

PROJECT CASE STUDY

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Step 1 – Deciding (Not) to Segment

Step 1 of the market segmentation process is about deciding whether or not to pursue a market segmentation strategy. This is a foundational and strategic organizational decision with far-reaching implications.

Key Considerations**1. Long-Term Commitment**

- Market segmentation is not a short-term effort but a significant, continuous commitment. Implementing segmentation often means changes in products, pricing, distribution, and internal structures.

2. Organizational Change

- Adopting a segmentation strategy may require reorganizing the business around market segments rather than products, requiring flexibility and a willingness to adapt.

3. Resource Allocation

- Segmentation incurs additional costs (e.g., research, product adaptation, communications) and must deliver benefits that outweigh these expenses.

4. Executive Decision & Communication

- The decision to segment should be made and championed at the senior executive level. Active, visible commitment from leadership is essential for success, as is clear communication across the organization.

Barriers to Implementation

- **Senior Management Issues:** Lack of leadership or insufficient resource commitment.
- **Cultural Barriers:** Resistance to change, lack of market orientation, poor communication.
- **Skills & Structure Gaps:** Insufficient training, lack of marketing or data experts, unclear objectives, and inadequate planning.
- **Practical Constraints:** Financial shortages, inability to restructure, or time pressure.

Readiness Assessment (Checklist Highlights)

Before proceeding with segmentation, organizations should ensure they:

- Are market-oriented and willing to change.
- Take a long-term perspective.
- Have strong cross-unit communication.
- Can make necessary structural changes and have adequate resources.
- Have committed and involved senior management.

- Fully understand the concept and implications of segmentation.
- Assemble a cross-functional team including marketing and data experts.
- Have clarified objectives, a structured process, clear responsibilities, and sufficient time for the process.

If any of these requirements cannot be met, the organization should seriously reconsider moving forward with segmentation.

Conclusion

Step 1 ensures that the organization is fully aware of what market segmentation entails and is properly prepared culturally, structurally, and resource wise to undertake such a strategic initiative. This preparation is essential for successful, actionable outcomes from market segmentation.

Step 2 – Specifying the Ideal Target Segment

After committing to market segmentation, Step 2 is about defining what the "ideal" target segment looks like for your organization. This step is crucial because it shapes the direction of the segmentation analysis, influences data collection, and sets clear parameters for selecting the best segments later.

Key Elements

1. Segment Evaluation Criteria

Organizations must establish two sets of criteria for assessing potential segments:

- **Knock-Out Criteria:** These are essential, non-negotiable requirements a segment must meet to even be considered. If a segment fails any of these, it is automatically eliminated from further consideration.
- Common knock-out criteria include:
 - **Homogeneity:** Members of the segment are similar to one another.
 - **Distinctness:** The segment is clearly different from other segments.
 - **Size:** The segment is large enough to justify targeted marketing efforts.
 - **Organizational Match:** The organization has the ability to serve that segment.
 - **Identifiability:** It's possible to determine who is a member of the segment.
 - **Reachability:** The segment can be reached through marketing channels.
- **Attractiveness Criteria:** These are negotiable and help to compare the eligible segments based on their relative appeal. Attractiveness criteria might include:
 - Profitability
 - Growth potential
 - Competitive advantage
 - Strategic fit

- Ease of serving
- Risk factors
- Responsiveness, etc.

Each organization usually selects up to six key attractiveness criteria and assigns them weights according to importance.

2. Involving Stakeholders

The selection and weighting of criteria should involve a cross-departmental team and an advisory committee representing major organizational units. This ensures that all relevant perspectives are included and promotes effective buy-in for later steps.

3. Structured, Transparent Process

- **Step 2 is conceptual and collaborative:** the segmentation team proposes criteria and weightings, discusses them collectively, and submits them for approval by the advisory committee.
- The process ensures that when the time comes to pick actual target segments (in later steps), the organization already has a consistent, shared understanding of what makes a segment attractive.

4. Checklist (Summary)

- Convene a segmentation team meeting.
- Agree and document knock-out criteria.
- Present for review to the advisory committee.
- Study and discuss attractiveness criteria, narrow down to six or fewer.
- Allocate weightings to attractiveness criteria (such as dividing 100 points across them).
- Seek committee input and finalize criteria for later use.

Conclusion

Step 2 establishes the foundation for rational, unbiased, and business-driven segment selection later in the process. By agreeing on essential and desirable characteristics for target segments before reviewing the data, organizations position themselves for more effective and profitable segmentation outcomes.

Step 3 – Collecting Data

Step 3 involves gathering all the empirical data required to enable both the identification and description of meaningful market segments. The quality and relevance of this data is crucial to the success of the entire segmentation analysis.

Key Elements

1. Segmentation Versus Descriptor Variables

- **Segmentation Variables:** The criteria actually used to divide the sample into groups (e.g., gender, benefits sought, purchase behaviors). In commonsense segmentation, often just one is used; in data-driven segmentation, multiple variables are generally combined.
- **Descriptor Variables:** Used to profile and describe each segment in detail (e.g., age, media usage, travel behavior), essential for developing effective marketing mixes for each segment.

2. Choosing Segmentation Criteria

- The organization must select which underlying variable or construct will serve as the base for segmentation.
- Common segmentation criteria:
 - **Geographic** (location)
 - **Socio-demographic** (age, gender, income)
 - **Psychographic** (attitudes, interests, lifestyles)
 - **Behavioral** (past purchases, usage patterns)
- Simple criteria are often preferable if they effectively distinguish between consumer types.

3. Data Sources

- Data can be obtained from:
 - **Surveys:** The most common, but subject to bias.
 - **Internal Data:** Purchase records, loyalty programs, etc., reflecting actual behaviors.
 - **Experimental Studies:** Results from controlled experiments, e.g., advertising reactions.

4. Questionnaire Design and Data Quality

- **Variable Selection:** Only include variables relevant to the chosen segmentation criterion—exclude unnecessary, redundant, or highly correlated items.
- **Response Options:** Prefer binary or metric responses over ordinal where possible, to facilitate later analysis.
- **Avoid Bias:** Consider and minimize response styles (e.g., tendency to always agree or to pick extremes).
- **Exploratory Research:** Often needed to develop the right set of variables for surveys.

5. Sample Size Considerations

- There is no universal rule, but generally the more segmentation variables and potential segments, the larger the required sample.
- A strong recommendation is to have at least **100 respondents per segmentation variable** for reliable results, and to ensure high data quality.

6. Step 3 Checklist (Summary)

- Assemble the team and discuss potential segmentation and descriptor variables.
- Design a data collection strategy to minimize bias and error.
- Ensure all necessary variables are included and unnecessary variables are excluded.
- Collect the data with sufficient sample size and quality.

Conclusion

Step 3 lays the empirical foundation for successful market segmentation. It is essential that the data collected are not only high quality and unbiased, but also relevant to the segmentation problem. This ensures that subsequent steps yield actionable, credible, and profitable market segments.

Step 7: Describing (Profiling) Segments

Purpose

Step 7 is about thoroughly describing and profiling the market segments identified in earlier steps. The aim is to understand how each segment differs from others using additional variables—not those used to extract the segments but other relevant data, such as demographics, behaviors, interests, or attitudes.

Process Overview

- **Segment Profiling:** This involves examining all available data to build a detailed profile for each segment. Profiling typically includes crossing segmentation outcomes with as many other variables as possible (e.g., psychographic, geographic, product usage, media habits).
- **Why It Matters:** Understanding segment characteristics in depth is vital for tailoring the marketing mix, anticipating needs, and avoiding unpleasant surprises after targeting a group. Profiling helps ensure segments are actionable and relevant for business strategy¹.

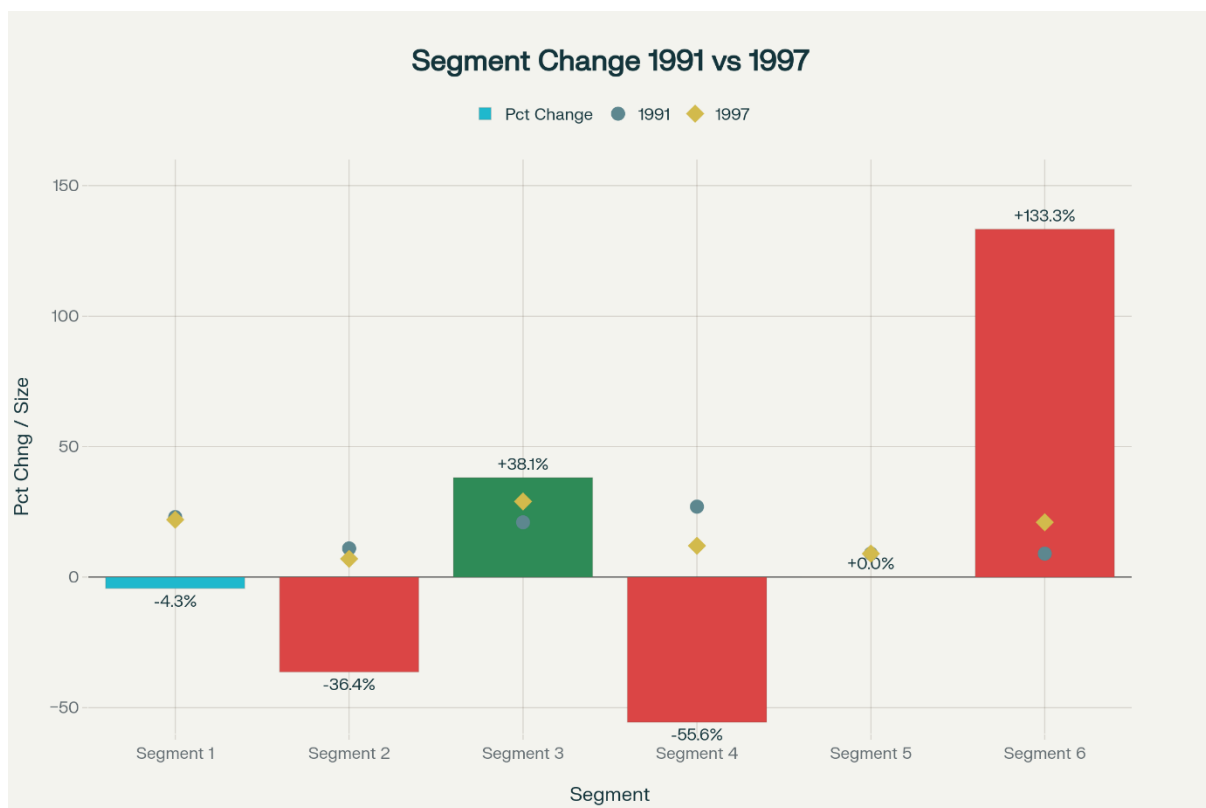
Key Actions in Step 7

1. **Compile Descriptor Data:** Gather additional information about members of each market segment (beyond segmentation variables).
2. **Cross-Tabulate:** Compare segments against descriptor variables to see how they differ and what makes each unique.
3. **Visualization:** Use tables, charts, and creative visual tools (such as bar charts, mosaics, or radar plots) to present segment characteristics clearly and accessibly for managers and stakeholders.
4. **Interpretation:** Focus not only on statistical significance but also on practical meaning—are members of Segment A more affluent, younger, or more tech-savvy, for instance?
5. **Application:** These rich profiles form the basis for further steps, such as product or message tailoring and targeted marketing campaigns.

Example Visual

Below is a chart illustrating how segment sizes can shift between two points in time (e.g., 1991 and 1997), highlighting the importance of monitoring and understanding changes in segment composition and size:

Market Segment Size Changes from 1991 to 1997 showing growth and shrinkage of segments.



Market Segment Size Changes from 1991 to 1997 showing growth and shrinkage of segments

Conclusion

Step 7 is essential for translating the technical results of segmentation into practical, actionable insights for marketers. By profiling segments thoroughly, organizations can make well-informed decisions about targeting, positioning, and marketing strategy to serve their distinct customer groups most effectively.

CASE STUDY:

<https://github.com/roshnrf/Feynn-Labs-Internship-2025>

Arin_Sahni_Report

Step 1

3.1 Implications of Committing to Market Segmentation

- **Segmentation ≠ a short-term tactic:** It's a strategic **marriage**, not a one-time campaign.
- It requires **substantial investment** — in research, product design, marketing, and organisational change.
- **Cost–benefit tradeoff** is crucial: The value gained from segmentation must **exceed** its cost.
- Companies must be prepared to:
 - Modify or develop products
 - Change pricing models
 - Alter distribution (Place)
 - Adapt promotional strategies
 - Possibly **reorganize around segments** rather than products
- Must have **top-down support:** Executive leadership must *drive, support, and communicate* the segmentation initiative.

3.2 Implementation Barriers

The chapter classifies barriers into several key areas:

1. Leadership Failures

- Lack of **executive sponsorship** or understanding
- **Insufficient funding** for research or implementation
- Passive involvement undermines segmentation

2. Organisational Culture

- Resistance to change, poor cross-team communication
- Lack of customer focus or openness to new ideas
- Short-term thinking and internal politics

3. Knowledge Gaps

- Teams may **not understand segmentation** or its implications
- Lack of training or awareness
- Absence of skilled marketers, data analysts, or marketing functions

4. Operational Constraints

- Limited budget or inability to change internal structures
- No clear segmentation objectives
- Poor planning or rushed timelines
- Lack of structured segmentation process and role clarity

5. Execution Gaps

- Complex models are ignored by management if not **easily understood**
- Need for **clear visuals** and **intuitive results** (as shown in Steps 6 & 7 of the book)

3.3 Checklist

This practical checklist helps organizations determine if they are *ready* to pursue segmentation:

- Is the **organisation market-oriented** and **open to change**?
- Is there **long-term thinking** and **good internal communication**?
- Are **financial resources and structural capacity** available?
- Has **senior management committed visibly** to the initiative?
- Are all teams **trained and aware** of implications?
- Is there a **clear process, assigned responsibilities**, and **adequate time**?
- Does the segmentation team include:
 - A **marketing expert**
 - A **data expert**
 - A **data analyst**
 - Representation from all affected departments

If any answer is **“no”**, the chapter urges serious reconsideration of whether to proceed.

Step 2

Key Concepts & Contributions

1. User Involvement is Critical

- Organisations must remain engaged **throughout the segmentation process**.
- Their contribution is **conceptual**, shaping data collection (Step 3) and guiding **segment selection (Step 8)**.

2. Two Types of Segment Evaluation Criteria

Knock-Out Criteria

(Non-negotiable, binary)

These determine whether a segment is even *eligible* for consideration:

- **Homogeneous**: Internally similar members.
- **Distinct**: Clearly different from other segments.
- **Large enough**: Economically worthwhile.
- **Matching organisational strengths**: The organisation can serve them well.
- **Identifiable**: Members can be found in the market.
- **Reachable**: Accessible through communication/distribution channels.

If a segment fails any of these, it is *automatically excluded*

Attractiveness Criteria

(Gradual, scored)

Used to **rank** the eligible segments by appeal. Criteria include:

- Segment size & growth rate
- Competitive landscape
- Profitability
- Technological stability
- Price sensitivity
- Synergies with other segments
- Fit with brand image and corporate objectives

These are **negotiated**, weighted, and scored by the team — not binary yes/no filters.

3.Structured Decision-Making

A **Segment Evaluation Plot** is often used:

- **X-axis:** Segment attractiveness
- **Y-axis:** Organisational competitiveness
- Only 5–6 **weighted criteria** are recommended for simplicity and clarity.

Example: Segment A might be very attractive but low in competitiveness → avoid it.
Segment B might be medium attractive but high in fit → prioritize it.

Team & Process Recommendations

- Build a **core team** (2–3 people) and an **advisory committee** (cross-functional).
- Choose and **weight segment attractiveness criteria** early (Step 2), even before segments exist.
- Use a **point-allocation method** (e.g., 100 points across criteria) to rank importance.
- Revisit these priorities once real segments are derived later in the analysis.

Task	Purpose
Agree on knock-out criteria	To eliminate unsuitable segments early
Choose ~6 attractiveness criteria	To assess which segments are best
Weight those criteria (e.g. 100 points)	To reflect what matters most to the org
Present to advisory committee	For buy-in and cross-unit alignment

Step 3

5.1 Segmentation Variables

- **Segmentation variables** are used to divide the market (e.g., gender).
- **Descriptor variables** describe the resulting segments (e.g., age, income, preferences).
- Two approaches:
 - **Commonsense segmentation:** uses one variable like gender.
 - **Data-driven segmentation:** uses multiple variables such as benefits sought.

5.2 Segmentation Criteria

These are broad categories to base segmentation on:

1. **Geographic:** Based on location. Easy to implement but may not reflect behavioral differences.
2. **Socio-Demographic:** Based on age, gender, income, etc. Easy to apply but often weak predictors of behavior.
3. **Psychographic:** Based on attitudes, preferences, or benefits sought (e.g., relaxation or adventure). More insightful but harder to measure.
4. **Behavioral:** Based on actual consumer behavior (e.g., purchase history). Highly reliable if data is available.

5.3 Survey Data Challenges

Surveys are widely used but come with limitations:

- **Choice of Variables:** Include relevant ones only; avoid noise.
- **Response Options:** Prefer binary or metric over ordinal scales.
- **Response Styles:** Be aware of biases (e.g., always agreeing).
- **Sample Size:** Larger is better. A common rule: at least 100× the number of segmentation variables.

5.4 Internal Data Sources

- Examples: CRM systems, loyalty programs, scanner data.
- Strength: Reflects real behavior.
- Limitation: Often excludes potential customers.

5.5 Experimental Data

- Comes from controlled experiments, e.g., **conjoint analysis** or **A/B testing**.
- Can measure reactions to product attributes or ads, and be used for segmentation.

Step 9

From Segmentation to Action

- Segmentation is not a standalone strategy—it feeds directly into **targeting and positioning (STP model)**.
- Once a segment is chosen, all 4Ps must be **customized**:
 - **Product** – features, naming, warranties, and services
 - **Price** – regular pricing, discounts, willingness to pay
 - **Place** – distribution and booking channels
 - **Promotion** – advertising content and delivery channels

Example Application: Segment 3 – Australian Tourism

A tourism destination uses **biclustering** to identify Segment 3 tourists:

They love **cultural experiences** like museums, gardens, and monuments.

Product

Create a special product like **“MUSEUMS, MONUMENTS & MUCH, MUCH MORE”** that bundles cultural activities. Gardens can be positioned as attractions too.

Price

Analysis of spending behavior reveals Segment 3 spends **more** than others.

Insight: No need for discounts—**premium pricing** may even be possible.

Place (Distribution)

Segment 3 tourists mostly **book online**.

Strategy: Ensure the cultural product is **widely bookable online** via preferred channels.

Promotion

Segment 3 gets information from **tourist information centres** and prefers **Channel 7** on TV.

Strategy: Use both online and offline **information packs** and advertise on **Channel 7** to maximize reach.

Case Study Code Link

<https://github.com/barondebajit/MarketSegmentation>

Report on Steps 1, 2, 3 and 8

Debajit Kanungo

Step 3: Collecting Data

Introduction

Step 3 focuses on collecting the right type of data for effective segmentation. The success of following steps largely depends on how well this data highlights meaningful differences among potential customers.

Types of Segmentation Variables

- Geographic: Location-based attributes like city, region, or climate.
- Socio-demographic: Variables such as age, gender, income, education, and occupation.
- Psychographic: Measures of attitudes, values, personality traits, and lifestyle.
- Behavioral: Includes purchase history, brand loyalty, usage frequency, and interaction channels.

Primary vs. Secondary Data

Primary data is gathered specifically for the segmentation study, often through surveys, interviews, or experiments. It offers control and relevance.

Secondary data, such as CRM logs, social media analytics, or purchase histories, may be more cost-effective and larger in volume but might lack depth or specificity.

Survey Design Considerations

- Ensure questions are unbiased and clearly worded.
- Limit the number of variables to keep the survey concise and focused.
- Use appropriate response formats, like Likert scales for attitudes.
- Be aware of response styles, such as social desirability or extreme responding.

Sampling and Quality

A sufficiently large and diverse sample is critical for reliable segmentation. Random sampling improves generalizability, and data quality must be checked for completeness, consistency, and accuracy.

Conclusion

Collecting clean, targeted, and relevant data lays the groundwork for any successful segmentation effort. It ensures that later insights are based on reality and that resulting segments are meaningful and actionable.

Step 4: Exploring Data

Introduction

This step involves reviewing and preparing data before any segmentation takes place. It's an important time to clean, understand, and validate the data to ensure it's ready for analysis.

Initial Data Review

- Identify and manage missing values or anomalies.
- Look for duplicate entries and outliers.
- Confirm that variable types are correctly assigned, like categorical versus continuous.

Descriptive Statistics

Calculate and review statistics such as means, medians, modes, and standard deviations. These summaries reveal the distribution and central tendencies of your variables.

Visualization Techniques

- Histograms: Good for showing frequency distributions.
- Box plots: Identify outliers and data spread.
- Bar charts: Show frequencies for categorical data.
- Scatter plots: Reveal relationships between continuous variables.

Preprocessing Methods

- Normalize or standardize numeric data to ensure consistent scales.
- Encode categorical variables, such as using one-hot encoding.
- Optionally, apply dimensionality reduction, like PCA, to simplify complex sets of variables.

Conclusion

Step 4 guarantees data integrity and usability. Skipping or rushing through this phase raises the risk of creating flawed or meaningless segments. Think of it as a quality control checkpoint before deeper analysis begins.

Step 5: Extracting Segments

Introduction

This step transitions from data to insight. The goal is to identify naturally occurring customer groups using proper statistical and machine learning techniques.

Common Methods

- K-Means Clustering: Efficient and widely used; best for large, numeric datasets.
- Hierarchical Clustering: Builds a tree of clusters and works well for smaller datasets while providing visual insights.
- Model-Based Clustering: Uses statistical models, like Gaussian Mixtures, for probabilistic grouping.

Choosing the Right Method

Your choice should depend on:

- Data type (categorical, numerical, mixed).
- Sample size and dimensionality.
- Whether you need explanation or are optimizing for prediction.
- Available computational resources.

Assessing Quality of Segmentation

- Silhouette scores measure how similar an item is to its own cluster compared to others.
- Inertia or within-cluster sum of squares: Lower values indicate tighter clusters.
- Expert review ensures segments are interpretable and meaningful from a business standpoint.

Segment Validation Techniques

- Elbow method: Helps determine the ideal number of segments.
- Bootstrapping or resampling checks segment stability.
- Comparison with known outcomes: If available, compare to previous segmentation schemes.

Conclusion

Step 5 transforms raw data into structured insights. While algorithms handle the grouping, interpretation and validation make the results useful. Segments are only as valuable as your ability to understand and act on them.

Step 8: Selecting the Target Segment

Introduction

Step 8 is the strategic center of the segmentation process, where analytical outcomes turn into real marketing action. After segments have been extracted, profiled, and described, organizations must make a deliberate choice about which segment or segments to target. This decision will directly affect brand positioning, product design, pricing, communication, and customer relationship strategies.

While earlier steps focus on understanding the market, Step 8 is about making a commitment. It's not a one-time tactical move but a long-term investment in aligning company offerings with the needs and preferences of a chosen group of customers.

Why Segment Selection Matters

- High resource implication: Every marketing dollar, product feature, and channel decision will be shaped by this choice.
- Strategic direction setter: Determines where the company will compete and how it will succeed.
- Defines differentiation: The chosen segment determines the nature of your value proposition.
- Enables customer focus: Drives attention, personalization, and operational unity across departments.

Evaluation Frameworks for Target Segment Selection

Several decision matrices and frameworks help marketers assess segment viability:

1. Segment Attractiveness vs. Competitive Strength Matrix

Plot each segment on a 2x2 or 3x3 grid:

- High attractiveness plus High strength equals Ideal targets.
- High attractiveness plus Low strength means Watch or build capability.
- Low attractiveness plus High strength suggests a possible niche strategy.
- Low/Low means Avoid.

2. DAMP Criteria (Distinct, Accessible, Measurable, Profitable)

- Distinct: Does the segment behave differently enough to justify separate treatment?
- Accessible: Can we reach them through marketing channels and sales infrastructure?
- Measurable: Do we have data on the size and characteristics of the segment?
- Profitable: Is there enough value in serving this group to justify the cost?

3. RFM & CLV Modeling

- Recency, Frequency, Monetary (RFM) scores can help identify high-value segments.
- Customer Lifetime Value (CLV) projections assist in comparing long-term potential across segments.

Key Evaluation Criteria

1. Size and Growth Potential

Is the segment large enough to be commercially viable? Is it expanding? Are customer needs evolving in a direction your company can address?

2. Profitability

What margins can be expected? Are customers in this segment willing to pay for premium solutions, or are they price-sensitive?

3. Accessibility and Reachability

Can the organization reach this segment through media, channels, and sales infrastructure? Is it sustainable to communicate and deliver to them?

4. Compatibility with Brand and Mission

Does the segment resonate with the brand's values and long-term vision? Would targeting it require repositioning?

5. Competitive Intensity

How crowded is the space? Are there entrenched competitors with strong loyalty, or is there a gap your offering can fill?

6. Customer Alignment

Are you capable of delivering real value to this group better than others can?

Strategic Targeting Approaches

1. Undifferentiated Targeting

- Strategy: Same offering for the entire market.
- Use when: Customer needs are similar.
- Example: Salt or bottled water brands.

2. Concentrated Targeting

- Strategy: Focus on one narrowly defined segment.
- Use when: You are a niche player with specialized expertise.

- Example: A vegan protein brand targeting fitness-conscious plant-based eaters.

3. Differentiated Targeting

- Strategy: Tailor separate marketing mixes for multiple segments.
- Use when: You have resources to manage multiple campaigns or product lines.
- Example: Nike creating separate lines for runners, basketball players, and lifestyle consumers.

4. Micro-Marketing / Mass Personalization

- Strategy: Hyper-personalized campaigns, sometimes down to individual users.
- Use when: You have access to data and automation, like in e-commerce and streaming platforms.
- Example: Spotify playlists or Amazon product recommendations.

Cross-Functional Decision-Making

Segment selection is not just the marketing team's responsibility. Input is needed from:

- Product Development: Can we design something this segment wants?
- Sales: Are we equipped to engage this group?
- Finance: Is serving the segment cost-effective?
- Leadership: Does this choice align with long-term strategy?

Cross-functional workshops or strategic offsites are often used to finalize and agree on the target segment.

Risks and Trade-Offs

- Over-segmentation: May spread resources too thin.
- Under-segmentation: Misses opportunities to specialize and deepen relationships.
- Wrong fit: Choosing a segment that looks good on paper but misaligns with internal capabilities.
- Cannibalization: New targeting might dilute or harm existing market positions.

Real-World Examples

- Airbnb shifted from targeting budget travelers to high-value "experiential" travelers by emphasizing curated local stays.
- Apple targeted creative professionals and premium tech users instead of mass-market PC users, resulting in strong brand loyalty.

Conclusion

Step 8 is the strategic heart of the segmentation journey. Choosing the right segment or segments affects everything that follows, including positioning, product development, marketing, and sales. It's not just about who you could serve but who you should serve sustainably and profitably.

Success in this step depends on balancing data-driven evaluation with strategic judgment while ensuring alignment within the organization at every level.

Repository Link

<https://github.com/barondebajit/MarketSegmentation>

Market Segmentation - A Case Study

Summary Of Step 1, 2 And 3.

Submitted by:

Iman Chandra

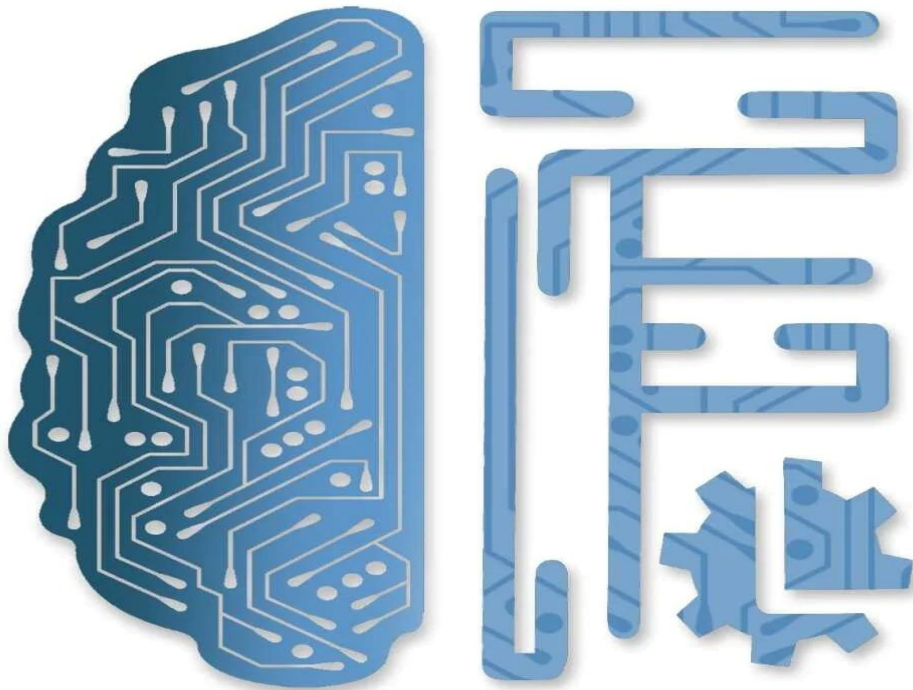


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Market Segmentation – A Case Study

Abstract:

This report provides a detailed overview of **Market Segmentation (MS)**—a widely used marketing strategy that involves dividing a broad consumer or business market into smaller, more manageable segments based on shared characteristics such as demographics, behaviors, or preferences. It explains the core concepts behind market segmentation and explores its practical applications. In particular, the report demonstrates how segmentation can be performed using **Python**, highlighting data-driven techniques for identifying and analyzing market segments efficiently.

1. Market Segmentation

1.1 What is Market Segmentation?

Market segmentation is the process of dividing a target market into distinct subgroups or segments based on shared characteristics such as demographics, needs, priorities, interests, behaviours, or psychographic traits. These segments help businesses better understand their audience and tailor their marketing efforts to meet the specific needs of each group.

1.2 Why is Market Segmentation Important?

- Market segmentation plays a key role in helping businesses grow and succeed. Instead of trying to appeal to everyone, it allows you to focus on the people who are most likely to be interested in your product or service. This means you can spend your time and resources more efficiently.
- By understanding your market segments, you can tailor your marketing, sales, and product strategies to better meet the specific needs of each group. For example, your approach for high-income customers might be very different from your strategy for budget-conscious buyers.
- Segmentation also helps guide product development. Knowing what different groups want makes it easier to design and improve products that truly meet their expectations—like creating different versions for men and women, or for younger and older users.

- Most importantly, it helps boost profits. When you give people exactly what they're looking for, they're more likely to buy, come back, and recommend your brand to others.

1.3 Types of Market Segmentation

There are several ways to segment a market, depending on the kind of product or service and the audience you're trying to reach. Below are the four major types of market segmentation:

1. Demographic Segmentation

This type of segmentation technique splits the target audience based on people-based differences. These factors include things like age, sex, marital status, family size, occupation, education level, income, race, nationality and religion.

Example: A luxury car brand may target high-income professionals aged 35–55.

2. Geographic Segmentation

This groups people based on their **location**—such as country, state, city, climate, or even neighbourhood. It's useful for businesses that serve specific areas or tailor their offerings based on regional preferences.

Example: A clothing brand offering winter wear in colder regions and light wear in tropical areas.

3. Psychographic Segmentation

Psychographic Segmentation splits the target market based on characteristics that are mental and emotional. Some examples of psychographic characteristics include personality traits, interests, beliefs, values, attitudes and lifestyles.

Example: A brand selling eco-friendly products targeting environmentally conscious consumers.

4. Behavioural Segmentation

Behavioral segmentation is a form of marketing segmentation that divides the target market based on behavioural patterns exhibited. This segmentation type studies the behavioural traits of consumers — their knowledge of, attitude towards, use of, likes/dislikes of, or response to a product, service, promotion, or brand.

Example: A streaming service offering special deals to binge-watchers or frequent users.

These types can also be combined for even more precise targeting. For instance, a company might focus on young (demographic), urban (geographic), fitness enthusiasts (psychographic) who buy activewear frequently (behavioural).

2. The How

Following are the key points involved in Market Segmentation:

2.1 Data Exploration

Data exploration is the first and one of the most crucial steps in data analysis. It involves examining and visualizing the dataset to uncover initial patterns, trends, and potential insights. This step helps analysts understand the structure and quality of the data before applying any segmentation techniques.

During data exploration, you:

- Identify the types and measurement levels of variables (e.g., categorical, numerical).
- Analyze the univariate distributions (how each variable behaves on its own).
- Explore relationships and dependencies between variables (e.g., correlations or groupings).

In many cases, the data also needs **pre-processing** such as cleaning, handling missing values, or transforming variables so that it can be properly used with segmentation algorithms.

The insights gained from this stage guide the choice of suitable segmentation methods and help ensure that the analysis is both meaningful and effective.

2.2 Data Cleaning

Data cleaning is a vital step in preparing your dataset for analysis. It involves identifying and correcting issues such as missing values, duplicate records, formatting errors, incorrect entries, or inconsistencies in labelling.

When data is collected from multiple sources, there's a high chance of duplication, mismatched labels, or corrupted entries. That's why cleaning the data is often the first thing you do before beginning any meaningful analysis.

Some key tasks in this step include:

- Verifying data entry: Ensuring all values have been recorded accurately.
- Standardizing categories: Making sure categorical variables use consistent labels (e.g., "Male" vs. "M").
- Handling outliers or invalid values: For many numeric variables, expected value ranges are known, so values outside those ranges can be flagged and reviewed.

A clean and consistent dataset not only ensures the accuracy of your segmentation results but also makes the modelling process much smoother and more reliable.

2.3 Data Preprocessing

Before applying segmentation algorithms, the data must be pre-processed to ensure it's in a suitable format. This involves transforming both numerical and categorical variables to make them compatible with machine learning techniques and to avoid bias in the results.

2.3.1 Numerical Variables

Numerical variables often exist on different scales—some might range from 0 to 1,000, while others range between 0 and 10. When using models that rely on distance calculations (like k-means), variables with larger values can dominate those with smaller values, leading to skewed results.

To avoid this, centering and scaling is commonly applied:

- Centering: Subtracting the mean value from each data point shifts the data to have a mean of zero.
- Scaling: Dividing by the standard deviation (or another value) ensures all variables are on a common scale.

This standardization process allows fair comparison across variables and ensures no single variable overpowers the rest in the segmentation model.

2.3.2 Categorical Variables

Categorical variables require different preprocessing steps. Two common approaches include:

- Merging similar levels: If a categorical variable has too many categories, some of them may be combined (or grouped) to reduce noise and improve model performance. This is especially useful when some categories have very few observations.
- Encoding categories: Categorical variables often need to be converted into numeric format to be used in machine learning models. This can be done using techniques like:
 - Label Encoding (for ordinal data)
 - One-Hot Encoding (for nominal data)

These transformations help machine learning algorithms interpret the categorical data in a way they can process effectively.

2.4 Descriptive Analysis

Descriptive analysis is a fundamental step in understanding the basic features of a dataset. It helps summarize and present data in a meaningful way, making it easier to identify patterns, trends, and anomalies before applying more advanced analytical techniques.

This type of analysis doesn't make predictions—it simply describes what's in the data. It is especially useful in preparing the dataset for deeper exploration or modelling.

There are three main types of descriptive statistics:

1. Frequency Distribution: Shows how often each value or category occurs in the dataset.
2. Measures of Central Tendency: Indicates the central point of the data, typically using the mean, median, or mode.
3. Measures of Variability: Describes how spread out the data is, using statistics like range, variance, and standard deviation.

To visualize and better understand the data, several graphical tools are commonly used:

- Histograms, box plots, and scatter plots for numeric variables.
- Bar charts for showing the frequency of categorical variables.

These tools help in spotting outliers, trends, and groupings that may influence segmentation decisions later in the analysis process.

2.5 Principal Component Analysis (PCA)

- PCA is a dimensionality reduction technique used to simplify large datasets.
- It transforms a large set of variables into a smaller set of uncorrelated variables called *principal components*.
- The goal is to retain as much of the original information (variance) as possible while reducing complexity.
- Helps in removing redundant or less informative variables, which may slow down or mislead analysis.
- First principal component captures the maximum possible variance in the data; each subsequent component captures the remaining variance.
- Useful for:
 - Easier data visualization (especially in 2D or 3D).
 - Reducing noise in the data.
 - Improving performance of machine learning algorithms by eliminating irrelevant features.
- There is a small trade-off in accuracy, but it's often acceptable for the benefit of speed and simplicity.

2.6 The K-Means Clustering Algorithm

2.6.1 What is this algorithm?

- K-Means Clustering is an unsupervised machine learning algorithm used to group data into clusters based on similarity.
- It works on unlabelled data, meaning the data has no predefined categories or outputs.
- The number K refers to the number of clusters you want to form.
 - If $K = 2$, the algorithm forms 2 clusters.
 - If $K = 3$, it forms 3 clusters, and so on.
- Each cluster contains data points that are more similar to each other than to those in other clusters.
- The algorithm tries to minimize the distance between data points and their respective cluster centre (called the centroid).

2.6.2 How Does It Work?

The K-Means algorithm follows these steps:

1. **Choose the number of clusters (K):**
Decide how many clusters you want to divide the data into.
2. **Initialize centroids:**
Randomly select K data points from the dataset as the initial centroids (cluster centers).
3. **Assign data points to the nearest centroid:**
Measure the distance of each data point to each centroid and assign it to the closest one.
4. **Update centroids:**
Recalculate the centroid of each cluster by taking the **mean** of all data points assigned to that cluster.
5. **Repeat assignment:**
Reassign each data point to the new nearest centroid.
 - a. If any data point has changed clusters, go back to Step 4.
 - b. If no points change clusters, move to Step 6.
6. **Calculate cluster variance:**
Measure the variance (spread) within each cluster.
7. **Repeat the full process:**
Optionally repeat the entire process multiple times (with different random starting centroids) to minimize the **total within-cluster variance** and find the best clustering result.

2.6.3 The Elbow Method

- Choosing the right number of clusters (K) is a key step in K-Means clustering.
- The Elbow Method is a widely used technique to help determine the optimal value of K.

How it works:

1. Run K-Means for a range of cluster numbers (e.g., $K = 1$ to 10).
2. For each value of K , calculate the Within-Cluster Sum of Squares (WCSS):
 - a. WCSS measures how compact the clusters are (lower is better).
3. Plot a graph with:
 - a. X-axis: Number of clusters (K)
 - b. Y-axis: WCSS (sum of squared distances)
4. Look for the "elbow point" — the value of K where the WCSS begins to decrease more slowly.
 - a. This point represents a good balance between model simplicity and accuracy.

2.6.4 Why Use This Algorithm?

K-Means clustering is effective for grouping data points based on feature similarity. When data features have varying values, this algorithm helps segment the dataset into meaningful clusters by minimizing within-cluster variance.

Purpose:

- To group data points with similar feature values into the same cluster.
- Helps uncover natural groupings or structures within the data.
- Reduces complexity for analysis and modelling.

Advantages of K-Means Clustering:

- **Simple and easy to implement:**
The algorithm follows a straightforward, iterative approach.
- **Efficient for large datasets:**
It scales well and performs quickly even on high-volume data.
- **Guaranteed convergence:**
The algorithm will always converge to a result (though it may be a local optimum).
- **Adaptable to different cluster shapes:**
Can approximate various cluster geometries (e.g., spherical or elliptical) depending on the data distribution.

3. Market Segmentation Case Study on McDonalds Dataset

Kindly refer to any of the following GitHub links for the complete code implementation.

GitHub: - <https://github.com/Imanchandra2024/FeyynMcDonalds.git>

5. Conclusion

Market segmentation is a core element of modern marketing, playing a vital role in helping businesses define their target audiences, shape compelling value propositions, set effective pricing strategies, and plan impactful communication campaigns. While the idea of dividing a market into smaller groups may seem straightforward, putting it into practice can be quite complex. It often requires careful analysis, the right tools, and a deep understanding of various customer factors.

Research shows that many marketers struggle to seamlessly integrate segmentation into their broader marketing strategies. This highlights the ongoing need to explore new segmentation variables and develop fresh, data-driven approaches that reflect evolving consumer behavior.

When done well, market segmentation allows businesses to create more personalized, targeted campaigns that resonate with specific audiences. This not only improves customer engagement but also strengthens a company's position in an increasingly competitive marketplace.

However, the success of segmentation efforts largely depends on the quality of the data used. Reliable, accurate, and up-to-date data—presented in a clear and usable format—is essential for making informed marketing decisions.

In short, market segmentation helps businesses better understand their customers, predict their needs, and make smarter strategic choices. In today's fast-moving, data-focused world, it's a powerful tool for driving growth and staying ahead of the curve.

References:

Dolnicar, S., Grün, B., & Leisch, F. (2018). *Market segmentation analysis: Understanding it, doing it, and making it useful*. Springer. <https://www.springer.com/series/10101>

Varini, K. (2011, October). *Market segmentation: Does it work?* Paper presented at the 29th EuroCHRIE Conference, Dubrovnik, Croatia.

Step 5: Segmenting the Market — In-Depth Summary

From the Book: *Market Segmentation Analysis* by Sara Dolnicar, Bettina Grün, and Friedrich Leisch

Summarised by: *Iman Chandra*

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1. Introduction

Market segmentation is more than just a technical procedure — it's the beating heart of customer-centric strategy. Step 5 represents the transition from preparation to action, where data becomes insight and insights drive decision-making. This phase involves breaking the market into distinct segments based on customer similarities, typically using clustering algorithms.

Using clustering algorithms, we group customers in such a way that individuals within the same segment are more alike compared to those in other segments.

2. Importance of Segmenting

Market segmentation enables organizations to: - Discover natural customer patterns hidden in data. - Personalize marketing, product offers, and communication. - Replace assumptions with evidence-based targeting strategies.

Without this step, the insights needed for profiling and targeting (in later steps) cannot exist.

3. Types of Segmentation Techniques

3.1 Distance-Based Clustering (K-Means)

- Most popular method.
- Measures how close customers are in terms of selected features.
- **K-Means** minimizes the distance between each point and its assigned centroid.
- Requires prior selection of k (number of clusters).
- Fast, scalable, and best for numeric data.

3.2 Model-Based Clustering

- Based on statistical models.
- Assumes data points are drawn from different distributions (e.g., Gaussian).
- Soft clustering: each customer gets a probability for each segment.
- More flexible than K-Means but computationally heavier.

3.3 Hierarchical Clustering

- Builds a tree (dendrogram) of clusters.
- No need to predefine k .
- Better for small datasets.
- Easy to visualize but slow on large data.

3.4 Hybrid Clustering

- Combines fast clustering (e.g., K-Means) with detailed refinement (e.g., hierarchical).
 - Balances speed and interpretability.
-

4. Key Concepts and Terms

Term	Meaning
Centroid	Average point of a cluster in feature space.
WCSS (Inertia)	Within-cluster sum of squares; measures compactness.
Elbow Method	Graphical technique to find optimal number of clusters (K).
Hard Clustering	Each point belongs to one cluster only.
Soft Clustering	Each point has a probability for each cluster (e.g., GMM).

5. Comparison of Clustering Methods

Method	Input Needed	Speed	Interpretability	Type of Clustering
K-Means	Number of K	Very Fast	Medium	Hard
GMM (Model-Based)	Number of K	Medium	High	Soft
Hierarchical	Optional	Slow	High	Hard/Soft
Hybrid	Depends	Medium	Medium-High	Mixed

6. Real-World Case Highlight

In retail, a company like **Decathlon** can apply K-Means clustering to: - Identify “premium customers” with high income but low visits. - Find “student shoppers” with low income but high frequency. - Target “bargain hunters” during discount seasons.

These segments help customize offers, promotions, and inventory planning.

7. What to Avoid in Step 5

- Using raw (unscaled) numerical data with distance-based algorithms.
- Skipping K selection step and assuming arbitrary number of clusters.
- Trusting clusters blindly without visualizing or checking business logic.
- Using irrelevant or redundant variables that distort cluster quality.

8. Choosing the Right Technique

There is no universally best technique. The choice depends on: - Data type (numeric vs categorical). - Sample size. - Speed vs accuracy needs. - How interpretable the results need to be.

A good analyst always tests multiple methods and validates using business feedback.

9. Personal Reflection

While studying Step 5, I realized this is not just a technical activity — it's a critical business move. The clustering algorithm is just a tool; the real value lies in how we **interpret the segments** and how well they **translate into business action**. I learned that blindly trusting clusters can be misleading unless combined with proper validation and visualization.

github link:-

https://github.com/lmanchandra2024/FeyynMcDonalds/blob/main/fyenn_project.ipynb

10. TL;DR – Step 5 Recap

- Step 5 is the core of market segmentation: clustering similar customers together.
 - K-Means is widely used due to its speed and simplicity.
 - Different clustering methods serve different goals.
 - Visual validation and business sense are key.
 - Segmenting right is not just about algorithms — it's about insights.
-

Market Segmentation analysis. STEP-6

Kartik Padia

Step 1: Deciding (not) to segment

Market segmentation is a marriage, not a date. Before we run any numbers, we must be absolutely certain our organization is ready—and willing—to live with segmentation as a long-term strategy.

1. Strategic Commitment

- *Organizational Alignment:* Every department—from R&D to finance to sales—must understand and actively support segmentation. If senior leaders treat segmentation as a side project, it will die on the vine.
- *Resource Investment:* Real segmentation costs money: designing multiple product variants, running surveys and focus groups, tailoring messaging, and updating distribution plans. We must forecast whether the *net* lift in revenue justifies these costs.

2. Structural Implications

- *Team Structure:* We may need new “segment-focused” units or cross-functional squads. This isn’t just a marketing exercise; it can reshape reporting lines and budgets.
- *Process Overhaul:* From product development cycles to customer support scripts, every touchpoint may need tweaking to address distinct segment needs.

3. Common Pitfalls & Barriers

- *Leadership Apathy:* Without visible, ongoing sponsorship (budget approvals, steering-committee meetings, executive updates), segmentation fizzles.
- *Cultural Resistance:* An organization that resists change, hoards data in silos, or prioritizes short-term metrics over strategic bets will block segmentation at every turn.
- *Skill Gaps:* You need *both* marketing vision and data-science chops. A team heavy on one but light on the other will struggle to turn analysis into action.
- *Rushed Timelines:* When segmentation is jammed into a two-week sprint without clear objectives or roles, everyone cuts corners—and the output is useless.

4. “Knock-Out” Checklist

This step offers a checklist of yes/no questions—like “Is our culture market-oriented?” or “Do we have the bandwidth to manage multiple segments?” A single “no” should trigger a serious rethink. It’s better to pause now than waste effort on a doomed project.

- Do executives fully grasp the concept and its implications?
- Is there a dedicated budget for research, analytics, and execution?
- ...

Step 2: Specifying the Ideal Target Segment

“Imagine your dream customer before you see the data.” It’s where theory meets strategy: before we ever see the real data, we decide the type of segment we want.

- **Knock-Out Criteria (Must-Haves)**

- *Size & Growth Potential:* Must represent at least $X\%$ of the market, with runway to expand.
- *Profitability Threshold:* Average spend or margin above a defined floor.
- *Strategic Fit:* Must align with brand values and operational capabilities.

- **Attractiveness Criteria (Nice-to-Haves)**

- *Reachability:* How easily can we connect via digital, retail, or direct channels?
- *Growth prospects* (emerging demographics)
- *Loyalty & Advocacy:* Likelihood of repeat purchases and word-of-mouth referrals.
- *Competitive Intensity:* Fewer competitors or ability to differentiate effectively.

- **Structured Process**

- Document every criterion and weight in a shared template.
- Review and refine with stakeholders, ensuring no hidden agendas.
- Lock down this blueprint before moving on to data collection.

- **Scoring & Prioritization**

- Assign weights to each attractiveness factor (e.g., 30% reach, 25% loyalty, 45% growth).
- Later, when segments emerge from data, we’ll **score** each on these criteria, multiply by weights, and compute a composite “attractiveness” score to rank them objectively.

Step 3: Collecting Data

By Step 3, the rubber hits the road—we move from planning to gathering the raw ingredients for segmentation. Data collection is deceptively complex; I found several nuances that stood out:

1. Define Variable Types

- *Segmentation Variables*: Core inputs for clustering (e.g., frequency of visits, rating scales for taste, speed, health).
- *Descriptor Variables*: Used later to **profile** and **name** the segments (e.g., age, income bracket, geography, lifestyle indicators).

2. Select Data Sources

- *Surveys & Questionnaires*: Custom-designed to capture psychographics and satisfaction scores—ensure questions map directly to segmentation variables.
- *Internal Systems*: CRM, POS, and web analytics offer behavioral and transaction data—high volume but often missing psychographics.
- *Experimental & Observational*: A/B tests, focus-group transcripts, or even social-media listening can add nuance—but watch out for bias and consent issues.

3. Quality & Quantity

- *Sample Size*: Big enough to reveal stable, repeatable clusters (e.g., ≥ 300 respondents for 3–5 segments).
- *Data Cleaning*: Standardize scales, impute or remove missing values judiciously, and flag outliers that could skew clusters.
- *Pre-Testing*: Pilot the survey on a small cohort to catch ambiguous wording or technical glitches.

4. Practical Considerations

- *Timing & Budget*: Balance depth of data (long surveys = fatigue) against cost.
- *Privacy & Ethics*: Ensure compliance with data-protection regulations and transparent consent processes.
- *Documentation*: Maintain a clear data-dictionary so every team member knows exactly what each field means.

Step 6: Profiling Segments

This step is about digging into the core of each segment to answer: “*Who are they, really?*” and “*What makes them different from the rest?*” It’s the step that translates abstract clusters into rich, descriptive identities that businesses can actually act on. Profiling is only required when data-driven market segmentation is used. Profiling answers two core questions simultaneously:

1. **What defines each segment?**
2. **How distinct is each segment from the others?**

Profiling is **only** about the segmentation variables (e.g. travel motives, product-attribute ratings, etc.). We *do not* yet bring in demographics or behavior data—that will come in Step 7. Instead, we characterize each segment *on the same dimensions used for clustering*, ensuring our descriptions link directly back to why the clusters formed in the first place.

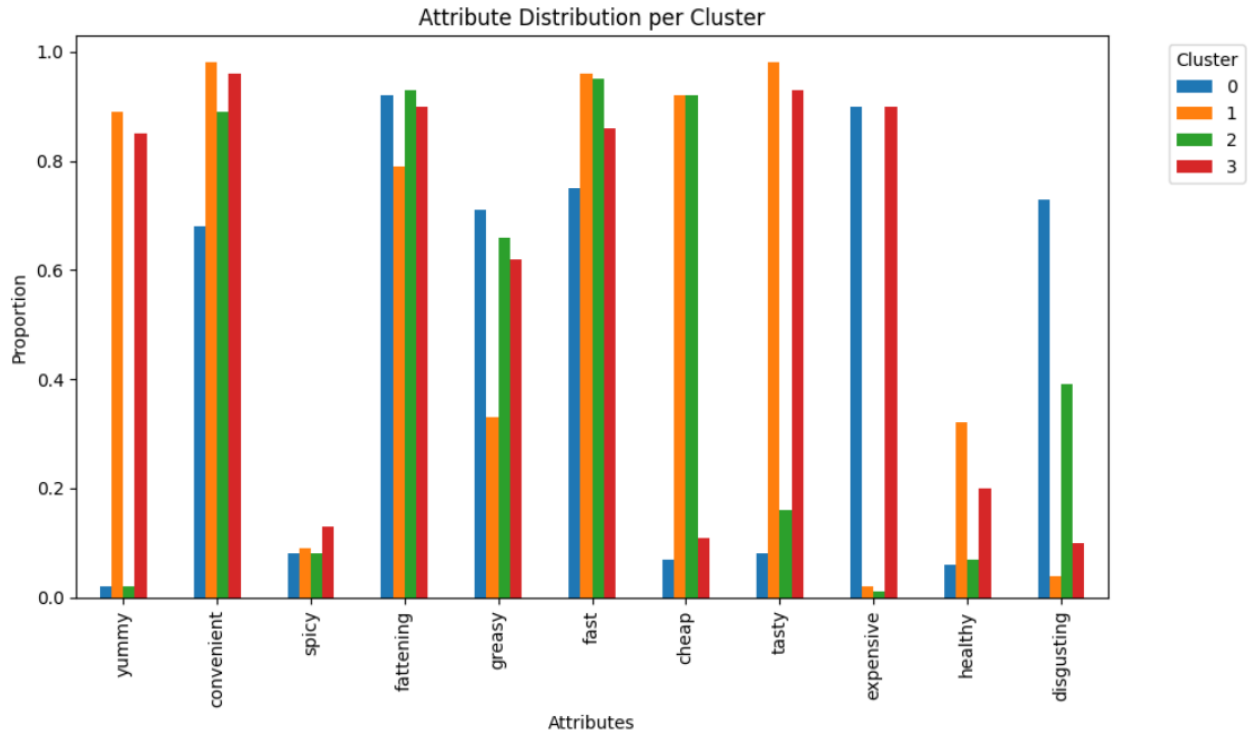
6.1 Identifying Key Characteristics

- *Aim:* “Identify the defining characteristics of market segments with respect to the segmentation variables”.
- *Why it matters:* In data-driven segmentation, you cannot know beforehand which combination of variables will emerge as differentiators. Profiling gives managers real, interpretable features—otherwise, the clusters remain a “black box” (71% of surveyed managers feel this way!).

What we do:

- For each segment, compute summary statistics (means for continuous/binary, proportions for binary variables).
- Compare those segment-means to the overall sample mean. A large deviation signals that variable is a **marker variable**—one that *really* characterizes the segment.

Example: In the McDonald’s segmentation, **Cluster 1** was clearly defined by high agreement with “**convenient**” (≈ 1.00) and “**fast**” (≈ 1.00), making these the top markers for this group. These attributes not only scored near-perfect within the segment but also exceeded the average ratings across all respondents, indicating that **operational efficiency** is a primary appeal for this segment.



6.2 Traditional vs. Graphical Profiling

Traditional Tables

- Listing each segment's mean for every variable is possible (see Table 8.1), but for 20 variables and 6 segments, that's **420** comparisons—and if you present multiple solutions? You quickly end up with thousands of numbers to scan.

Graphical Visualizations

- *Segment Profile Plots* (“panel plots”): One small panel per segment, bars show each variable's segment-mean vs. overall mean. Marker variables are highlighted in color, the rest in gray.
- *Eye-tracking evidence* proves profile plots take *far* less time and effort to interpret than tables.
- *Segment Separation Plots*: Project high-dimensional data (e.g. via PCA) into 2D, then plot observations (or just cluster hulls) colored by segment, plus a neighborhood graph showing which segments are most similar.

Why graphics matter: They turn hundreds of raw numbers into *at-a-glance* insights—letting managers quickly see which segments bulge on which variables, and spot overlapping or indistinct clusters.

6.3 Why Profiling Must Be Done Well

- *Avoid over-interpretation* of noise: tiny segments or small differences can mislead. If a segment has < 5% of data, its means might not be stable.
- *Keep it focused:* Only segmentation variables in this step—external descriptors belong in Step 7.
- *Use sensible thresholds* for marker variables—0.25/50% are defaults, but adjust if your data aren't binary.
- *Produce clean visuals:* highlight only key differences, avoid clutter, annotate values when helpful.

Conclusion:

Profiling transforms abstract clusters into *actionable customer portraits*. Without this step, the results of segmentation remain hidden behind math and models. By identifying each segment's defining traits—grounded in the original clustering variables—we bridge the gap between analytics and strategic decision-making.

Case Study:

<https://github.com/Rohit-Rannavre/Feynn-Labs-Internship-2022/tree/main>

Market Segmentation

SUMMARY OF STEP 1, 2,3 AND 4.

SANSKRITI SINGH

1. What is Market Segmentation?

Market segmentation is the process of dividing a broad market—full of all kinds of people—into smaller, more manageable groups who share common characteristics. These could include age, spending habits, beliefs, or interests. Instead of trying to please everyone, businesses focus on these segments to connect with customers most likely to appreciate—and buy—their product or service.

Strategic and Tactical Marketing: -

Feature	Strategic Marketing	Tactical Marketing
Time Frame	Long-term (1–5 years)	Short-term (days to months)
Focus	Market direction, positioning, objectives	Campaign execution, offers, content
Responsibility	Executives, Strategy Heads	Marketing teams, agencies
Decision Type	What markets to enter, who to target	When and where to run ads, what creatives to use
Tools Used	SWOT, 5Cs, STP, Porter’s Five Forces	Google Ads, social media, CRM, email, events
Impact	Guides marketing vision	Delivers measurable short-term results

Benefits of Marketing Segmentation

1. **Better Targeting** – Focus on the right audience, not everyone.
2. **Higher Efficiency** – Save money and effort in campaigns.
3. **Personalized Marketing** – Tailor messages for each segment.
4. **Improved Customer Insights** – Understand needs and behaviors better.
5. **Better Product Fit** – Design products that match segment preferences.
6. **Optimized Pricing** – Charge different prices based on segment value.
7. **Strategic Planning** – Guide decisions on market entry and positioning.
8. **Customer Retention** – Improve loyalty with tailored retention strategies.
9. **Market Expansion** – Discover and enter new markets.
10. **Performance Tracking** – Measure and optimize by segment.

2. Types of Market Segmentation: -

Businesses divide their market into distinct customer groups to serve them more effectively. The method of segmentation depends on the nature of the product or service and the characteristics of the target audience. The four main segmentation approaches are:

1. **Demographic Segmentation**

This method categorizes individuals based on measurable personal details such as age, gender, income, education, occupation, marital status, and other similar factors.

2. **Geographic Segmentation**

This approach groups people by their physical location, which can include their country, region, city, climate, or neighborhood.

3. **Psychographic Segmentation**

This form of segmentation considers internal traits like lifestyle, values, beliefs, attitudes, and personality characteristics.

4. **Behavioural Segmentation**

This method segments customers according to their actions, habits, and responses in relation to a product or brand, including things like usage frequency, preferences, and engagement level.

Segmentation Type	What It's Based On
Demographic	Age, gender, income, education, job, family
Geographic	Country, city, climate, region
Psychographic	Lifestyle, values, beliefs, attitudes, interests
Behavioral	Purchase frequency, usage, brand loyalty, responses

3. The Market Segmentation Process (Step-by-Step Breakdown):-



Step 1: Decide Whether to Segment

- **Goal:** Determine if segmentation is necessary and feasible.
- **What it involves:**
 - Assess if different customer groups exist with varying needs.
 - Consider resource constraints, organizational readiness, and potential benefits.
 - Decide whether mass marketing, differentiated marketing, or focused segmentation is best.

Step 2: Define Ideal Target Segment

- **Goal:** Identify what makes a segment “ideal” for your business.
- **What it involves:**
 - Set criteria such as profitability, size, growth potential, strategic fit.
 - Eliminate non-viable segments using *knock-out* filters (e.g., too small, inaccessible).
 - Prioritize segments that match brand values and capabilities.

Step 3: Collect Data

- **Goal:** Gather relevant data on customers or market to enable segmentation.
- **What it involves:**
 - Design surveys or use internal/external data sources.
 - Choose variables (e.g., demographics, psychographics, behaviors).
 - Ensure data quality and enough sample size

Step 4: Explore Data

- **Goal:** Prepare the data for analysis and uncover initial patterns.
- **What it involves:**

- Clean data (handle missing values, outliers).
- Normalize/standardize for comparison.
- Use descriptive statistics and visualizations to understand trends.

Step 5: Segment Customers

- **Goal:** Identify distinct groups of customers.
- **What it involves:**
 - Apply segmentation techniques like k-means, hierarchical clustering, or model-based clustering.
 - Use statistical tools or machine learning algorithms.
 - Determine the optimal number of segments (e.g., via silhouette score, stability).

Step 6: Profile Segments

- **Goal:** Understand what makes each segment unique.
- **What it involves:**
 - Examine key differentiating attributes.
 - Use cross-tabulations or visual analytics.
 - Identify what needs or values define each segment.

Step 7: Describe Segments

- **Goal:** Create a comprehensive view of each segment.
- **What it involves:**
 - Analyze demographic, geographic, psychographic, and behavioral traits.
 - Test statistically significant differences between segments.
 - Build segment personas or profiles for practical understanding.

Step 8: Select Target Segment(s)

- **Goal:** Choose the most attractive segment(s) to serve.

- **What it involves:**
 - Evaluate segments using criteria like size, growth, competitiveness, and fit.
 - Consider strategic alignment and long-term potential.
 - Make a final decision on which segment(s) to focus your efforts on.

Step 9: Customize the Marketing Mix

- **Goal:** Tailor your 4Ps (Product, Price, Place, Promotion) for each segment.
- **What it involves:**
 - Develop targeted value propositions.
 - Adapt marketing strategies to resonate with segment-specific needs.
 - Optimize messaging, channels, and offerings accordingly.

Step 10: Evaluate & Monitor

- **Goal:** Track performance and adjust as needed.
- **What it involves:**
 - Monitor KPIs such as segment growth, response rate, and profitability.
 - Check for shifts in segment behavior or size (segment evolution).
 - Re-segment or realign strategy as the market changes.

4: Exploring Data

Objective: To prepare a clean, structured, and analytically meaningful dataset that is suitable for segmentation modeling.

4.1 Initial Exploration: A First Glimpse

Begin with a structural review of the dataset. This includes:

- Scanning for unexpected data types or unusual formats.
- Identifying the volume and distribution of responses.
- Understanding the general nature of each variable (e.g., categorical vs numerical).

The purpose is to become familiar with the dataset's scope and limitations before proceeding to technical treatments.

4.2 Data Cleaning

Cleaning ensures data integrity. Key tasks include:

- **Handling missing data:** Determine whether to impute, remove, or flag missing values based on their nature and frequency.
- **Dealing with outliers:** Assess statistical outliers and determine whether they represent valid edge cases or data entry errors.
- **Standardizing entries:** Ensure consistent encoding (e.g., converting "Male/Female" and "M/F" into unified formats).
- **Removing duplicates or irrelevant entries:** Especially important in survey data where multiple responses may exist.

This step prevents distorted results during clustering or dimensionality reduction.

4.3 Descriptive Analysis

Run summary statistics and basic visualizations:

- **For categorical variables:** Frequency tables, bar charts.

- **For numeric variables:** Means, medians, ranges, standard deviations, histograms, and boxplots.

This helps understand underlying distributions, detect skews, and uncover any initial patterns or anomalies worth noting before modeling.

4.4 Pre-Processing Variables

To ensure compatibility with clustering algorithms, further transformations may be required:

4.4.1 Categorical Variables

- Encode variables using one-hot encoding or label encoding.
- Combine rare categories where necessary to avoid sparsity issues.
- Ensure variables selected are relevant to segmentation objectives.

4.4.2 Numeric Variables

- Normalize or standardize variables (e.g., z-scores or min-max scaling) to ensure comparability.
- Log-transform or bin variables if appropriate to reduce skew or increase interpretability.

This step aligns data structurally and statistically for consistent treatment by algorithms.

4.5 Dimensionality Reduction (Optional)

If the dataset contains many correlated numerical variables, **Principal Component Analysis (PCA)** or similar techniques may be applied:

- **Purpose:** Reduce redundancy, simplify structure, improve computational efficiency, and aid in visualization.
- **Outcome:** A smaller number of orthogonal components that preserve the majority of the data's variance.

PCA is particularly useful when using distance-based clustering methods where multicollinearity can distort proximity measures.

4.6 Final Checklist Before Modeling

Ensure:

- All variables are in appropriate formats.
- Data is cleaned, encoded, and scaled.
- Dimensionality is reduced if necessary.
- Dataset is ready for clustering or model-based segmentation.

Strategic Importance

This step is not merely technical preparation—it is foundational to producing **valid, replicable, and insightful segmentation results**. Errors or oversights here can propagate and compromise the entire segmentation strategy.

Case Study on McDonald's: -

Link:-

https://github.com/sans121314/Fynn_lab_project_2_part1_sansri.git