Market Segmentation Analysis

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Step 1: Deciding (Not) to Segment

1 Implications of Market Segmentation Commitment

- Market segmentation requires long-term commitment and significant organizational changes (McDonald and Dunbar 1995).

- It involves costs such as research, surveys, new product development, pricing, and marketing adjustments (Cahill 2006).

- Organizations must be willing to modify their internal structures to cater to different market segments (Croft 1994).

- Segmentation decisions must be made at the highest executive level, with continuous organizational communication and support.

2 Implementation Barriers

- Senior Management Issues: Lack of leadership, resources, and understanding of market segmentation can hinder its success.

- Organizational Culture: Resistance to change, poor communication, and short-term thinking can prevent successful implementation.

- Training and Knowledge: Lack of understanding of segmentation foundations and consequences can lead to failure.

- Operational Barriers: Insufficient financial resources, lack of planning, and unclear objectives can obstruct the segmentation process.

- Managerial Acceptance: Segmentation techniques may not be adopted if management does not understand them well, so clear visual presentations can help.

3 Step 1 Checklist

- A series of questions and tasks guide the decision to pursue market segmentation:

  - Is the organization market-oriented, willing to change, open to new ideas, and capable of structural changes?

  - Does it have the financial resources to support segmentation?

  - Commitment and active involvement of senior management are essential.

  - Ensure that the team fully understands market segmentation concepts and implications, with training provided if needed.

Step 2: Specifying the Ideal Target Segment in market segmentation.

It emphasizes the importance of user input throughout the process, especially in defining criteria for evaluating potential market segments.

1 Segment Evaluation Criteria

Two types of criteria are essential for assessing market segments:

1. Knock-out Criteria: These are non-negotiable features that automatically eliminate market segments that don’t meet specific conditions.

2. Attractiveness Criteria: These assess the relative appeal of remaining segments.

Various researchers have proposed criteria like measurability, substantiality, accessibility, and distinctiveness to evaluate market segments.

2 Knock-Out Criteria

Knock-out criteria help determine whether a segment qualifies for further evaluation:

- The segment must be homogeneous, distinct, large enough, and identifiable.

- It must match the organization's strengths and be reachable.

3 Attractiveness Criteria

Attractiveness criteria are more subjective, allowing the segmentation team to rate how attractive a segment is in relation to the organization's objectives. Common factors include profitability, growth potential, and competitiveness.

4 Implementing a Structured Process

The chapter recommends using a structured process, such as a **segment evaluation plot**, to assess segment attractiveness versus organizational competitiveness. This helps determine the most attractive segments for targeting, though segments are not yet available at this stage.

Step 2 Checklist

A checklist guides the segmentation team to:

- Discuss and agree on knock-out criteria.

- Define six attractiveness criteria.

- Assign relative weights to each criterion based on importance.

- Seek approval from the advisory committee.

Step 3 - Collecting Data

This chapter focuses on the collection of empirical data, a crucial part of both commonsense and data-driven market segmentation. In commonsense segmentation, one segmentation variable (e.g., gender) is used to divide consumers, while descriptor variables (e.g., age, travel behavior) are used to describe each segment. Data-driven segmentation involves multiple segmentation variables to identify patterns or groups.

Key points include:

- Segmentation variables define how consumers are grouped, while **descriptor variables** help describe segments in detail.

- High-quality data is essential for accurate segmentation, influencing product development, pricing, and marketing strategies.

- Empirical data for segmentation comes from surveys, observations, and experiments, but it is vital to choose data that closely reflects real consumer behavior. Surveys are common but not always reliable for behaviorally sensitive topics.

The chapter highlights the importance of exploring various data sources to ensure accurate market segmentation.

Segmentation Criteria

Before collecting data for market segmentation, an organization must choose a segmentation criterion, which refers to the type of information used to divide a market into segments. This decision is crucial and can't be outsourced as it requires knowledge of the market. The most common segmentation criteria include geographic, socio-demographic, psychographic, and behavioral approaches.

1. Geographic Segmentation: This approach divides the market based on consumers' location (e.g., country, region). It's simple and useful when location affects product needs, such as language or regional preferences. However, location alone rarely reflects deeper consumer characteristics like preferences or behaviors.

2. Socio-Demographic Segmentation: Common criteria include age, gender, income, and education. This segmentation is easy to implement and can explain certain preferences, such

as luxury goods (high income) or baby products (families). However, socio-demographics often explain only a small part of consumer behavior.

3. Psychographic Segmentation: This method groups people based on psychological factors like beliefs, interests, and benefits sought. It is more reflective of the reasons behind consumer behavior (e.g., travel motives). However, it is more complex and relies on reliable and valid data to accurately segment consumers.

4. Behavioral Segmentation: This approach uses actual consumer behaviors like purchase history or spending habits. It is highly effective because it groups people by their most relevant actions. However, it can be challenging to obtain behavioral data, especially for potential customers who haven't interacted with the product yet.

Each segmentation criterion has its advantages and disadvantages, and the choice depends on the market context and product needs.

3 Data from Survey Studies

Survey data is often used in market segmentation due to its cost-effectiveness and ease of collection. However, it is prone to biases that can affect the quality of the segmentation results. Some key considerations when using survey data for segmentation include:

3.1 Choice of Variables

Carefully selecting variables is essential to the success of market segmentation. Including unnecessary variables can lead to respondent fatigue and hinder the accuracy of segmentation algorithms, as they introduce "noisy" or "masking" variables that obscure the correct segmentation solution. It is important to ask only necessary and unique questions.

3.2 Response Options

The choice of response options can affect the analysis. Binary and metric data are preferable because they allow clearer distance measures. Ordinal data (common in surveys with 5 or 7-point scales) complicates the measurement of distances between responses, which affects segmentation accuracy. To improve analysis, researchers may consider binary or metric options or use visual analogue scales for nuanced responses.

3.3 Response Styles

Response biases, such as a tendency to agree with all questions or use extreme answers, can distort segmentation results. Algorithms struggle to distinguish between true beliefs and response biases, potentially misinterpreting biased data as a distinct market segment. It is important to minimize response styles and remove such respondents if detected.

3.4 Sample Size

Sample size significantly affects segmentation quality. Studies recommend sample sizes of at least 100 times the number of segmentation variables to ensure accurate results. However, larger sample sizes are necessary when dealing with complex market and data characteristics, such as unequal segment sizes or overlapping segments.

4 Data from Internal Sources

Internal data from an organization's systems (e.g., scanner data, loyalty programs) reflects actual consumer behavior and avoids biases common in survey responses. However, such data may over-represent current customers, potentially skewing future market insights.

5 Data from Experimental Studies

Experimental data from field or lab experiments, such as responses to advertisements or choice experiments, can also serve as segmentation criteria. These experiments help identify preferences for product attributes and their influence on consumer choice, providing a strong basis for segmentation.

6 Step 3 Checklist

This checklist outlines the key tasks for the third step in market segmentation, ensuring that necessary data is collected in an effective and unbiased manner.

1. Convene a market segmentation team meeting

   Gather the team responsible for the segmentation process.

2. Discuss consumer characteristics for segmentation

   Identify consumer characteristics that can serve as effective segmentation variables for extracting groups of consumers from the data.

3. Discuss consumer characteristics for detailed segment descriptions

   Identify additional consumer characteristics needed to thoroughly describe the segments.

4. Determine data collection methods

   Decide on the best approach to collect data that accurately captures both segmentation and descriptor variables.

5. Design data collection to minimize biases

   Ensure the data collection process is carefully designed to avoid contamination through biases or other systematic errors.

6. Collect data

   Proceed with the actual data collection based on the decided methods.

Step 7: Describing Segments

1. Tree Structure: Decision trees predict segment membership by splitting data at nodes based on independent variables, with terminal nodes indicating final predictions.

2. Types of Splits: Algorithms can implement binary (two-way) or multi-way splits.

3. Key Parameters:

- Independent Variable Selection: Chosen based on association tests, such as p-values.
- Stopping Criteria: Guidelines for when to cease further splitting.
- Final Predictions: Made according to the majority membership in terminal nodes.

R Implementation with `partykit`

- Basic Usage: The `ctree()` function fits conditional inference trees, using datasets like `vacmotdesc`.

- Example Output:

- Splits based on variables like `Vacation. Behaviour` and `Obligation`, classifying consumers into segments.
- Visualizations enhance interpretation, displaying segment distributions across nodes.

Advanced Configuration

- Control Parameters: Utilizing `ctree_control` to set minimum node sizes and significance thresholds increases model robustness.

- Handling Categorical Variables: The method can also effectively accommodate dependent variables with multiple categories.

Visual Insights

- Stacked Bar Plots: Clearly represent segment distributions within terminal nodes.

- Purity Comparison: Evaluating the proportion of true segment members across nodes can inform targeted marketing strategies.

Checklist for Analysis

- Ensure that selected segments possess well-defined profiles.

- Utilize appropriate visualizations for assessing descriptor variables.

- Validate statistical significance and apply corrections for multiple testing.

Github Link: Github Link: https://github.com/Shwetapatki22/Market-Segmentation