Term End Project Task 1

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[DSC640 Data Presentation & Visualization](https://cyberactive.bellevue.edu/webapps/blackboard/execute/courseMain?course_id=_506364_1)

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The airlines crashes often get more media hype and importance than other kinds of accidents such as passengers’ buses, cars, and train. Airline crashes usually cover by international media such as CNN and BBC News. As a result, the public presumes that road transportation is safer than airlines.

As a member of the data science team, I have done a study on comparative accidents and fatality study on airlines and road transportation.

I have created two dashboards, first is focused on airline crashes, fatalities, and revenues while the second is focused on road accidents, fatality, and comparing road fatality with airlines fatality.

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**Question 1. Is airline travel unsafe as published by media?**

Despite the media coverage and hype surrounding airline crashes, the trend of airline crashes has significantly decreased. The first visualization, which is based on data from 1940 to 2020, shows all airline crashes in the USA. The number of accidents has decreased by 500% from the 1940s to the 2020s.

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Similarly, we can observe a significant decline in fatalities from airline crashes over the past two decades. Despite occasional high-profile incidents, the overall trend shows a remarkable improvement in airline safety. This positive trend can be attributed to advancements in technology, stricter regulations, improved pilot training, and enhanced safety measures implemented by airlines. The focus on proactive risk management and continuous improvement in the aviation industry has contributed to making air travel safer than ever before.

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**Does road transportation safer than airline?**

airline travel tends to have a lower fatality rate per passenger mile compared to road transportation. According to statistical data, air travel is considered one of the safest modes of transportation. Commercial airlines are subject to stringent safety regulations, and advancements in aircraft technology have greatly contributed to reducing accidents and fatalities.

On the other hand, road transportation, including cars, buses, and motorcycles, poses higher risks due to factors such as human error, driver fatigue, distractions, and varying road conditions. Road accidents are unfortunately more frequent and can result in a significant number of fatalities and injuries.

However, it's crucial to note that the context and specific circumstances play a role in assessing safety. Factors such as regional road infrastructure, driver behavior, adherence to traffic laws, and overall transportation regulations can vary across different countries and regions.

It's also worth mentioning that perceptions of safety can be influenced by media coverage. High-profile airline accidents often receive significant media attention, whereas road accidents, though more frequent, may not receive the same level of coverage.

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**Does bad media coverage decline airlines revenue?**

Regarding the COVID-19 pandemic in 2020, the decline in airline revenues was primarily driven by travel restrictions, lockdowns, and reduced passenger demand due to health concerns rather than specific incidents or accidents. The global health crisis severely impacted the entire aviation industry, leading to a sharp decline in air travel and resulting in financial challenges for airlines worldwide.

It's worth mentioning that the long-term trend for the aviation industry has shown consistent growth in passenger numbers and revenue. This growth is driven by factors such as increasing global connectivity, rising middle-class populations, and overall economic development.

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**Do we have any constant increase in fatal crashes on particular geographical continents during the recent five years?**

After looking below Stack-line bar chart, during the last 5 years fatality count is not increasing constantly for any continents. So it is a myth that some continents are more prone to accidents.

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**Datasets used in Dashboard and sources**

1. [Motor vehicle fatality rate in U.S. by year - Wikipedia](https://en.wikipedia.org/wiki/Motor_vehicle_fatality_rate_in_U.S._by_year)

Wikipedia page has web scrapped and data framed by using Python, converted into csv.

Motor vehicle fatality per 100 million MVT,

Sum Motor vehicle fatalities

Motor vehicle fatal accidents

1. <https://docs.google.com/spreadsheets/d/1SDp7p1y6m7N5xD5_fpOkYOrJvd68V7iy6etXy2cetb8/edit#gid=1448957446>

Accidents and Fatalities by Year

Summary 2017-2021 (accidents by continent)

1. <http://web.mit.edu/airlinedata/www/2020%2012%20Month%20Documents/Traffic%20and%20Capacity/System%20Total/Passenger%20Revenue%20--%20Total%20System%20Operations.htm>")

Airlines revenue