Customer segmentation

Premium Coffee chain

Identified differentiating attributes based on the customer purchasing behavior, to define customer clusters by leveraging transactional and survey data to help the company devise customized marketing strategies

Premium coffee chain company needs to “brew” marketing strategies for its customers

Picture this…

You’re looking for leveraging the customer survey & transaction data to define advanced customer segments/clusters and to provide visibility into its customers’ behavior

You turn to Accordion.

We partner with your team to identify differentiating attributes based on the customer purchasing behavior, to define customer clusters by leveraging transactional and survey data, to help devise customized marketing strategies, including:

1) Analyzing the customer survey and transactions data to identify the attitudinal and behavioral attributes, and defined appropriate clusters / segments such as pre-work fuel up, casual non-work hangout, etc.
2) Deploying various clustering techniques (K-prototype, Agglomerative Clustering, Gaussian Mixture models primarily) to evaluate the best fit for the data (which consisted of both continuous and categorical variables) and identifying the algorithm that best fit to differentiate the clusters based on the business needs and the statistical tests (BIC/Silhouette scores, convergence of the clusters, etc.)
3) Providing recommendations to scale the defined clusters across the current customer base and new customers on an ongoing basis

Your value is enhanced.

You have scalable analysis that helps improve the effectiveness of your marketing strategies by targeting a group of customers with tailored campaigns. You also have defined clusters to design a product pipeline aligned with its customer preferences.

CUSTOMER SEGMENTATION

KEY RESULT

- Impact 1…
- Impact 2…

VALUE LEVERS PULLED

- Random Forest
- Clustering Techniques (K-Prototype, Gaussian Mixture Models, Agglomerative Clustering)
- Statistical tests (BIC/Silhouette scores)
- Post-cluster analysis

Customer segmentation

Situation

- Client had an opportunity to analyze their customer purchasing behavior in order to support its product innovation pipeline, improve its targeted marketing and enhance customer satisfaction
- Partnered with the company to leverage the company's customer survey & transaction data to define advanced customer segments/clusters and to provide visibility into its customers' behavior

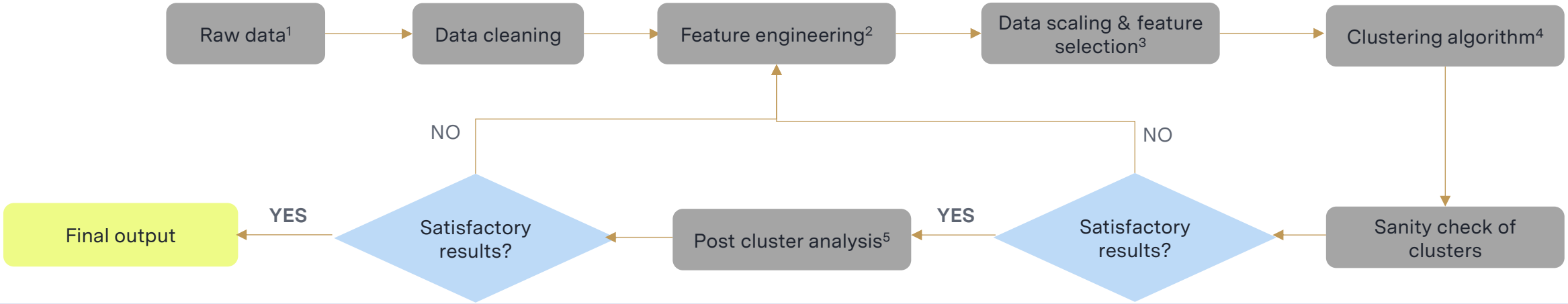
Accordion Value Add

- Analyzed the customer survey and transactions data to identify the attitudinal and behavioral attributes, and defined appropriate clusters / segments such as pre-work fuel up, casual non-work hangout, etc.
- Deployed various clustering techniques (K-prototype, Agglomerative Clustering, Gaussian Mixture models primarily) to evaluate the best fit for the data (which consisted of both continuous and categorical variables) and identified the algorithm that was the best fit to differentiate the clusters based on the business needs and the statistical tests (BIC/Silhouette scores, convergence of the clusters, etc.)
- Provided recommendations to scale the defined clusters across the current customer base and new customers on an ongoing basis

Impact

- Our analyses helped the company improve the effectiveness of its marketing strategies by targeting a group of customers with tailored campaigns
- Defined clusters helped the company to design a product pipeline aligned with its customer preferences

Approach & methodology for project delivery



1. Raw data	Customer survey data (~3,000 unique customers) & transactional data (for 60% of the survey customers) that together reflected the attitudinal and behavioral attributes of the customers
2. Feature engineering	From the existing data columns, new variables were engineered that are more reflective of the customers' behavior
3. Data scaling & feature selection	As the range of values varies across columns, data scaling was done to eliminate the variation before fitting it to the Clustering Model. Multiple techniques were used feature selection: ▪ Based on the business context, few variables were selected to explain the visiting and purchasing patterns of the customers ▪ Top 5-10 variables that affect the loyalty (from transaction date) and the purchase intent (from survey data) of the customers were identified through random forest importance
4. Clustering algorithm	Five different clustering algorithms were tested (k-prototype, gaussian mixture model (GMM), agglomerative clustering, etc.) and the results were evaluated to identify the best fit
5. Post cluster analysis	Statistical indexes (silhouette score and BIC score), industry accepted standards for cluster analysis (minimum and maximum size of the cluster), along with a comprehensive cluster analysis (that evaluates the behavior of individual clusters and identifies the differentiating attributes between clusters) have been performed to evaluate the sanity of the clusters

Behavioral variations of customer groups

	Pre-Work Fuel Up	Casual Non-Work Hangout	Workday Coffee Break	Weekend Hangout	Pre-Lunch Break From Work
					
% of customers	**20%**	**15%**	**23%**	**22%**	**20%**
Inferred "Occasion"	*Fuel up on the way to work*	*Casual hangout for non-workers*	*Take a mental break from my workday*	*Connect with friends over coffee*	*Break before lunch*
Day of the week					
Time of the day					
People skew					
Mode of order					
Consumption location					
Food preference					
Employment status					

Customer segments were defined based on the differences in the behavioral traits