**DAB 402 – CAPSTONE PROJECT (GROUP 7)**

**VEHICLE RECALL ANALYSIS**

**What is a vehicle recall and factors for vehicle recall:**

All products, whether they be gadgets or vehicles, must be made in a way that is safe to use. This is not only essential for long-term brand recognition and success in business, but it is also mandated by law. Even while accuracy is the main aim, mistakes will inevitably happen, particularly with highly developed items like vehicles.

When a manufacturer or government agency concludes that an automobile, piece of equipment, car seat, or tyre poses an unacceptable danger to safety or does not adhere to minimal safety requirements, a vehicle recall is issued.

While dealing with a recall may seem daunting or intimidating, in most cases, consumers receive free repairs or replacements for recalled vehicle parts, and in a few uncommon cases, a refund for the vehicle.

These cases sometimes include a huge number of automobiles, several accounts of serious damage or death, and substantial media coverage. How much harm a recall does to a brand depends on these elements as well as its reputation for excellence.

**DATA ASSESSMENT STEPS:**

1. **Data Source(s) and Gathering:**

We analysed numerous dataset sources and how the suitable data was acquired by each source in our first search for appropriate datasets for the project work. The key sources from which we obtained acceptable datasets are as follows

Data is collected from NHTSA for USA vehicle recall data and Canada government site and Stock data has been collected from Kaggle.

<https://wwwapps.tc.gc.ca/Saf-Sec-Sur/7/VRDB-BDRV/search-recherche/menu.aspx?lang=eng>

[NHTSA Recalls by Manufacturer | Tyler Data & Insights (transportation.gov)](https://datahub.transportation.gov/Automobiles/NHTSA-Recalls-by-Manufacturer/mu99-t4jn)

<https://www.kaggle.com/datasets/varpit94/ford-stock-data>

1. **Dataset Features/Attributes, Quality, Fitness, Usability & Missing Values:**

The dataset includes recall information related to specific NHTSA campaigns. Users can filter based on characteristics like manufacturer and component. The dataset can also be filtered by recall type: tires, vehicles, car seats, and equipment. The earliest campaign data is from 1966.  
  
Manufacturers who determine that a product or piece of original equipment either contains a safety defect or is not in compliance with Federal safety standards are required to notify NHTSA within 5 business days. NHTSA requires that manufacturers file a Defect and Noncompliance Report in compliance with Federal Regulation 49 (the National Traffic and Motor Safety Act) Part 573, which identifies the requirements for safety recalls. This information is stored in the NHTSA database referenced above.

**3. Dataset Terms of Use:**

While considering the terms of using the datasets, we followed 5C’S principles by which we can ensure that we follow the ethical principles. 5C’s are consent, clarity, consistency, control (and transparency), and consequences (and harm). We selected our data from open sources which are free to use. Our data doesn’t cause any harm to individuals or any organization as it doesn’t contain any personal information. We can not use the data for commercial purposes. We can use the data for academic purpose. So, we have evaluated all these terms to use our datasets.

**4. Dataset Reproducibility:**

We compared many datasets from many sources we found this dataset to be good one in terms of quality, reliability, fitness and usability. This dataset can assure us on reliable results of our research analysis in this project, by which we can obtain again and again the reliable results.

**5. Dataset Storage & Handling:**

All together our datasets size is less than 100mb which is easily storable and can be handled easily without any complex tools. So, we are not using any special tools for storage and handling.

**REFERENCES:**

<https://wwwapps.tc.gc.ca/Saf-Sec-Sur/7/VRDB-BDRV/search-recherche/menu.aspx?lang=eng>

[NHTSA Recalls by Manufacturer | Tyler Data & Insights (transportation.gov)](https://datahub.transportation.gov/Automobiles/NHTSA-Recalls-by-Manufacturer/mu99-t4jn)

<https://www.kaggle.com/datasets/varpit94/ford-stock-data>

<https://www.kaggle.com/datasets/victorsullivan/cars-stock-dataset>

<https://www.kiplinger.com/slideshow/investing/t052-s000-10-biggest-product-recalls-of-all-time/index.html>