

# SUMMARY OF FUNDAMENTALS OF MARKET SEGMENTATION

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## Team members

**Varad Kajarekar**

**Rohit Daddekar**

**Sourabh Yeshal**

**Vikas Reddy**

# Market Segmentation

## What is marketing?

Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.

## What is marketing strategy?

Marketing strategy is a set of specific ideas and actions that outline and guide decisions on the best or chosen way to create, distribute, promote, and price a product or service (Manage the marketing mix variables).

## What is market segmentation?

At its core, market segmentation is the practice of dividing your target market into approachable groups. Market segmentation creates subsets of a market based on demographics, needs, priorities, common interests, and other psychographic or behavioral criteria used to better understand the target audience.

## Benefits of market segmentation

1. Stronger marketing messages: You no longer have to be generic and vague – you can speak directly to a specific group of people in ways they can relate to, because you understand their characteristics, wants, and needs.
2. Targeted digital advertising: Market segmentation helps you understand and define your audience's characteristics, so you can direct your marketing efforts to specific ages, locations, buying habits, interests etc.
3. Developing effective marketing strategies: Knowing your target audience gives you a head start about what methods, tactics and solutions they will be most responsive to.
4. Better response rates and lower acquisition costs: These will result from creating your marketing communications both in ad messaging and advanced targeting on digital platforms like Facebook and Google using your segmentation.
5. Attracting the right customers: Market segmentation helps you create targeted, clear and direct messaging that attracts the people you want to buy from you.
6. Increasing brand loyalty: when customers feel understood, uniquely well served and trusting, they are more likely to stick with your brand.

7. Differentiating your brand from the competition: More specific, personal messaging makes your brand stand out.
8. Identifying niche markets: segmentation can uncover not only underserved markets, but also new ways of serving existing markets – opportunities which can be used to grow your brand.
9. Staying on message: As segmentation is so linear, it's easy to stay on track with your marketing strategies, and not get distracted into less effective areas.
10. Driving growth: You can encourage customers to buy from you again, or trade up from a lower-priced product or service.
11. Enhanced profits: Different customers have different disposable incomes; prices can be set according to how much they are willing to spend. Knowing this can ensure you don't over (or under) sell yourself.
12. Product development: You'll be able to design with the needs of your customers top of mind, and develop different products that cater to your different customer base areas.

#### 4 Types of markets segmentation :

	<b>Demographic (B2C)</b>	<b>Firmographic (B2B)</b>	<b>Psychographic (B2B/B2C)</b>	<b>Behavioral (B2B/B2C)</b>
<b>Definition</b>	Classification based on individual attributes	Classification based on company or organization attributes	Classification based on attitudes, aspirations, values, and other criteria	Classification based on behaviors like product usage, technology laggards, etc
<b>Examples</b>	Geography Gender Education Level Income Level	Industry Location Number of Employees Revenue	Lifestyle Personality Traits Values Opinions	Usage Rate Benefit Types Occasion Purchase Decision
<b>Decision Criteria</b>	You are a smaller business or you are running your first project	You are a smaller business or you are running your first project	You want to target customers based on values or lifestyle	You want to target customers based on purchase behaviors
<b>Difficulty</b>	Simpler	Simpler	More advanced	More advanced

## Step 1: Deciding (not) to Segment

Marketing segmentation is a long-term work strategy and includes research, fielding surveys, focus groups, designing multiple packages, advertisements, communication. Before deciding to use or not use this method or strategy one must check with constraints and requirements. The scheme must be more profitable than marketing without it, and net of expenses of developing and using the scheme itself.

### Barriers:

They are some parameters we need to see before starting up the process of market segmentation. There are some obstacles between successful segmentation implementation.

1. Senior Management :

Lack of leadership in implementation and decision making will cost much to the company as investments are done for these segments. Lack of commitment and involvement will cause loss.

2. Organizational culture:

A proper culture is needed to be developed in the organizing committee. Where there is a lack of consumer orientation, no new ideas, no creative thinking, bad communication, short term thinking, politics and the unwillingness.

3. Lack of training:

Necessary marketing and analytics training is not provided then lack in performance will cause loss to implementation of market segmentation.

4. Inadequate financial resources:

While entering or implementing marketing segmentation we sometimes need to make changes in infrastructure or product details and designing too. Hence we need financial investments to go further. If not adequate resources are available then it may cause an obstacle between implementation of segmentation and running them.

**Then what's required first?**

- Sense of purpose
- Dedication
- Patience
- Willingness

## Step 2: Specifying the Ideal Target Segment

In Step 2 the organization must determine two sets of segment evaluation criteria. One set of evaluation criteria can be referred to as knock-out criteria. These criteria are the essential, non-negotiable features of segments that the organization would consider targeting. The second set of evaluation criteria can be referred to as attractiveness criteria. These criteria are used to evaluate the relative attractiveness of the remaining market segments – those in compliance with the knock-out criteria.

Knock-out Criteria	Attractiveness Criteria
<p>Segments must be <b>homogeneous</b> members of the segment must be similar to one another.</p> <p>Segments must be <b>Distinct</b> members of the segment must be distinctly different from members of other segments</p> <p>Segments must be <b>Large enough</b> the segment must contain enough consumers to make it worthwhile to spend extra money</p>	<p>Attractiveness criteria are <b>not binary</b> in nature</p> <p>Segments are not assessed as either complying or not complying with attractiveness criteria</p> <p>Each segment is <b>rated</b> for attractiveness.</p>
<p>Segments must be <b>Matching</b> the strengths of the organization; the organization must have the capability to satisfy segment members' needs.</p> <p>Segments must be <b>identifiable</b> it must be possible to spot them in the marketplace.</p> <p>Segments must be <b>reachable</b> there has to be a way to get in touch with members of the segment</p>	<p>The attractiveness across all criteria specifies whether a market segment is selected as a target segment in <b>Step 8</b>.</p>

### Step 3: Data Collection:

Data is a collection of facts, figures, objects, symbols, and events gathered from different sources. Organizations collect data to make better decisions. Without data, it would be difficult for organizations to make appropriate decisions, and so data is collected at various points in time from different audiences.

For instance, before launching a new product, an organization needs to collect data on product demand, customer preferences, competitors, etc. In case data is not collected beforehand, the organization's newly launched product may lead to failure for many reasons, such as less demand and inability to meet customer needs.

Although data is a valuable asset for every organization, it does not serve any purpose until analyzed or processed to get the desired results.

You can categorize [data collection](#) methods into primary methods of data collection and secondary methods of data collection.

#### Primary Data Collection Methods

Primary data is collected from first-hand experience and is not used in the past. The data gathered by primary data collection methods are specific to the research's motive and highly accurate.

Primary data collection methods can be divided into two categories: [quantitative methods](#) and [qualitative methods](#).

#### Quantitative Methods:

Quantitative techniques for [market research](#) and demand forecasting usually make use of statistical tools. In these techniques, demand is forecast based on historical data. These methods of primary data collection are generally used to make long-term forecasts. Statistical methods are highly reliable as the element of subjectivity is minimum in these methods.

#### Time Series Analysis

The term time series refers to a sequential order of values of a variable, known as a trend, at equal time intervals. Using patterns, an organization can predict the demand for its products and services for the projected time.

#### Smoothing Techniques

In cases where the time series lacks significant trends, smoothing techniques can be used. They eliminate a random variation from the historical demand. It helps in identifying patterns and

demand levels to estimate future demand. The most common methods used in smoothing demand forecasting techniques are the simple moving average method and the weighted moving average method.

### **Barometric Method**

Also known as the leading indicators approach, researchers use this method to speculate future trends based on current developments. When past events are considered to predict future events, they act as leading indicators.

### **Qualitative Methods:**

Qualitative methods are especially useful in situations when historical data is not available. Or there is no need for numbers or mathematical calculations. Qualitative research is closely associated with words, sounds, feeling, emotions, colors, and other elements that are non-quantifiable. These techniques are based on experience, judgment, intuition, conjecture, emotion, etc.

Quantitative methods do not provide the motive behind participants' responses, often don't reach underrepresented populations, and span long periods to collect the data. Hence, it is best to combine quantitative methods with qualitative methods.

### **Surveys**

[Surveys](#) are used to collect data from the target audience and gather insights into their preferences, opinions, choices, and feedback related to their products and services. Most survey software often has a wide range of question types to select.

You can also use a ready-made [survey template](#) to save on time and effort. [Online surveys](#) can be customized as per the business's brand by changing the theme, logo, etc. They can be distributed through several distribution channels such as email, website, offline app, QR code, social media, etc. Depending on the type and source of your audience, you can select the channel.

Once the data is collected, [survey software](#) can generate various reports and run analytics algorithms to discover hidden insights. A [survey dashboard](#) can give you the statistics related to response rate, completion rate, filters based on demographics, export and sharing options, etc. You can maximize the effort spent on online data collection by integrating survey builders with third-party apps.

### **Polls**

Polls comprise of one single or [multiple choice question](#). When it is required to have a quick pulse of the audience's sentiments, you can go for polls. Because they are short in length, it is easier to get responses from the people.

Similar to surveys, [online polls](#), too, can be embedded into various platforms. Once the respondents answer the question, they can also be shown how they stand compared to others' responses.

### Interviews

In this method, the interviewer asks questions either face-to-face or through telephone to the respondents. In face-to-face interviews, the interviewer asks a series of questions to the interviewee in person and notes down responses. In case it is not feasible to meet the person, the interviewer can go for a telephonic interview. This form of data collection is suitable when there are only a few respondents. It is too time-consuming and tedious to repeat the same process if there are many participants.

### Delphi Technique

In this method, market experts are provided with the estimates and assumptions of forecasts made by other experts in the industry. Experts may reconsider and revise their estimates and assumptions based on the information provided by other experts. The consensus of all experts on demand forecasts constitutes the final demand forecast.

### Focus Groups

In a [focus group](#), a small group of people, around 8-10 members, discuss the common areas of the problem. Each individual provides his insights on the issue concerned. A moderator regulates the discussion among the group members. At the end of the discussion, the group reaches a consensus.

### Questionnaire

A [questionnaire](#) is a printed set of questions, either open-ended or closed-ended. The respondents are required to answer based on their knowledge and experience with the issue concerned. The questionnaire is a part of the survey, whereas the questionnaire's end-goal may or may not be a survey.

## Secondary Data Collection Methods

Secondary data is the data that has been used in the past. The researcher can obtain data from the sources, both internal and external, to the organization.

Internal sources of secondary data:



- Organization's health and safety records
- Mission and vision statements
- Financial Statements
- Magazines
- Sales Report
- CRM Software
- Executive summaries

External sources of secondary data:

- Government reports
- Press releases
- Business journals
- Libraries
- Internet

The secondary data collection methods, too, can involve both quantitative and qualitative techniques. Secondary data is easily available and hence, less time-consuming and expensive as compared to the primary data. However, with the secondary data collection methods, the authenticity of the data gathered cannot be verified.

## Step 4: Exploring Data:

### 1) WHAT IS DATA EXPLORATION

Data exploration is a methodology that is very much like initial data analysis. A data analyst utilizes visual exploration to comprehend the contents of a dataset and its attributes, instead of using data management systems. These attributes could include the size, culmination, accuracy, potential connection between different data components or data files/ tables.

Both manual (drill down or filtering of data to understand similar patterns in data) and automated (data profiling or visualization) methods may be used for data exploration.

Essentially, Data exploration is pruning of data to remove unusable parts and identify potential relationships between different types of data.

## 2) STEPS IN DATA EXPLORATION

Before delving into the steps involved in data exploration, it is essential to understand that the quality of output is directly proportional to the quality of input. In data exploration, a significant amount of project time is spent on preparation and cleaning of data.

Given below are certain steps that are to be followed while preparing data to build a predictive model-

- First, it is necessary to identify the input and output variables. Post that, the type and category of the data variables must be made clear.
- In the next stage, each variable is to be explored independently; one by one. The method used for such analysis can be decided based on whether the variables are categorical or continuous.

In the instance that the variables are continuous, the central tendency, as well as the spread of the variable, must be understood. Central tendency is measured using mean, median, mode, min, max etc., and measure of dispersion is through the range, quartile, IQR, Variance, standard deviation, skewness and kurtosis, etc. Visualization methods of Histogram and Box Plot are usually adopted.

In the case of Categorical variables, a frequency table that reads the percentage of values using count and count% metrics must be used to understand the distribution of each category.

- To understand the relationship between two variables, the bivariate analysis must be adopted. Here, the association and dissociation between pre-defined significant variables are considered. The variables can be in the following combinations:

Categorical and categorical: To identify the relationship between two categorical variables two-way table, stacked column chart and chi-square test methods may be used.

Categorical and continuous: In understanding the relationship between categorical and continuous variables, box plots for each categorical variable level are to be drawn.

Continuous and continuous: Here, the pattern of scatter plot must be looked into while conducting an analysis between two continuous variables as a scatter plot defines whether the relationship can be linear or nonlinear.

### 3) DATA EXPLORATION TECHNIQUES

There are various approaches/ techniques that may be adopted in data exploration. Some of them are:

- Use of unique value count of categorical columns.
- To detect how frequently individual values occur in a column. This will give an insight into the content of categorical variables.
- In analyzing numeric values, the minimum, maximum and variance of the data values provide a good indication of the spread of values.
- Pareto analysis is effective in data exploration as well.
- Histogram can be used to get information for a range of values falling in the majority sector. It points out any skew in the data and indicates the maximum and minimum values of the data as well.
- A correlation heat map between all numeric columns is a great way to understand the relationship between various types of data.

- The method of Pearson correlation is used to understand the trend between two numeric columns.
- Another effective data exploration is Cramer V that correlated between all categorical columns.
- Cluster size analysis is often adopted to tackle huge amounts of data wherein data is split into different groups/ clusters and then analyzed
- Outlier detection is used when there is something unusual in the data. Here, standard deviation analysis methods or algorithms like Isolation forest are used to obtain outlier values in numeric columns. Outlier methods can be used for multiple columns.
- Specialized visualization moves from bar charts and scatters plots to radar charts, neural network visualization and Sankey charts.

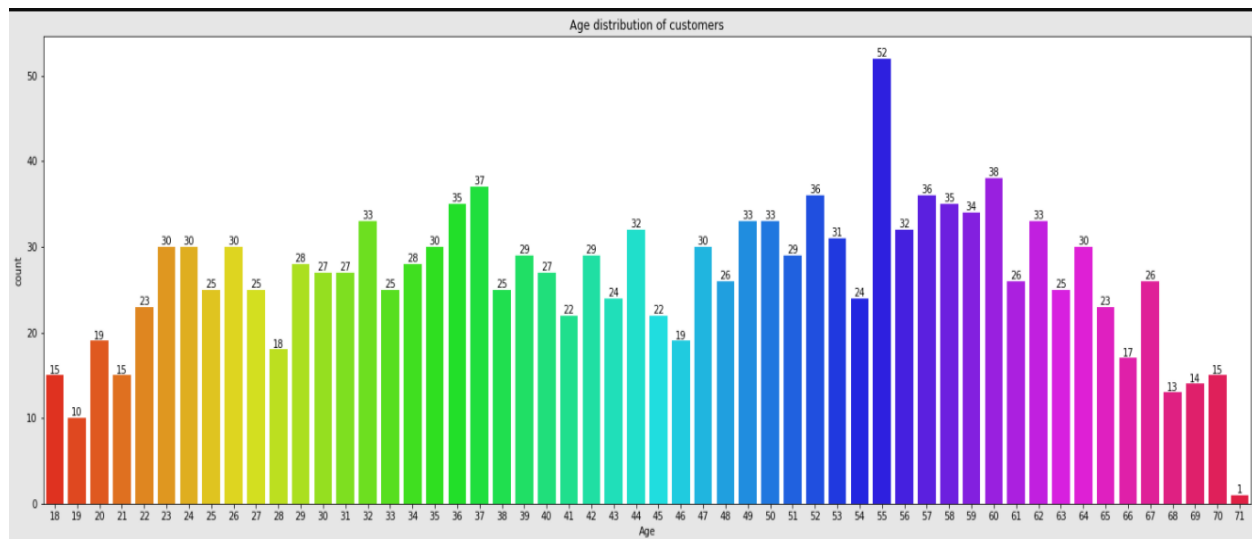


Fig 2: Count plot for age distribution

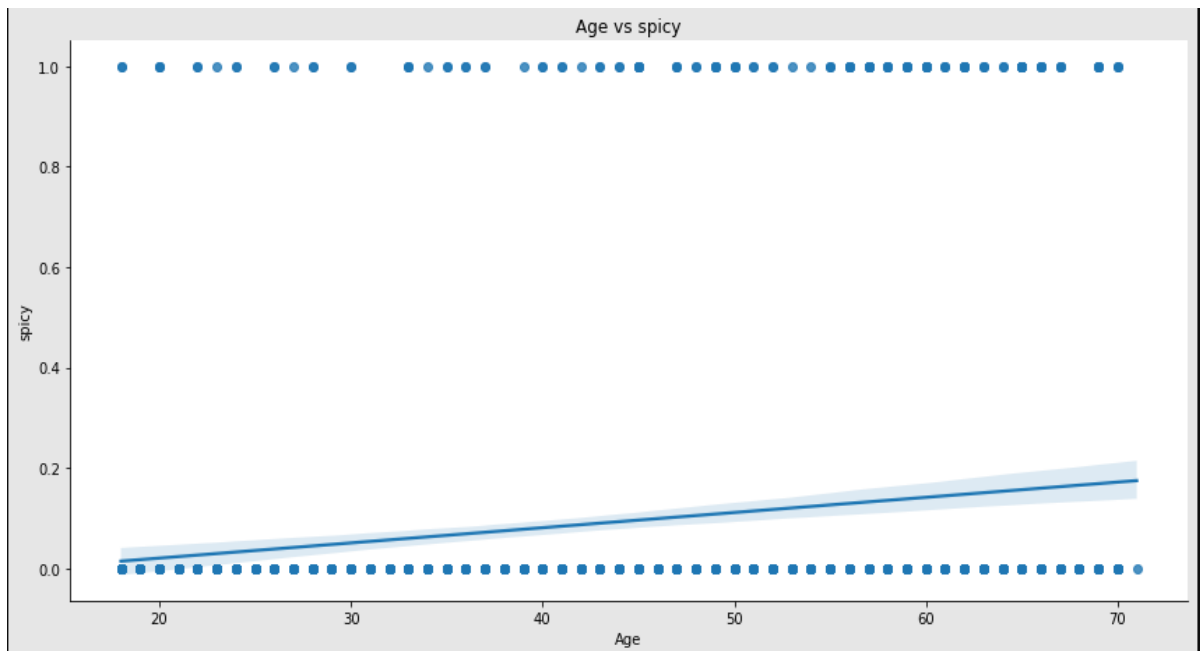


Fig 3: Age vs Spicy regression plot

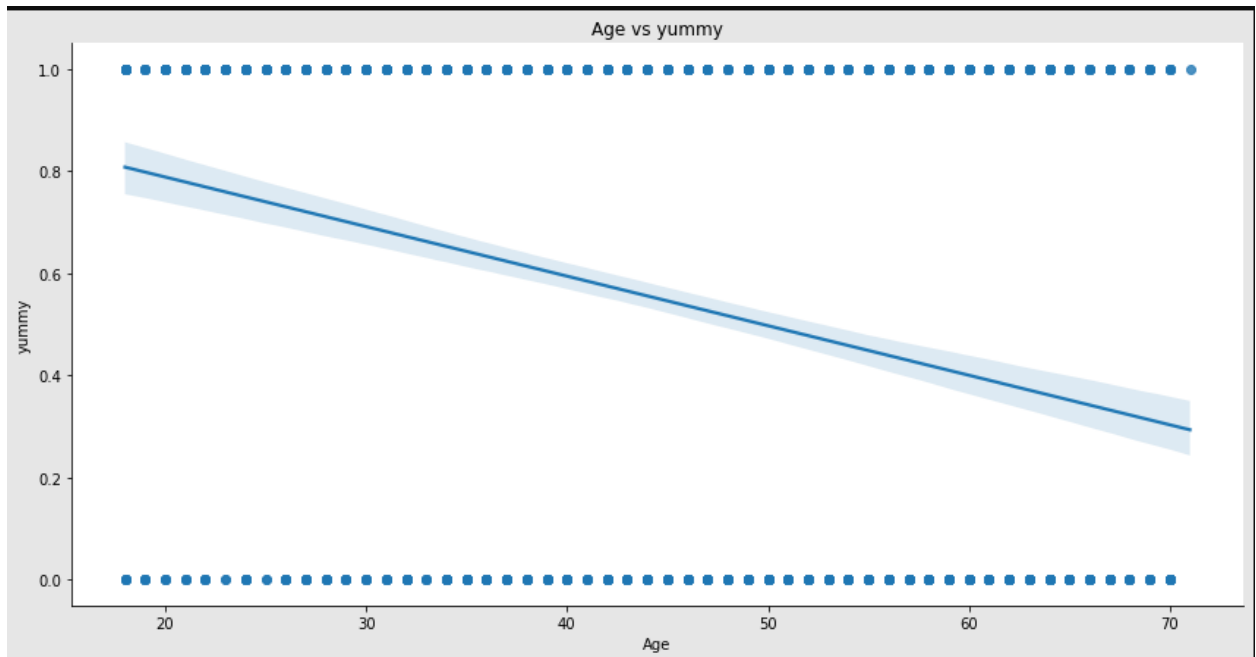


Fig 4: Age vs yummy regression plot

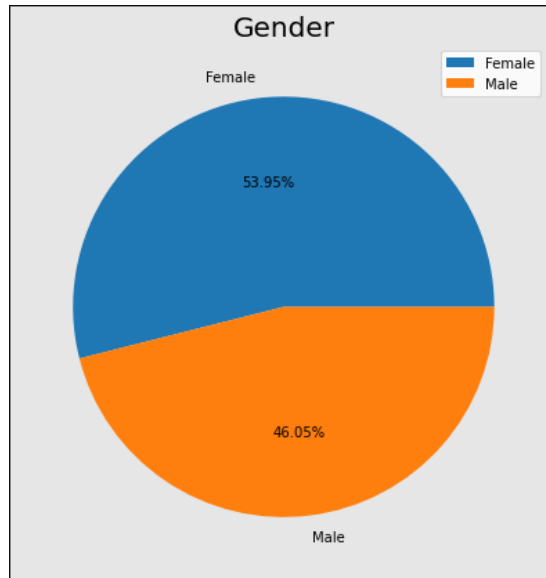


Fig 5: Gender distribution plot

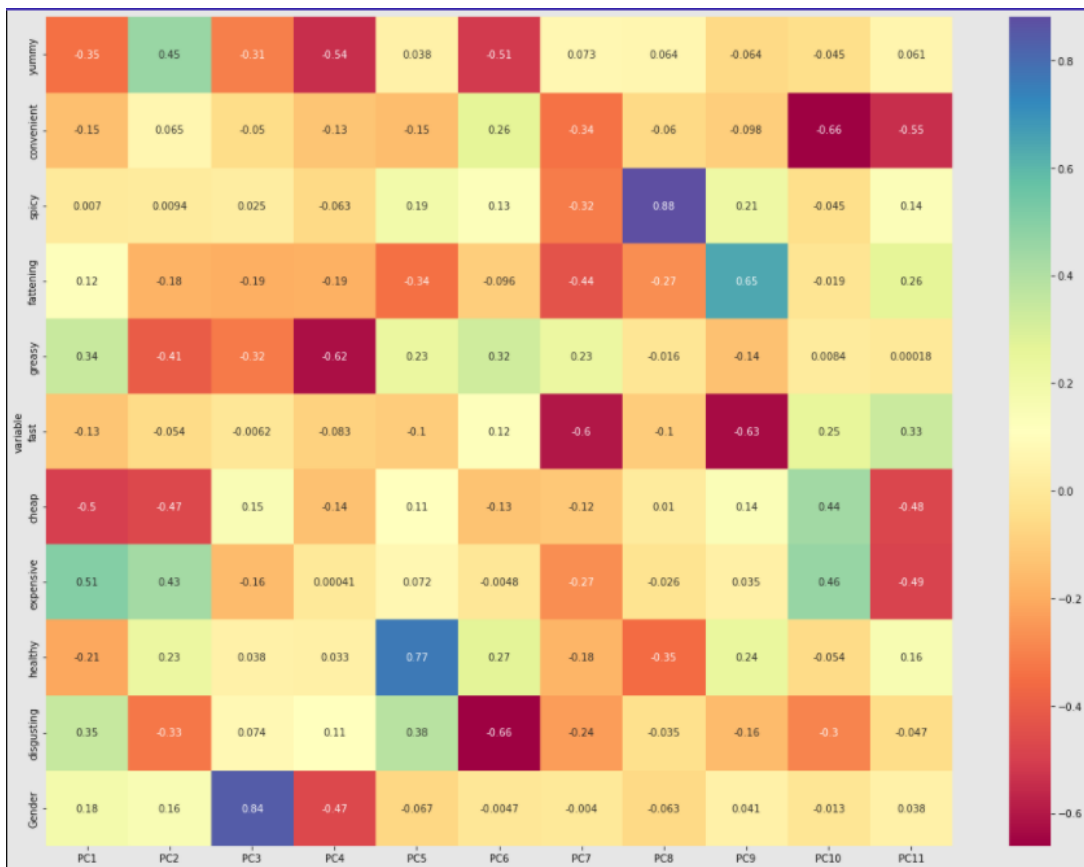


Fig 6: Heatmap of pca correlations.

## Step 5: Extracting Segments

### Grouping Consumers

For extracting market segments from data mostly clustering analysis is used with a variety of approaches. Selecting a suitable clustering method requires matching the data analytic features of the resulting clustering with the context-dependent requirements that are desired by the researcher of the market.

Some of Data set and segment characteristics informing extraction algorithm selection given:

Data set characteristics: – Size (number of consumers, number of segmentation variables) – Scale level of segmentation variables (nominal, ordinal, metric, mixed) – Special structure, additional information.

Segment characteristics: – Similarities of consumers in the same segment – Differences between consumers from different segments – Number and size of segments

None of these methods outperform other methods in all situations. Rather, each method has pros and cons.

Distance-based methods use a particular notion of similarity or distance between observations (consumers), and try to find groups of similar observations (market segments). For distance-based methods, the choice of the distance measure depends on the scale level of the data.

Model-based methods formulate a concise stochastic model for the market segments where mainly distributions and probabilistic approach is used. Model based approaches are more probability based considering parameters of segment size and characteristics consumer's probability of getting fit into segment is derived and best solution is provided in end. If the data set contains repeated measurements of consumers over time, for example, an algorithm that takes this longitudinal nature of the data into account is needed. Such data generally requires a model-

based approach. If the data contains purchase histories and price information, and market segments are based on similar price sensitivity levels, regression models are needed. This, in turn, calls for the use of a model-based segment extraction algorithm.

In the case of binary segmentation variables, another aspect needs to be considered. We may want consumers in the same segments to have both the presence and absence of segmentation variables in common, here these variables would be symmetrical (with 0s and 1s treated equally).

Alternatively, we may be concerned about segmentation variables consumers have in common, here these variables would be symmetrical (with only common 1s being of interest). Biclustering uses binary information asymmetrically. Distance-based methods can use distance measures that account for this asymmetry, and extract segments characterized by common 1s.

### Distance based methods

In order to find groups of similar consumers, one needs a notion of similarity or dissimilarity, mathematically speaking: a distance measure.

A distance measure has to comply with a few criteria. One criterion is symmetry, that is:

$$d(x, y) = d(y, x).$$

A second criterion is that the distance of a vector to itself and only to itself is 0:

$$d(x, y) = 0 \Leftrightarrow x = y.$$

In addition, most distance measures fulfill the so-called triangle inequality:

$$d(x, z) \leq d(x, y) + d(y, z).$$

The triangle inequality says that if one goes from  $x$  to  $z$  with an intermediate stop in  $y$ , the combined distance is at least as long as going from  $x$  to  $z$  directly.

The most common distance measures used in market segmentation analysis are:

Euclidean distance:



$$d(x, y) = \sqrt{\sum_{i=1}^n (y_i - x_i)^2}$$

Manhattan or absolute distance:

$$d(x, y) = \sum_{i=1}^n |x_i - y_i|$$

Asymmetric binary distance: applies only to binary vectors, that is, all  $x_j$  and  $y_j$  are either 0 or 1.

Euclidean distance has a straight line representing distance between two points in 2D space.

Manhattan distance derives its name from the fact that it gives the distance between two points assuming that streets on a grid (like in Manhattan) need to be used to get from one point to another. The asymmetric binary distance does not use all dimensions of the vectors. It only uses dimensions where at least one of the two vectors has a value of 1.



Fig 7: Euclidean and manhattan measures

### Hierarchical methods

Hierarchical methods are very intuitive and work similar to how the human discerning mind works. It goes from 1 big market cluster containing all consumers to segment numbers equal to consumer numbers. Here two approaches are given,

Divisive hierarchical clustering methods start with the complete data set X and splits it into two market segments in a first step. Then, each of the segments is again split into two segments. This process continues until each consumer has their own market segment.

Agglomerative hierarchical clustering approaches the task from the other end. The starting point is each consumer representing their own market segment (n singleton clusters). Step-by-step, the two market segments closest to one another are merged until the complete data set forms one large market segment

Underlying both divisive and agglomerative clustering is a measure of distance between groups of observations (segments). This measure is determined by specifying (1) a distance measure  $d(x, y)$  between observations (consumers)  $x$  and  $y$ , and (2) a linkage method. The linkage method decides or says how, given a distance between pairs of observations, distances between groups of observations are obtained.

Single linkage: distance between the two closest observations of the two sets.

$$l(X, Y) = \min_{x \in X, y \in Y} d(x, y)$$

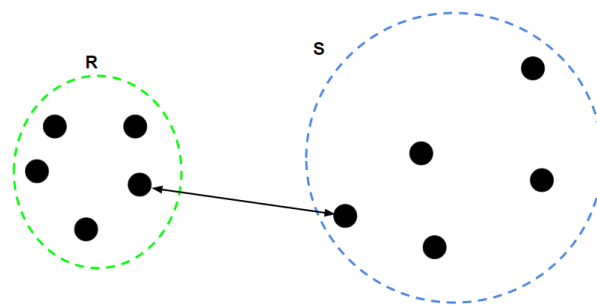


Fig 8: Single linkage

Complete linkage: distance between the two observations of the two sets that are farthest away from each other.  $l(X, Y) = \max_{x \in X, y \in Y} d(x, y)$

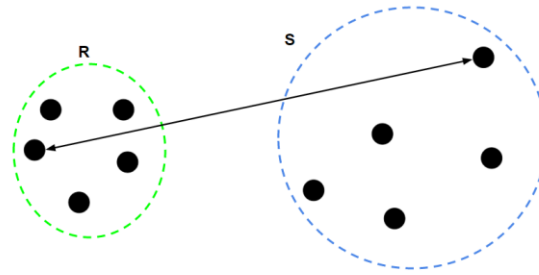


Fig 9: Complete linkage

Average linkage: mean distance between observations of the two sets.

$$l(X, Y) = \frac{1}{|X||Y|} \sum_{x \in X} \sum_{y \in Y} d(x, y),$$

where  $|X|$  denotes the number of elements in  $X$

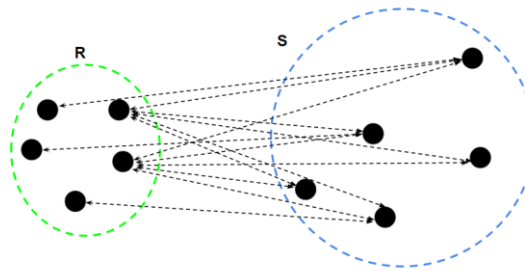


Fig 10: Average linkage

A very popular alternative hierarchical clustering method is named after Ward (1963), and it is based on squared Euclidean distances. Ward clustering joins the two sets of observations (consumers) with the minimum weighted squared Euclidean distance between cluster centers (centroids). Cluster centers are the midpoints of each cluster. They result from taking the average over the observations in the cluster. We can interpret them as segment representatives.

The result of hierarchical clustering is typically presented as a dendrogram. A dendrogram is a tree diagram. The root of the tree represents the one-cluster solution where one market segment contains all consumers. The leaves of the tree are the single observations (consumers), and

branches in-between correspond to the hierarchy of market segments formed at each step of the procedure. The height of the branches corresponds to the distance between the clusters. Where higher the branches are states higher the distance between clusters (segments) exist.

Dendrograms are often recommended as a guide to select the number of market segments.

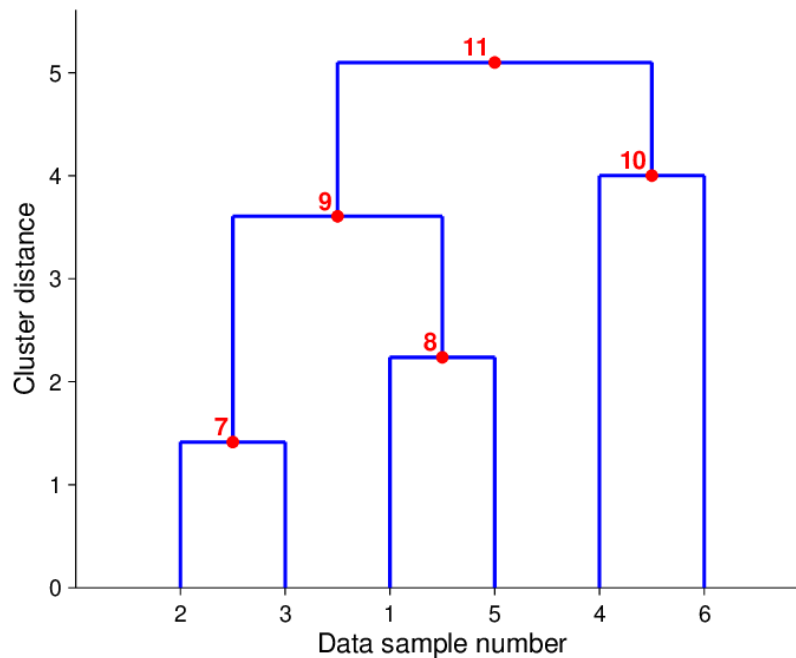


Fig 11: Example of Dendrogram

### Partitioning methods

For larger data sets, dendrograms are hard to read, and the matrix of pairwise distances usually does not fit into computer memory. For data sets containing more than 1000 observations (consumers), clustering methods creating a single partition are more suitable than a nested sequence of partitions.

For a data set including information about 1000 consumers, for example, the agglomerative hierarchical clustering algorithm would have to calculate  $(1000 \times 999) / 2 = 499,500$  distances for the pairwise distance matrix between all consumers in the data set. A partitioning clustering algorithm aiming to extract five market segments, in contrast, would only have to calculate between 5 and 5000 distances at each step of the iterative or stepwise process (the exact number depends on the algorithm used).

## K-Means and k-Centroid Clustering

K-means represents a heuristic for solving the optimization problem of dividing consumers into a given number of segments such that consumers are similar to their fellow segment members, but dissimilar to members of other segments. This algorithm is iterative; it improves the partition in each step, and is bound to converge, but not necessarily to the global optimum.

It involves five steps with the first four steps visualized in a simplified way in Fig. 7.7:

1. Specify the desired number of segments  $k$ .
2. Randomly select  $k$  observations (consumers) from data set  $X$  (see Step 2 in Fig. 7.7) and use them as the initial set of cluster centroids  $C = \{c_1, \dots, c_k\}$ . If five market segments are being extracted, then five consumers are randomly drawn from the data set, and declared the representatives of the five market segments. Of course, these randomly chosen consumers will – at this early stage of the process – not be representing the optimal segmentation solution. They are needed to get the step wise (iterative) partitioning algorithm started.
3. Assign each observation  $x_i$  to the closest cluster centroid (segment representative, see Step 3 in Fig. 7.7) to form a partition of the data, that is,  $k$  market segments  $S_1, \dots, S_k$  where  $S_j = \{x \in X | d(x, c_j) \leq d(x, c_h), 1 \leq h \leq k\}$ . Calculating the distance between each consumer and each segment representative, and then assigning the consumer to the market segment with the most similar representative. If two segment representatives are equally close, one needs to be randomly selected. The result of this step is an initial – suboptimal – segmentation solution.
4. Recompute the cluster centroids (segment representatives) by holding cluster membership fixed, and minimizing the distance from each consumer to the corresponding cluster centroid (representative see Step 4 in Fig. 7.7):  $c_j = \arg \min_{c \in S_j} d(x, c)$ . For squared Euclidean distance, the optimal centroids are the cluster-wise means, for Manhattan distance cluster-wise medians, resulting in the so-called k-means and k-medians procedures.
5. Repeat from step 3 until convergence or a pre-specified maximum number of iterations is reached. This means that the steps of assigning consumers to their closest representative, and electing new representatives is repeated until the point is reached where the segment

representatives stay the same. This is when the stepwise process of the partitioning algorithm stops and the segmentation solution is declared to be the final one.

```
from sklearn.cluster import KMeans
```

```
from sklearn import metrics
```

```
from scipy.spatial.distance import cdist
```

```
import numpy as np
```

```
import matplotlib.pyplot as plt
```

```
X1 = df.loc[:, ["Age", "VisitFrequency"]].values
```

```
from sklearn.cluster import KMeans
```

```
Sum_of_squared_distances = []
```

```
WCSS = []
```

```
# Using k from 1 to 15
```

```
K = range(1,15)
```

```
for k in K:
```

```
    km = KMeans(n_clusters=k, init='random', n_init=10, max_iter=500, tol=1e-04,  
random_state=0)
```

```
    km = km.fit(X1)
```

```
    # Get sum of square distances by applying km.inertia_
```

```
    Sum_of_squared_distances.append(km.inertia_)
```

```
# Plot Results

plt.plot(K, Sum_of_squared_distances, marker='o')

plt.xlabel('k')

plt.ylabel('WCSS')

plt.title('Elbow Method For Optimal k')

plt.show()

kmeans = KMeans(n_clusters = 3)

label = kmeans.fit_predict(X1)

print(label)

sns.scatterplot(data=df, x="Age", y="VisitFrequency", hue=kmeans.labels_)

plt.scatter(kmeans.cluster_centers_[0], kmeans.cluster_centers_[1], marker="X", c="r", s=80,
label="centroids")

plt.legend()

plt.show()
```

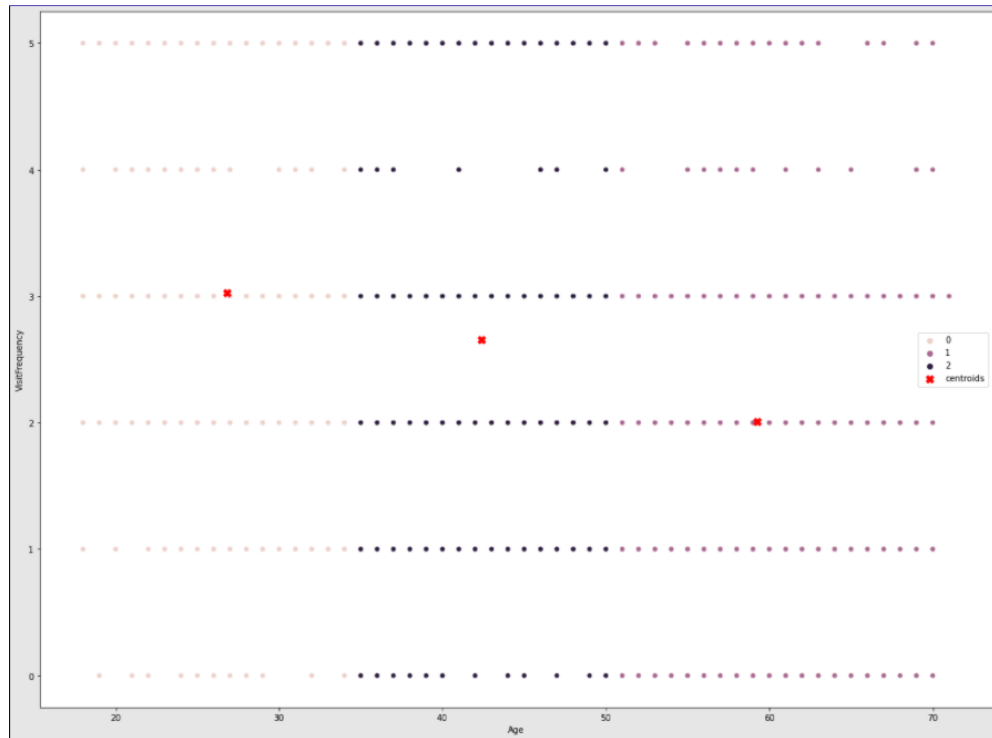


Fig 12: Clusters with age and visi frequency features

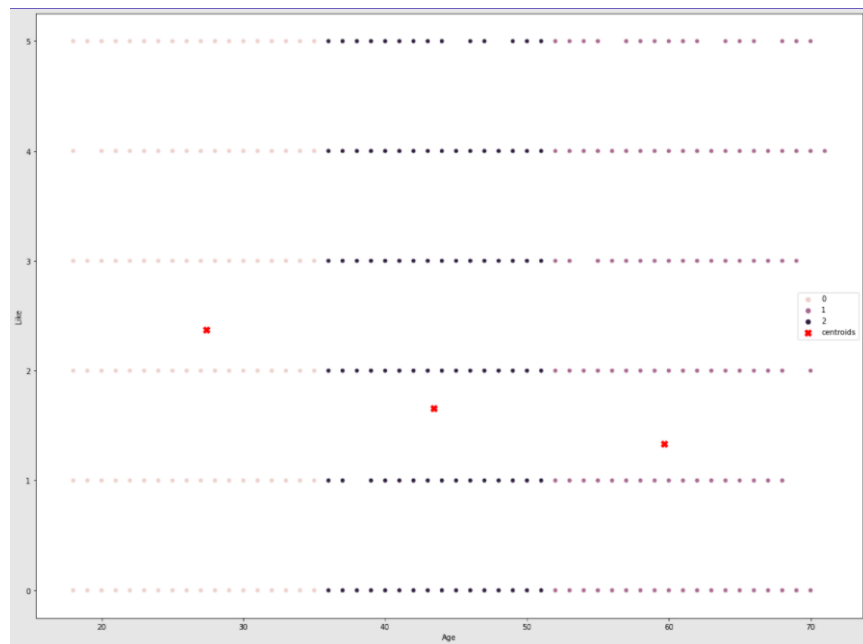




Fig 13: Clusters with age and Like features

### Improved" k-Means

Instead of randomly initializing starting points i.e. - segment representative, we would initialize with starting points which are evenly spread over whole data and they will better represent entire data otherwise if points are consumers being located very close to each other, solution will be stuck with the problem of local-optimum. Good representatives are close to their segment members; the total distance of all segment members to their representatives is small.

### Hard Competitive Learning

It minimizes the sum of distances from each consumer contained in the dataset to their representative (centroid). K means uses all consumers in the dataset at each iteration to determine new centroids. While hard competitive learning randomly picks one consumer & moves this one's closest segment representative small step into direction of randomly chosen consumer.

### Neural Gas & Topology representative networks

It is the variation of hard competitive learning. Here, not only the centroid is moved towards randomly chosen consumers instead also the 2nd closed centroid is moved toward randomly chosen consumers. In addition, Topology representative networks count how often each pair of segments representative is closest & second closest to a randomly chosen consumer.

### Self-Organizing Maps

Self-organizing feature maps also known as Kohonen maps. Self-organizing maps position segment representatives (centroids) on a regular grid, usually a rectangular or hexagonal grid. a single random consumer is selected from the data set, and the closest representative for this random consumer moves a small step in their direction.

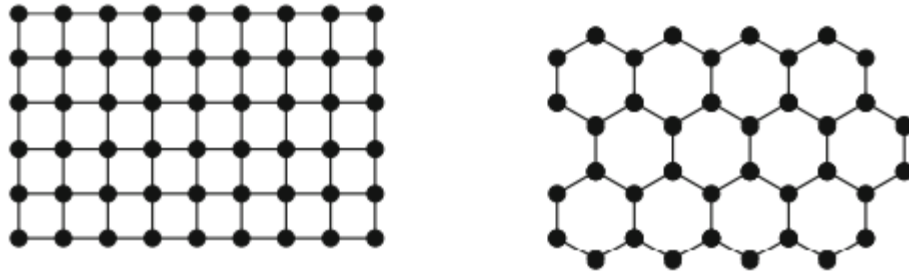


Fig 14: Grid structure of Kohonen maps

In addition, representatives which are direct grid neighbors of the closest representative move in the direction of the selected random consumer. Rather, the numbering aligns with the grid along which all segment representatives (centroids) are positioned. The price paid for this advantage is that the sum of distances between segment members and segment representatives can be larger than for other clustering algorithms.

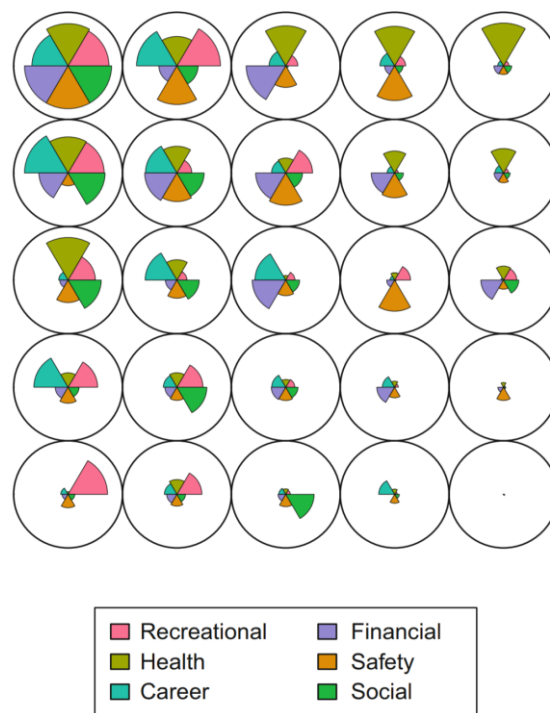


Fig 15: Example of Kohonen maps implementation

Each circle on the grid represents one market segment. Neighboring segments are more similar to one another than segments located far away from one another. Members of the segment in the top left corner take all six kinds of risks frequently. Members of the segment in the bottom right corner do not take any kind of risk ever. The market segments in-between display different risk taking tendencies. For example, members of the market segment located at the very center of the map take financial risks and career risks, but not recreational, health, safety and social risks.

## Hybrid Approaches

There are some advantages and disadvantages in using both hierarchical and partitioning algorithms.

Advantage of hierarchical – No. of market segments not needed to say in advance. Use of Dendrograms to see similarity.

Disadvantage of hierarchical – Use of margin memory. Interpreting dendrograms is difficult. Also the use of a large dataset won't go well with it.

Advantage of partitioning – Minimal memory required. Good for large datasets.

Disadvantages of partitioning – No. of segments needed to specify in advance. Data analysts cannot track changes in segment membership in solutions with different no. of segments.

First run a partitioning algorithm because it can handle data sets of any size. But the partitioning algorithm used initially does not generate the number of segments sought. Rather, a much larger number of segments is extracted. Then, the original data is discarded and only the centers of the resulting segments (centroids, representatives of each market segment) and segment sizes are retained, and used as input for the hierarchical cluster analysis. At this point, the data set is small enough for hierarchical algorithms, and the dendrogram can inform the decision on how many segments to extract.

## Two step clustering

The two steps consist of running a partitioning procedure followed by a hierarchical procedure. The procedure has been used in a wide variety of application areas, including internet access

types of mobile phone users (Okazaki 2006), segmenting potential nature-based tourists based on temporal factors (Tkaczynski et al. 2015), identifying and characterizing potential electric vehicle adopters (Mohamed et al. 2016), and segmenting travel related risks (Ritchie et al. 2017).

The exact number of clusters  $k$  in this first step is not crucial. For large empirical data sets much larger numbers of clusters can be extracted (100, 500 or 1000). The choice of the original number of clusters to extract is not crucial because the primary aim of the first step is to reduce the size of the data set by retaining only one representative member of each of the extracted clusters. Such an application of cluster methods is often also referred to as vector quantization.

### Bagged Clustering

It adds bootstrapping too in the above mentioned approach. Bootstrapping – By random drawing from a dataset with replacement. The process of extracting segments is repeated many times with randomly (bootstrap) drawn data (samples of dataset).

It only saves the cluster centroid resulting from repeated partitioning cluster analysis. These centroids serve as our dataset for 2nd step (Hierarchical) clustering.

Bagged clustering is suitable in the following circumstances (Dolnicar and Leisch 2004; Leisch 1998):

- If we suspect the existence of niche markets.
- If we fear that standard algorithms might get stuck in bad local solutions.
- If we prefer hierarchical clustering, but the data set is too large.

Chance of arriving at a good segmentation solution results from:

1. Drawing many bootstrap samples from the original data set.
2. Repeating the k-means analysis – or any other partitioning algorithm – many times to avoid a suboptimal initialization (the random choice of initial segment representatives).

3. Using only the centroids resulting from the k-means studies in the second (hierarchical) step of the analysis.
4. Using the deterministic hierarchical analysis in the final step.

## Model-Based Methods

Given that extracting market segments is an exploratory exercise, it is helpful to use a range of extraction methods to determine the most suitable approach for the data at hand. As opposed to distance-based clustering methods, model-based segment extraction methods do not use similarities or distances to assess which consumers should be assigned to the same market segment.

The true market segmentation solution – which is unknown – has the following two general properties:

1. Each market segment has a certain size.
2. If a consumer belongs to market segment A, that consumer will have characteristics which are specific to members of market segment A. These two properties are assumed to hold, but the exact nature of these properties – the sizes of these segments, and the values of the segment-specific characteristics – is not known in advance. Model-based methods use the empirical data to find those values for segment sizes and segment-specific characteristics that best reflect the data.

In model based approaches we see finite mixture models because the number of market segments is finite, and the overall model is a mixture of segment-specific models. It shows two main properties.

Property 1: (that each market segment has a certain size) implies that the segment membership  $z$  of a consumer is determined by the multinomial distribution with segment sizes

$$\pi: z \sim \text{Multinomial}(\pi).$$

Property 2: states that members of each market segment have segment-specific characteristics. These segment-specific characteristics are captured by the vector  $\theta$ , containing one value for each segment-specific characteristic. Function  $f()$ , together with  $\theta$ , captures how likely specific values  $y$  are to be observed in the empirical data, given that the consumer has segment membership  $z$ , and potentially given some additional pieces of information  $x$  for that consumer:  $f(y|x, \theta z)$ .

This leads to the following finite mixture model:

$$\sum_{h=1}^k \pi_h f(y|x, \theta_h), \pi_h > 0, \sum_{h=1}^k \pi_h = 1.$$

The values to be estimated – across all segments  $h$  ranging from 1 to  $k$  – consist of the segment sizes  $\pi$  (positive values summing to one), and the segment-specific characteristics  $\theta$ . Model based approaches are more probability based considering parameters of segment size and characteristics consumer's probability of getting fit into segment is derived and best solution is provided in end.

### Finite Mixtures of Regressions/classification

Finite mixtures of distributions are similar to distance-based clustering methods and – in many cases – result in similar solutions. Compared to hierarchical or partitioning clustering methods, mixture models sometimes produce more useful, and sometimes less useful solutions. Finite mixtures of regression models offer a completely different type of market segmentation analysis. As a consequence, finite mixture models can accommodate a wide range of different data characteristics: for metric data we can use mixtures of normal distributions, for binary data we can use mixtures of binary distributions. For nominal variables, we can use mixtures of multinomial distributions or multinomial logit models. For ordinal variables, several models can be used as the basis of mixtures. Ordinal variables are tricky because they are susceptible to containing response styles. To address this problem, we can use mixture models disentangling response style effects from content-specific responses while extracting market segments. In combination with conjoint analysis, mixture models allow to account for differences in preferences.

## Algorithms with Integrated Variable Selection

The filtering approach proposed by Steinley and Brusco (2008a) assesses the clusterability of single variables, and only includes variables above a certain threshold as segmentation variables. This approach outperforms a range of alternative variable selection methods (Steinley and Brusco 2008b), but requires metric variables. Variable selection for binary data is more challenging because single variables are not informative for clustering, making it impossible to pre-screen or pre-filter variables one by one. When the segmentation variables are binary, and redundant or noisy variables cannot be identified and removed during data pre-processing in Step 4, suitable segmentation variables need to be identified during segment extraction. Two such algorithms for binary segmentation variables: biclustering and the variable selection procedure for clustering binary data (VSBD).

## Biclustering Algorithms

Biclustering simultaneously clusters both consumers and variables. Biclustering algorithms exist for any kind of data, including metric and binary. A bicluster is defined for binary data as a set of observations with values of 1 for a subset of variables. Each row corresponds to a consumer, each column to a segmentation variable.

The starting point is a data matrix where each row represents one consumer and each column represents a binary segmentation variable:

**Step 1** First, rearrange rows (consumers) and columns (segmentation variables) of the data matrix in a way to create a rectangle with identical entries of 1s at the top left of the data matrix. The aim is for this rectangle to be as large as possible.

**Step 2** Second, assign the observations (consumers) falling into this rectangle to one bicluster, as illustrated by the gray shading in Fig. 7.35. The segmentation variables defining the rectangle are active variables (A) for this bicluster.

**Step 3** Remove from the data matrix the rows containing the consumers who have been assigned to the first bicluster. Once removed, repeat the procedure from step 1 until no more biclusters of sufficient size can be located.

This biclustering method has been proposed by Kaiser (2011) referring to it as a repeated Bimax algorithm because step 1 can be solved with the Bimax algorithm proposed by Prelic et al. (2006). The Bimax algorithm is computationally very efficient, and allows to identify the largest rectangle corresponding to the global optimum, rather than returning a local optimum as other segment extraction algorithms.

It has two advantages: No data transformation, Ability to capture niche markets. Biclustering methods, however, do not group all consumers. Rather, they select groups of similar consumers, and leave ungrouped consumers who do not fit into any of the groups.

```
from sklearn.cluster import SpectralBiclustering

bicluster = SpectralBiclustering(n_clusters = 10)

bicluster.fit(df)

from numpy import argsort

from matplotlib.pyplot import show, imshow, figure, subplot, subplot, supitle, tight_layout, xticks, xlabel

sns.scatterplot(data=df, x="yummy", y="cheap")

plt.scatter(bicluster.cluster_centers_[:,0], bicluster.cluster_centers_[:,1], marker="X", c="r",
s=80, label="centroids")
```

One constraint with biclustering in python is that, it facilitates only spectral cluster analysis and data needs to be compatible with it otherwise it won't fit well and will get wrong clusters.

### Variable Selection Procedure for Clustering Binary Data (VSBD)

In particular, the method assumes the presence of masking variables. They need to be identified and removed from the set of segmentation variables. Removing irrelevant variables helps to identify the correct segment structure, and eases interpretation.



Step 1 - Select only a subset of observations with size  $\phi \in (0, 1]$  times the size of the original data set. Brusco (2004) suggests using  $\phi = 1$  if the original data set contains less than 500 observations,  $0.2 \leq \phi \leq 0.3$  if the number of observations is between 500 and 2000 and  $\phi = 0.1$  if the number of observations is at least 2000.

Step 2 - For a given number of variables  $V$ , perform an exhaustive search for the set of  $V$  variables that leads to the smallest within-cluster sum-of-squares criterion. The value for  $V$  needs to be selected small for the exhaustive search to be computationally feasible. Brusco (2004) suggests using  $V = 4$ , but smaller or larger values may be required depending on the number of clusters  $k$ , and the number of variables  $p$ . The higher the number of clusters, the larger  $V$  should be to capture the more complex clustering structure. The higher  $p$ , the smaller  $V$  needs to be to make the exhaustive search computationally feasible.

Step 3 - Among the remaining variables, determine the variable leading to the smallest increase in the within-cluster sum-of-squares value if added to the set of segmentation variables.

Step 4 - Add this variable if the increase in within-cluster sum-of-squares is smaller than the threshold. The threshold is  $\delta$  times the number of observations in the subset divided by 4.  $\delta$  needs to be in  $[0, 1]$ . Brusco (2004) suggests a default  $\delta$  value of 0.5

### Variable Reduction: Factor-Cluster Analysis

More common is the case where factor-cluster analysis is used because the original number of segmentation variables is too high. According to the results from simulation studies by Dolnicar et al. (2014, 2016), a rule of thumb is that the number of consumers in a data set (sample size) should be at least 100 times the number of segmentation variables. This is not always easy to achieve, given that two thirds of applied market segmentation studies reviewed in Dolnicar (2002b) use between 10 and 22 variables. For 22 segmentation variables, the sample size should be at least 2200.

## Step 6: Profiling Segment

The profiling stage is the opportunity for all members of the segmentation team to inspect what characterizes each of the resulting market segments, and to select which segments to retain for the next step. Profiling is based on segmentation variables.

The aim of the profiling step is to get to know the market segments resulting from the extraction step. Profiling is only required when data-driven market segmentation is used. Profiling consists of characterizing the market segments individually, but also in comparison to the other market segments.

Good profiling is the basis for correct interpretation of the resulting segments. Correct interpretation, in turn, is critical to making good strategic marketing decisions. A good way to understand the defining characteristics of each segment is to produce a segment profile plot. The segment profile plot shows – for all segmentation variables – how each market segment differs from the overall sample.

	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Total
Rest and relax	83	96	89	82	98	96	90
Change of surroundings	27	82	73	82	87	77	67
Fun and entertainment	7	71	81	60	95	37	53
Free-and-easy-going	12	65	58	45	87	75	52
Not exceed planned budget	23	100	2	49	84	73	51
Life style of the local people	9	29	30	90	75	80	46
Good company	14	59	40	58	77	55	46
Excitement, a challenge	9	17	39	57	76	36	33
Maintain unspoilt surroundings	9	10	16	7	67	95	30
Cultural offers	4	2	5	96	62	38	28
Luxury / be spoilt	19	24	39	13	89	6	28
Unspoilt nature/natural landscape	10	10	13	15	69	64	26
Intense experience of nature	6	8	9	21	50	58	22
Cosiness/familiar atmosphere	11	24	12	7	49	25	19
Entertainment facilities	5	25	30	14	53	6	19
Not care about prices	8	7	43	19	29	10	18
Everything organised	7	21	15	12	46	9	16
Do sports	8	12	13	10	46	7	14
Health and beauty	5	8	10	8	49	16	12
Realise creativity	2	2	3	8	29	14	8

Fig 16: List of criterias for profiling segments

## Step 7: Describing Segments

Segment profiling is about understanding differences in segmentation variables across market segments. Segmentation variables are chosen early in the market segmentation analysis process: conceptually in Step 2 (specifying the ideal target segment), and empirically in Step 3 (collecting data). Segmentation variables form the basis for extracting market segments from empirical data. Step 7 (describing segments) is similar to the profiling step. The only difference is that the variables being inspected have not been used to extract market segments. Rather, in Step 7 market segments are described using additional information available about segment members. If committing to a target segment is like a marriage, profiling and describing market segments is like going on a number of dates to get to know the potential spouse as well as possible in an attempt to give the marriage the best possible chance, and avoid nasty surprises down the track.

### Using Visualizations to Describe Market Segments

We discuss two basic approaches suitable for nominal and ordinal descriptor variables (such as gender, level of education, country of origin), or metric descriptor variables (such as age, number of nights at the tourist destinations, money spent on accommodation). Using graphical statistics to describe market segments has two key advantages: it simplifies the interpretation of results for both the data analyst and the user, and integrates information on the statistical significance of differences, thus avoiding the over-interpretation of insignificant differences.

### Predicting Segments from Descriptor Variables

Another way of learning about market segments is to try to predict segment membership from descriptor variables. To achieve this, we use a regression model with the segment membership as categorical dependent variable, and descriptor variables as independent variables. We can use methods developed in statistics for classification, and methods developed in machine learning for supervised learning.

Regression analysis is the basis of prediction models. Regression analysis assumes that a dependent variable  $y$  can be predicted using independent variables or regressors  $x_1, \dots, x_p$ :

$$y \approx f(x_1, \dots, x_p).$$

Regression models differ with respect to the function  $f(\cdot)$ , the distribution assumed for  $y$ , and the deviations between  $y$  and  $f(x_1, \dots, x_p)$ .

$$y = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p + \epsilon,$$

### Binary Logistic Regression

We can formulate a regression model for binary data using generalized linear models by assuming that  $f(y|\mu)$  is the Bernoulli distribution with success probability  $\mu$ , and by choosing the logit link that maps the success probability  $\mu \in (0, 1)$  onto  $(-\infty, \infty)$  by

$$g(\mu) = \eta = \log \left( \frac{\mu}{1 - \mu} \right).$$

### Multinomial Logistic Regression

Multinomial logistic regression can fit a model that predicts each segment simultaneously. Because segment extraction typically results in more than two market segments, the dependent variable  $y$  is not binary. Rather, it is categorical and assumed to follow a multinomial distribution with the logistic function as link function.

### Tree-Based Methods

Classification and regression trees (CARTs; Breiman et al. 1984) are an alternative modeling approach for predicting a binary or categorical dependent variable given a set of independent variables.

The advantages of classification and regression trees are their ability to perform variable selection, ease of interpretation supported by visualizations, and the straight-forward incorporation of interaction effects. Classification and regression trees work well with a large number of independent variables. The disadvantage is that results are frequently unstable. Small changes in the data can lead to completely different trees.

## Step 8: Selecting Target Segment:

After the implementation of algorithms or methods for clustering or grouping the consumers import step comes of targeting specific segments to work on depending upon their characteristics. These characteristics include geographic locations, cultures, psychographics properties of people in region, Behavioral characteristics feedback received from consumers, etc. Market segmentation is a strategic marketing tool. The selection of one or more target segments is a long term decision significantly

affecting the future performance of an organization. This is when the flirting and dating is over; it's time to buy a ring, pop the question, and commit

### Need and purpose of target segmentation:

A particular market requires particular improvements in terms of service and product. After extracting the optimal number of segments we decide target segments among them to focus on. These segments will be those where collective action making improvement in product and services will take place. To grow business sales we need to see consumer's tendencies in segments which we are specialized in facilitating. This helps us to focus on specific groups and make strategies for improving consumer satisfaction with profitable business returns.

\*See readme file in github link.

## Step 9: Marketing Mix:

After segmenting the market, finding the target segment and positioning itself, each company needs to come up with an offer. The 5 P's used by McDonald are:

1. Product
2. Place
3. Price
4. Place
5. Promotion

### 1. Product:

Product is the physical product or service offered to the consumer. Product includes certain aspects such as packaging, guarantee, looks etc. This includes both the tangible and the non-tangible aspects of the product and service.

How should the company design, manufacture the product so that it enhances the customer experience?



Fig 17: Customizing marketing Mix

McDonald's has intentionally kept its product depth and product width limited. McDonald's studied the behavior of the Indian customer and provided a totally different menu as compared to its International offering. It dropped ham, beef and mutton burgers from the menu. McDonald's success worldwide has been attributed to the "Think Global, Act Local and Sell like a Retailer" philosophy. McDonald's followed this international mantra while opening doors to the Indian subcontinent. With respect to the cultural and traditional sentiments, not only did McDonald's not serve its most popular product The BIG MAC (a beef burger) but also developed an egg-less mayonnaise for the first time in the worldwide system.

To suit the Indian palette, the McAloo Tikki burger, Veg. Pizza McPuff and Chicken McGrill burger were among other offerings that were formulated and introduced using spices favored by Indians. Furthermore, each restaurant kitchen was designed to maintain separate Vegetarian and Non-Vegetarian food counters.

Reasons for introducing the products

- 1) Beef which was a taboo in the Indian market was planned to be replaced by filling of Aloo Tikki to match up with the Indian culture.

2)Salad sandwiches were introduced targeting the people who are more health conscious about health.

3)The introduction of Jain salad in the outlet keeps the Jain people's rituals of not cutting ginger, onion, potatoes etc.

4) Seeing the Indian mentality of having wheat chapatis led to the idea to introduce paneer salsa wrap and chicken Mexican wrap.

5)Filet-o-fish was introduced keeping in mind the demand of the sea food lovers having no competitors in the segment before.

## 2. Place:

The place mainly consists of distribution channels and outlets of the company. It is considered very important because the product must be available to the customer at the right place, at the right time and in the right quantity. In the U.S.A nearly 50% of outlets are situated within the distance of 3 minutes.

There is a certain degree of fun and happiness that McDonald's provides to its customers. It provides a value position based on the needs of the customer. McDonald's offers a proper hygienic atmosphere, good ambience and better services.

Now McDonald's have also started offering internet facilities at their outlets, along with a music system through radio, not the normal music but the music which is preferred by the younger generation in order to attract them.

There are also games for children, one example is air hockey. Children play games till their parents spend quality time in McDonald's.

## 3. Price:

Pricing includes the list price, the discount functions available, the financing options available etc. It should also take into consideration the probable reaction from the competitor to the pricing strategy. This is the most important part of the marketing mix as this is the only part which generates revenue. All the other three are expenses incurred. The price must take into consideration the appropriate demand-supply equation.

McDonald's came up with a very grasping punch line "Aap ke zamane mein ,baap ke zamane ke daam". This pricing strategy was founded to attract middle class and lower class people and the effect can clearly be seen in the consumer base that McDonald's has now.

McDonald's has certain value pricing and bundling strategies such as happy meal, combo meal, family meal etc. to increase overall sales volumes.

McDonald's found success in its strategy of Branded Affordability and introduced the Happy Price Menu' of Rs.20/-. Engaging and Memorable campaigns were created to establish the Branded Affordability communication.

#### 4. People:

McDonald's understands the value of both its employees and its customers. It understands the fact that a happy employee can serve well and result in a happy customer.

McDonald continuously does Internal Marketing. This is important as it must precede external marketing. This includes hiring, training and motivating able employees. This way they serve customers well and the final result is a happy customer.

The level of importance has changed to be in the following order (the more important people are at the top):

- 1)Customers
- 2)Front line employees
- 3) Middle level managers
- 4)Front line managers

The punch line:

"I'm loving it" is an attempt to show that the employees are loving their work at McDonald's and will love to serve the customers.

#### 5. Promotion:

The promotional activities adopted by McDonald helps to communicate efficiently with the target customers. The diagram gives ideas about the promotion strategy of McDonald's Application of above mentioned Communication Mix describes the cost that is feasible as per the consumers.



McDonald's corporate used advertising, personal selling, sales promotion, public relations, and direct marketing and became the world's largest leading Burger Empire. These five promotion tools are used by McDonald's to integrate marketing communication programs which allows McDonald's to access the communication channels clearly, consistently and easily transfers messages and products to the target audiences.

## SETTING THE PROMOTION MIX

### 1) ADVERTISING:

An Advertisement is targeted to attract the masses it reaches to a large number of people at a time. Advertising is one of the most important tools for promotion which has various ways of advertisement in that advertising through billboards and media are often used by any of the business enterprises. Consumers mostly perceive goods which are advertised goods, as they assume it is more rightful.

McDonald's also holds the hand of Advertising. There are three main objectives of advertising for McDonald's are to make people aware of an item, feel positive about it and remember it. The right message has to be communicated to the right people through the right media. McDonald's does its promotion through television, hoardings and bus shelters.

They use print ads and the television programs are also an important marketing medium for promotion.

### 2) PERSONAL SELLING:

Personal selling is the most effective tool for building buyers preference, convenience and actions. Personal interaction allows knowing feedback and adjustments if required. If the organization has a good Relationship with Buyers they are more attentive towards personal selling.

In personal selling McDonald's employees working in different outlets are the best example of personal interaction, the employees are directly serving the customers so, and the face to face communication is easily possible. In the McDonald's outlet there are such staff which are appointed for personal selling they are the one who perform the activities regarding selling goods to customers.

### 3) PUBLIC RELATIONS:

Highly credible; Very believable; Many forms: news stories, news features. events and sponsorships, etc.; Reaches many prospects missed by means of other forms of promotion: Dramatizes company or product; Often the most under used element in the promotional mix, Relatively inexpensive (certainly not 'free' as many people think--there are costs involved)

Public Relations are also an important part of the McDonald's marketing strategy. The restaurant employees play a huge role in interacting with the public. On a day-to-day basis the employees commit themselves to customers and the customers' feelings toward the brand. McDonald's feels that before they communicate with their customers they need to be aware of what their competitors are communicating, so they can create a beneficial difference between themselves and the competitors.

#### 4) **DIRECT MARKETING:**

Many forms: Telephone marketing, direct mail, online marketing, etc.: Four distinctive characteristics: Nonpublic, Immediate, Customized, Interactive; Well suited to highly-targeted marketing efforts.

Direct marketing is also one of the efficient tools for promotion. The McDonald's uses tool in the home delivery services in which they directly serve the order to their home. Also they have a websites which are more in preference for direct marketing in that they usually mentioned all the new offers along with the contact number of your nearby outlets.

#### 5) **SALES PROMOTION:**

Sales promotion activity consists of promoting the business unit through organizing various contests, programs, functions, distribution of free discounts coupons etc that attracts attention of the customers. Also offers strong purchase incentives, dramatizes offers, boosts sagging sales Stimulates quick response; Short-lived: Not effective at building long-term brand preferences.

McDonald's organizes several sales promoting contests and programmes in different retail markets and outlets in which they distribute free discounts coupons. The statue of Mascot McDonald's is always there for any occasions that are also one of the logos of McDonald's.

Github link - <https://github.com/Yogirajdas/Market-segmentation-Feynn-lab-internship-Team-Varad-study-task->

## **Conclusion**

After the market segmentation analysis is completed, and all strategic and tactical marketing activities have been undertaken, the success of the market segmentation strategy has to be evaluated, and the market must be carefully monitored on a continuous basis. It is possible, for example, that members of segment 3 start earning more money and the MCSUPERBUDGET line is no longer suitable for them. Changes can occur within existing market segments. But changes can also occur in the larger marketplace, for example, if new competitors enter the market. All potential sources of change have to be monitored in order to detect changes which

require McDonald's management to adjust their strategic or tactical marketing in view of new market circumstances.