DSC-640 Data Presentation & Visualization

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Assignment: Week 05-06

Story Title: Increasing Kia & Hyundai Car Thefts Across the U.S.

Introduction:

In recent years, Kia and Hyundai vehicles have been disproportionately targeted for theft in multiple regions across the U.S. The analysis presents total car thefts in different locations, with a special focus on how Kia and Hyundai vehicles have been affected. Law enforcement can use this information to gauge the effectiveness of their crime prevention strategies, identify trends in car theft across different states, and further allocate resources to areas where Kia and Hyundai thefts remain high.

Audience:

This story is targeted at local police departments, providing them with insights into how Kia and Hyundai theft trends compare to overall vehicle thefts. The purpose is to encourage police to continue focusing on these efforts and ensure that stolen vehicle data is constantly updated to track progress. **Datasets:**

Kia Hyundai Milwaukee Data

Car Thefts Map

Kia Hyundai Thefts

Motherboard VICE News Kia Hyundai Theft Data

Dataset Sources:

Motherboard VICE News Kia Hyundai Theft Data

Car thefts are rising. Is a TikTok challenge to blame?

Call to Action:

Local police departments must **continue targeted enforcement and proactive measures** to combat vehicle theft, with a special focus on Kia and Hyundai models. Although the data shows positive trends, there are still areas with higher-than-average theft rates. By

closely monitoring the dashboard and updating it with real-time data, law enforcement agencies can adjust their strategies to reduce vehicle thefts even further. Additionally, partnering with car manufacturers and the community to improve awareness and security measures can drive these numbers down in the coming months.

Medium:

The story will be shared via an interactive presentation with the different local police departments to show how many Kia/Hyundai vehicles theft in the city and then the local police can identify based on the geo location and increase the security to reduce it. The dashboard allows police departments and policymakers to filter data by city, state, year, and car model, making it easier for local authorities to focus on specific areas. This medium is ideal for keeping track of changes and identifying areas where interventions are needed.

Pie, donut, stacked bar and area charts created using R for the visualization and included in the presentation.


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Data Summary & Insights

We use the following four datasets to support our analysis:

- **Motherboard VICE News Kia Hyundai Theft Data:** Contains theft counts for Kia/Hyundai vehicles and all cars by city over time.
- **KiaHyundaiMilwaukeeData:** Focuses on Kia/Hyundai thefts compared to other car thefts across various cities and states, with a percentage breakdown.
- **carTheftsMap:** Geographic data on car thefts over multiple years, including latitude, longitude, and percentage change from 2019 to 2022.
- **kiaHyundaiThefts:** Similar to the Milwaukee dataset, but provides broader data for different cities and states, showing both Kia/Hyundai thefts and all other car thefts.

Together, these datasets allow us to track how the number of Kia/Hyundai car thefts compares to total thefts in each city and how those trends have shifted geographically.

Design:

- **Color:** Cool, calming tones like blue and teal will indicate improvements and security.
- **Text:** Clear, large headlines to communicate the key takeaway: Kia and Hyundai thefts are reducing.
- **Sizing:** Key figures, such as percentages of reduction in theft, will be displayed in large, bold fonts to attract attention.

Ethical Considerations:

Minimal data cleaning was applied, with no significant changes to the datasets. Missing values were handled carefully, and outliers were not excluded unless they could be proven erroneous.

Formatted the Motherboard VICE News Kia Hyundai Theft Data in more readable format for creating the visualization without modifying any of the data. Removed the entries which don't have full data for comparison.

The data comes from publicly available crime and car theft databases, verified through multiple sources (e.g., Motherboard VICE News, Kia Hyundai-specific studies). Each dataset used is reliable and trustworthy for the purpose of this analysis.

The data was acquired from legitimate sources, without any ethical concerns regarding privacy breaches or misuse of sensitive information.

There is a risk of misrepresenting trends by focusing too heavily on percentage reductions in Kia and Hyundai thefts without considering the context of other rising thefts. To mitigate this, the story clearly shows both Kia/Hyundai and other vehicle thefts to provide a complete picture.