

Market Segmentation Analysis

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Introduction

Market segmentation is a strategic marketing approach that involves dividing a broad consumer or business market into smaller, more homogenous groups based on shared characteristics, needs, or behaviours. Rather than treating the market as a single undifferentiated entity, segmentation allows organizations to identify and understand specific customer segments, tailor their offerings, and optimize marketing strategies for greater relevance and effectiveness.

The primary goal of market segmentation is to better satisfy customer needs by offering targeted products, services, and communication. It enables companies to allocate resources more efficiently, improve customer retention, enhance competitive positioning, and increase profitability.

Segmentation can be based on a variety of criteria, including geographic location, demographics, psychographics, and behavioural factors.

In an increasingly diverse and competitive marketplace, market segmentation serves as a foundational tool for achieving customer-centricity and building long-term strategic advantage. It shifts the focus from a product-oriented view to a customer-focused perspective—helping organizations deliver the right value to the right people at the right time.

Step 1: Deciding (Not) to Segment

1. Objective:

To determine whether market segmentation is the right strategic approach for the organization.

2. Key Considerations:

2.1. Strategic Commitment:

Committing to market segmentation involves a long-term strategic outlook. It is not a one-time project but a continuous effort that affects the structure, processes, and priorities of the organization.

2.2. Organizational Requirements:

- Leadership support and buy-in from top management are essential.
- Organizational willingness to transition from product-based to customer-segment-based operations.
- Sufficient financial and human resources to support segmentation activities.
- Strong internal communication and cross-functional collaboration.

2.3. Implementation Barriers:

- Lack of internal capabilities or expertise.
- Resistance to change from within the organization.
- Short-term business focus that conflicts with long-term segmentation benefits.

3. Checklist for Readiness:

- Does the organization have a customer-oriented mindset?
- Is there a willingness to invest in change?
- Are internal teams aligned for cross-departmental coordination?
- Is there clear strategic intent and a long-term view?

Step 2: Specifying the Ideal Target Segment

1. Objective:

To clearly define the characteristics of the most desirable target segment before analyzing data.

2. Conceptual Framework:

- This step is conceptual and precedes data collection. It helps ensure that only relevant data is gathered and sets a foundation for consistent evaluation in later stages.

3. Segment Evaluation Framework:

3.1. Knock-Out Criteria:

- Mandatory requirements that every viable segment must fulfill.
- Examples: segment must be identifiable, accessible, of a minimum size, and operationally reachable.

3.2. Attractiveness Criteria:

- Used to compare and rank segments that meet knock-out criteria.
- Common factors include profitability, strategic fit, competitive intensity, and expected growth.

3.3. Structured Process Implementation:

- Define a complete list of evaluation criteria with input from various departments.
- Assign relative weights to attractiveness criteria.
- Use advisory panels or expert groups to validate assumptions and ranking systems.

4. Benefits:

- Aligns marketing efforts with strategic business objectives.
- Prevents unnecessary or irrelevant data collection.
- Ensures objective segment selection based on pre-defined success measures.

Step 3: Collecting Data

1. Objective:

To gather the appropriate data needed for effective market segmentation.

2. Types of Variables:

- **Segmentation Variables:**
Used to actually form the market segments. These variables should reflect consumer behaviors, attitudes, or needs relevant to the organization's goals.
- **Descriptor Variables:**
Used after segment formation to describe and differentiate the segments. Help in developing actionable insights and crafting targeted marketing strategies.

3. Segmentation Approaches:

- **Geographic Segmentation:** Based on physical location (e.g., city, region, climate).
- **Socio-Demographic Segmentation:** Age, gender, education, income, etc.
- **Psychographic Segmentation:** Based on personality traits, values, or lifestyles.
- **Behavioral Segmentation:** Based on observed behaviors such as usage frequency, purchase patterns, or loyalty.

4. Sources of Data:

- **Survey Studies:**
 - Must be carefully designed with relevant segmentation variables.
 - Includes attention to response formats, bias control, and validity of scales.
- **Internal Sources:**
 - CRM systems, purchase histories, customer feedback.
- **Experimental Studies:**
 - Data collected through controlled trials and behavioral experiments.

5. Sample Size Considerations:

- The sample must be large enough to ensure reliable and valid segmentation results.
- The necessary size varies depending on:
 - The number of variables used.
 - Segment complexity.
 - Statistical techniques applied (e.g., cluster analysis, regression).

6. Checklist Highlights:

- Have segmentation and descriptor variables been clearly defined?
- Are the sources of data appropriate and sufficient?
- Is the survey design robust and free from common biases?
- Is the sample size statistically adequate?

Step 4: Exploring Data

1. Overview of the Data

- The dataset consists of responses from **1,453 adult Australian consumers**.
- Variables include **11 perception attributes** of McDonald's (e.g., *yummy*, *cheap*, *fast*, *healthy*) and **3 demographic variables**: *Age*, *Visit Frequency*, and *Gender*.
- Responses to perceptions are **verbal**, coded as *Yes* or *No*.

2. Initial Data Inspection

- Using R programming environment:
 - The data was loaded and inspected using functions like `names()`, `dim()` and `head()`.
 - This allowed verification of structure, column names, number of variables (15), and an understanding of raw entries.

3. Variable Format Adjustment

- The verbal responses ("Yes"/"No") for the 11 perception attributes were **not suitable for segmentation algorithms**.
- These were:
 - Extracted into a matrix.
 - Transformed into **binary format**: *Yes* = 1, *No* = 0 using logical indexing and numeric conversion.

4. Data Validation

- The transformation was validated by computing the **mean** of each newly created binary variable.
- For example:
 - 55% perceived McDonald's as *yummy*.
 - 91% as *convenient*.
 - 9% as *spicy*.
- This summary gave insight into general customer perception patterns.

5. Principal Components Analysis (PCA)

- PCA was conducted on the 11 binary perception variables to explore the **underlying structure** in the data.
- Key outcomes:
 - The **first two principal components (PCs)** explained approximately **49% of total variance**.
 - Loadings from PCA were used to **plot a perceptual map**, revealing how attributes are grouped or contrasted.
 - Example: *Cheap* and *Expensive* loaded heavily (and oppositely) on the same PC, indicating a clear **price dimension**.

6. Data Visualization

- The perceptual map was created by:
 - Projecting the data into the space defined by the first two PCs.
 - Plotting consumer responses and overlaying attribute vectors.
- This visualization provided **intuitive insights** into relationships between attributes and highlighted clusters of perceptions (e.g., *natural experience* vs. *luxury & excitement*).

7. Implications

- The PCA showed that:
 - No single perception variable was redundant—all added distinct value.
 - Dimensionality reduction through PCA was **not suitable for segmentation** in this case.
 - However, PCA was valuable for exploring **correlation structures** and guiding potential **variable selection**.

Market Segmentation Case Study on McDonalds Dataset

Complete Code on: <https://colab.research.google.com/drive/1nzonKXTmgaAaVlrXPQRoY4rXZ-tf37Cn?usp=sharing>

Conclusion

The foundation of a successful market segmentation strategy lies in making deliberate, well-informed decisions at the outset. It begins with assessing organizational readiness to adopt segmentation, requiring leadership commitment, a long-term mindset, and a shift towards customer-centric structures. Once committed, defining the characteristics of the ideal target segment using structured evaluation criteria—such as knock-out and attractiveness filters—ensures alignment with strategic goals.

Data collection follows this framework, focusing on variables that will support both segment formation and profiling. A combination of survey data, internal records, and experimental studies helps ensure robust and relevant inputs. Before proceeding to segmentation modeling, exploring and preprocessing the data is essential. This includes cleaning, transforming variables into suitable formats, and using tools like principal components analysis (PCA) to reveal underlying patterns and check for redundancies.

Together, these four foundational stages provide a rigorous and strategically aligned basis for extracting valid, actionable market segments—setting the stage for deeper analysis and effective targeting.