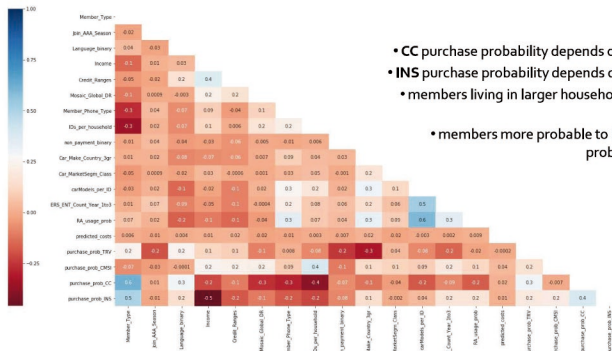# RESULTS – Variable Correlations

- members with higher incomes are less likely to purchase **INS** (-0.5, correlation coefficient)
- members living in larger households are less likely to purchase **CC** (-0.4)
- car make country (American vs. Japanese vs. other) correlates with **TRV** purchase probability (-0.3)

- **CC** purchase probability depends on member type (0.6)
- **INS** purchase probability depends on member type (0.5)
- members living in larger households are more likely to buy **CMSI** (0.4)
- members more probable to buy **CC** are also more probable to buy **INS** (0.4)

# RESULTS – Probability of RA Usage
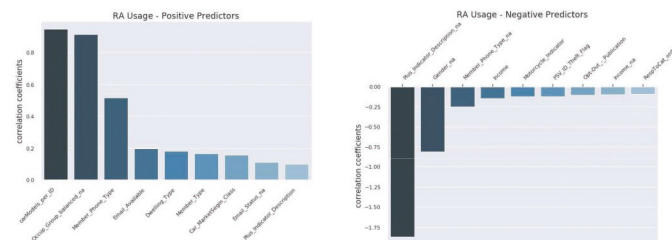
Strongest positive predictors (left, in order of decreasing relevance): car models per member (i.e., number of unique car models registered [2014-2019]), missing values in occupation groups (recoded to higher-level groups), member phone type, email available, dwelling type, member type, car market segment class (A-F), missing values in „*email status*", plus indicator description

Strongest negative predictors (right, in order of decreasing relevance): missing values in „*Plus Indicator Description*", missing values in „*Gender*", missing values in „*Member Phone Type*"

Validation metrics: 100 % precision of detecting members *not using RA* (at a sensitivity of 32 %, f1 = 48 %), i.e.:out of those members predicted to *not* use RA, 100% (212/213) do in fact not use RA (negative predictive value = 100%; Out of those members in fact *not* using RA, 32 % (212/670) are predicted to *not* use RA).

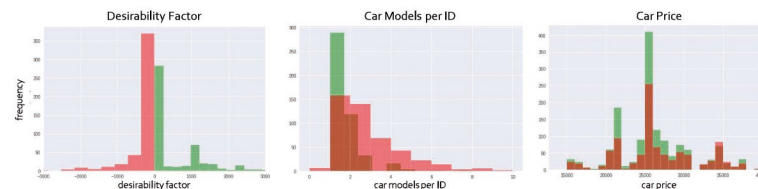# RESULTS – Car Market Segment Class
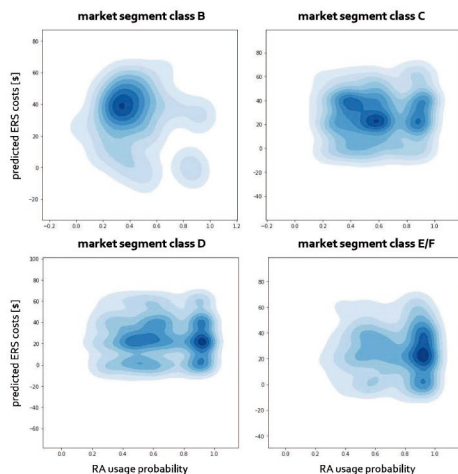
RESULTS – Member Desirability

Gains Chart – Alternatively Implemented:

- Revenue = „*Member Fees*" - „*ERS Costs Year 1*"

- In **red**: the 10 % of members bringing the **lowest revenue / largest losses** to AAA Northeast („flop decile")
- In **green**: the 10 % of members bringing the **highest revenue** to AAA Northeast („top decile")

- **Desirability Factor** (left) = (0.1 * Revenue) * (2.5 * Number of Products) * (0.1 * Member Tenure Months)

- Finding 1 (middle): „flop members" (i.e., members belonging to the „flop decile") were registered to drive more **different car models** (2014-2019) than „top members"

- Finding 2 (right): **cars** with **prices** in the range of 23,000 and 26,000 $ are especially driven by „top members"