

4. Data Analysis

In this section the researcher has analyzed the data in tabulation form to clarify the statistics provided by the respondents through questionnaire.

4.1 Demographic Characteristics of the Respondents.

Table 1: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	59	59.0	59.0	59.0
	Female	41	41.0	41.0	100.0
	Total	100	100.0	100.0	

Table 1 indicates the gender of the respondents. Out of 100 respondents, total male respondents were 59 and 41 respondents were females. The highest frequency 59 shows that the people who traveled through airplane in last six months were males

Table 2: Age of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-25	56	56.0	56.0	56.0
	26-30	20	20.0	20.0	76.0
	31-35	10	10.0	10.0	86.0
	36-40	9	9.0	9.0	95.0
	41-45	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

In table 2, 56 respondents belonged to the age group of 21 to 25. 20 respondents belonged to the age group of 26 to 30 and 10 respondents belonged to the age group of 31 to 35. 9 respondents belonged to the age group of 36 to 40 and only 5 respondents belonged to the age group of 41 to 45. Highest frequency is 56 which indicate that most of the respondents belonged to the age group of 21 to 25.

Table 3 Marital Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Married	19	19.0	19.0	19.0
Single	81	81.0	81.0	100.0
Total	100	100.0	100.0	

Table 3 represents the marital status of the respondents. 19 respondents were married and 81 respondents were unmarried.

Table 4: Employment Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Employed	67	67.0	67.0	67.0
Business	25	25.0	25.0	92.0
Unemployed	8	8.0	8.0	100.0
Total	100	100.0	100.0	

Table 4 indicates the employment status of the respondents. 67 respondents were employed. 8 respondents were unemployed and 25 respondents were running their own businesses. The highest percentage is of 67 percent indicating that mostly people travel because of their job or business requirement and some may travel for visiting purpose only.

4.3 The Effect of Information Technology on Customer Safety.

Table 5: You travel most often.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	39	39.0	39.0	39.0
Agree	55	55.0	55.0	94.0
Neutral	4	4.0	4.0	98.0
Disagree	2	2.0	2.0	100.0
Total	100	100.0	100.0	

In table 5, 39 percent respondents have strongly agreed that they travel most often whereas 55 percent slightly agreed to the statement. 4 percent respondents remained neutral and only 2 respondents disagreed to the statement. The higher percentages are in favor of the statement which is that 94% respondents most often travel through airlines.

Table 6: You Traveled in last six months.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	16	16.0	16.0	16.0
Agree	47	47.0	47.0	63.0

Neutral	28	28.0	28.0	91.0
Disagree	7	7.0	7.0	98.0
Strongly Disagree	2	2.0	2.0	100.0
Total	100	100.0	100.0	

Table 6 indicates how many respondents traveled in the last six months. 16 percent respondent strongly agreed that they traveled in last six months and 47 agreed to the statement. 28 percent remained neutral indicating that they may have traveled through aircraft before six months did not travel during last six months. 7 percent disagreed to the statement and 2 percent strongly disagreed to the statement.

Table 7: The purpose of travel was job related.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	17	17.0	17.0	17.0
Agree	60	60.0	60.0	77.0
Neutral	19	19.0	19.0	96.0
Disagree	4	4.0	4.0	100.0
Total	100	100.0	100.0	

In table 7, 17 percent respondents strongly agreed that the purpose of their visit was job related and 60 percent slightly agreed to the statement. 19 percent of the respondents remained neutral and only 4 respondents disagreed to the statement.

Table 8: Airport had effective sign system.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	29	29.0	29.0	29.0
Agree	62	62.0	62.0	91.0
Neutral	8	8.0	8.0	99.0
Disagree	1	1.0	1.0	100.0
Total	100	100.0	100.0	

In table 8, respondents were asked about the effective sign systems on the airport. 29 percent respondent strongly agreed to the statement and 62 only agreed to the statement, 8 percent respondents remained neutral and only 1 disagreed to the statement. Highest percentage is 62 which shows that mostly people approved that airport had effective sign system.

Table 9: The aircraft had Stronger Cockpit Doors.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	23	23.0	23.0	23.0
Agree	57	57.0	57.0	80.0
Neutral	12	12.0	12.0	92.0
Disagree	6	6.0	6.0	98.0

Strongly Disagree	2	2.0	2.0	100.0
Total	100	100.0	100.0	

Table 9 represents the responses regarding the statement that the aircraft had strong cockpit doors. 23 percent strongly agreed to the statement and 57 percent agreed to the statement. 12 percent remained neutral in the response and 6 percent respondents disagreed to the statement. only 2 percent strongly disagreed to the statement, the higher percentages are in favor of agree and strongly agree which shows that the air craft had stronger cockpit doors which are necessary for the safety of the customers.

Table 10: Aircraft you chose was equipped with modern technology.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	12	12.0	12.0	12.0
Agree	62	62.0	62.0	74.0
Neutral	15	15.0	15.0	89.0
Disagree	11	11.0	11.0	100.0
Total	100	100.0	100.0	

Table 10 indicates the responses regarding the statement the aircraft chosen by respondent were equipped with modern technology. 12 percent respondents strongly agreed with the statement and 62 percent agreed with it. 15 percent remained neutral and 11 percent disagreed that the aircraft did not had modern technology. The highest percentage is 62 percent which is in the favor that aircraft was equipped with modern technology.

Table 11: Puffer machines were used on the airport.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	33	33.0	33.0	33.0
Agree	60	60.0	60.0	93.0
Neutral	6	6.0	6.0	99.0
Disagree	1	1.0	1.0	100.0
Total	100	100.0	100.0	

In Table 11, 33 percent respondents strongly agreed that puffer machines were used on the airport and 60 percent only agreed to the statement. 6 percent respondents remained neutral and only 1 percent disagreed to the statement.

Table 12: The aviation security used metal detectors to scan the passengers.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	71	71.0	71.0	71.0
Agree	29	29.0	29.0	100.0
Total	100	100.0	100.0	

In table 12, 71 percent respondents strongly agreed that the aviation security used metal detectors to scan the passengers and 29 percent agreed to the statement. the higher percentages in favor of strongly agree and agree shows that airports give importance to the security of the customers and use metal detectors to scan the passengers.

Table 13: You used the airline because of security measures.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	61	61.0	61.0	61.0
Agree	39	39.0	39.0	100.0
Total	100	100.0	100.0	

In table 13, 61 percent of the respondents strongly agreed that they used the airline because of its security measures and 39 percent had only agreed to the statement. the higher percentages are in favor of strongly agree and agree and no respondent disagreed to the statement which shows that security measures are taken seriously by the airport authorities in Pakistan.

Table 14: Reservations and ticketing transactions were error-free.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	15	15.0	15.0	15.0
Agree	33	33.0	33.0	48.0
Neutral	23	23.0	23.0	71.0
Disagree	19	19.0	19.0	90.0
Strongly Disagree	10	10.0	10.0	100.0
Total	100	100.0	100.0	

In table 14, 15 percent respondents strongly agreed to the statement and 33 percent agreed that reservations and ticketing transactions were error free whereas 23 percent remained neutral in the answer 19 percent disagreed and 10 percent strongly disagreed that the reservations of seat and ticketing transactions were not error free.

Table 16: Aviation security measures were enough for the safety of customers.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	25	25.0	25.0	25.0
Agree	30	30.0	30.0	55.0
Neutral	23	23.0	23.0	78.0
Disagree	12	12.0	12.0	90.0
Strongly Disagree	10	10.0	10.0	100.0
Total	100	100.0	100.0	

In table 16, 25 percent respondents strongly agreed that *Aviation security measures were enough for the safety of customers* and 30 percent only agreed to the statement. 23 percent remained neutral and 12 percent disagreed that security measures were not enough. 10 percent of the respondents strongly disagreed in the response of the statement. The answers give us a mixed overview that aviation security measures are not enough for the respondents and aviation security need improvements.

Table 17: You suggest your friends and relatives to travel through the same airline they use.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	22	22.0	22.0	22.0
Agree	53	53.0	53.0	75.0
Neutral	16	16.0	16.0	91.0
Disagree	5	5.0	5.0	96.0
Strongly Disagree	4	4.0	4.0	100.0
Total	100	100.0	100.0	

In table 17, 22 percent respondents strongly agreed that they suggest other relatives and friends to travel through same airline respondents used to travel. 53 percent respondents agreed to the statement and 16 percent remained neutral in the response. 5 percent disagreed and 4 percent strongly disagreed to the statement.

4.2 Chi Square Hypotheses Testing

H₁: Information Technology Has Positive Effects on Customer Safety

Table 18: Test Statistics

	Airport had effective sign system.	The aircraft has Stronger Cockpit Doors.	Aircraft you chose was equipped with modern technology.	Puffer machines were used on the airport.	The aviation security used metal detectors to scan the passengers.
Chi-Square	90.000 ^a	98.100 ^b	73.360 ^a	89.040 ^a	17.640 ^c
Df	3	4	3	3	1
Asymp. Sig.	.000	.000	.000	.000	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 25.0.

b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 20.0.

c. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.0.

The table 18 gives us the chi square test statistics calculated in SPSS. The difference level of the variables is in between 1 to 4 and the significance level p value in cases of all variables is less the 5 which shows that H₁; information technology has positive effects on customers safety.

H₂: Aviation Security Increases the Level of Customer Satisfaction

Table 19: Test Statistics

	You used the airline because of security measures.	Reservations and ticketing transactions were error-free.	Aviation security measures taken by the security management was enough for the safety of customers.	You suggest your friends and relatives to travel through the same airline.
Chi-Square	4.840 ^a	15.200 ^b	14.900 ^b	79.500 ^b
Df	1	4	4	4
Asymp. Sig.	.028	.004	.005	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.0.

b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 20.0.

Table 19 gives the detailed chi square test statistics regarding our second hypothesis H₂: *Aviation Security Increases the Level of Customer Satisfaction*. The chi square value is greater and p value is smaller than the significance value 5 therefore we will reject the null hypothesis and accept the alternative hypothesis that H₂: Aviation security increases the level of satisfaction in the respondents.

5.1 Major Findings & Discussion

The reliance on technology, especially cyber-technology systems, has increasingly become part of the modern society. This reliance has in no doubt brought increased efficiency and effectiveness in day-to-day life, but it has also some attendant risks. The reliance on cyber-enabled technologies has increased the safety and efficiency of air transport systems. In the same vein, a cyber-incident in one airport could pose a transnational problem with social and economic consequences, due to high connectivity of human migration and the hyper-connectivity in aviation industry (Arampatzis, 2020). With the introduction of modern IT tools such as IoT devices, machine learning, cloud storage and cloud computing in aviation industry, Kagalwalla and Churi (2019) are of the view that many attentions are needed in aviation cyber-security due to their inherent vulnerabilities. In the same vein, Duchamp, Bayram and Korhani added that the increase in the number of travelers, building of new modern airports, and complexities in new aircraft have brought with them an increase in cyber-attacks in civil aviation industry (2016).

- The major findings of this study asserts that most of the young people who belonged to the age group of 21-25 and 26-30 and mostly people travel because of their job or business requirements.
- The major finding of the study suggests that aircraft chosen by respondent were mostly equipped with modern technology but some respondents also disagreed that the aircraft was not equipped with modern technology.
- The acceptance of both hypotheses has clearly shown that in Pakistan, aviation management is adopting the modern technologies to make the aircraft and airport more secure for the customers.
- The only issue face by respondents is of online reservations of seats and ticketing transactions in our study and they also face cyber security issues.
- The first hypothesis of this study was that *information technology has positive effects on customer safety*. The acceptance of the hypothesis has answered the first research question of our study. The integration of modern IT tools and newly emerged devices to check the working of aircraft and cyber security management systems has motivated the people to travel through secure airplane.
- The second hypothesis of our study identified the relationship between aviation security and customer satisfaction and answers our second research question that there is a positive relationship between customer satisfaction and aviation safety measures. The more security provided by aviation company will increase the level of customer satisfaction and they will prefer to travel more through the similar aircraft.

5.2 Limitations of the study and Future Directions

The current study was limited to very small sample size. Furthermore, the limited time duration for data collection and access to respondents may jeopardize the findings. Access to travelers who were the respondents of the study was a big hurdle in data collection. It is suggested that the

future studies may be conducted in a larger sample frame with official and easy access to the respondents so that the validity and reliability of the data may not be compromise.

5.3 Conclusion

Every airport, airline, and air traffic control system today is built on intelligent transportation systems, or information and communication technology (ICT). Understanding customers' preferences, IT innovation, and modernization assist airlines in re-engineering their business processes and transforming their operations to a customer-centric strategy by tackling industry obstacles and possibilities. This traditional strategy improves customer happiness by increasing connectivity, while modern software applications deliver real-time value to customers. Mainly the focus of this research study was to identify the role of information technology in providing Aviation Security and the safety to customers. The findings revealed that a clear and a concise relationship between customer satisfaction and aviation modern security measures exist which needs to be positive for the development of aviation industry. It is recommended to conduct a future research study in this regard on a broader scale with more access to respondents and aviation management.

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