### Background

**ADP Cobalt group**
- Leading provider of digital marketing solutions for the automotive industry
- Has collected customer survey feedback on their dealer websites
- Wants to leverage survey data to guide decisions for optimizing content and website functionalities for the end user

### Research Questions

**Consumer Segmentation**
- Cluster consumers into groups
- Statistical testing to understand the behaviors of each group
- Find relationships between key responses to particular questions and major KPIs

**Understanding open text responses**
- Figure out usability problems on the dealer websites based on consumer responses to failed task completion
- Find out which customer segments are experiencing these usability problems

**Survey Changes**
- Use the information found to help the development/design team form personas and scenarios, and improve the survey questions

### Methods

- **Hierarchical clustering with Gower distances**
  - Consumer clusters

- **User Behaviors**
  - Use correlation test to find the relationships between the clusters and KPIs
  - Manually labeled a small amount of text of survey responses
  - Kappa tests
  - Using Stanford topic modeling tools to add latent topics.
  - Using machine learning algorithms (Naïve Bayes, Maximum entropy) to automatically label the rest

- **Suggestions**
  - Make suggestions to change the consumer survey questions
  - Correlate consumer segmentations and usability problems

### Results

**Likelihood of visiting dealership and purchasing vehicle**

<table>
<thead>
<tr>
<th>Consumer</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
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</tr>
</tbody>
</table>

**Relationship between web experience and group mean of KPIs**

- Ugly UI
- More features please!
- Where is the dealer email?
- Looking for a Chevrolet
- Over 45 years old
- Female
- >65K Income