**Market Segmentation**

Market segmentation is the process of dividing a big target market into smaller group of consumers with some similarities like goegraphy, needs, behaviour etc.

**The task is divided among the team below:**

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**Step 1: Deciding (not) to Segment:**

While making segmentation we have to keep some points so that we can make segment effectively.

* The author compares segmention with marriage rather than a date, it is because market segmentation is a long term process. If organization has patient and have a long time goal then go for segmentaion else not.
* Segmentaion requires changes, if the organization is ready for big changes then go for segmentaions else avoid.
* There are some cost for performing research and survey. If the organization is financially strong then segmentation should be successful.

**Step 2: Specifying the Ideal Target Segment:**

There are some standard criteria we should follow to make an effective segmentation. We have keep some points while making segmentation.

**Knock-out criteria:**

* All the members inside a segment/group must be homogenous/similar.
* Members from one segment must be dissimilar from the members of another segments.
* Segment should be large enough so that the generated profits should be greater than the expenses in making segmentation.
* Segmentaion must be matching the organization’s strength, so that organization have the ability to satisfy members’ needs.
* Members of the segmentaion must be identifiable so that organization can spot them int the market place.
* There must be a way to get in touch with the members of the segment.

**Attractiveness criteria:**

In addition to knock-out criteria also assign some attractiveness score to each segment based on how useful the segments are. For example : There are 4 segments where organization generates 40% of profits from segment two and 30% from segment four then we may assign a attractiveness score for segment One = 15, segment Two = 40, segment Three = 15 and segment Four = 30.

**Step 3: Collecting Data**

Data collection is most difficult part for any organization there are some way organizations use for data collection.

* **Survay Data:** Most of the organizations use survey data for market segmentation because survey data is cheap and easy to collect. But survey data can have a wide range of biases.
* **Internal Data Source:** Increasingly organizations have access to large amount of internal data that can be used for market segmentation analysis. It is easy to collect and use, represents actual behaviour of the customers.
* **Data from Experimental Studies:** This kind of data can be collected from research laboratory experiments. For example how customers reacts to a certain advertisements.

**Step 5: Extracting Segments**

In this step we will learn some famous clustering algorithms K-Means, Hierarchical clustering etc used for making segmentations.

**K-Means:** It is a distance based clustering algorithm which initiliazes K number of points then computes distance of each observations from each points then assing cluster labels to each obeservation which is nearest to K point again compute mean of the cluster and shift the point to the mean of the cluster and repeats process untill find best clusters.

**Heirarchical Clustering:**  These methods are most intiutive way of grouping data because they mimic how human would approach the tast of dividing a set of observations into k groups. Hierarchical clustering can be divided into two types, Agglomerative and Divisive.

Agglomerative clustering is that where select 1 point as a cluster then merge it with the nearest point and so on. Divisive clustering is that Where entire points are treated as one single cluster then break that cluster based on dissimilarities again and again.

**Linkage Methods used in Hierarchical Clustering:**

Single linkage: In this method nearest points from two clusters are selected for distance calculation. Single linkage is useful when there is very less noise in the dataset.

Complete linkage: In this method farthest points are selected for distance calculation.

Average linkage: Mean disctance is used between observation of two sets.

**Step 7: Describing Segments**

Market segmentation is a foundational concept in marketing, allowing businesses to categorize a broad customer base into smaller, more manageable groups or segments. Each segment typically exhibits similar needs, preferences, or behaviours. After the initial identification of these segments, it is crucial to describe them thoroughly to ensure effective targeting and positioning. In the market segmentation process—Describing Segments—focuses on this detailed examination.

**Objective:** The primary goal of it is to provide a comprehensive understanding of each segment by utilizing additional variables, referred to as descriptor variables. These variables are critical for differentiating segments and painting a detailed picture of the characteristics that define each group. The insights gained from this step allow businesses to tailor their marketing strategies, ensuring that they align with the specific needs and preferences of each segment.

**Understanding Descriptor Variables**: Descriptor variables are the attributes that were not initially used to create the segments but are now applied to describe and distinguish them further. These can include:

* Demographics: Variables such as age, gender, income, education level, and family size. These are often the most straightforward descriptors but are fundamental in defining who the customers are.
* Psychographics: This category covers the lifestyles, values, attitudes, and personality traits of customers. Psychographics provide deeper insights into why customers behave the way they do and what motivates their purchasing decisions.
* Behavioural Factors: These include purchasing habits, brand loyalty, usage rates, and benefits sought from products or services. Understanding these behaviours helps in tailoring marketing messages and offerings.
* Geographic Information: Location-based data can be a powerful descriptor, particularly when regional preferences or needs are significant.

These variables are used to create a vivid, multidimensional view of each segment, going beyond the basic clustering performed in earlier steps.

**Methodology for Describing Segments:** To effectively describe the segments, the document suggests a combination of statistical analyses and visual tools:

1. Descriptive Statistics:
   * Mean, Median, Mode: These central tendency measures provide an overview of the typical customer within a segment. For example, calculating the average income level within a segment can help marketers understand the purchasing power of that group.
   * Standard Deviation and Range: These measures of variability give insights into the diversity within a segment. A segment with a wide range of income levels might require a more nuanced marketing approach than one with a more homogeneous income distribution.
2. Inferential Statistics:
   * Hypothesis Testing: Inferential statistics are employed to test hypotheses about the differences between segments. For instance, marketers might test whether the average age of one segment is significantly different from another. This helps confirm that observed differences are not due to random chance.
   * Significance Testing: Techniques such as t-tests, ANOVA, or chi-square tests are used to determine the statistical significance of differences between segments. This ensures that the distinctions being made are meaningful and reliable.
3. Visualizations:
   * Bar Charts: These are used to represent the frequency or percentage of different attributes within a segment. For example, a bar chart might show the distribution of income levels across different segments.
   * Mosaic Plots: These plots are particularly useful for displaying categorical data across multiple dimensions. They can visually represent the relationship between descriptor variables and segments, making it easier to spot patterns or significant differences.
   * Pie Charts and Histograms: While less emphasized, these tools can also be used to display data in a way that is easily interpretable by marketing professionals.

Visual representations are crucial because they simplify complex data, making it more accessible for decision-makers. Marketing managers often prefer graphical data as it allows for quick comprehension and more informed decision-making.

**Practical Application in Marketing Strategy:** Once the segments are described in detail, businesses can use this information to develop a customized marketing mix for each segment. The marketing mix—comprising product, price, place, and promotion—can be adjusted to better meet the needs of each group. For example:

* Product: The features and benefits of a product might be highlighted differently depending on the segment's preferences and needs.
* Price: Pricing strategies can be tailored based on the income levels and price sensitivity of each segment.
* Place: Distribution channels might be chosen based on the geographic locations and purchasing habits of the segments.
* Promotion: The messaging and communication channels used in marketing campaigns can be customized to resonate with the values and lifestyles of each segment.

The document also highlights the importance of not over-interpreting the data. It is easy to fall into the trap of focusing on minor or statistically insignificant differences that do not materially impact the marketing strategy. Marketers are advised to concentrate on differences that are both statistically significant and practically meaningful.

**Conclusion:** It is a vital part of the market segmentation process as it transforms raw segment data into actionable marketing insights. By thoroughly describing each segment using additional descriptor variables, marketers can gain a deeper understanding of their target audiences. This understanding enables the development of highly targeted marketing strategies that are more likely to resonate with customers, thereby increasing the effectiveness of marketing efforts and ultimately driving business success.

The careful application of statistical analysis and the use of visual tools ensure that the segment descriptions are both accurate and easily interpretable. This step ensures that the segmentation analysis does not remain an abstract exercise but instead leads to practical, data-driven marketing strategies that can be implemented to achieve tangible business results.

**Github Links:**

Md Ismail Quraishi: <https://github.com/mdismailquraishicse/McDonaldCustomerSegmentation>

Riyan Khan: <https://github.com/Alriyan1/McDonald-Segmentation.git>