

# Market Segmentation

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## Step 1: Deciding (not) to Segment

### 1.1 Implications of Committing to Market Segmentation

- **Long-Term Commitment:** Market segmentation demands a long-term commitment and substantial investment.
- **Cost Considerations:** It involves costs for research, surveys, focus groups, and multiple product designs and marketing messages. Benefits must outweigh these costs.
- **Required Changes:** Segmentation may require significant changes in products, pricing, distribution, marketing, and organizational structure.
- **Strategic Structure:** Organizations should structure business units around market segments rather than products to better address each segment's needs.
- **Executive Decision:** The decision to implement segmentation should be made at the executive level and communicated throughout the organization for alignment and commitment.

### 1.2 Implementation Barriers

1. **Senior Management Issues:**
  - Lack of leadership, commitment, and involvement can undermine segmentation efforts.
  - Insufficient allocation of resources for both initial analysis and long-term implementation can impede success.
2. **Organizational Culture:**
  - Barriers include a lack of market orientation, resistance to change, poor communication, and office politics.
  - A culture that does not support market segmentation or lacks creative and long-term thinking can be a major obstacle.
3. **Lack of Training:**
  - Inadequate understanding of market segmentation principles among senior management and team members can lead to failure.
4. **Absence of Formal Marketing Functions:**
  - The lack of a formal marketing function or qualified marketing experts can hinder the segmentation process.

- Inadequate data management and analysis capabilities are also significant obstacles.
- 5. Objective Restrictions:**
  - Limited financial resources and the inability to make necessary structural changes can restrict successful implementation.
- 6. Process-Related Barriers:**
  - Issues include unclear objectives, poor planning, lack of structured processes, and time constraints.
- 7. Operational Challenges:**
  - Management may resist using techniques they do not understand, which can be mitigated by simplifying and visually presenting segmentation results.

## **1.3 Step 1 Checklist**

### **1. Cultural Fit:**

- Market-oriented culture.
- Openness to change and new ideas.
- Effective internal communication.

### **2. Resource Availability:**

- Capability for major changes.
- Adequate financial resources.

### **3. Management Support:**

- Commitment and involvement from senior management.
- Financial backing.

### **4. Understanding and Training:**

- Clear grasp of market segmentation concepts.

### **5. Team and Structure:**

- Segmentation team (2-3 members) with marketing, data, and analysis experts.
- Defined objectives and roles.

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

### **2.1 Segment Evaluation Criteria**

The third layer of market segmentation analysis stresses continuous user involvement throughout the process, not just at the beginning or end. After committing to segmentation, the organization must define evaluation criteria in Step 2, which guides data collection and target segment selection.

The criteria include:

- **Knock-Out Criteria:** Essential features for segment consideration.
- **Attractiveness Criteria:** Measures the appeal of segments that meet knock-out criteria.

Literature often lists various criteria without clearly distinguishing between these types.

### **2.2 Knock-Out Criteria**

Knock-out criteria filter out market segments that don't meet key requirements. Essential factors include:

- **Homogeneity:** Members are similar.
- **Distinctness:** Clearly different from other segments.
- **Size:** Large enough to justify investment.
- **Match with Organizational Strengths:** Organization can meet the segment's needs.
- **Identifiability:** Members can be identified in the market.
- **Reachability:** Segments can be contacted effectively.

Senior management and the segmentation team must understand and agree on these criteria for effective segment selection.

### **2.3 Attractiveness Criteria**

Alongside knock-out criteria, segment attractiveness criteria are used to evaluate how appealing each market segment is. Unlike knock-out criteria, which are binary,

attractiveness criteria assess segments on a scale, determining how well they meet each criterion. The overall attractiveness of a segment across these criteria influences its selection as a target segment in the final step of market segmentation analysis.

## **2.4 Implementing a Structured Process**

- A structured approach to assess market segments is recommended.
- Uses attractiveness and organizational competitiveness axes. Criteria must be defined by the team, with no universal standard.
- Limit to about six key factors, agreed upon by the team and reviewed by an advisory committee.
- Helps in data collection and simplifies segment selection later.
- Assign weights to criteria by distributing 100 points, with final approval from the advisory committee.

## **2.5 Step 2 Checklist**

- Convene a segmentation team meeting.
- Agree on knock-out criteria: homogeneity, distinctness, size, match, identifiability, reachability.
- Present knock-out criteria to the advisory committee for discussion/adjustment.
- Study and discuss available attractiveness criteria.
- Agree on a subset of no more than six attractiveness criteria.
- Distribute and agree on weightings for each attractiveness criterion.
- Present selected criteria and weights to the advisory committee for discussion/adjustment.

## **Step 3: Collecting Data**

### **3.1 Segmentation Variables**

- **Segmentation Variable:** In commonsense segmentation, a single characteristic (e.g., gender) is used to split the sample into segments.
- **Descriptor Variables:** Additional personal characteristics (e.g., age, vacation preferences) describe segments in detail, aiding in developing targeted marketing strategies.
- **Data-Driven Segmentation:** Uses multiple segmentation variables to identify or create market segments. For example, segments may be based on shared vacation benefits rather than gender.
- **Data Quality:** Crucial for accurate segmentation and segment description. High-quality data ensures correct segment assignment and effective marketing strategies.
- **Data Sources:** Can include surveys, observations (e.g., scanner data), and experimental studies. The best data reflects actual consumer behavior, and reliance solely on surveys may be unreliable for certain behaviors.

### **3.2 Segmentation Criteria**

#### **3.2.1 Geographic Segmentation**

Before segmenting the market, an organization must select a segmentation criterion, which defines the type of information used. This criterion should align with the product's needs and is chosen based on market knowledge. Common options include geographic, socio-demographic, psychographic, and behavioral factors. Simpler methods are often preferred if they meet the product's requirements effectively.

- Geographic Segmentation: Uses location to define market segments.
- Advantages: Simple and effective for targeting specific regions.
- Limitations: Doesn't capture diverse consumer preferences within the same area.
- International Use: Useful for managing segments across borders but challenging due to cross-cultural differences and the need for relevant segmentation variables.

### 3.2.2 Socio-Demographic Segmentation

- Socio-Demographic Segmentation: Uses criteria such as age, gender, income, and education.
- Uses: Effective for products linked to specific demographics, like luxury goods, cosmetics, baby products, retirement villages, and family tourism.
- Advantages: Easy to determine segment membership and can sometimes explain product preferences.
- Limitations: Socio-demographics often don't fully explain consumer behavior and are less effective for understanding preferences, which may be influenced more by values and tastes.

### 3.2.3 Psychographic Segmentation

- **Psychographic Segmentation:** Groups based on psychological criteria such as beliefs, interests, and preferences.
- **Benefit Segmentation:** Focuses on the benefits consumers seek, pioneered by Haley (1968).
- **Lifestyle Segmentation:** Based on activities, opinions, and interests (Cahill, 2006).
- **Complexity:** Requires multiple variables to capture psychographic dimensions, making it more complex than geographic or socio-demographic segmentation.

### 3.2.4 Behavioural Segmentation

- Behavior-Based Segmentation: Uses actual consumer behaviors like purchase frequency and amount spent.
- Advantages: Reflects real behavior and avoids the need for psychological measures.
- Limitations: May lack data for potential customers who haven't made a purchase.

## 3.3 Data from Survey Studies

Survey data is commonly used in market segmentation because it is cost-effective and easy to gather. However, it can be subject to biases that may compromise the quality of the segmentation results. Key considerations for using survey data include the potential for such biases affecting the analysis outcomes.

### 3.3.1 Choice of Variables

Selecting relevant variables is crucial for accurate market segmentation. Including only essential variables avoids survey fatigue and prevents "noisy" or "masking" variables that can disrupt segmentation. Surveys should focus on unique, necessary questions and avoid redundancy. A good questionnaire often involves exploratory research to ensure important variables are included and redundancy is minimized.

### 3.3.2 Response Options

Survey response options impact data quality:

- Binary: Ideal for segmentation (0s and 1s).
- Nominal: Unordered categories, converted to binary.
- Metric: Numerical values are best for segmentation.
- Ordinal: Ordered options, less precise due to undefined distances.

Use binary or metric responses for clearer segmentation. Visual analogue scales offer a metric-like option online. Binary responses often perform better than ordinal ones.

### 3.3.3 Response Styles

-**Response Bias:** Systematic tendencies to answer based on style rather than content.

-**Response Styles:** Includes using extreme options, midpoints, or agreeing with all statements.

- **Impact:** Can skew segmentation results, confusing genuine responses with biased ones.

- **Mitigation:** Reduce impact by identifying and excluding biased responses.

### 3.3.4 Sample Size

-**Sample Size Importance:** Sufficient sample size is crucial for accurate market segmentation; small samples can lead to incorrect segment identification.

- **Impact of Sample Size:** Larger samples improve segmentation accuracy.

- Significant gains are seen with increases in very small samples; benefits taper with larger samples.

- A sample size of 100 respondents per variable is recommended.

**- Challenges:**

- Unequal segment sizes and overlapping segments make segmentation harder.
- Correlation between variables complicates segment identification, even with large samples.
- Use binary or metric data.
- Avoid response styles and ensure high-quality, unbiased responses.
- Include necessary, uncorrelated variables.
- Collect a sufficient sample size based on the number of segmentation variables.

### **3.4 Data from Internal Sources**

**-Advantages of Internal Data:**

- Reflects actual consumer behavior, avoiding biases from memory or response styles.
- Typically automatically generated and easily accessible if stored properly.

**- Challenges:**

- May be biased by over-representing existing customers.
- Lacks information on potential future customers who may have different patterns.

### **3.5 Data from Experimental Studies**

- Field or Laboratory Experiments: Data from tests such as responses to advertisements.
- Choice Experiments/Conjoint Analysis: Present consumers with stimuli featuring specific product attributes.
- Segmentation Criteria: Use responses and preferences from experiments to define segmentation criteria.
- Attribute Impact: Determine how different product attributes influence consumer choice.

### **3.6 Checklist**

1. Convene a Market Segmentation Team Meeting- Responsibility: Market Segmentation Team- Status: Completed?
2. Discuss Promising Segmentation Variables- Identify consumer characteristics to use for extracting consumer groups from data.
3. Discuss Required Descriptor Variables- Identify additional consumer characteristics necessary for detailed segment descriptions.



4. Determine Data Collection Methods- Ensure valid capture of both segmentation and descriptor variables.
5. Design Data Collection to Minimize Biases- Carefully design the data collection process to avoid contamination from biases and systematic errors.
6. Collect Data- Implement the data collection plan.

## **Step 4: Exploring Data**

### **4.1 Data Exploration**

- Data Source: Australian travel motives dataset.
- Sample Size:1000 respondents (488 women, 512 men).
- Variables:
  - 1) Age: Ranges from 18 to 105 years, with median at 42 years.
  - 2) Income and Income2:Contains missing data (coded as NA in R).
  - 3) Gender:Two categories: female and male.
- Exploration Tasks:
  - 1) Measurement Levels:Identify metric and categorical variables.
  - 2) Univariate Distributions: Analyze distribution of each variable.
  - 3) Dependency Structures: Assess relationships between variables.
- Data Preprocessing: Prepare data for segmentation algorithms.

### **4.2 Data Cleaning**

- Check Values:
  - Verify correctness of all recorded values.
  - Ensure categorical variables use consistent and valid labels.
  - For numeric variables, confirm values are within plausible ranges.
- Verify Categorical Data:
  - Check that categorical variables contain only permissible values.
  - Correct any inconsistencies or errors in categorical data.
- Reordering Variables:
  - For categorical data, reorder levels if needed to reflect the correct order.
  - Verify accuracy by comparing original and re-ordered data.
- Reproducibility:
  - Document all data transformations and cleaning steps.

- Use scripts or code for reproducibility and consistency.

→ Saving and Loading Data:

- Save cleaned data to a file or database.
- Reload data for future use as needed.

## 4.3 Descriptive Analysis

Numeric Summary:

- Use ``summary()`` in R for range, quartiles, mean, and missing values.

Graphical Methods:

- Histograms: Visualize numeric variable distributions (e.g., Age).
- Box Plots: Illustrate five-number summary and outliers (e.g., Age).
- Dot Charts: Display percentage agreement with travel motives.

## 4.4 Pre-Processing

### 4.4.1 Categorical Variables

Preprocessing Categorical Variables

#### 1. Merging Levels:

- Combine similar categories to simplify and balance the data.

#### 2. Converting to Numeric:

- Ordinal Data: Convert if distances between scale points are roughly equal (e.g., income ranges).
- Likert Scales: Often treated as numeric, though this assumes equal distances between options.
- Binary Variables: Convert dichotomous variables to 0/1 for easier analysis.

### 4.4.2 Numeric Variables

- Numeric variables should ideally be standardized to balance their influence in distance-based methods.
- Standardization involves transforming variables to have a mean of 0 and a standard deviation of 1.

## 4.5 Principal Components Analysis

### 1) Purpose:

- Transforms multivariate data into uncorrelated principal components ordered by importance.

### 2) Process:

- Operates on the covariance or correlation matrix of numeric variables.
  - Use the covariance matrix for variables on the same scale.
  - Use the correlation matrix if data ranges differ.

### 3) Usage:

- Projects high-dimensional data into lower dimensions for visualization, typically using the first few principal components.

### 4) Interpreting PCA:

- Summary function provides standard deviation, proportion of explained variance, and cumulative proportion of explained variance.

### 5) Insights:

- High variability in the first components indicates redundancy in the original variables.
- PCA helps identify highly correlated variables, guiding the removal of redundant variables.

## 4.6 Checklist

- Explore and clean data for inconsistencies and systematic errors.
- Pre-process data as needed, including handling categorical variables and standardizing numeric ones.
- Assess sample size relative to the number of segmentation variables; ideally, have at least 100 observations per variable.
- Check for correlations among segmentation variables; reduce redundancy by selecting uncorrelated variables.

## **Step 6: Profiling Segments**

### **6.1 Identifying Key Characteristics of Market Segments**

#### **1)Purpose:**

- Profiling aims to understand and characterize market segments, especially when data-driven segmentation is used.

#### **2)Process:**

- Characterization: Describes segments individually and in comparison to others.
- Inspection of Alternatives: Evaluates different segmentation solutions, particularly when no natural segments exist.

#### **3)Challenges:**

- Interpretation Issues: Managers often find it difficult to understand data-driven segmentation results.
- Common issues include long, contradictory reports, lack of clear summaries, and insufficiently conclusive data presentations.

#### **4)Approaches:**

- Traditional Statistics: Provides a detailed but often complex view of segments.
- Graphical Statistics: Offers a more intuitive and less tedious way to profile segments, reducing the risk of misinterpretation.

### **6.2 Traditional Approaches to Profiling Market Segments**

- **Tabular Presentations:** Typically complex and hard to interpret, especially with numerous segmentation variables.
- **Segment Profile Tables:** Detailed tables show percentages of segment members for each variable, aiding in identifying defining characteristics.

### **6.3 Segment Profiling with Visualisations**

Segmentation results are often presented either as overly simplified summaries or complex tables, which can be less effective. Graphics are crucial for providing clear insights into complex relationships, aiding exploratory analysis, and monitoring data

developments. Effective visualizations help simplify the interpretation of segmentation results and evaluate different solutions.

### 6.3.1 Identifying Defining Characteristics of Market Segments

- Segment Profile Plot:** Visualizes segment differences for all segmentation variables compared to the overall sample.
- Variable Order:** Can be rearranged for clarity, based on meaningful order or similarity in answer patterns.
- Marker Variables:** Highlighted in color to show significant deviations from the overall mean.
- **Interpretation:** Easier than tables, as it simplifies complex comparisons and highlights key segment traits.

### 6.3.2 Assessing Segment Separation

- Segment Separation Plot: Displays segment overlap across dimensions.
- Components:
  - Scatter Plot: Shows observations and segment shapes.
  - Neighborhood Graph: Indicates similarity between segment centers.
- Projection: Utilizes techniques like principal component analysis for high-dimensional data.
- Example: Differentiates characteristics, such as nature-focused versus luxury-oriented segments.

## 6.4 Checklist

1. Visualize Segment Profiles: Examine segment profiles to identify distinguishing features of each segment.
2. Apply Knock-Out Criteria: Evaluate if any segments should be eliminated based on predetermined criteria.
3. Proceed to Description: Forward the remaining segments to the next step for detailed description.

## Step 8: Selecting the Target Segment(s)

### 8.1 The Targeting Decision

1. **Reviewing Knock-Out Criteria:** Ensure all segments under consideration meet previously agreed-upon criteria.

2. **Evaluating Segment Attractiveness:** Assess which segments align with organizational goals and competitive strengths. This involves:

- Determining which segments the organization prefers to target.
- Evaluating how likely the organization is to attract and satisfy each segment compared to competitors.

The aim is to select segments that align with both the organization's capabilities and strategic goals.

### 8.2 Market Segment Evaluation

-**Decision Matrix:** Visualizes segment attractiveness vs. organizational competitiveness.

-**Axes:** One for segment attractiveness, one for organizational competitiveness.

-**Circle Size:** Reflects additional criteria like profit potential.

**Evaluation:**

-Attractiveness: Rate and weight segments based on potential value.

-Competitiveness: Rate how well the organization meets segment needs.

### 8.3 Checklist

- Convene segmentation team meetings to discuss potential target segments.
- Ensure remaining segments comply with knockout criteria.
- Agree on and assign values for segment attractiveness and organizational \ competitiveness criteria.
- Calculate each segment's overall attractiveness and competitiveness.
- Plot values on a segment evaluation plot.
- Make a preliminary segment selection.
- Ensure compatibility if targeting multiple segments.
- Present selected segments for advisory committee discussion and reconsideration if necessary.

### – Replication of McDonalds Case Study in Python code:

Github link:-

[https://github.com/nidhi-158/First-Project/blob/main/Mc\\_Donalds\\_Case\\_Study.ipynb](https://github.com/nidhi-158/First-Project/blob/main/Mc_Donalds_Case_Study.ipynb)