Example 13

IB Math Studies Project

Example 13

Title: Statistics on flight information for P   Airlines

A2

Statement of Task:

My project deals with the financial statistics of P   . My statistical analysis was conducted on the seats of the plane taken by people on a monthly basis and the fees charged onboard facilities such as advanced bookings, food and other accessories. My survey took place at different travel agencies which were incorporated with the P   airlines. I planned to collect data by making a questionnaire which would be distributed amongst   people who were frequent travelers of P   airlines in Copenhagen and I was able to acquire world wide information about the flights from the main P   office.

Research Question:

How frequent are P   airlines being used all over the world?

Procedure:

I chose 25 participants who were asked to fill out the questionnaires and hand them back to me when they were done. Luckily I was able to get all the questionnaires back and they were filled. After getting the questionnaires back I calculated the mean of all the information provided by the participants. Theses participants mostly included frequent users who were experienced and they knew what they had to say.

Before I started to write my project I went to the P   main office and I had an interview with some of the employees working there, this included the finance manager who gave me information about the income made by the airlines and the expenditure they spend on the passengers travelling the airline. This included the fares; ticket price and the money spend on food and other accessories. The other employee I interviewed was the station manager for the airlines who gave me information about the capacity of the plane and how many seats are taken on a monthly basis all over the world.

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As my father works in P as a country manager, he helped me a lot in getting the information about P easily, this was a great help for me because I was unable to find any source of qualitative information regarding P .

So after having not just the answers to the questionnaires and the information acquired from the P office I was able to complete my research and get started with my project.

Unfortunately the figures which were provided to me were not 100% accurate, there were some faults and errors in my figures which I managed to eradicate using probability and other mathematical processes such as making graph to make it easier for the reader to understand.
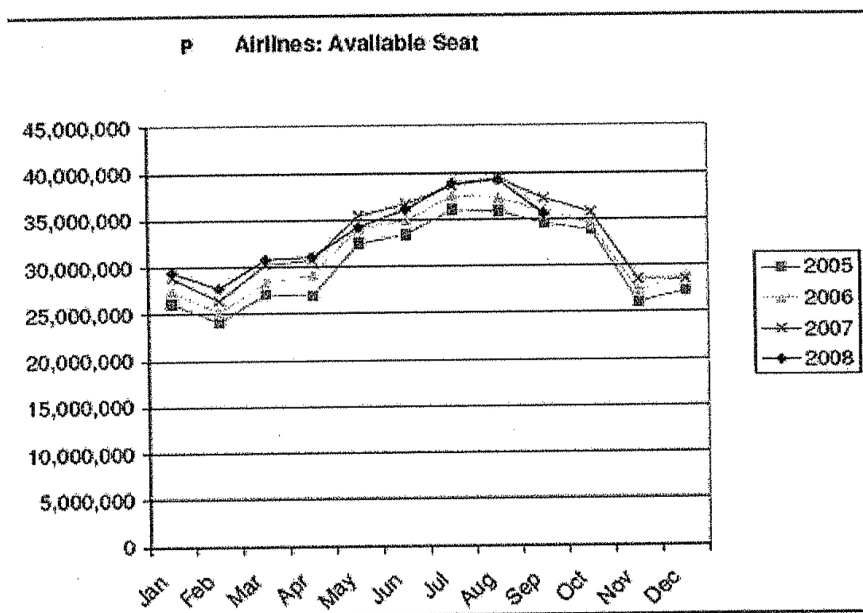
These are the following recorded data which I calculated using a calculator and then made a graph with accordance to the numbers presented in the tables.

Monthly Statistics: P airline (All Flights)

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Month	2005	2006	Percent Change	2007	Percent Change	2008	Percent Change
Jan	26,105,523	27,368,245	4.91%	28,878,271	5.44%	29,469,166	2.05%
Feb	24,080,721	25,170,615	4.53%	26,380,607	4.81%	27,735,886	5.14%
Mar	27,065,621	28,359,769	4.78%	30,225,013	6.58%	30,772,307	1.81%
Apr	26,918,373	29,119,509	8.18%	30,705,317	5.45%	31,032,966	1.07%
May	32,451,933	34,072,680	4.99%	35,426,058	3.97%	34,238,569	-3.35%
Jun	33,400,062	34,661,733	4.38%	36,641,812	5.11%	36,076,932	-1.54%
Jul	36,001,034	37,519,212	4.22%	38,603,113	2.89%	38,862,762	0.67%
Aug	35,812,477	37,285,461	4.11%	39,391,925	5.65%	39,223,398	-0.43%
Sep	34,509,100	35,870,022	3.94%	37,228,261	3.79%	35,542,630	-4.53%
Oct	33,825,693	34,416,291	1.75%	35,731,057	3.82%		
Nov	26,051,950	27,207,474	4.44%	28,494,258	4.73%		
Dec	27,223,866	28,620,362	5.86%	28,477,929	-1.19%		
Total	363,446,353	380,091,373	4.58%	396,183,621	4.23%		

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The table represents the variation in the population around the world using P Airlines. For example, from January to February there was a change of around 2000000 passengers using the flight. It also shows the percentage change from year to year. It also shows the predicted values for the year 2008 which might not be as accurate.

This is a graph which I made to illustrate the seat availability from month to month. We can see that from January to May it was quite steady but after July the numbers increases because it's a peak season for people having vocations and moving around the world so the number of passengers using the flight increases. After that, from late October the graph decline as it isn't a peak season for people to travel. The

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overall view of graph shows that the number of seats available is almost constant January to May. But then as it's the summer season and people wildly prefer vocations so there is a obvious increase in the number of seats available. This is also because in the summer season P   present Jumbo-Jet plane. This kind of plane has almost double capacity than a standard plane.

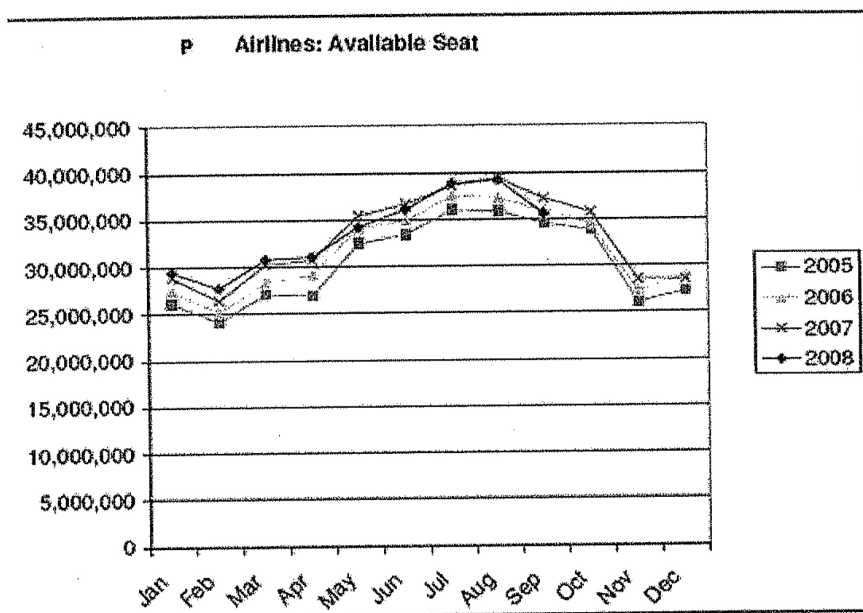The values for the year 2008 are predicted so they might not be accurate.

Passenger Carried: P   Airline (Denmark)

Month	2005	2006	Percent Change	2007	Percent Change	2008	Percent Change
Jan	7,883,760	8,028,020	1.83%	8,118,896	1.13%	8,111,705	-0.09%
Feb	7,747,933	8,082,755	4.32%	8,124,635	0.52%	8,574,317	5.53%
Mar	9,297,702	9,361,666	0.69%	9,788,403	4.56%	10,080,126	2.98%
Apr	9,217,947	10,064,356	9.18%	10,018,302	-0.46%	9,897,367	-1.21%
May	11,003,324	11,444,738	4.01%	11,584,884	1.22%	11,452,362	-1.14%
Jun	12,165,708	12,538,234	3.06%	12,741,032	1.62%	12,981,629	1.89%
Jul	13,206,152	13,462,382	1.94%	13,759,225	2.20%	13,949,092	1.38%
Aug	13,202,003	13,176,923	-0.19%	14,065,608	6.74%	14,241,527	1.25%
Sep	12,586,952	12,637,352	0.40%	13,161,528	4.15%	12,868,855	-2.22%
Oct	11,394,776	11,358,145	-0.32%	11,788,464	3.79%	11,497,335	-2.47%
Nov	8,172,658	8,463,669	3.56%	8,635,162	2.03%		
Dec	8,205,920	8,478,199	3.32%	9,356,138	10.36%		
Total	124,084,635	127,096,439	2.43%	131,142,277	3.18%		

The table represents the variation in the population of Denmark using P   Airlines. For example, from January to February there was a change of around 1000000 passengers using the flight. It also shows the percentage change from year to year. It also shows the predicted values for the year 2008 which might not be as accurate. These predictions are from top different travel agencies and their customers in Denmark.

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The table represents the variation in the population around the world using P Airlines. For example, from January to February there was a change of around 2000000 passengers using the flight. It also shows the percentage change from year to year. It also shows the predicted values for the year 2008 which might not be as accurate.

P   Airlines: Available Seat

This is a graph which I made to illustrate the seat availability from month to month. We can see that from January to May it was quite steady but after July the numbers increases because it's a peak season for people having vocations and moving around the world so the number of passengers using the flight increases. After that, from late October the graph decline as it isn't a peak season for people to travel. The

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This bar graph represents the fee charged for the features onboard such as beverages, online payment, pre-assigned seats, entertainment etc. We can see that the highest fee charged is for booking through a call center and the minimum fee charged is for booking through websites. This is because calls are charged according to the regions you call from.

Future Plans on Fee Charged on Airline

Graph 2: Fees Charged in the Future
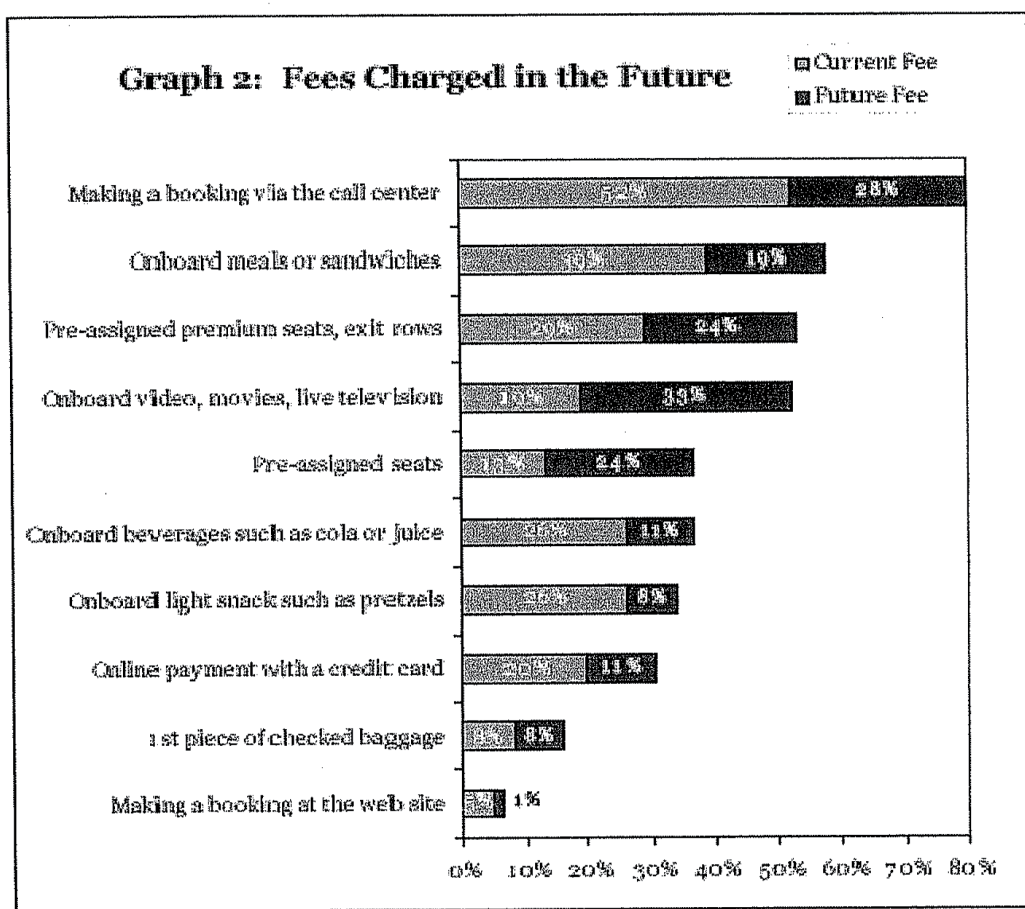
C1

This is another bar graph representing what P plans to charge their customers in the near future. We can see that they are planning to increase the charges for

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everything. This is because the airlines are facing a financial crisis. So that is why they are increasing the prices of different commodities.

Conclusion:

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In the end of my project I will evaluate all my information and come up with my own conclusion about P . The increase the airlines are making in their prices is causing them a loss in customers which is a negative factor for P as the airlines are losing a lot of money maintaining the flight and the conditions of the plane.

As we can see in the graphs above that there is a decrease in the number of customers. In my opinion and keeping the figures in mind I can say that P airlines should decrease the fee charges and enhance the technology, so they are more efficient. As I am also a customer of P , I have information in this part of the field. The figures itself gives us an answer that what should the airlines do to increase their revenue, keep their customers happy and become a world renowned airlines and operate in other countries where there station is not present.