedures

This section will discuss the relationship between demographical variables and airline procedures.

Cabin crew with higher level of education or more seniority found in-flight procedures less effective than those with less education or a lower position.. More highly educated senior crew cabin crew may have better analytical skills and thus recognise that procedures are not always effective in some situations. Additionally, they are more likely to be required to deal with the most difficult situations in which normal procedures are likely to be less effective.

5.3.2 Organisational Culture and In-flight Aggression

This section examines airlines organisational culture/s with regards to in-flight aggression management.

Cabin crew ranked 11 items related to the culture at their organisation (see table 4.22). As can be seen, airlines were found to have communicated clearly on their policies *(x = 3.90)* and expect cabin crew to adhere to these policies strictly *(x = 4.80)*. Should they fail they are likely to face disciplinary actions *(x = 3.84)*. These findings suggest that management are concerned and proactive about the way passengers are managed by cabin crew in the event of an incident.

Cabin crew were also found to be relatively happy with the safety standards at their airlines *(x = 3.40)*. Cabin crew were encouraged to report perpetrators *(x = 3.36)* but management did not always take action on reported incidents *(x = 3.31)*. These finding indicate that despite perpetrators being reported they do not always get punished. Franzoi (1996) suggested that one of the conditions for punishments to be effective in reducing aggression is that it must be consistently applied. Acting on some incidents and not on others, gives perpetrators the impression that the likelihood of punishment is not high.

The study also found that cabin crew operate in an environment that is low on warmth and friendliness *(x = 3.21)*, where there is little room for initiative *(x =3.18)* or open communication *(x = 3.17)*. These suggest that in the event of an incident, cabin crew may not be able to manage incidents creatively moreover they may have difficulty co-operating in managing those incidents. The problem may intensify in a group incident where a single cabin crew will not be able to manage alone.

The findings also suggest that lessons learned from incidents seldom lead to a policy change or improvement in procedures *(x = 3.16)* and cabin crew involved in incidents are usually not informed of the outcome *(x = 2.68)*. This suggests complacency in airlines about their current measures in preventing and managing incidents, and because cabin crew are not informed about the outcome, they may be discouraged from submitting further reports, thus disguising the magnitude of the in-flight problem.

Demographical Variables and Organisational Culture

This section will discuss the relationship between demographical variables and organisational culture.

Younger and less experienced cabin crew also found their operating environment warmer and friendlier than older and more experienced cabin crew (see table 4.23a & table 4.23b). The findings suggest that the attitudes and beliefs of more senior staff result from repeated and prolonged negative experiences in the work environment. This should be regarded by management as a serious issue to be addressed for several reasons. First, management itself seems to be one of the main causes of negative attitudes, particularly in relation to their non-responsiveness to reports of incidents and recommendations from cabin crew. Secondly, in a stressful environment, where safety is of paramount importance, cabin crew must be able to work effectively in teams. This is unlikely to happen in a climate of distrust and poor communication.

The level of education of cabin crew also may play a role in how much they adhere to policies. Those who were attending universities *(x = 4.50)* seem to have indicated higher adherence to policies than those who have completed their degree *(x = 3.82)*. An

explanation could be that cabin crew who have completed their degree feel more confident about their ability to assess the relevance of policies at the time of the incidents and thus may take initiatives to resolve incidents their own way.

Cabin crews' level of experience in the job was found to be significant; those with little experience believe policies and procedures were communicated more clearly than cabin crew with more experience (see table 4.3b). The result may indicate that cabin crew 'discover' more grey areas with regard to incident management as they progress in their career.

5.3.3 Perceived Cabin Environment (Passenger)

This section examines how passengers perceive the cabin environment and whether they have negative perception of flight prior to flying. Passengers were asked if they worry in several given situations during flight.

Passengers believed that that they were treated with respect *(x =2.14)* and flight information was sufficiently well communicated *(x = 2.37)*. They also believe most passengers are considerate *(x =2.85)* and that they still have some control over their own safety *(x =2.97)*. Overall they were also not too worried about having a terrorist onboard the aircraft *(x =2.68)*. These findings suggest that passengers usually board an aircraft with few concerns and their in-flight experience usually bears out their expectations.

Demographical Variables and Perceived Cabin Environment

This section will discuss the relationship between demographical variables and perceived cabin environment.

Female passengers believed that they had less control over their own safety than male passengers. Such belief is consistent with the literature where Williams & Best; Eagly and Eagly & Johnson (1982; 1987; 1990 cited in Smith and Mackie 2000) found women to be more dependent, soft hearted and emotional than men who are more aggressive, independent, strong and tough.

Asian passengers *(x = 2.40)* were found to feel they are given less respect by cabin crew than Caucasian passengers *(x = 1.85)*. As discussed before in 5.2.6 this could be due to cultural influence.

Passengers travelling on shorter flights were more satisfied with the amount of information provided to them than those on longer flights. The findings suggest that the passengers on a long haul flight require more information about the flight programme to feel comfortable but it is unknown what kind of information they seek.

5.3.4 Passenger Adherence to Flight Regulations

Of the four regulations, passengers felt most obligated to adhere to smoking restrictions *(x = 4.61)*, followed by fastening of seat belts *(x = 4.40)*, alcohol restrictions *(x = 4.32)* and lastly baggage limits *(x = 3.87)*. An examination by Bor (2001) shows that excess alcohol consumption, smoking, and carries on baggage ranked 1st, 5th and 7th on a list of 10 possible triggers of in-flight aggression. Bor's (2001) findings showed that despite passengers believing alcohol and smoking restrictions should be strictly adhered to they are remained top triggers.

One explanation is given by Smith and Mackie (2000) on the subject of reactance, where they held that people can resist being manipulated by norms, and when norms are not privately accepted or seen as appropriate they fight against threats to freedom of action. Reactance could occur when passengers lose the freedom to choose timing to smoke, consume alcohol and buckle up and how much baggage they want to carry onto aircrafts. Thus despite knowing the importance of adhering to policies laid down, some passengers responded with reactance.

Demographical Variables and Passenger Adherence to Flight Regulations

This section will discuss the relationship between demographical variables and perceived cabin environment.

Male passengers were found to believe less in the need to adhere to baggage limits *(x = 3.66)* than female passengers *(x = 4.09)*. As described in section 5.2.4 female passengers reported experiencing more incidents related to carry-on baggage than males and it was

argued that this fining adds further support to the notion that female experience of baggage problems is caused by male behaviour.

Passengers who attended high school *(x = 4.54)* were more likely to comply with baggage limits than those who started university *(x = 3.63)* and those who had completed their degree *(x = 3.49)*. Education level was found to be related to some triggers, including carry on baggage, more than once in this discussion. Without exception, passengers with higher levels of education were found to have been involved more often in these incidents further reinforcing the notion that passengers with higher education are more likely to ignore or breech regulations.

Passengers that usually travelled only on domestic routes *(x = 4.78)* were found to have adhered more strictly to seat belt regulations *(x = 4.07)* than those who travelled on both international and domestic routes. One reason for this phenomenon could be that fastening seat belts on longer flights may be uncomfortable and thus passengers are felt less obligated to adhere to the seat belt rule.

5.3.5 The Effects of September 11th

This section discusses the effects of the attack in New York on September 11th in relation to in-flight aggression. The discussion examines the impact from the perspective of cabin crew and passengers.

While it might be expected that the 9/11 incident would have caused air passengers to worry about their safety more than before and thus enter the cabin in a more fearful frame of mind, perhaps triggering more incidents in-flight, this did not turn out to be the case. Passengers indicated that they were not more afraid to fly after the incident *(x = 2.33)* and likewise cabin crew did not encounter more fearful passengers than pre-September 11th *(x = 3.23)*.

The 9/11 incident however did increase passenger's awareness of in-flight aggression *(x = 3.75)*. Cabin crew were moderately more concerned about violence than before *(x = 3.15)* but dealt with the security threat by observing passengers more closely *(x = 4.00)*.

Passengers became more willing to assist cabin crew in managing violent passengers than pre-September 11th *(x = 4.00)* and this trend was similarly observed by cabin crew *(x = 3.54)*.

Cabin Crew D respondent indicated that about 2 months after Sept 11, there was very good behaviour from passengers and in-flight aggression ground to a halt (see Annex A). However immediately post September 11th flights were empty and people enjoyed having a whole row of seats to themselves, perhaps reducing stress. As air traffic recovered, incidents began to creep up again. Such a phenomenon however is expected to be short lived as things return to normal but it is important to note that environmental influences can alter people's behaviour and expectations as such.

5.4 Measures in Preventing and Managing In-flight Aggression

This section discusses the measures that could be used to prevent and manage incidents related to in-flight aggression. The section will first look at the way cabin crew and passengers rate the effectiveness of a list of measures and then it will further discuss some specific measures such as the identification of potential perpetrators, the effectiveness of cabin crew and the kind of training cabin crew require to better manage in-flight incidents.

5.4.1 Measures in Preventing and Managing in-flight Aggression

This section discusses the effectiveness of measures such as legislation, airport screening, negotiation skills, physical restraints, cabin crew, flight crew, passengers and negotiation skills. Both cabin crew and passengers were asked how efficient they believe these measures were.

The results showed that respondents believed that skills, people and items found in the immediate environment of the aircraft cabin were rated more effective than those outside the cabin environment (see table 4.25). As can be seen, negotiation skill tops the ranking while airport screening and legislation ranked lowly.

Similarly the results showed that the cabin crew sample ranked measures that they were more familiar with during the course of work as being more effective. They ranked fellow cabin crew, negotiation skills and physical restraints 1st, 2nd and 3rd respectively (see table 4.25). They believed that these measures are effective. They also believe that passengers and legislation are quite useful measure while ranking them 4th and 5th. They found airport screening and flight crew least useful.

The results were in accordance with expectations because at the frontline, they are dependent on measures that can be delivered with an immediate effect. As humans, we are also more aware of effects that are more salient. The effects of legislation and airport screening, which are preventive in nature, are more subtle and thus seldom capture the attention of people. Getting help from the flight crew was rated as the least effective measure because they have less training than cabin crew for passenger incidents. They are regarded as being useful only as an extra body, not because of specialist skills.

Similarly passengers rated the measures in a similar fashion. They rated cabin crew, the flight crew and airport screening as very effective measures (see table 4.25). They believed physical restraints were only relatively effective and ranked it 4th. The two least effective measures according to passengers were public education and legislation.

The results are a reminder that people judge the effectiveness of measures by what is visible. Legislation and airport screening are proactive measures and they are usually judged by how often they fail to prevent an incident and not how many incidents they prevented because there is no effective instruments to do so. However, legislation and airport measures are still important as cabin crew can only act to deal with perpetrators if there is a strong legislation supporting them. The results also showed that both cabin crew and passengers believe cabin crew is the top measure against in-flight aggression. In the following sections we will further discuss cabin crew's ability to manage incidents.

Cabin crew and passengers rated flight crew very differently. Perhaps because the flight crew are perceived to hold a lot of authority onboard the aircraft, passengers believe they will be effective in managing aggressive passengers. However, NASA analysts found some pilots who either left the cockpit or were interrupted from their routine by flight attendants seeking help committed errors such as flying too fast, going to the wrong altitude, or taxiing across runways reserved for other aircraft. Cabin crew may have understood these concerns and thus rated flight crew ineffective in managing in-flight aggression incidents.

Cabin crew and passengers also rated airport screening quite differently. The result may suggest that cabin crews' experiences may have lead to them ranking airport screening lowly. This is further explained in the next section where demographical variables are examined.

Demographical Variables and Measures of In-flight Aggression

This section will discuss the relationship between demographical variables and measures of in-flight aggression according to the two groups.

Total Sample

The results indicates that passengers with higher level of education perceive the effectiveness of cabin crew and flight crew to be less effective than those who received less education. The key to this difference could lie on how these groups of passengers pass judgements. Smith & Mackie (2000) held that judgements are passed based on superficial processing or after extensive processing. Higher education might have changed the way people make judgements.

Asian passengers found cabin crew less effective at dealing with incidents than Caucasian passengers. The reason for the difference could be cultural. This is consistent with the finding that that passengers travelling on Asian airlines found cabin crew less effective than those on European airlines. This may be because Asians travel more often on Asian airlines which are more service than safety oriented. Cabin crew from Asian airlines include Singapore Airlines, Malaysia Airlines and Cathay Pacific. The majority

of the cabin crew at these airlines are young females and this may have created an impression that they are less effective in managing in-flight incidents.

Respondents travelling on European airlines believed that legislations related to in-flight aggression are more effective than those travelling on American airlines. This might indicate that legislation in Europe is may be more effective, or at least is perceived to be. However both the United States and European Governments have introduced relevant legislations to manage the problem and they are also increasing efforts to uphold these regulations (Fogg, 2001). For example the United States introduced the 'Air Rage' bill while the British government created the new offense of acting in a disruptive manner (Fogg, 2001). As of 2001, only half of airlines have policies to tackle the growing problem of air rage (ITF, 2001a). Thus the findings of this study may reflect how airlines uphold these legislations rather than the ineffectiveness of the legislations.

Male respondents found female cabin crew less effective than female respondents, probably because males are stereotyped as aggressive, strong and tough (Smith & Mackie, 2000). This belief is contradicted by the finding that females seem to handle some types of aggression more effectively than males, for example, incidents related to alcohol.

Young adults were found to believe public educations is more effective than those who were in the middle ages. It may be reasonable to say that education has become more affordable and accessible to people than 20 years ago in most places. The younger generation are generally better educated and thus may understand the effects and benefits of education and thus believe public education more effective.

Cabin Crew

Demographical variables of cabin crew were found to be related to measures for dealing with in-flight aggression. Younger cabin crew found flight crew more effective than cabin crew from older age groups. Likewise cabin crew with less experience and those in junior positions found the flight crew more effective than those with more experience. The findings could be due to younger cabin crew being more dependent on

authoritative figures for direction during incidents. They also are less confident because they may not have much experience in managing incidents and since the study found cabin crew likely to be disciplined for errors, younger cabin crew and those in junior positions may worry about being penalised for offending passengers.

Female cabin crew rated flight crew more effective, whereas male crew thought they were less effective. The results could be explained by (Williams & Best, 1982; Eagly, 1987; Eagly & Johnson, 1990 cited in Smith and Mackie, 2000) where females are stereotyped as more dependent. Male cabin crew, being more independent, do not perhaps see flight crew as being able to offer any additional skills to those they (cabin crew) can bring to the problem. The results in this section so far suggests that cabin crew who are female, junior in position or with little experience are likely to be more dependent on their seniors for direction when incidents occur.

Cabin crew who operated on European airlines found airport screening more effective than those who operated on mixed categorical airlines. Likewise cabin crew from European airlines found legislation more effective than those who operated on pacific airlines. These results may suggest that pre-flight measures at these airlines could be more effective than other airlines.

5.4.2 Identification of Potentially Disruptive Passengers

Prevention is better than cure is a cliché, but true for all that. Identifying potentially disruptive passengers can help reduce unnecessary disruptions to flights and prevent dangers that come with it. This section discusses the findings related to the identification potential perpetrators. It will first examine how easily cabin crew can identify these passengers. Next it will examine the usefulness of some cues in assisting identification.

Most cabin crew (49.2%) found identifying potentially disruptive passengers relatively easy, however more than a quarter of them (27.0%) found some difficulty in doing so. Further examination showed that Asian cabin crew found identification more difficult than Caucasian cabin crew. In addition, Asian cabin crew also found body language less

useful as a predictor than Caucasian and Polynesian cabin crew. Two aspects may have contributed to these phenomenons. Firstly, Rosenberg (2003) held that people in Asian cultures dislike direct confrontation and avoided expressing clear rejections. This may suggest that the cabin crew with an Asian cultural background may not actually find identification of disruptive passengers difficult but the real difficulty could be in bringing attention to these passengers. Secondly, Izard (1971, cited in Marsh, Elfenbein & Ambady, 2003) provided evidence that people have an innate ability to understand basic emotions communicated through facial expression. However people's accuracy in interpreting emotions (anger, disgust, fear, happiness, sadness, and surprise) decreases when they were asked to interpret expression of people from another cultural group Izard (1971, cited in Marsh et. al., 2003). Izard's study may offer support for the notion that Asian cabin crew may have found it more difficult to interpret emotions accurately because of cultural differences.

Some cues are better predictors of aggressive passengers than others. Cabin crew found body language *(x = 4.30)* and behaviour *(x = 4.29)* most useful in identifying such passengers while the appearance of passengers was deemed a less useful cue.

5.4.3 Effectiveness of Cabin Crew

Cabin crew is the frontline in managing incidents related to in-flight aggression, thus their effectiveness is important. In this study, most passengers (54.1%) rated cabin crew effective in managing individual incidents while 38.8% of them found cabin crew moderately effective (see fig.4.13). Only 7.1% of the passengers found cabin crew ineffective. However the effectiveness of cabin crew seems to decrease during group incidents. About forty five percent (45.4%) of the passengers found cabin crew effective during group incidents while 45.3% of them found cabin crew to be moderately effective and 9.3% found cabin crew to be ineffective (see fig.4.13). As can be seen cabin crew have more difficulty managing group incidents.

The results also show that only 9.2% and 10.5% of the passengers found cabin crew to be very effective during individual and group incidents respectively (see fig.4.13) suggesting there is room for improvement.

Demographical Variables and Effectiveness of Cabin Crew

The demographical data of passengers did not show any significance except for the type of airlines. Passengers travelling on Pacific airlines *(x = 2.14)* found cabin crew less effective in managing group incidents than those travelling on American airlines *(x = 3.71)*. The result may suggest that cabin crew from Pacific airlines may be less skilled in managing group incidents than their counterparts from American airlines.

5.4.4 Training of Cabin Crew

Training of cabin crew is important in two ways. First it can protect cabin crew themselves from getting injured in the process of managing an incident. Second, they can manage incidents more effectively/.

As can be seen from Annex A, Cabin Crew E is not confident in restraining a large passenger, is not sure how to manage a group during flight and felt that self defence is useful but training was not provided. This view, echoed in other findings suggest that many of the cabin crew share the same concerns and feel the need for better training to assist them in the course of their work.

Cabin crew were asked to rate the importance of a list of skills that they would like include in training in order to more effectively manage in-flight incidents. The study grouped the list of training into two major components; physical techniques *(x = 4.18)* and psychological techniques *(x = 4.18)* (see table 4.33). The two components were rated equally important. However the three most important skills identified were communication skills *(x = 4.71)*, negotiation skills *(x = 4.52)* and skills related to calming and comforting passengers *(x = 4.50)*. These findings give support to those of Hunt (1998)

Demographical Variables and Training of Cabin Crew

This section will discuss the relationship between demographical variables and training needs of cabin crew.

Female cabin crew *(x = 4.26)* believed that psychological training is more important than male cabin crew*(x = 4.07)*. This finding supports the notion that females look to resolve issues by dealing with them using empathy and understanding to persuade rather than physical intimidation or demands (Williams & Best, 1982; Eagly, 1987; Eagly & Johnson, 1990 cited in Smith and Mackie, 2000).

5.4.5 Understanding Passengers' Cultural Background

In this section, the study examines the importance of understanding cultural background in managing in-flight incidents. As can be seen from figure 4.11, cabin crew found understanding of passengers' cultural background useful in managing incidents.

Culture can manifest in many ways. One example is demonstrated in Cabin Crew C's description of her experience (see Annex A). In the incident the Japanese passenger expected the cabin crew to be submissive and subservient because that is part of the Japanese culture. By understanding cultural norms and expectations more could have been done to prevent incidents that arise from such misunderstandings.

Understanding Passengers' Cultural Background

Cabin crew operating on international aircraft *(x = 4.11)* found it more useful to understand a passenger's cultural background than those who operated on both commuter and international aircraft, or on domestic flights alone. When operating on international aircrafts, cabin crew are more likely to encounter more passengers from different cultural backgrounds than those who operate on commuter aircraft and therefore will feel a stronger need for cultural knowledge.

Chapter 6

Conclusion

6.0 Conclusion

In-flight aggression of varying magnitude is persistent in air travel. In-flight aggression endangers the aircraft and everyone onboard. Cabin crew however are exposed to the danger 6 times more than passengers and this clearly is an occupational hazard. Fortunately, most incidents are minor or moderate in nature.

September 11th saw a huge decrease in the number of air passengers for a period of time, but is did not increase overall fear of flying. It did, however, increase awareness of in-flight aggression among cabin crew and passengers. Passengers also indicated that they were more willing to assist cabin crew should an incident arise.

The study found alcohol to be the most prevalent trigger of in-flight aggression. These aggressive incidents occurred more often on longer international flights. Airlines appear to have effective alcohol control guidelines however they have little control over pre-flight alcohol consumption. The problem is exacerbated when the pre-flight behaviour of intoxicated or aggressive passengers is not communicated to the cabin or flight crew and they are allowed to board the aircraft.

Cabin crew believe pre-flight procedures to be only moderately effective as a measure for preventing in-flight incidents. As their work experience increases, their perception of the effectiveness of pre-flight procedures and other airline preventative measures diminishes.

Besides alcohol, cabin crew and passengers experienced incidents that involved other triggers. While generally, cabin crew and passengers rate the frequency of various triggers similarly, there are two about which they disagree: smoking and discomfort. Cabin crew seem to underestimate the amount of discomfort passengers experience,

while passengers downplay the importance of smoking related incidents, perhaps as some form of dissent with regards to smoking restrictions.

Airline culture plays an important role in determining if cabin crew can work cohesively to manage incidents. The study found airlines instilled high safety standards and effectively communicated these standards to cabin crew. However, cabin crew members themselves felt the work environment to be non-supportive and this may affect their effectiveness when managing aggressive passengers. Feedback about reported incidents was seldom relayed back to cabin crew and lessons drawn from incidents rarely lead to positive procedural or policy change. Cabin crew who are older and/or more experienced were the most likely to be disillusioned about the work environment, to find management less encouraging about reporting incidents and believe that procedures were communicated less effectively.

Most passengers do not start with a negative attitude to flying, but on some occasions, a variety of factors coincide to trigger an in-flight incident. Alcohol is clearly the most important of these. Although most airlines have good in-flight controls of alcohol, the problem is often caused by the acquisition or consumption of alcohol before boarding the flight. In-flight controls are relatively ineffective in these cases. Passengers are aware of regulations regarding alcohol consumption, smoking and carry-on luggage limits, but persist in violating the rules anyway.

Cabin crew and passengers perception of the effectiveness of preventative measures is strongly influenced by their visibility. Readily apparent measures, such as the use of restraints; passenger assistance and flight crew assistance are seen as being more useful than measures such as airport screening and legislation whose effects are less tangible.

Cabin crew also find it useful to pre-empt incidents by identifying potentially aggressive passengers during boarding. They found it relatively easy to identify these passengers and cited behaviour and body language as effective cues. However they found appearance to be a less accurate predictor.

Once an incident is underway, cabin crew are the first and most effective line of defence. They are seen as being more effective dealing with individuals than groups. Cabin crew found passenger assistance moderately effective when managing incidents however passengers are only moderately willing to assist cabin crew during an incident and they are even less willing to assist in group incidents.

Cabin crew believe training in passenger management is useful to their work. They value both psychological techniques and physical techniques equally important but they specifically rated communication skills, negotiation skill and skills related to calming and comforting passengers most useful. They also believe that self-defence technique would be useful but most airlines have no policy for such training to be conducted.

Culture plays an important role in people's behaviour. Cabin crew found it important to understand the culture of passengers whom they attend to as it may assist them in managing incidents.

The demographical analysis showed encouraging results that could be used for profiling of passengers and cabin crew. The analyses not only showed that certain passengers will behave aggressively it also showed that they may do so under certain conditions of flight. Additionally cabin crew with a certain profile may manage different kinds of aggression and triggers more efficiently than others.

This study found evidence that Asian passengers who are highly educated experienced more individual incidents; Polynesians on the other hand experienced more group incidents. Alcohol related incidents are experienced more often by Caucasian passengers aged between 30 and 34. Evidence also suggests that Asian male passengers under the age of 24 are more likely to experience individual incidents related to disputes with other passengers. Passengers with high level of education travelling on Pacific airlines are more likely to experience more group incidents related to dispute with other passengers. Highly educated passengers also experienced more individual incidents related to cabin crew and carry-on baggage, correspondingly, evidence also show that they are adhere less to carry-on baggage regulations. Evidence also show that passengers travelling on long haul flights

experienced more incidents related to seat assignment and cabin crew, correspondingly, they also found cabin crew to be relatively less effective in managing incidents. Passengers travelling on international routes are also less likely to adhere to seat belt fastening rules and those travelling on Pacific airlines found cabin crew to be less effective in dealing with incidents.

Evidence suggests that cabin crew working for European Airlines encountered more incidents. Male cabin crew were also found to have experienced more individual incidents and these incidents are likely to be triggered by alcohol, they also believed that they are better managers of incidents. Female cabin crew on the other hand experienced more incident related to seat assignments. Cabin crew operating on short haul, domestic routes are also more likely to experience incidents related to seat assignment, carry on baggage and fear of flight while those operating on long haul or international routes also are more likely to encounter incidents related to alcohol and smoking. Evidence also showed that cabin crew who operated on commuter aircraft experienced significantly more incidents involving individuals and these incidents usually are related to carry-on baggage and seat assignment. The same group of cabin crew also experience more group incidents which usually are related to discomfort and smoking. The study also found junior cabin crew experiencing more incidents involving individuals related to disputes with other passengers.

There is some suggestion that Asian cabin crew who found body language less effective a predictor of potentially aggressive passengers also found it difficult to identify potential perpetrators. Cabin crew flying on international routes believed that male cabin crew are more useful and that understanding passengers' background culture is useful in resolving incidents. Two other significant trends were also observed. Firstly, evidence suggest that the 'weaker' a cabin crew is the more dependent the cabin crew is on others to assist during incidents; for example, young female junior cabin crew were found to depend more on flight crew during incidents. Secondly, the more senior and experienced cabin crew are, the less they believe in-flight aggression measures are effective. They also found airport screening, the flight crew and in-flight procedures less effective. In addition they believe their work environment is less warm and friendly, safety procedures pertaining to in-flight

aggression less clearly disseminated and the management less likely to provide them with information about the outcomes of incidents.

Cabin crew with higher level of education believed that they are required to abide by aviation safety regulations and believed that in-flight procedures are less effective. Female cabin crew also found psychological techniques more important a training need than male cabin crew.

As can be seen there are situations where certain passengers have a greater potential to create an incident and during these incidents, some cabin crew are in a better position to prevent and deal with the perpetrator than others.

Chapter 7

Recommendations

The study examined three main areas; namely triggers of in-flight incidents, preventative measures and the work environment. This provides a broad brush understanding of in-flight aggression which helps to clarify the magnitude and nature of the problem. Greater in-depth understanding will be achieved from a series of studies each focusing one specific aspects of the issue. These may include the causes and sources of in-flight alcohol consumption, impact of passenger legislation on in-flight aggression and the impact of organisational culture on the effectiveness of cabin crew.

From the findings, several recommendations can be made to further reduce and prevent in-flight aggression. They include:

- Increasing the understanding of in-flight aggression with an effective feedback system
- Reviewing and improving security procedures related to alcohol
- Providing and improving training programmes
- Educating passengers
- Enforcing of legislation and regulations
- Profiling passengers and cabin crew
- Improve working conditions and build teamwork
- Developing an in-flight aggression management system

7.1 Increasing the Understanding of In-flight Aggression through an Effective Reporting and Feedback System

A major difficulty in effectively dealing with in-flight aggression is the lack of information. Not all incidents are reported to management, particularly those where interventions where successful. This means that management is unaware of the full

extent of the in-flight aggression problem, and do not always know what the most successful strategies used by cabin crew are. It is recommended that all incidents are fully reported, regardless of the severity or outcome. An effective feedback system should be developed to disseminate the lessons learned back to cabin crews, and others where appropriate (for example, flight crew). Additionally the system should be able to identify the 'real' cause and not just the trigger of the incident. For example, the real cause of one passenger smoking on an aircraft may be because he/she is not familiar with the regulations while another may have done so out of defiance.

7.2 Reviewing and Improving Security Procedures Related to Alcohol

The findings suggest that pre-flight and in-flight procedures at airlines need to be enhanced. The main trigger of in-flight aggression is the over consumption of alcohol. Since crew believe that in-flight controls are adequate, other access measures need to be taken. These may involve restricting the amount of alcohol available at airports, restricting access to duty-free alcohol brought on board and more effective policies for preventing intoxicated passengers from boarding.

7.3 Providing and Improving Training Programmes

Cabin crew are the front defence against aggressive behaviour. It is important therefore that they be given the appropriate tools to do the job effectively. A combination of psychological/ interpersonal and physical techniques is essential for managing in-flight aggression. Cabin crew themselves believe their effectiveness would be increased with more training in negotiating and communication skills to avert, ameliorate or resolve incidents, and strategies for calming and comforting anxious or distressed passengers. Should these efforts fail they need to be trained to use physical techniques that will allow them to restrain the perpetrator and at the same time defend themselves. Additionally, educating cabin crew about important cultural differences between passengers will enhance their ability to treat their diverse customers with dignity and respect.

7.4 Educating Passengers

Most passenger education focuses on informing them of the rules. Passengers in this study knew about rules relating to smoking, luggage and alcohol but still chose to ignore them. Educating passengers should involve helping them understand more about the 'why' of the rules and how they can assist in an incident. This would build on the greater willingness to assist cabin crew that has developed since 9/11 and may encourage them to behave more responsibly because they are 'entrusted' to keep the aircraft safe and develop a sense of being part of a team.

7.5 Enforcing Legislations and Regulations

Legislation was not rated well as a measure against in-flight aggression. However it is the core of managing incidents because it empowers countries and airlines to manage and punish perpetrators. Franzoi (1996) suggest that punishments must be prompt, relatively strong and consistently applied to be effective. Therefore airlines and countries should find ways of dealing expeditiously with problem passengers, such as black lists and instant fines and enforcing the legislation in a consistent manner.

7.6 Profile Passengers and Cabin Crew

There is always a best person for a task. This includes managing in-flight aggression. When an incident occurs it is important to identify the nature and triggers of the incident and assign the most suitable cabin crew, where possible, to manage the incident rather than allow a cabin crew responsible for the section do so. For example, as female cabin crew are better in managing incidents related to alcohol than males, a female cabin crew should be asked to manage such an incident.

On the other hand profiling of passenger is more complex. Ethical issues along with customer service related issues and profiling error will be the biggest concern. However, after September 11th, aviation security seems to become more receptive towards the idea. Some of the characteristics associated with a higher level of aggressive behaviour could be used to identify potential problems. While it would

not be possible to prevent these people from travelling, being able to anticipate problems will make them easier to avoid.

7.7 Improve Working Conditions and Build Team Work

Crew resource management should be introduced or enhanced to build a more conducive and friendly work environment for cabin crew. Cabin crew do not work with the same people all the time and this may contribute to less 'friendliness' within the cabin. Without healthy bonding among crewmembers and good relationships with ground staff effective passenger management could be made more difficult. This needs to be addressed on a number of fronts. First, all those directly involved in the processing, dispatch and managing of flights and passengers should have a greater understanding of the roles, needs and expectations of those colleagues they work alongside. Each team, whether its ground, cabin or flight, must recognise that their actions impact on problems that others have to deal with. The key to this is communication. As part of their initial training, knowledge of the roles of others should be stressed. In the workplace there is a need for on-going liaison between teams to improve communication and co-operation.

Much of cabin crew's discontent stems from management, from their failure to respond to incident reports to the climate or culture of the workplace. How management addresses these issues depends on the particular policies and procedures of each airline. However, it is clear that the effectiveness of cabin crew performance will be enhanced by changes in managerial practices.

7.8 Developing an In-flight Aggression Management System

If we do not understand how triggers, measures and the environment interact with one other, it will be difficult to predict, prevent and manage incidents. Figure 6.1 was developed after completing the analysis of the results. Annex B describes the system. To better understand in-flight aggression more studies must be conducted on various components within the system.

Figure 6.1 illustrates a passenger interacting with the environment and upon which if negative feelings arise from these stimuli then the passenger would decide to aggress or not. If they become aggressive, their behaviour would have been due to reward seeking (instrumental aggression) or because of negative emotions. All these occur within a person's mind and thus termed "internal attributes leading to aggression".

As discussed in previous sections a model is necessary for the development of an effective defence system against in-flight aggression (see figure 6.1). Base on the theories of aggression and the factors discussed previously, a model was developed to simulate the development of aggression and its interactions with flight defences.

The behaviours of passengers however are altered and controlled through two sets of measures; namely pro-active measures and active measures. Educating passengers and highlighting the punishments for in-flight aggression are examples of pro-active measures. However these measures can be further classified into three different categories, namely pre-flight, in-flight and post flight measures. An example of a post flight measure could be a simple thank you by the captain to passengers for 'assisting to make the flight pleasant with good behaviour' which may encourage passengers to continue good behaviour on their subsequent flight.

On the other hand, if a passenger becomes aggressive, active defences would be necessary to resolve the incident. As for pro-active defences, active defences can also be categorised according to the stage of flight.

An important feature of the system is feedback. The problems and effectiveness of the various defences are related to the management and according to the feedback changes will be made to improve. Should all measures fail in-flight aggression will lead to an accident.

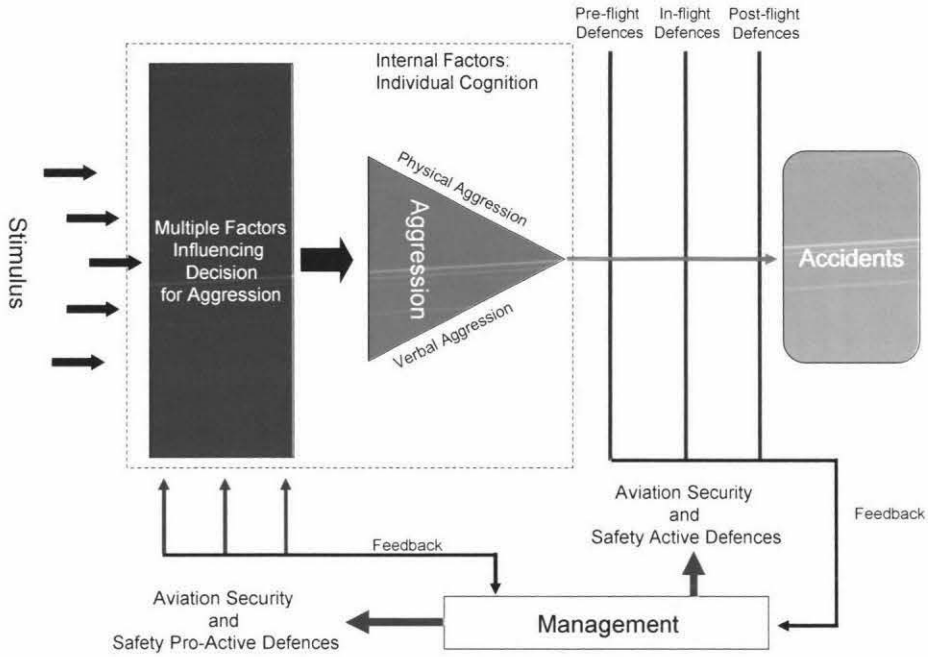

Figure 6.1 Model of In-flight Aggression and its interaction with Safety and Security Defences

Chapter 8

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Appendix A

Short description of experiences with in-flight aggression by cabin crew respondents

Cabin Crew A

- There are meant to be policies in plane but the dollar rules. Do not want to offend passengers. Have had a ground staff board passenger that had a fight in lounge and did not advise crew, as they knew we would deny boarding. Very little support from the management. They should have a policy that states "do not" serve alcohol to anyone showing signs of excess.

- The airlines only pay lip service to unruly passengers. It is illegal to admit for carriage of any passenger under the influence of alcohol, however recently staff tried to board a woman that was being carried by ground staff as she was too drunk to walk. They do not tell us about unruly behaviour on ground as they do not want to be stuck with the problem. Once the plane leaves, their problems are gone. This needs to be changed.

Cabin Crew B

- I try to solve disruptive passengers on the ground by identifying them on boarding and if possible off load them. This can be spotted by contact when checking boarding passes. Checking how they walk onto the aircraft and short conversation.

- I find actually the problem starts from their side when they seem to think that they are being discriminated against because of their race when it was them using it as a weapon against us to get extra attention. Sept 11 at this stage has slowed down my work load by 15% but it is starting to build back to pre Sept 11.

Cabin Crew C

- I had a very abusive passenger on my NRT-AKL flight last week. As I am Japanese, that passenger (He is also Japanese who is apparently staying in AKL) treated me very badly with an insulting word and behaviour. He hit my elbow twice to get my attention and started swearing which scared me away. It was a very frightening experience in my life. He was a JAL passenger and I know he expected me to be like a JAL stewardess (traditional and subservient). As soon AS this incident happen, I told ISD about how this passenger had been behaving, ISD's quick action was great.

- He went to see him and warned him and explained to him about policy of safety issue. He finally reported this incident. Even I was frightened and shocked at what happened. ISD's efficient and caring manner made me feel better. If I did not get his quick response, I must be too nervous to fly again. However after that NRT trip, I had a great trip to KLX and i was confident in my performance.

Cabin Crew D

- About 2 months ago after Sept 11, there was very good behaviour from passengers. Varying degrees of air rage ground to a halt. "Sweating the small stuff" is back worse than even.
- The following are examples that are very common. The abuse I have experienced is from mild dissatisfaction to swearing to shouting and threatening to offload them before take-off.
- Being screamed at because a flight did not go direct to ALK (NZSS always went via the islands
- being sworn at when passengers did not achieve meal choices
- people getting annoyed if the seat next to them is occupied (post September 11th many people enjoyed having a whole row to themselves)

Cabin Crew E

- Sheer strength plays a major role I personally would feel very "challenged" having to apply handcuffs to a large male.
- Who really knows if incidents are related to fear of flight
- ease of identification of potentially disruptive passengers depends, just pick up on "vibes" on boarding
- style of dressing can be misleading because sometimes bike and gang members are very pleasant and polite on flights
- self defence training would be useful but don't get it these days
- Not a good idea to be physically involved, anyway not allowed to these days.
- How to control passenger groups once on board, if out of hand?
- I am more worried about violent passengers only if they are hijackers.

Cabin Crew F

- Disruptive incidents usually do not occur in Business Class
- How useful Flight attendants are in situations depends on the nature and attitude of the perpetrator and the flight attendant.

Cabin Crew G

- Smoking is often related to incidents especially on Asian flights.

Cabin Crew H

- My airline does not serve alcohol on flights

Appendix B

Survey on In-flight Misbehaviour (Passengers)

Below is a list of statements to get an idea of your views on in-flight misbehaviour. Please express your opinion by circling one option. (For question 1 and 3 please fill in the number).

	Disruptive Individual		**Incidents**		
1.	**In the last two years how many incidents of disruptive individual passengers have you witnessed at each level of seriousness?**	**Level**	Minor	Moderate	Serious
		No.			

2.	**How often are the issues below related to in-flight incidents that involve an individual?**	Very Rarely	Rarely	Moderate	Often	Very Often
a	Alcohol	1	2	3	4	5
b	Smoking	1	2	3	4	5
c	Seat Assignments	1	2	3	4	5
d	Carry-on Luggage	1	2	3	4	5
e	Food Service	1	2	3	4	5
f	Cabin crew service	1	2	3	4	5
g	Disputes with other passengers	1	2	3	4	5
h	Fear of flight	1	2	3	4	5
j	Discomfort (e.g. noise, legroom)	1	2	3	4	5
	Others, please specify below:					
k		1	2	3	4	5
l		1	2	3	4	5
m		1	2	3	4	5
n		1	2	3	4	5

3.	**How effective were the cabin crew or flight crew when dealing with incidents involving an individual passenger?**	Totally In-effective	In-effective	Moderate	Effective	Very Effective
		1	2	3	4	5

	Disruptive Groups		**Incidents**		
4.	**In the last 2 years, how many incidents involving groups (E.g. Sports teams) at the various levels of seriousness have you witnessed?**	**Level**	Minor	Moderate	Serious
		No.			

5.	**How often does the issues below relate to in-flight incidents that involve groups?**	Very Rarely	Rarely	Moderate	Often	Very Often
a	Alcohol	1	2	3	4	5
b	Smoking	1	2	3	4	5
c	Seat Assignments	1	2	3	4	5
d	Carry-on Luggage	1	2	3	4	5
e	Food Service	1	2	3	4	5
f	Disputes with other passengers	1	2	3	4	5
g	Fear of Flight	1	2	3	4	5
h	Discomfort	1	2	3	4	5
	Others, please specify below:					
i		1	2	3	4	5
j		1	2	3	4	5
k		1	2	3	4	5
l		1	2	3	4	5

6.	**How effective were the cabin crew or flight crew when dealing with incidents involving a group of passengers?**	Totally In-effective	In-effective	Moderate	Effective	Very Effective
		1	2	3	4	5

7.	**When the incidents described below occur, I am willing to assist the cabin crew in everyway way I can, including:**	Totally Disagree	Disagree	Moderate	Agree	Totally Agree
a	restraining a violent passenger	1	2	3	4	5
b	restraining a violent group of passengers	1	2	3	4	5
8.	**I do not feel good when flying because of the following reasons:**					
a	The cabin crew do not treat me with respect	1	2	3	4	5
b	The flight and cabin crew do not give enough information about the flight (e.g. change of flight plans)	1	2	3	4	5
c	Other inconsiderate passengers	1	2	3	4	5
d	I have little control over my safety	1	2	3	4	5
e	There may be terrorists on board	1	2	3	4	5
	Others please specify below:					
f		1	2	3	4	5
g		1	2	3	4	5
h		1	2	3	4	5

9.	**Passengers should adhere strictly to the following airline rules and policies**	Totally Disagree	Disagree	Moderate	Agree	Totally Agree
a	Baggage limits	1	2	3	4	5
b	Smoking bans or restrictions	1	2	3	4	5
c	Alcohol restrictions	1	2	3	4	5
d	Fastening of seat belts	1	2	3	4	5
	Others please specify below:					
e		1	2	3	4	5
f		1	2	3	4	5
g		1	2	3	4	5

10.	**How effective are the following measures in preventing group or individual disruptive behaviour?**	Totally In-effective	In-effective	Moderate	Effective	Very Effective
a	Legislation	1	2	3	4	5
b	Airport Screening	1	2	3	4	5
c	Skills of cabin crew	1	2	3	4	5
d	Skills of flight crew	1	2	3	4	5
e	Physical Restraints	1	2	3	4	5
f	Education of the flying public	1	2	3	4	5
	Others, please specify below:	1	2	3	4	5
h		1	2	3	4	5
I		1	2	3	4	5
J		1	2	3	4	5
k		1	2	3	4	5

11	**Since September 11th how has your behaviour and attitude changed?**	Not Accurate at all	Not accurate	Moderate	Accurate	Very Accurate
a	I am more willing to assist the cabin crew when they need assistance to deal with an unruly passenger	1	2	3	4	5
b	I am more aware of the dangers of in-flight misbehaviour	1	2	3	4	5
c	I am more afraid to fly after the incident	1	2	3	4	5

		Never	1-2	3-4	5-6	6>
12.	In a 3 hour flight, how many alcoholic drinks would you usually consume?	1	2	3	4	5
13.	In a 3 hour social event how many alcoholic drinks would you usually consume?	1	2	3	4	5

14.	Are you afraid to travel by air?	Yes	No

15.	Have you ever intimidated cabin crew to achieve your goals? * *Question included in questionnaires for Internet respondents*	Yes	No

Biographical Information

In this section we would like some information about you. Please tick the box or write your answer as appropriate.

1. Gender: □ female □ male

2. Age: □ under 20 years □ 20-24 years □ 25-29 years □ 30-34 years
□ 35-39 years □ 40-44 years □ 45-49 □ over 50 years

3. Ethnic Origin (if you belong to more than one ethnic group, please tick the one with which you MOST identify)

□ Caucasians □ Asians □ Polynesians □ Others Please Specify:_____

4. How often do you travel in the last 2 years?

□ less than 2 □ 2-5 □ 6-10 □ 11-15 □ 16-20 □ 21-25 □ 26-30 □ more than 30

5. Highest level of education:

□ started high school □ started university

□ finished high school □ finished university diploma

□ started polytechnic (or TAFF) □ finished university bachelor degree

□ finished polytechnic diploma □ finished university masters degree

□ finished polytechnic degree □ finished PhD

6. How long was the last flight you took?

□ less than 2 hours □ between 2 and 5 hours

□ between 5 and 9 hours □ more than 9 hours

7. Do you mainly fly: □ domestic □ international □ both about the same

8. In most of the last two years, which of the following airlines group did you travel with?

□ American airline □ European Airline □ Asian Airline □ Pacific Airline

□ An Australasian Airline □ Others please specify: _____

Survey on In-flight Misbehaviour (Cabin Crew)

Below is a list of statements to get an idea of your views on in-flight misbehaviour. Please express your opinion by circling one option. (For question 1 and 3 please fill in the number).

	Disruptive Individual		**Incidents**		
1.	**In the last two years how many disruptive incidents involving individual passengers have you witnessed at each level of seriousness?**	**Level**	Minor	Moderate	Serious
		No.			

2.	**How often are the issues below related to in-flight incidents that involve an individual?**	Very Rarely	Rarely	Moderate	Often	Very Often
a	Alcohol	1	2	3	4	5
b	Smoking	1	2	3	4	5
c	Seat Assignments	1	2	3	4	5
d	Carry-on Luggage	1	2	3	4	5
e	Food Service	1	2	3	4	5
f	Cabin crew service	1	2	3	4	5
g	Disputes with other passengers	1	2	3	4	5
h	Fear of flight	1	2	3	4	5
j	Discomfort (e.g. noise, legroom)	1	2	3	4	5
	Others, please specify below:					
k		1	2	3	4	5
l		1	2	3	4	5
m		1	2	3	4	5
n		1	2	3	4	5

	Disruptive Groups		**Incidents**		
3.	**In the last 2 years, how many disruptive incidents involving groups (E.g. Sports teams) at the various levels of seriousness have you witnessed?**	**Level**	Minor	Moderate	Serious
		No.			

4.	**How often do the issues below relate to in-flight incidents that involve groups?**	Very Rarely	Rarely	Moderate	Often	Very Often
a	Alcohol	1	2	3	4	5
b	Smoking	1	2	3	4	5
c	Seat Assignments	1	2	3	4	5
d	Carry-on Luggage	1	2	3	4	5
e	Food Service	1	2	3	4	5
f	Disputes with other passengers	1	2	3	4	5
g	Fear of Flight	1	2	3	4	5
h	Discomfort	1	2	3	4	5
	Others, please specify below:					
i		1	2	3	4	5
j		1	2	3	4	5
k		1	2	3	4	5
l		1	2	3	4	5

5.	**How easily can you identify potentially disruptive passengers before an incident?**	With Great Difficulty	With Difficulty	Moderate	Easily	Very Easily
		1	2	3	4	5

6.	**How useful are the following in helping you to identify potentially disruptive passengers?**	Not Useful at all	Not Useful	Moderate	Useful	Very Useful
a	Style of dressing	1	2	3	4	5
b	Overall appearance	1	2	3	4	5
c	Body Language	1	2	3	4	5
d	Facial expressions	1	2	3	4	5
e	Forceful gestures	1	2	3	4	5
f	Ethnicity / Race	1	2	3	4	5
g	The way they speak (tone, volume, abusive language)	1	2	3	4	5
h	Distressed or anxious behaviour	1	2	3	4	5
i	Erratic behaviour	1	2	3	4	5
j	Attitude	1	2	3	4	5
k	Others, please specify below:					
l		1	2	3	4	5
m		1	2	3	4	5
n		1	2	3	4	5
o		1	2	3	4	5
7.	**How useful is a male attendant when defusing a moderate conflict?**	1	2	3	4	5
8.	**How useful is a female attendant when defusing a moderate conflict?**	1	2	3	4	5
9.	**How useful is a male flight attendant when defusing a violent situation?**	1	2	3	4	5

		Not Useful at all	Not Useful	Moderate	Useful	Very Useful
10.	**How useful is a female flight attendant when defusing a violent situation?**	1	2	3	4	5
11.	**How useful is it to understand a passenger's culture when defusing a conflict?**	1	2	3	4	5

12.	**How effective are the following measures in preventing or moderating group or individual disruptive behaviour?**	Totally In-effective	In-effective	Moderate	Effective	Very Effective
a	Legislation	1	2	3	4	5
b	Airport Screening	1	2	3	4	5
c	Negotiation Skills	1	2	3	4	5
d	Physical restraints	1	2	3	4	5
e	Other cabin crew	1	2	3	4	5
f	Flight Crew	1	2	3	4	5
g	Other Passengers	1	2	3	4	5
	Others, please specify below:	1	2	3	4	5
h		1	2	3	4	5
i		1	2	3	4	5
j		1	2	3	4	5
k		1	2	3	4	5

13.	**Which of the following policies, standard operating procedures (SOP) or practices does your airline follow and how effective are they?**	No Policy	Totally In-Effective	In-Effective	Moderate	Effective	Very Effective
a	Communicate with ground staff for information regarding potential disruptive passengers	1	2	3	4	5	6
b	Procedures to screen and stop potentially disruptive passengers from boarding the aircraft	1	2	3	4	5	6
c	In-flight alcohol control	1	2	3	4	5	6
d	Training in conflict resolution	1	2	3	4	5	6
e	Self defence training	1	2	3	4	5	6
f	Assistance from flight crew	1	2	3	4	5	6
g	Restraint kits in aircrafts	1	2	3	4	5	6
h	Deplaning of restrained passengers	1	2	3	4	5	6
i	Control of passenger groups	1	2	3	4	5	6
j	Incident reports	1	2	3	4	5	6
	Others, please specify below:						
k		1	2	3	4	5	6
l		1	2	3	4	5	6
m		1	2	3	4	5	6
n		1	2	3	4	5	6

14.	**How important is it to include training in the following areas to help manage disruptive passengers?**	Totally Un-important	Un-important	Moderate	Important	Very Important
a	Body language	1	2	3	4	5
b	Negotiation Skills	1	2	3	4	5
c	Using physical restraints	1	2	3	4	5
d	Crowd control techniques	1	2	3	4	5
e	Self defence techniques	1	2	3	4	5
f	Understanding culture	1	2	3	4	5
g	Coping with fear of flight	1	2	3	4	5
h	Communication skills	1	2	3	4	5
i	Calming and comforting upset passengers	1	2	3	4	5
	Others, please specify below:					
k		1	2	3	4	5
j		1	2	3	4	5
l		1	2	3	4	5
l		1	2	3	4	5

15	**When thinking about the organisation culture of your airline, how well do the statements below apply?**	Not at all true	Not true	Moderate	True	Very True
a	Must adhere to rules, regulation & policies	1	2	3	4	5
b	Takes disciplinary actions for errors	1	2	3	4	5
c	Communicates its safety policy and procedures clearly and effectively to all	1	2	3	4	5
d	The management encourages fearless reporting of incidents	1	2	3	4	5
e	Freedom to take initiative	1	2	3	4	5
f	Warm, friendly & collaborative work environment	1	2	3	4	5
g	Open communication between management and staff about safety issues	1	2	3	4	5
h	Most staff are happy with the safety standards of this organisation	1	2	3	4	5
i	The management usually informs staff of incidents and their outcomes	1	2	3	4	5
J	The management takes action on reported safety issues	1	2	3	4	5
k	The knowledge gained from incident reviews is usually put into practice	1	2	3	4	5
16	**With reference to the September 11th incident, how true are the statements below?**					
a	I am more worried about violent passengers	1	2	3	4	5
b	I observe passenger behaviour more closely now	1	2	3	4	5
c	Passengers are more willing to assist cabin crew when dealing with violent or difficult passengers	1	2	3	4	5
d	Passengers fear flying more than before	1	2	3	4	5

Biographical Information

In this section we would like some information about you. Please tick the box or write your answer as appropriate.

1. Gender: ☐ female ☐ male

2. Age: ☐ under 20 years ☐ 20-24 years ☐ 25-29 years ☐ 30-34 years
☐ 35-39 years ☐ 40-44 years ☐ 45-49 years ☐ over 50 years

3. Ethnic Origin (if you belong to more than one ethnic group, please tick the one with which you MOST identify)

☐ Caucasians ☐ Asians ☐ Polynesians ☐ Others Please Specify:_____

4. Years as a flight attendant:

☐ less than 2 ☐ 2-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30
☐ more than 30

5. Position or rank as a flight attendant: _____

6. Highest level of education:

☐ started high school
☐ finished high school
☐ started polytechnic (or TAFF)
☐ finished polytechnic diploma
☐ finished polytechnic degree
☐ started university
☐ finished university diploma
☐ finished university bachelor degree
☐ finished university masters degree
☐ finished PhD

In this section we would like you give us information about the environment in which you work. Answer these questions in terms of the job you have spent the most time doing in the last 2 years Please tick your answer.

7. How long is the average flight you do?

☐ less than 2 hours ☐ between 2 and 5 hours
☐ between 5 and 9 hours ☐ more than 9 hours

8. Do you mainly fly: ☐ domestic ☐ international ☐ both about the same

9. What Aircraft type/s were you trained in?

☐ Boeing 777 ☐ Boeing 747 ☐ Boeing 737 ☐ Airbus A300
☐ Airbus A310 ☐ Airbus A 320 ☐ Others, please specify: _____

10. Which airline have you most recently worked for?

☐ An American airline ☐ A European Airline ☐ An Asian Airline ☐ A Pacific Airline
☐ An Australasian Airline ☐ Others please specify: _____