**Introduction**

 Aviophobia, or the fear of flying, is a common fear amongst the population. Studies have shown that up to 40% of people have some fear of flying. This fear is so common yet unavoidable for many. To try to calm themselves people claim statistics from places like the New York Daily News which reports, “The chances of dying in a plane crash are equivalent to being struck by lightning seven times.” As someone not afraid of airplanes I wanted to see if those that are afraid of flying in airplanes have a reason to be afraid. In order to examine this I looked into the number of commercial airplane accidents each year to see what the relationship between the number of deaths and the year was. To do this I found the amount of people who have died each year to commercial airplane accidents. I complied this data into a histogram. Then I took this data and plotted it into a scatterplot. On the scatterplot I graphed a line of best fit and found the Pearson’s coefficient to determine the relationship between the data.

**Data Collection**

 In 2014 news stations regularly reported on commercial flights that had gone missing or had been shot down. This caused many in America to worry about the safety of airplane travel. With this new interest in commercial flight safety I was able to find an article from CNN showing a graph of deaths from commercial flights and the year. I used this graph to put together my data.

|  |  |
| --- | --- |
| Year | Deaths |
| 1950 | 948 |
| 1951 | 833 |
| 1952 | 683 |
| 1953 | 824 |
| 1954 | 608 |
| 1955 | 617 |
| 1956 | 734 |
| 1957 | 712 |
| 1958 | 969 |
| 1959 | 913 |
| 1960 | 1311 |
| 1961 | 1275 |
| 1962 | 1607 |
| 1963 | 1146 |
| 1964 | 721 |
| 1965 | 1134 |
| 1966 | 1358 |
| 1967 | 1262 |
| 1968 | 1284 |
| 1969 | 1529 |
| 1970 | 1364 |
| 1971 | 1368 |
| 1972 | 2429 |
| 1973 | 2137 |
| 1974 | 1979 |
| 1975 | 1114 |
| 1976 | 1578 |
| 1977 | 1516 |
| 1978 | 1201 |
| 1979 | 1612 |
| 1980 | 1297 |
| 1981 | 832 |
| 1982 | 1105 |
| 1983 | 1318 |
| 1984 | 601 |
| 1985 | 2331 |
| 1986 | 818 |
| 1987 | 1265 |
| 1988 | 1574 |
| 1989 | 1597 |
| 1990 | 624 |
| 1991 | 961 |
| 1992 | 1347 |
| 1993 | 1223 |
| 1994 | 1334 |
| 1995 | 1165 |
| 1996 | 1577 |
| 1997 | 1219 |
| 1998 | 1263 |
| 1999 | 621 |
| 2000 | 1157 |
| 2001 | 896 |
| 2002 | 952 |
| 2003 | 625 |
| 2004 | 483 |
| 2005 | 957 |
| 2006 | 914 |
| 2007 | 664 |
| 2008 | 512 |
| 2009 | 648 |
| 2010 | 897 |

To compile this data I read the graph from the article on CNN and found the value for each year from 1950-2010. The data from the graph was only in a bar graph and did not show the exact number of deaths for each year. I had to estimate the number for each year meaning that my data is not as precise as it could have been.

**Data Processing**

I took my data from the data table and created a histogram in Microsoft Excel.

 I wanted to create a line of best fit for my data, so I chose a vertex for the line and a point. I chose to create a quadratic line as the data has lower deaths at the extremes of the years. For the vertex I chose the year 1979 and for my point I chose the year 2007. To find the equation I put those two points into the equation y = a (x – h) 2 + k.

y = a (x -1979)2 + 1612

664 = a (2007 – 1979)2 +1612

a = -1.21

y = -1.21(x – 1979)2 + 1612

 I found Pearson’s coefficient by inserting my data into the scatterplot on excel along with my line of best fit that I calculated. I changed the setting on the line of best fit to show the Pearson’s coefficient to allow me to see the relationship between Commercial Airline Deaths and the year. I however do not know how CNN came to their results for their data which I used. This could mean my data is off.

**Conclusion**

With a Pearson’s coefficient of 0.3703 the relationship between commercial airline deaths and the year is a positively weak correlation. Even with the more technology and more weapons that can harm commercial airplane it does not seem that a strong relationship between the year and the number of deaths can be found. This gives some understanding into why so many people are still afraid of air travel. My data does not take into account the number of commercial flights each year which plays a large role in whether or not a person is safer in an airplane now compared to many years ago.

**Bibliography**

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