# A Summary On Market Segmentation

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# Market Segmentation :

Market segmentation is a vital tool for marketing managers in selecting target markets and designing appropriate marketing mixes. It is a cornerstone of strategic marketing and essential for success, with the most successful firms leveraging segmentation to drive their businesses. Market segmentation involves viewing a heterogeneous market as several smaller, homogeneous markets.

This concept balances the views of unique individual objects and a homogeneous population. An effective segmentation means consumers within the same segment are similar in critical characteristics, while those in different segments are distinct. These critical characteristics, known as segmentation criteria, can be single traits like age or gender, or a combination of traits such as benefits sought or expenditure patterns.

An example illustrates three market segments based on desired mobile phone features and price willingness: one segment desires many features and is willing to pay more, another prefers simple, cheap phones, and a third wants mid-range phones at mid-range prices.

# Steps in Market Segmentation :

## Step-1: Implications of Committing to Market Segmentation

Before implementing market segmentation , one need to understand the strategy i.e. which should be in long term only. It includes performing the research, fielding surveys, and focus groups, designing multiple packages, and designing multiple advertisements and communication messages .

Before Segmenting there is another key point which need to be implemented is using the scheme has to be more profitable than marketing without it, net of the expense of developing and using the scheme itself and the decision to investigate the potential of a market segmentation strategy must be made at the highest executive level.

Here the implementation barriers includes:

- Lack of leadership(commitment and involvement in the market segmentation process by senior leadership undermines the success of market segmentation )
- Organisational culture (. Lack of market or consumer orientation, resistance to change and new ideas )
- Lack of training .
- Lack of a formal marketing function or at least a qualified marketing expert in the organisation.
- Objective restrictions faced by the organisation.
- Limited Resources.

Above all dedication , patience and willingness to appreciate problems need to be encountered ,followed by some of the checklist , which will help to know finest of market segmentation analysis.

## Step-2 Segment Evaluation Criteria :

The organisation has to make a major contribution to market segmentation analysis . While this contribution is conceptual in nature, it guides many steps, such as -data collection and selecting one or more target segments.

The organisation must determine two sets of segment evaluation criteria. One set of evaluation criteria can be referred to as **knock-out criteria**, which is essential, non-negotiable features of segments that the organisation 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.

**Knock-Out Criteria:**

It is used to determine if market segments resulting from the market segmentation analysis qualify to be assessed using segment attractiveness criteria which includes Substantiality, measurability and accessibility .

Other criteria are as follows , the segment must be

- Homogeneous
- Distinct
- Large
- Identifiable & Matching strength of organisation.

**Attractiveness Criteria :**

- Attractiveness criteria are not binary in nature and Segments are not assessed as either complying or not complying with attractiveness criteria.
- It can be more or less attractive with respect to a specific criterion.
- The attractiveness across all criteria determines whether a market segment is selected as a target segment.

**Implementing a Structured Process :**

The segment attractiveness and organisational competitiveness values are determined by the segmentation team. This is necessary because there is no standard set of criteria that could be used by all organisations.

There must be use no more than six factors as the basis for calculating these criteria with team of 2 or 3 members ,which propose at least two good reasons to include in this process representatives from a wide range of organisational units .

knowing precisely what it is about market segments that matters to the organisation ensures that all of this information is captured when collecting data ,It also makes the task of selecting a target segment which will be much easier because the groundwork is laid before the actual segments are on the table.

At the end team should have list of attractiveness criteria, which help to know how important it is to the organisation compared to the other criteria followed by some checklist.

# Step 3: Collecting Data:

Empirical data forms the basis of both commonsense and data-driven market segmentation. Empirical data is used to identify or create market segments and later in the process describe these segments in detail.

Segmentation variable to refer to the variable in the empirical data used in commonsense segmentation to split the sample into market segments. In commonsense segmentation, the segmentation variable is typically one single characteristic of the consumers in the sample, Where as descriptor variables are used to describe the segments in detail.

Data-driven market segmentation is based on multiple segmentation variables, identifying naturally existing or artificially created segments useful to an organization. Data quality is crucial for assigning each person to the correct market segment and accurately describing the segments. Good market segmentation analysis requires good empirical data from survey studies, observations, scanner data, and experimental studies. Optimally, data should reflect consumer behaviour, as survey data can be unreliable in reflecting socially desirable behaviour. A range of possible sources should be explored, with the source that delivers data most closely reflecting actual consumer behaviour being preferable.

## Segmentation Criteria:

Long before segments are extracted, and data for segment extraction is collected, the organisation must make an important decision, it must choose which segmentation criterion to use . segmentation variable refers to one measured value and segmentation criterion relates to the nature of the information used for market segmentation.

## Geographic Segmentation :

Geographic information is the original segmentation criterion used for market segmentation, typically focusing on a consumer's location of residence. This approach is often the most appropriate for targeting different geographic segments, such as attracting tourists from neighbouring countries or promoting products online.

The key advantage of geographic segmentation is that each consumer can be easily assigned to a geographic unit, allowing marketers to target communication messages and select communication channels. However, living in the same country or area does not necessarily

mean people share other characteristics relevant to marketers, such as product preferences or preferences.

Despite its shortcomings, the location aspect has seen a revival in international market segmentation studies, aiming to extract market segments across geographic boundaries. This approach is challenging due to the need for meaningful segmentation variables and potential biases from respondents from different cultural backgrounds.

**Socio-Demographic Segmentation:**

Socio-demographic segmentation criteria, such as age, gender, income, and education, can be useful in certain industries like luxury goods, cosmetics, baby products, retirement villages, and tourism resort products. However, they may not provide sufficient market insight for optimal segmentation decisions.

Demographics explain about 5% of consumer behaviour variance, but values, tastes, and preferences are more influential in consumers' buying decisions, suggesting that values, tastes, and preferences are more useful for market segmentation.

**Psychographic Segmentation :**

Psychographic segmentation is a method where people are grouped based on psychological criteria, such as beliefs, interests, preferences, aspirations, or benefits sought when purchasing a product. Benefit and lifestyle segmentation are popular approaches, but psychographic criteria are more complex than geographic or socio-demographic criteria.

Most studies use multiple segmentation variables, such as travel motives and perceived risks. The psychographic approach is more reflective of underlying reasons for consumer behaviour, but has limitations such as increased complexity in determining segment memberships and the power of the method relying on the reliability and validity of empirical measures.

**Behavioural Segmentation :**

Segment extraction can be achieved by examining similarities in behaviour or reported behaviour, such as prior experience, frequency of purchase, amount spent, and information search behaviour. Behavioural approaches use actual behaviour as the basis for segment extraction, grouping people by the most significant similarity.

Examples include Tsai and Chiu using actual consumer expenses and Heilman and Bowman using purchase data across product categories. However, behavioural data may not always be available, especially for potential customers who have not previously purchased the product.

**Data from Survey Studies :**

Most market segmentation analyses are based on survey data. Survey data is cheap and easy to collect, making it a feasible approach for any organisation.

**Choice of Variables :**

The quality of the solution in market segmentation greatly depends on the meticulous selection of segmentation factors. All pertinent factors must be included in data-driven segmentation while excluding extraneous ones, which can weary the reader and make the problem more multidimensional.

Often referred to as masking or noisy factors, these variables take focus away from important details and make it more difficult for the segmentation algorithm to get the right answer. It is advised to avoid this by making sure all of your questions are pertinent and essential, and to avoid asking the same ones twice.

In market segmentation analysis, redundant items pose a special challenge since they obstruct the majority of segment extraction algorithms' capacity to get the right answers. For a survey to be effective, exploratory or qualitative research is usually necessary to gain understanding of people's beliefs.

**Response Options & Styles :**

Survey response options determine data scale for analysis, with binary or metric data being more suitable for segmentation analysis due to distance measures. Metric data allows for any statistical procedure, including distance measurement.

The most common response option is a limited number of ordered answer options larger than two. Binary response options outperform ordinal answer options, especially when formulated level-free. Response styles in survey data can affect segmentation results, necessitating additional analyses or removal of respondents affected by such response styles.

**Sample Size:**

Market segmentation analysis requires a large sample size to accurately identify market segments. Studies suggest a sample size of at least 2p for goodness-of-fit testing and 10 times the number of segmentation variables and segments in the data. Dolnicar et al. (2014) found that increasing sample size improves segment accuracy, but the biggest improvement was achieved with very small samples.

The study emphasizes the importance of collecting high-quality unbiased data for market segmentation analysis, including all necessary items, no unnecessary items, correlated items, high-quality responses, binary or metric responses, and a sufficient sample size.

**Data from Internal Sources :**

Organizations are increasingly using internal data for market segmentation analysis, such as scanner data, booking data, and online purchase data. These data represent actual consumer behaviour, avoiding imperfect memory and response biases.

They are usually automatically generated and require no extra effort to collect. However, the danger is that internal data may be systematically biased, missing information about future customers who may differ from current customers in their consumption patterns.

**Data from Experimental Studies :**

Experimental data, derived from field or laboratory experiments, can be used to analyze market segmentation. It can be used to determine consumer response to advertisements or to conduct choice experiments or conjoint analyses.

These studies present consumers with stimuli with specific product attributes, allowing them to indicate their preferences and determine the impact of each attribute on their choice.

## Step-4 A First Glimpse at the Data :

After collecting the data, exploratory data analysis is conducted to clean and preprocess it, if necessary, and to provide guidance on the most suitable algorithm for extracting meaningful market segments. This exploration involves identifying the measurement levels of variables, investigating the distributions of each variable, and assessing dependency structures between variables.

Additionally, the data may need preprocessing to be used as input for segmentation algorithms. Results from this exploration stage offer insights into the suitability of different segmentation methods for extracting market segments. For instance, in an illustrative travel motives dataset of 1000 Australian residents' last vacations, consisting of 20 travel motives, gender distribution reveals responses from 488 women and 512 men. Age ranges from 18 to 105 years old, with median age falling between 32 and 57 years old.

The dataset includes two income variables, one of which has fewer categories due to merging high-income categories. Missing data, coded as NAs in R, are present in both income variables, with 66 respondents not providing income information.

**Steps for Data Cleaning and Preparation**

- Verify that all values are recorded correctly.
- Ensure that categorical variables use consistent labels.
- Ensure values fall within plausible ranges (e.g., Age between 0 and 110).
- Confirm categorical variables contain only permissible values (e.g., Gender should only be "female" or "male" unless a third option was provided).
- Re-order the levels of categorical variables like Income2, which may be sorted alphabetically by default in R:
- Copy column to helper variable.
- Store levels and find correct order.
- Convert to an ordered factor.
- Cross-tabulate original and new versions of the variable to ensure accurate transformation.
- Overwrite the original column if correct.
- Keep all data transformation code for reproducibility.
- Save the cleaned data frame using save() and reload with load () for future sessions.
- These steps ensure a clean and reproducible data set ready for analysis.

## Steps for Data Cleaning and Preparation

- Use **`summary()`** in R to obtain a range, quartiles, mean, and frequency counts for variables.
- Check for the number of missing values for each variable.
- **Histograms**: Visualize the distribution of numeric variables using **`histogram()`** from the lattice package.
  Example**: `histogram(~ Age, data = vac)`**
- **Adjusting Bins**: Specify the number of bins to gain deeper insights.
  Example: **`histogram(~ Age, data = vac, breaks = 50, type = "density")`**
- **Boxplots**: Use box-and-whisker plots to visualize unimodal distributions and identify outliers
  Example: **`boxplot(vac$Age, horizontal = TRUE, xlab = "Age")`**
- Use histograms to check if distributions are unimodal, symmetric, or skewed.
- Use boxplots to summarize data into minimum, first quartile, median, third quartile, and maximum.
- Recognize outliers and ensure they are represented correctly in visualizations.
- Example: In R, whiskers in boxplots are limited to 1.5 times the interquartile range to depict outliers clearly.
- Use bar plots for frequency counts of categorical variables.
- Use mosaic plots for associations between multiple categorical variables.
- Calculate and visualize the percentage of "yes" responses for travel motives.
- The dot chart helps identify the varying importance of different travel motives among respondents.
- These steps ensure a comprehensive descriptive analysis of the data, providing insights into the distribution, central tendencies, and variability of the data, as well as the relationships between different variables.

## Pre-processing Procedures for Categorical Variables

- Combine levels of categorical variables when original categories are too numerous.
- Merge higher income categories into a single category for a more balanced distribution:
- **Ordinal Data**: Convert to numeric if distances between scale points are approximately equal.
- **Likert Scales**: Treat as numeric if equal distances can be justified, but be cautious of response styles.
- Convert categorical data to binary numeric values (0 and 1).
  Example: Convert travel motives from "yes"/"no" to 1/0:
  - **R**
  - **`vacmot <- (vac[, 13:32] == "yes") + 0`**
- Use pre-processed data matrices for further analysis.
  Example:
  - **R**
  - **`data("vacmot", package = "flexclust")`**
- These steps ensure categorical variables are pre-processed effectively for further analysis.

## Standardizing Numeric Variables

- Variables with different ranges can disproportionately affect distance-based segmentation methods.
  Example: A binary variable (0 or 1) vs. a dollar expenditure variable (0 to $1000).

- To balance the influence of variables by putting them on a common scale.
- Ensures that all variables contribute equally to the segmentation process.
- **Steps**:
- Subtract the mean of the variable.
- Divide by the standard deviation.
- **R Implementation**:

```
R
vacmot.scaled <- scale(vacmot)
```

- When outliers are present, use robust estimates like the median and interquartile range (IQR) instead of mean and standard deviation for standardization.
- These steps ensure numeric variables are standardized, balancing their influence on segmentation results.

## Principal Components Analysis (PCA)

1. **Purpose**:
   - PCA transforms a multivariate dataset into a new set of variables called principal components, which are uncorrelated and ordered by the amount of variability they capture.
   - The first principal component captures the most variance, followed by the second, and so on.
2. **Process**:
   - PCA operates on the covariance or correlation matrix of numeric variables.
   - Use the correlation matrix if variables have different scales.
   - Typically used to reduce dimensionality for visualization.
3. **Example in R**:
   - Generate PCA: `vacmot.pca <- prcomp(vacmot)`
   - Inspect results: `print(vacmot.pca)`
4. **Interpreting Results**:
   - **Standard Deviations**: Indicates the importance of each principal component.
   - **Rotation Matrix**: Shows how original variables contribute to each principal component.
5. **Further Analysis**:
   - Use `summary(vacmot.pca)` to get the importance of components.
6. **Visualization**:
   - Plot using principal components 2 and 3 for clearer differentiation:
7. **Reducing Dimensionality**:
   - Using all principal components keeps the data intact but viewed from a different angle.
   - Using a subset of principal components can be problematic for segmentation.
   - PCA can help identify and remove redundant variables without losing original data characteristics.

PCA is a valuable tool for data exploration, dimensionality reduction, and identifying correlations among variables, but caution is advised when using it to reduce variables for segmentation.

## Step-8
## The Targeting Decision:

In Step 8 of the targeting decision process, after global market segmentation and detailed segment profiling, the focus shifts to selecting the target segment(s). This decision is critical, akin to making a long-term commitment.

The team builds on previously agreed knock-out criteria and attractiveness factors. Ideally, segments still under consideration already meet these criteria, but it's essential to double-check. Then, the remaining segments' attractiveness and the organization's competitiveness for them are evaluated.

Two main questions guide this evaluation: which segment(s) does the organization most desire to target and commit to, and how likely is it for each segment to choose the organization over competitors and commit to it, Answering these questions drives the selection of the target segment(s), marking a significant milestone in strategic marketing planning.

## Market Segmentation Evaluation :

In the process of market segment evaluation, various decision matrices are commonly used to visualize both the relative attractiveness of segments and the organization's competitiveness within each segment. These matrices, known by different names like the Boston matrix or General Electric/McKinsey matrix, aim to facilitate the comparison of alternative market segments for targeting. The selection of a specific matrix variation is left to the discretion of the segmentation team.

Typically, these matrices plot segment attractiveness against organizational competitiveness, akin to evaluating whether one would want to marry a person (segment attractiveness) and whether that person would want to marry them (organizational competitiveness). Using R, a generic segment evaluation plot can be created, with attractiveness to the organization on the y-axis and attractiveness of the segment on the x-axis, represented by circles whose size may reflect additional criteria like contribution to turnover or loyalty.

The determination of segment attractiveness values crucially relies on previously specified criteria and their associated weights, as outlined in Step 2 of the segmentation analysis. Each segment's attractiveness value is computed by multiplying the weight of each attractiveness criterion with its assigned value for that segment, derived from profiling and description efforts in previous steps. Similarly, relative organizational competitiveness is assessed based on criteria like product attractiveness, pricing, distribution channels, and brand image.

Once plotted, the segment evaluation plot provides a visual aid for discussions within the segmentation team. Segments may be eliminated based on low attractiveness or organizational fit, despite high profit potential. For instance, Segment 5 might be highly attractive but less favorable towards the organization, making successful catering unlikely at present. Segment 8 could be a strong match in terms of mutual attractiveness but with lower profit potential. Segment 2, while not as attractive as Segment 8, might be a more feasible option due to its balance of organizational attractiveness and profit potential.

In R, recreating the plot involves organizing segment evaluation data into matrices and vectors, and then using the appropriate functions to generate the visualization, considering additional factors such as profitability for bubble size. Overall, this approach offers a structured method for selecting target segments, integrating both quantitative and qualitative assessments.

## Step-9 Customising the Marketing Mix: Implications for Marketing Mix Decisions:

Market segmentation is not a standalone strategy but rather a component integrated with other strategic aspects of marketing, notably positioning and competition. The segmentation-targeting-positioning (STP) approach frames segmentation as the initial step, followed by targeting and then positioning. However, the process isn't strictly linear, and adjustments may be needed between segmentation and targeting before committing to specific segments.

Once target segments are identified, they must align with other strategic elements, influencing the development of the marketing mix. Traditionally represented by the 4Ps model (Product, Price, Place, Promotion), the marketing mix must be thoroughly reviewed and customized for each target segment. This customization may involve designing new products, adjusting pricing strategies, selecting appropriate distribution channels, and crafting communication messages tailored to the segment's preferences.

Organizations may structure their segmentation analysis around one of the 4Ps to inform specific marketing decisions. For instance, if pricing decisions are the focus, segmentation variables like price sensitivity and deal proneness may be prioritized. Alternatively, advertising decisions may rely on variables such as benefits sought or lifestyle segmentation. Similarly, distribution decisions could be informed by variables like store loyalty and benefits sought when selecting a store.

While segmentation analysis isn't always conducted with a single P in mind, insights gleaned from detailed segment descriptions guide the organization in adapting the marketing mix to effectively serve the chosen target segment. This ensures that marketing efforts are finely tuned to meet the unique needs and preferences of each segment, maximizing the benefits of market segmentation strategy.

## Product & Price:

In marketing, the product dimension involves decisions regarding product specifications tailored to customer needs, such as modifying existing products, naming, packaging, warranties, and after-sales support services. For instance, targeting a specific market segment may necessitate the development of new products or the adaptation of existing ones to better cater to segment preferences.

For example, if a destination targets a segment that enjoys visiting museums, monuments, and gardens, product measures could include creating a "MUSEUMS, MONUMENTS & MUCH, MUCH MORE" product with an activities pass to help segment members locate and access activities of interest. Another option could involve enhancing the destination's gardens to make them a more attractive feature.

In contrast, the price dimension involves decisions like setting product prices and offering discounts. Analyzing segment spending patterns can guide pricing strategies. For instance, if a destination targets a segment with higher vacation expenditures, it may not need to offer discounts on premium products. Instead, there could be potential to charge premium prices for tailored offerings.

For example, segment 3 tourists in the Australian vacation activities dataset spend more per person per day compared to other tourists, suggesting potential for premium pricing strategies. This insight informs the destination's marketing approach, illustrating how understanding segment spending behaviours can optimize pricing decisions to maximize returns.

## Place:

In the marketing mix, the place dimension focuses on distributing the product to customers effectively. Key decisions include determining whether the product should be available for purchase online, offline, or both, and whether the manufacturer should sell directly to customers or use intermediaries like wholesalers or retailers.

For instance, in the context of segment 3 tourists at a destination with a rich cultural heritage, understanding their booking preferences for accommodation provides valuable insights. By knowing how segment 3 members typically book their accommodation, the destination can ensure that its "MUSEUMS, MONUMENTS & MUCH, MUCH MORE" product is accessible through these preferred distribution channels.

To visualize segment 3's booking behavior, the propBarchart function from the flexclust package can be utilized. By specifying the relevant columns related to booking behavior in the dataset and segment membership, the function generates a bar chart illustrating the percentage of segment 3 tourists using different booking avenues.

For instance, the resulting plot might indicate that segment 3 tourists tend to book hotels online more frequently than the average tourist. This insight informs the place dimension of the marketing mix, suggesting the importance of providing an online booking option for accommodation to cater to segment 3's preferences. Collecting additional information on their booking behavior for other products and services can further refine the understanding of segment 3's preferences and inform distribution strategies accordingly.

## Promotion:

In the promotion dimension of the marketing mix, typical decisions involve developing an advertising message that resonates with the target market and determining the most effective communication channels. Other tools in this category include public relations, personal selling, and sponsorship.

For segment 3 tourists, understanding the best information sources for reaching them is crucial to inform them about the "MUSEUMS, MONUMENTS & MUCH, MUCH MORE" product. By comparing their information sources and TV channel preferences with those of other tourists, insights can be gained to tailor the promotion component of the marketing mix accordingly.

The propBarchart function can be used to visualize the comparison of information sources used by segment 3 tourists for choosing a destination for their last domestic holiday. For example, Fig. 11.4 might reveal that segment 3 members rely more on information from tourist centers compared to other tourists. This insight suggests the importance of providing information packs about the product in both hard copy at local tourist information centers and online on their websites.

Similarly, the mosaic plot in Fig. 11.5 illustrates TV channel preferences of segment 3 tourists compared to others. For instance, if segment 3 members show a preference for Channel 7, the destination can incorporate this insight into its media plan to ensure targeted communication of the product through this channel.

Overall, these analyses enable marketers to tailor promotional strategies to effectively reach and engage with segment 3 tourists, maximizing the exposure and appeal of the "MUSEUMS, MONUMENTS & MUCH, MUCH MORE" product to this specific segment.