Agenda

1. Excel Rater
   a. Driver Assignment vs. Averaging
   b. Example Profiles

2. Collision Coverage Factors
   a. Generalized Linear Model
   b. Issues with current model
   c. Possible suggestions
Creating Excel Raters
Driver Age Factor

Key Takeaways:

- Age 16 ~ Most risky
- Age 40 ~ Safest
- Age 70+ ~ More risky than 40
Factors to Consider

Policy Level
- Coverage Limits
- Household Composition
- Advanced Shopping Discount

Driver Level
- Years of Driving Experience
- Driver Age
- Driver Point

Vehicle Level
- Deductible
- Model Year
- Vehicle Symbol
- New Car Discount
Company Coverages

Bodily Injury Liability
Physical Damage Liability
Comprehensive
Collision
Driver Averaging

Base Rate → Overall Policy → Individual Drivers

Average All Drivers → Individual Vehicles → Final Rate
Driver Assignment

- Base Rate
- Overall Policy
- Individual Drivers
- Individual Vehicles
- Primary Driver
- Final Rate
Example Profiles
Profile 1

Driver Averaging

- Vehicle 1: $1,537.55
- Vehicle 2: $463.13
- Vehicle 3: $1,675.24
- Total: $3,695.92

Driver Assignment

- Vehicle 1: $1,255.48
- Vehicle 2: $566.19
- Vehicle 3: $1,322.89
- Total: $3,134.56

2 Drivers (Age 52, 19)
3 Vehicles
Profile 2

Driver Averaging

- Vehicle 1: $2,366.15
- Vehicle 2: $999.17
- Total: $3,395.32
- Driver 2 Included

Driver Assignment

- Vehicle 1: $1,697.23
- Vehicle 2: $902.28
- Total: $2,629.51
- Driver 2 Excluded

3 Drivers (Age 46, 45, 21)
2 Vehicles
Profile 3

1 Driver (Age 32)  
1 Vehicle

Driver Averaging & Driver Assignment

- Total: $1,099.85 (Identical)
- 1 driver policy causes no difference
### Driver Averaging vs. Driver Assignment

<table>
<thead>
<tr>
<th>Driver Assignment</th>
<th>Driver Averaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takes account of which drivers drive which cars</td>
<td>Takes account of every driver in the policy</td>
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</table>

Both methods should be considered for different situations
Collision Analysis with GLM
Generalized Linear Model (GLM)

GLM - Enhanced Version of Simple Linear Model

- Flexible to different data patterns
- Works well with more types of variable
Dataset for GLM

Collision coverage exclusive

Sample includes all clients

Data from 2014 - 2018
Concerns with The Variables

● 2 Driver Points (1.160) vs. 1 Driver Point (1.423)
  ○ Possible Error With
    ■ Training Model
    ■ Insurance Point System
● “Good Student” variable
Methodology Suggestions

- Selecting time Period
  - Consider major law changes

- Model by individual states
  - State-specific factors
    - Geography
    - Regulations
Rater Enhancement

Adjust/Remove…

Model Year Factor
Years Driving Experience

Add…

Vehicle Use Factor
“New Driver” Factor
Challenges & Suggestions

Dropping Retentions

- Possibly from Adverse Selection
- Implement Verification Methods

Reaching out to Young Drivers

- A New “Good Student” Factor
- Advertisement on Group Discounts
Thank You!