Customer profiling for a auto insurance company

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Data description

▶ It is a database of the current customers of an auto insurance company with different variables associated.

▶ Each client is represented by a unique ID and then we have 23 variables.

▶ 24 columns and 9134 rows

▶ We have mix of categorical and numerical values

▶ File size : 1536 kb

▶ Data set from IBM - data dictionary in appendix

Customer ID	Gender	Number of Policies
State	Income	Policy Type
Customer Lifetime Value	Location Code	Policy
Response	Marital Status	Renew Offer Type
Coverage	Monthly Premium Auto	Sales Channel
Education	Months Since Last Claim	Total Claim Amount
Effective To Date	Months Since Policy Inception	Vehicle Class
EmploymentStatus	Number of Open Complaints	Vehicle Size

Task

Analyze the current customers of a certain auto insurance company and determine the profile of the MOST profitable customer. The main goal is to provide insights to Marketing team in order to create targeted content.

- Our analysis will be based on the customer lifetime value
  - The customer lifetime value is a metric that represents the total net profit a company makes from any given customer

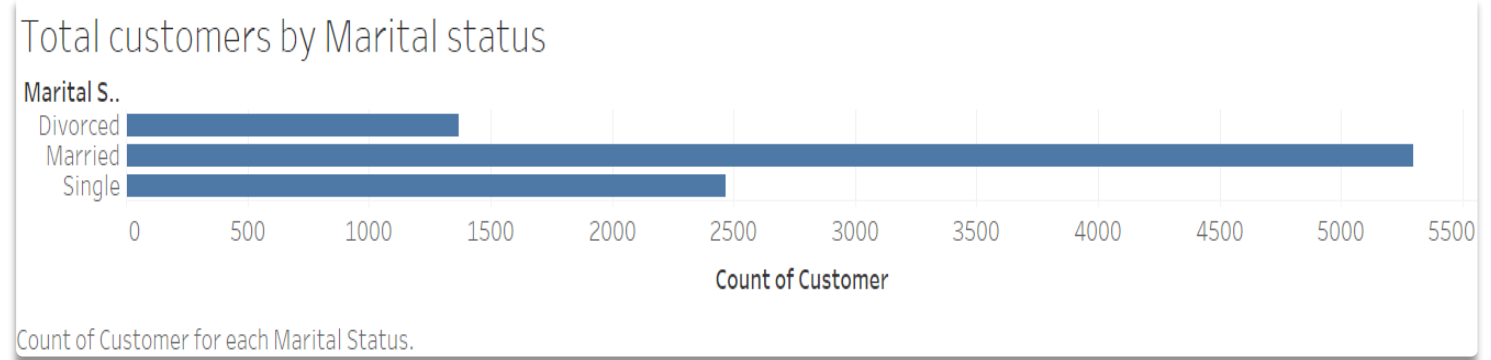**CLV = (Frequency of Purchase) X (Duration of Loyalty) X (Gross Profit)**

ANALYSIS

Demographic

Geographic

Behavioral

Demographic segmentation

Life stage traits such as marital status and education, affect the product needs of consumers. They also affect the types of messages that will make an emotional connection.

Total customers by Marital status

Marital S..
Divorced
Married
Single

| 0 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | 5500 |

Count of Customer

Count of Customer for each Marital Status.

✓We concentrate the most CLV into Married customers

Demographic segmentation

Life stage traits such as marital status and education, affect the product needs of consumers. They also affect the types of messages that will make an emotional connection.

Total CLV by Education Level

Education
- Bachelor
- College
- Doctor
- High School or B..
- Master

Customer Lifetime Value
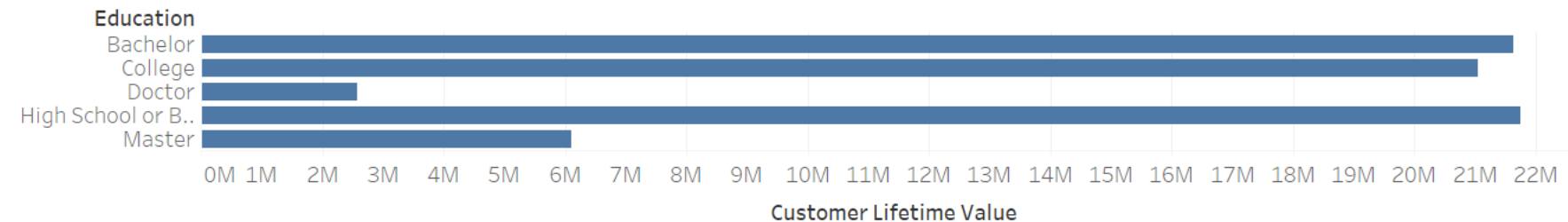
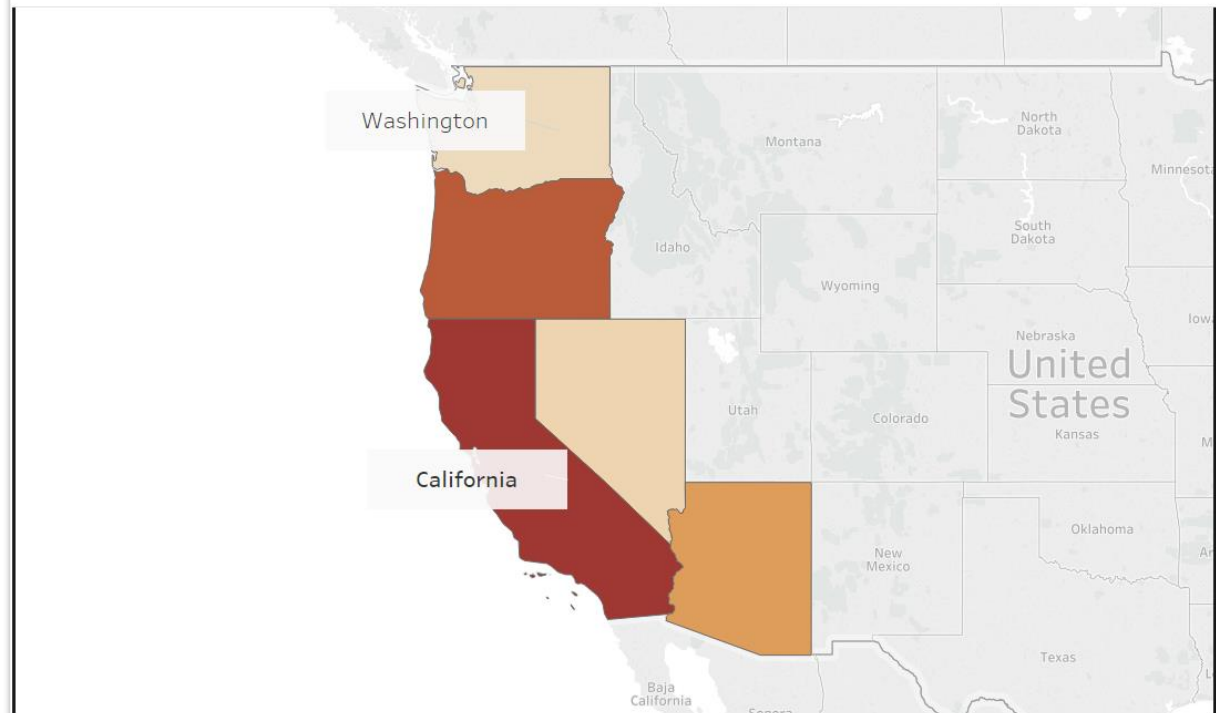Sum of Customer Lifetime Value for each Education.

✓We generate the most CLV with client having a Bachelor degree or below

Geographic segmentation

▶ Weather, culture, and even school calendars vary geographically. This means that you'll often have reason to use geography in developing your marketing campaigns. Regional differences can help drive decisions about what products to offer, how to craft your message, and even when to communicate.
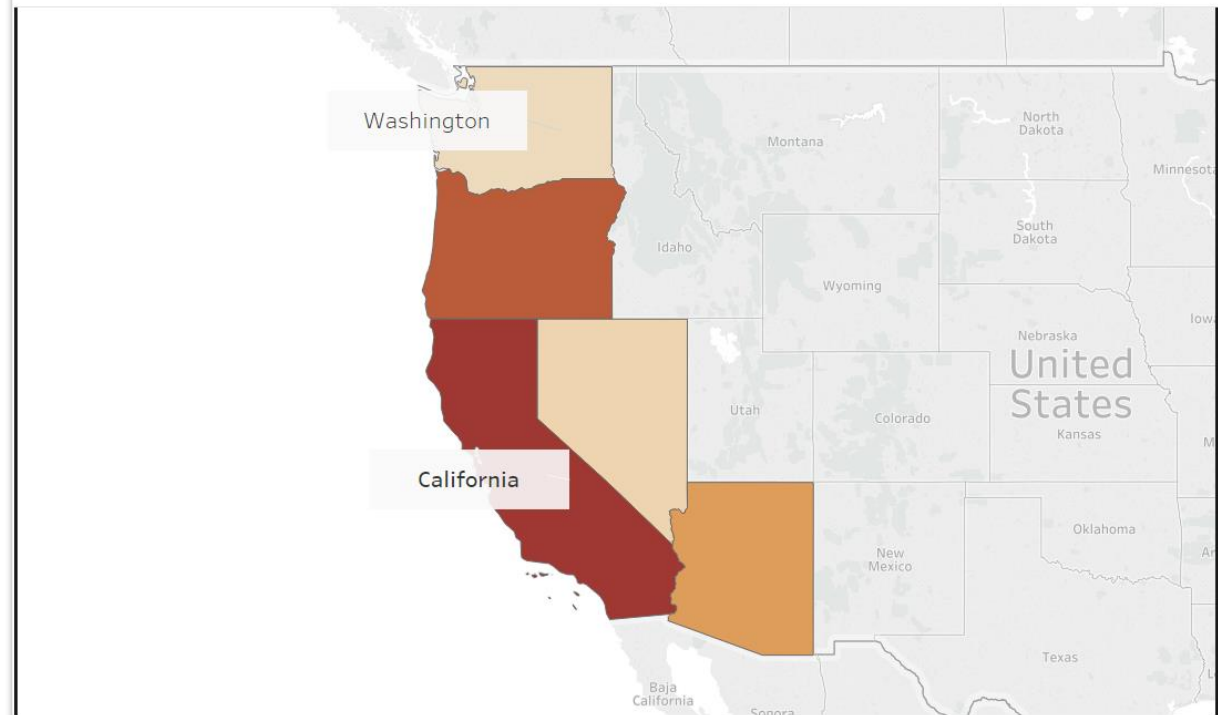
➢ CALIFORNIA

Total CLV by state

Map based on Longitude (generated) and Latitude (generated). Color shows sum of Customer Lifetime Value. Details are shown for State.

Geographic segmentation

- About California

  - 38% of population is Hispanic

  - Multi-bilingual state : Los Angeles region featured the nation's second highest number of languages spoken, 185

  - Agriculture & Tourism are the top 2 industry

  Source : U.S Bureau Census

Total CLV by state

Map based on Longitude (generated) and Latitude (generated). Color shows sum of Customer Lifetime Value. Details are shown for State.

Behavioral segmentation

▶ **Promotional offer choices**, sales channel, policy type are factors that can be used to see some patterns in the clients behaviors and better address their needs.

▶ Offer 1 has the highest CLV

CLV by renew offer type
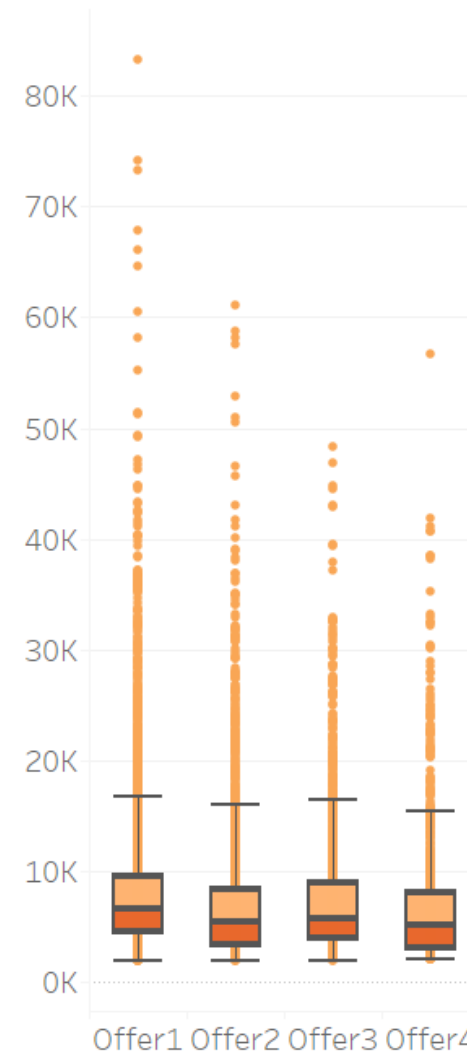
Behavioral segmentation

▶ Promotional offer choices, **sales channel**, policy type are factors that can be used to see some patterns in the clients behaviors and better address their needs.

▶ Agents drive the highest total CLV

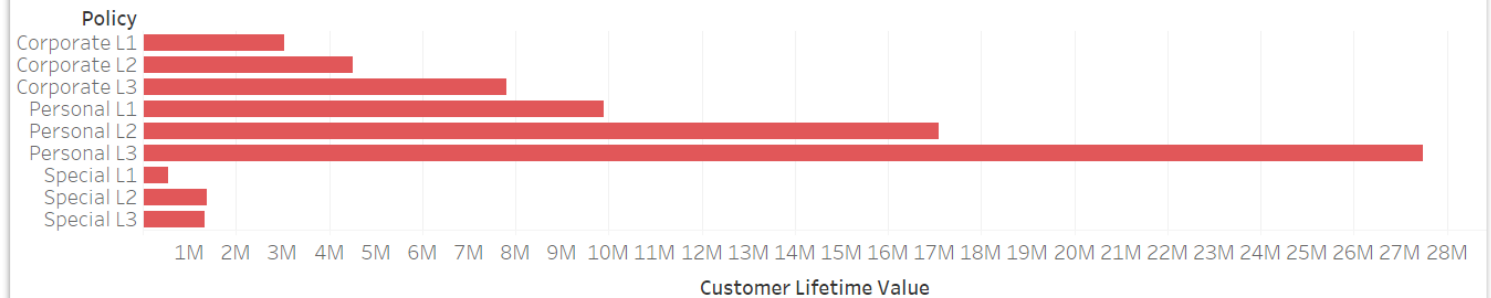Total CLV by Sales Channel

Web

Agent

Branch

Call Center

Behavioral segmentation

▶ Promotional offer choices, sales channel, **policy type** are factors that can be used to see some patterns in the clients behaviors and better address their needs.

▶ Policy **Personal L3** generates the MOST CLV

Total customer lifetime value by policy type

LET'S WRAP UP !

DEMOGRAPHIC

- Married
- Bachelor degree or below

GEOGRAPHIC

California

- Hispanic
- Multilingual
- Agriculture & Tourism

BEHAVIORAL

- Offer Type 1
- Agents as best sale channel
- Policy personal 3

Appendix

▶DATA DICTIONARY

Variables	Type	Description
Customer ID	Categorical	Unique identifier
State	Categorical	
Customer Lifetime Value	Numeric	The value generated by each customer
Response	Dependent Variable - Character	Whether the customer responded to a promotional offer -Yes or no-
Coverage	Categorical	Premium, Basic or extended coverage
Education	Categorical	The highest education level reached
Effective To Date	Date	
Employment Status	Categorical	Unemployed, employed, Disabled, retired or medical leave
Gender	Categorical	Male or female
Income	Numeric	In $$$
Location Code	Categorical	Suburban, urban or rural
Marital Status	Categorical	Divorced, married or single
Monthly Premium Auto	Numeric	In $$$
Months Since Last Claim	Numeric	
Months Since Policy Inception	Numeric	
Number of Open Complaints	Numeric	
Number of Policies	Numeric	
Policy Type	Categorical	Personal or corporate
Policy	Categorical	
Renew Offer Type	Categorical	The company proposes 3 different renewal offer – Offer, offer 2 & offer 3
Sales Channel	Categorical	Sales conducted thru agent, call center, Branch or Web
Total Claim Amount	Numeric	
Vehicle Class	Categorical	Luxury, 4- Door, 2-Door, Sports
Vehicle Size	Categorical	SUV, Large or Med size