



Analysis of Internet Purchasing Behavior

October 3, 2011
CAS In Focus Seminar

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Discussion Topics

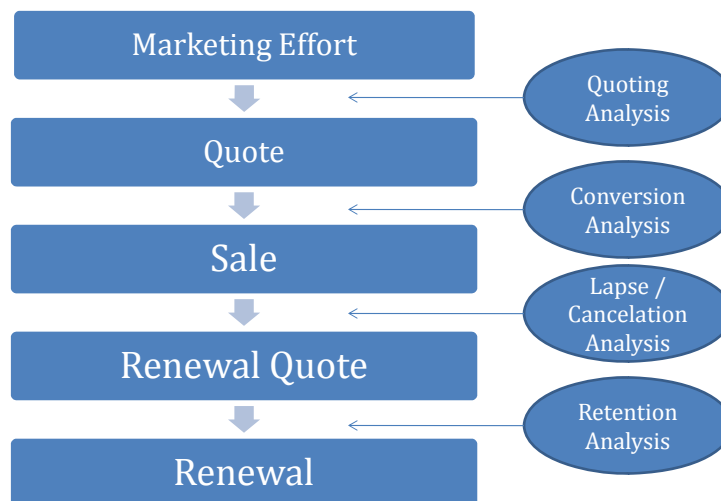
- Current State of Insurance Marketing
- Customer response analyses
- comScore background and data
- Description of research
- Characteristics of shoppers
- Model development
 - Analysis of quotes submitted
 - Analysis of policies purchased
- Impact of price on conversion
- Unstructured data
- Additional Research

Current State of Insurance Marketing

- Explosion in the investment that insurers are making in marketing
- Many different advertising mediums are being used
 - Traditional, internet, social media, etc.
- Has led to the understanding that customer behavior is about more than price
 - Customer service, reputation, convenience
- Different elements are important to different market segments

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Customer Response Analyses



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Customer Response Analyses

- Quoting analysis: analysis of the likelihood of a prospective insured obtaining an insurance quote from you
- Conversion analysis: analysis of the likelihood of a prospective insured that has received a quote purchasing insurance from you
- Lapse/Cancelation analysis: likelihood of an insured not lapsing or canceling the policy mid-term
- Retention analysis: analysis of the likelihood of a current insured renewing with you

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Customer Response Modeling – Challenges for Insurance Companies

- Model structure and parameterization
- New territory – learning curve
- Priority
- Internal data availability
- Internal data applicability
- Availability of price change data
- Measuring market competitiveness
- Applications

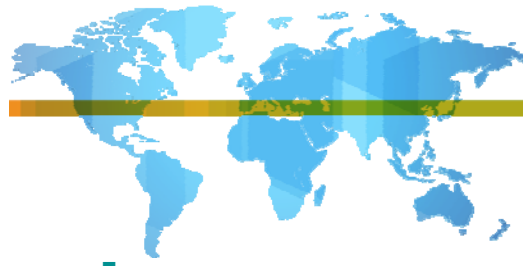
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comScore Background & Data

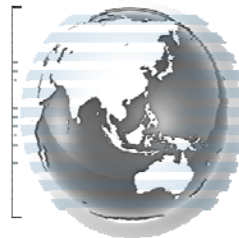
comScore is a Global Leader in Measuring the Digital World

NASDAQ	SCOR
Clients	1700+ worldwide
Employees	900+
Headquarters	Reston, VA
Global Coverage	170+ countries under measurement; 43 markets reported
Local Presence	32 locations in 23 countries



What We Do....

- We provide digital marketing intelligence that helps our customers make better-informed business decisions and implement more effective digital business strategies
- We measure the continuous online activity of 1 million people in the U.S. who have granted us explicit permission to confidentially measure their Internet usage patterns.
- Our consumer panel is a representative cross-section of the U.S. population, worldwide regions and individual countries
- We also have permission to:
 - Survey panelists
 - Match to third-party databases
 - Append offline data



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The Trusted Source for Digital Intelligence Across Vertical Markets

9 out of the top 10
INVESTMENT BANKS

4 out of the top 4
WIRELESS CARRIERS

47 out of the top 50
ONLINE PROPERTIES

45 out of the top 50
ADVERTISING AGENCIES

9 out of the top 10
MAJOR MEDIA COMPANIES

9 out of the top 10
AUTO INSURERS

9 out of the top 10
INTERNET SERVICE PROVIDERS

9 out of the top 10
PHARMACEUTICAL COMPANIES

9 out of the top 10
CONSUMER FINANCE COMPANIES

9 out of the top 10
CPG COMPANIES

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Auto Insurance Quote Detail

- Data is captured from what panelists see using scraping technology

The screenshot displays the Progressive Direct website interface for an auto insurance quote. At the top, there are navigation tabs for 'VEHICLES', 'DRIVERS', 'VIOLATIONS', and 'YOUR RATE'. A prominent offer states 'Save \$50!' on the first 6-month policy. Below this, three plan options are shown: Minimum (\$98.35/month), Economy (\$1,028.00/month), and Plus (\$213.21/month). The 'Economy' plan is circled in red. The 'Policy Coverages' section lists various coverages with their respective limits and deductibles, with the 'Medical Expense' benefit also circled in red. The 'Vehicle #1 - 2007 AUDI A4' is listed at the bottom, also circled in red. A 'Help Center' sidebar on the right offers assistance from a representative.

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Auto Insurance Quote Detail

- Data for 5 Top Auto Insurance Company Sites
 - Quote
 - ZIP code
 - Bodily injury liability limits
 - Coverage package
 - Premium quoted
 - Final Purchased Premium
 - Company name
 - Homeownership
 - Whether SSN entered
 - Primary driver education
 - Current Insurance Information
 - Whether currently insured
 - Length of gap in coverage
 - Length of current carrier
 - Length continuously insured
 - Prior BI Limit
 - Drivers
 - Age
 - Gender
 - Marital Status
 - Industry/Occupation
 - Vehicles
 - Vehicle year/make/model/type
 - Vehicle use
 - Annual mileage
 - Comprehensive deductibles
 - Collision deductibles
 - Incidents
 - Incident Type
 - Incident Description

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Auto Insurance Quote Detail Data – Source of Traffic Data

- Source of traffic is broken out into the following categories:
 - Paid search
 - Natural search
 - Webmail sites
 - Other referred
 - Non-referred
- For search, we know the search engine, click type (paid/natural), and the search phrase
- For webmail sites and other referred, we know the referring site

Pinnacle & comScore Research

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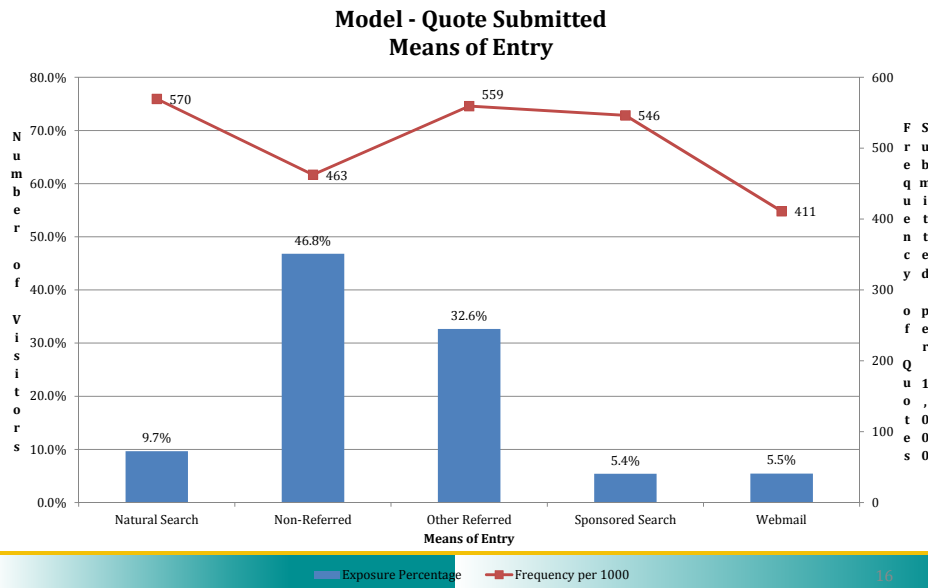
graph TD
    A([Marketing Effort]) --> B([Quote])
    B --> C([Sale])
            
```

Population	Target	Description
Auto Insurance Website Visitor	Quote Initiated	Of those that visit the website, people with what characteristics are more likely to start the quote process?
Quote Initiated	Quote Submitted	Of those that initiate the quote process, what is the likelihood that they complete it?
Quote Submitted	Policy Bind	Of those that actually submit the quote, how many complete the purchase?

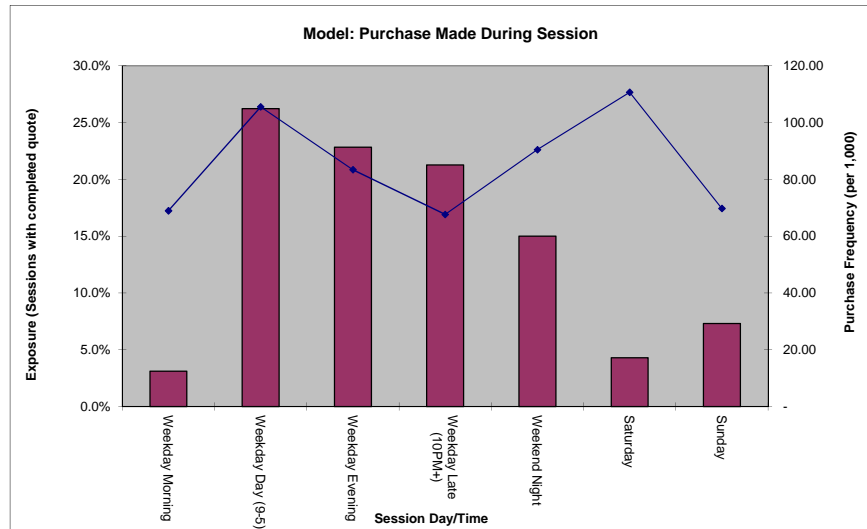


Characteristics of Shoppers

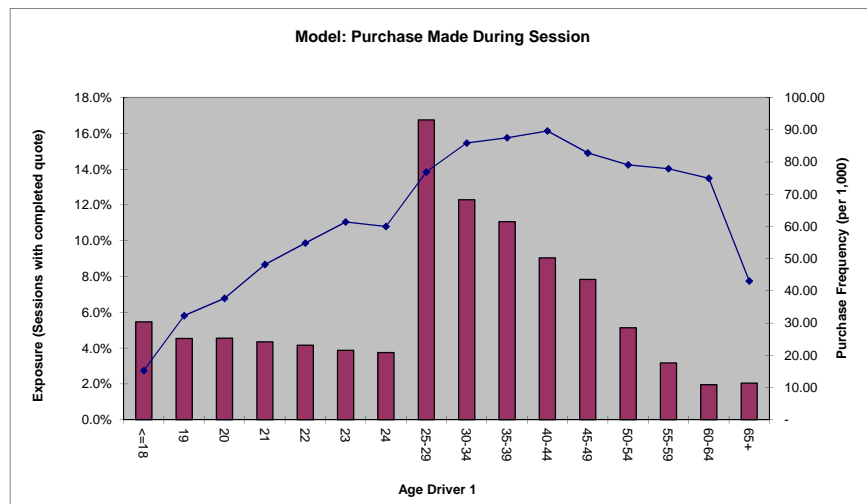
Data Summary - Means of Entry



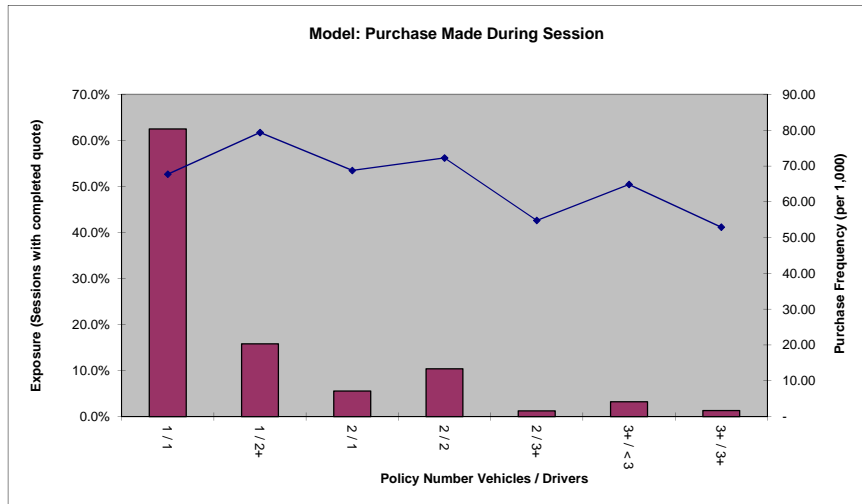
Data Summary - Session Day/Time



Data Summary - Driver1 Age

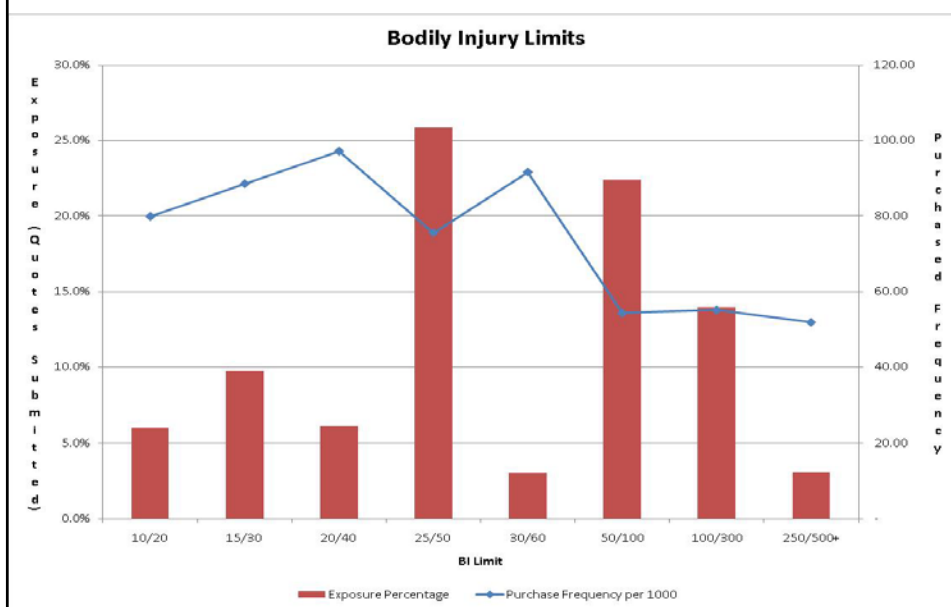


Data Summary - Number Vehicles/Drivers



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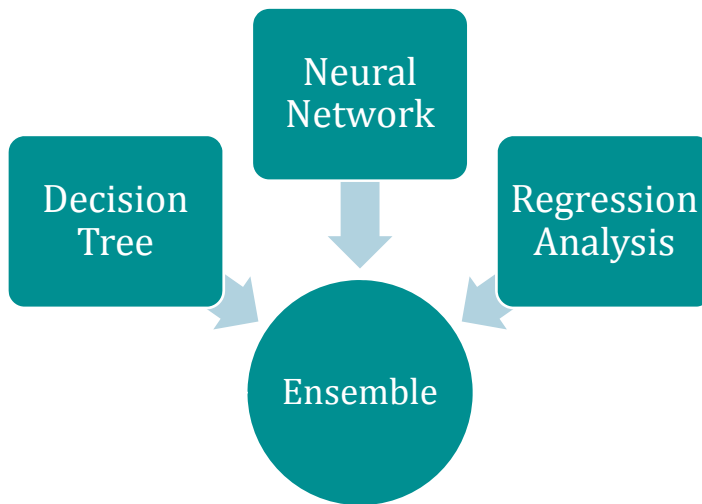
Data Summary - Bodily Injury Limit





Model Development

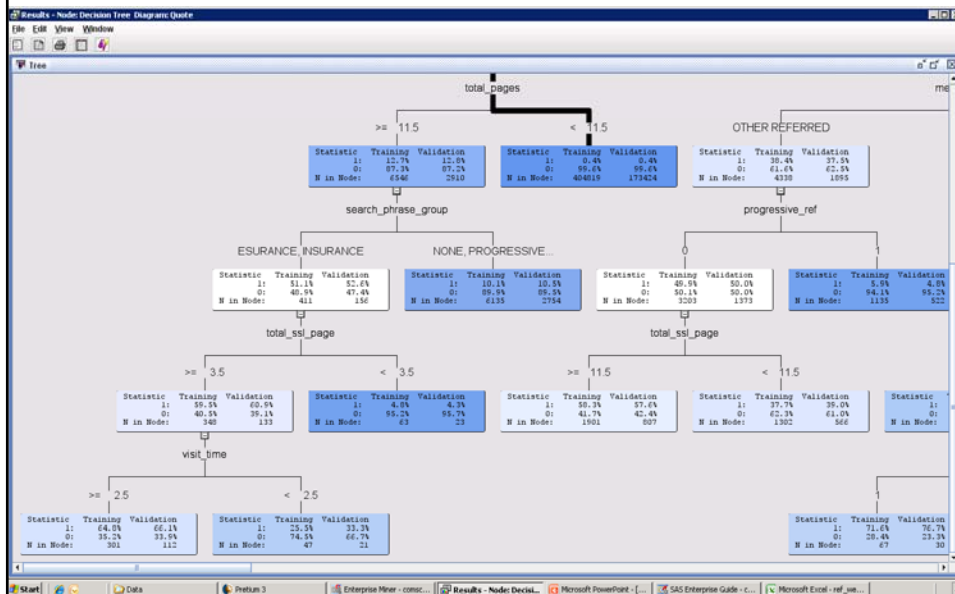
Modeling Techniques





Quotes Submitted Analysis

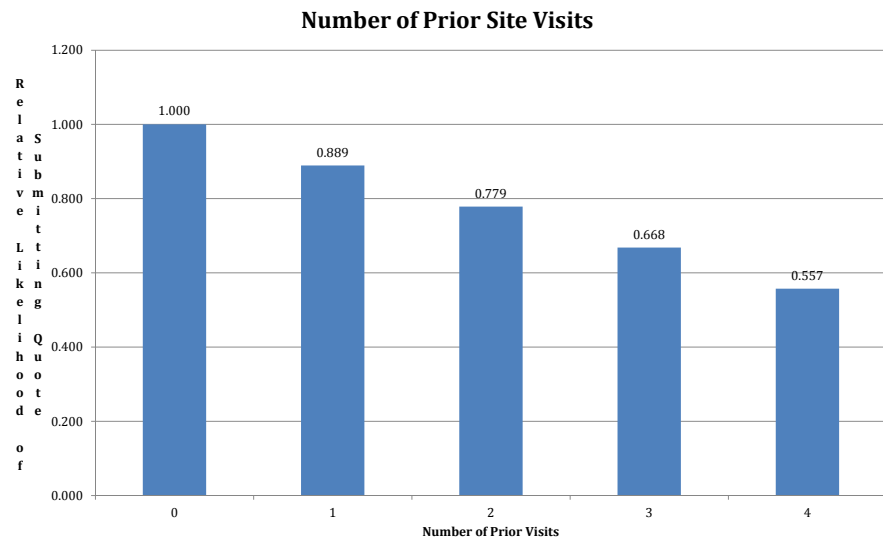
Submitted Likelihood Model - Decision Tree



Decision Tree - English Rules

- Low Estimate
 - IF total_pages < 11.5
 - AND total_ssl_page < 9.5
 - Quote Initiated: 0.4%
- High Estimate
 - IF aig EQUALS 1
 - AND 11.5 <= total_ssl_page
 - AND 4.5 <= visit_time
 - AND means_of_entry IS ONE OF: WEBMAIL NON-REFERRED SPONSORED SEAR
NATURAL SEARCH
 - AND total_pages < 15.5
 - Quote Initiated: 71.4%

Quote Submitted - Number of Prior Visits



Relative Likelihood of Submitting Quote

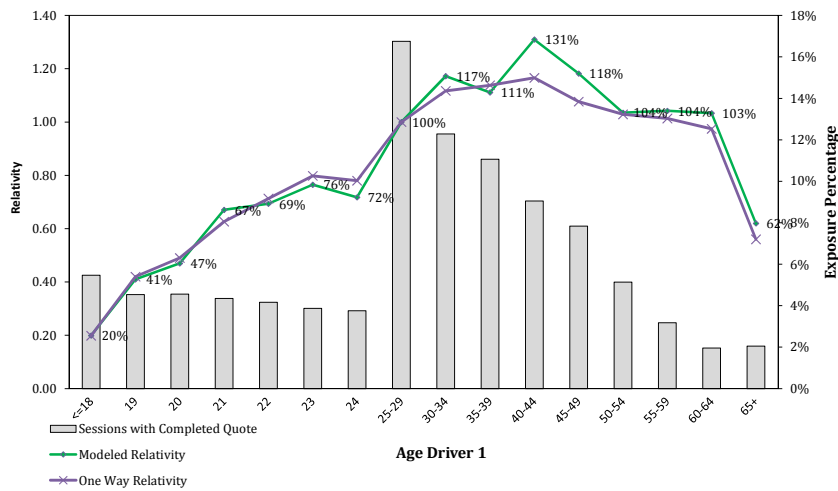
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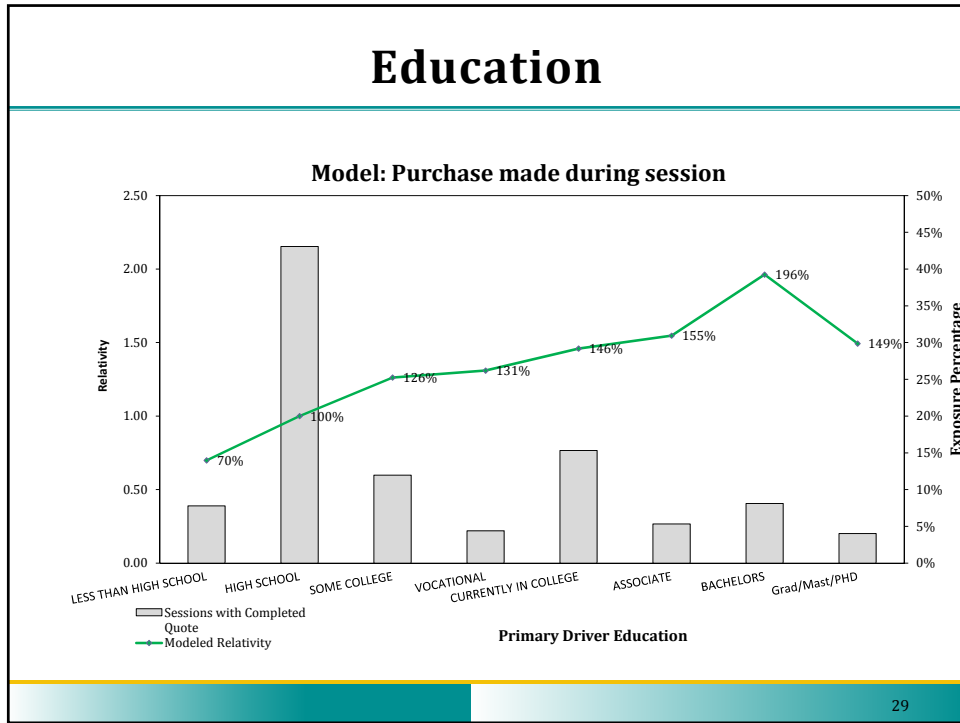
Policy Purchased Analysis

Age of Driver

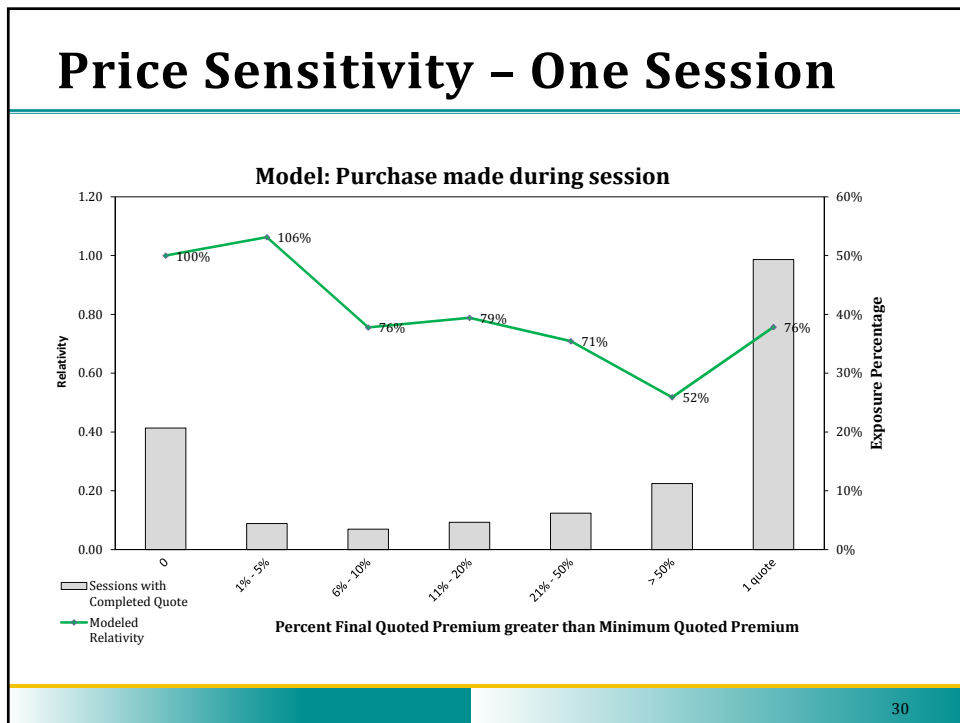
Model: Purchase made during session



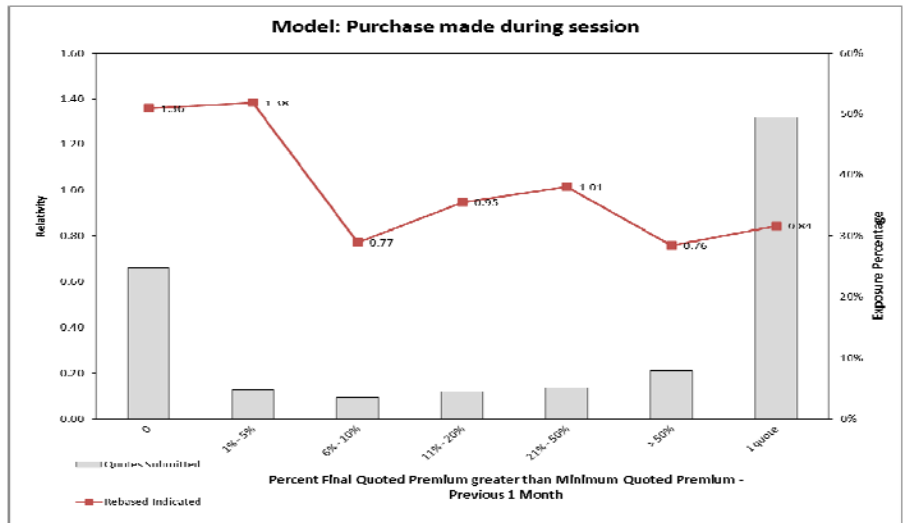
Education



Price Sensitivity - One Session

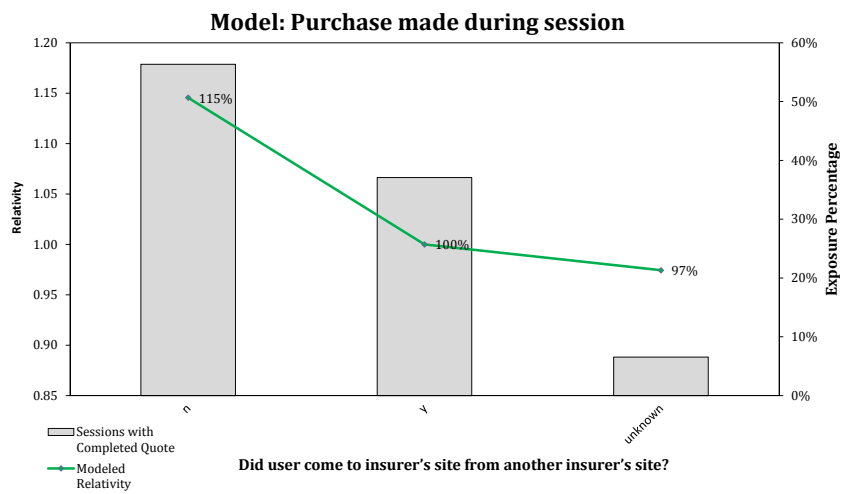


Price Sensitivity - One Month

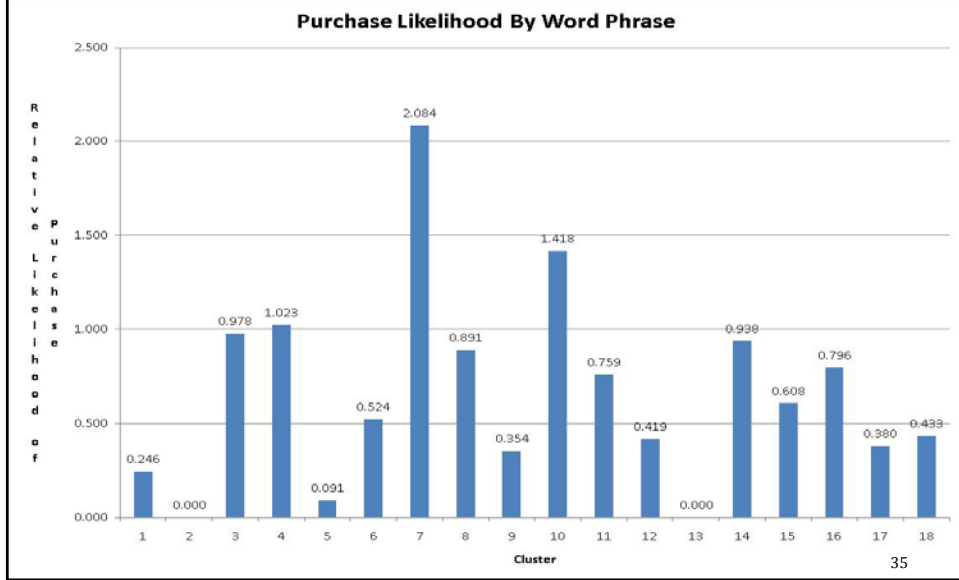


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Regression Preliminary Results

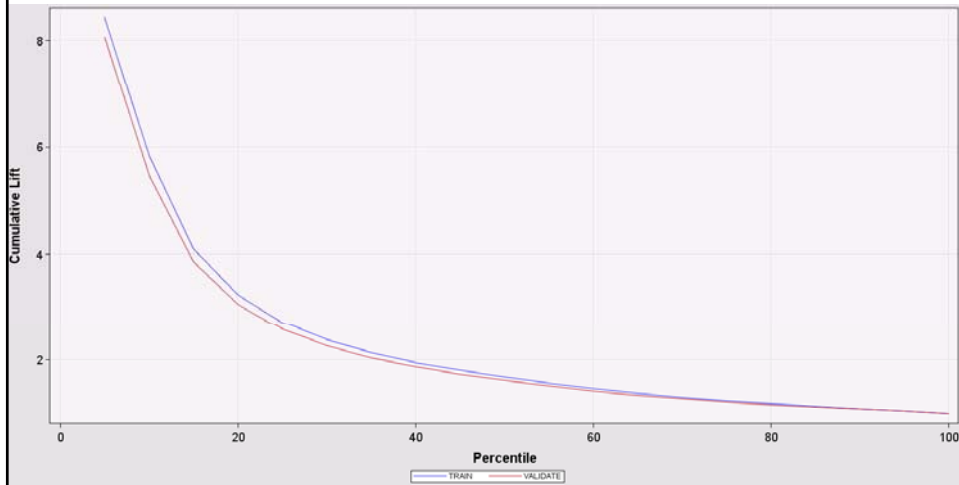


Cluster Text Analysis



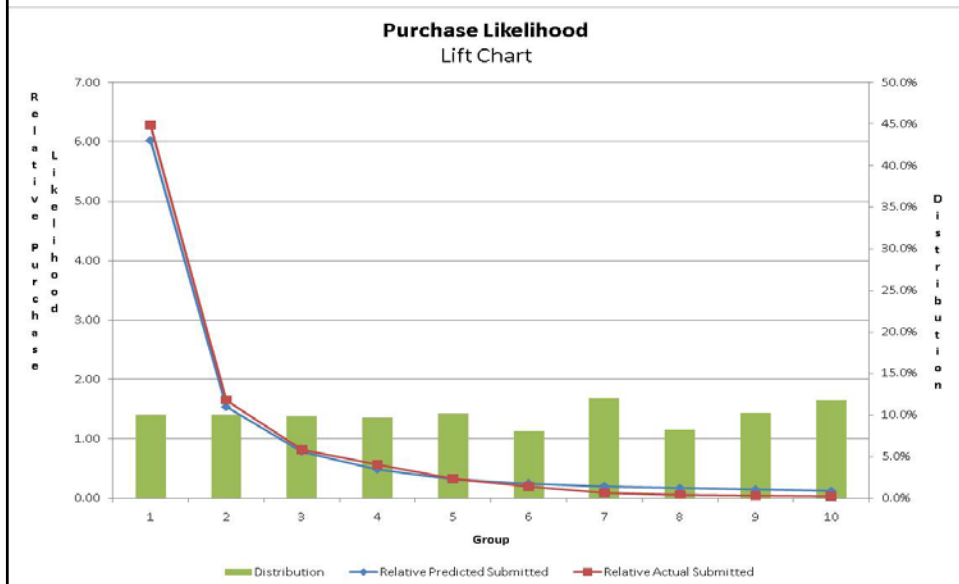
Summary & Additional Research

Cumulative Lift

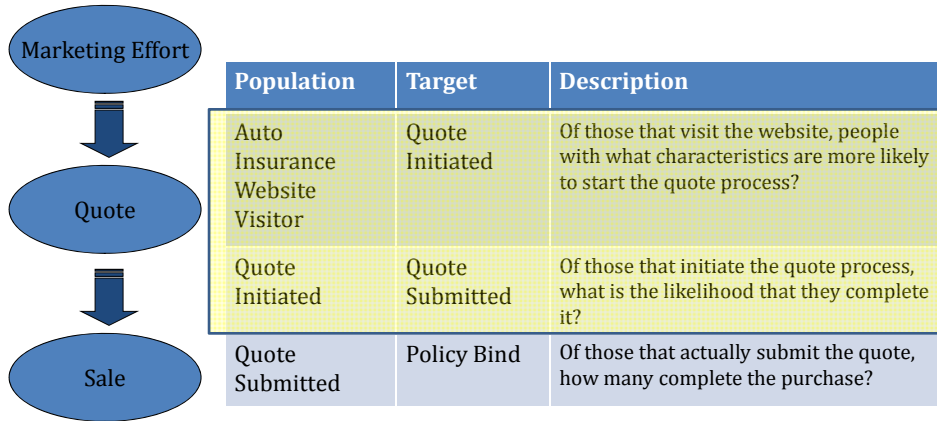


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Lift Chart



Additional Research



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Data Considerations

- Voluntary panel
- Only captures internet shopping trends
- Does not marry online shopping with offline shopping
- May not track same user on separate computers

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Potential Applications

1. For potential insureds with a higher likelihood of purchasing a policy, steps can be taken within the quote and purchase process to **ensure that the customer does not drop out**
2. For potential insureds with a higher than average likelihood of purchase, insurance companies would be able to **market more aggressively** to these potential insureds
3. For segments of potential insureds that have a lower than average likelihood of purchasing a policy, an insurance company can **identify and investigate where these lower than average likelihoods** are and try to increase the likelihood of purchase

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Questions?

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