Introduction to Market Segmentation Analysis

1.1 Market SEGMENTATION

- A Market plan consists of two components namely Strategic and tactic. Strategic components is long term direction of an organisation, but does not provide details on short term actions, while tactic component outlines short term plans and actions that need to be taken to achieve the require output. It simply Contains instructions to reach the destination an organisation is willing to reach.

- SWOT Analysis means analysing Strength, weakness, Opportunities and Threat of an organisation that either is already serving or plans to cater to newly emerging Needs/Requirement. Here based on specific needs of Customers an organisation analyses how it can use the existing strengths create revenue for an existing opportunity, minimize weakness and minimize/eliminate threat that can be factors like new competitor entry /Availability of skilled workers etc. Ultimate Aim of SWOT Analysis in a Business environment is to maximize profit by best utilization of resources while minimizing all sorts of risk.

- Once SWOT Analysis is done and Two key decisions has to be made as part of strategic marketing plan, namely which consumer to focus and which image of organization to create in Market. Once above two points are cleared then only Tactical Marketing plan begins which typically cover for a period up to 1 year and has four areas namely the development and modification of the product in view of needs and desires of the target segment (Product), the determination of the price in view of cost, competition, and the willingness to pay of the target segment (Price), the selection of the most suitable distribution channels to reach the target segment (Place), and the communication and promotion of the offer in a way that is most appealing to the target segment (Promotion). The combination of good strategic marketing and good tactical marketing leads to the best possible outcome.

1.2 Definition Market SEGMENTATION

- Market segmentation is a Decision Making Tool for marketing Manager in task of selecting a target market segment for given product and selecting an approximate market mix.
- Market segmentation means cutting markets into slices. Ideally, consumers belonging to the same market segments– or sets of buyers are very similar to one another with respect to the consumer characteristics deemed critical by management. At the same time, optimally, consumers belonging to different market segments are very different from one another with respect to those consumer characteristics. Consumer characteristics deemed critical to market segmentation by management are referred to as segmentation criteria.
- The segmentation criterion can be one single consumer characteristic, such as age, gender, country of origin, or stage in the family life cycle. Alternatively, it can contain a larger set of consumer characteristics, such as a number of benefits sought when purchasing a product, a

number of activities undertaken when on vacation, values held with respect to the environment, or an expenditure pattern.

- One Example to understand Concept of segmentation is that of a Mobile Phone Manufacturing company .In this case the company can segment Mobile Phone Market based on price Customers are willing to pay and features that can be made available in the phone.

1.3 Benefits of Market Segmentation

- There are a Number of benefits of Market Segmentation as below.

- **Enhanced Consumer Understanding**: Market segmentation improves understanding of consumer differences, aligning organizational strengths with consumer needs, leading to competitive advantage and potential market dominance (McDonald and Dunbar, 1995).

- **Ideal Niche Segments**: Successful niche segments match organizational skills, are profitable, have growth potential, and face little competition, making them ideal targets (Kotler, 1994).

- **Micro Marketing and Finer Segmentation**: Advanced eCommerce and consumer databases enable personalized offerings through micro marketing and finer segmentation, where each consumer represents a unique market segment (Kara and Kaynak, 1997).

- **Higher ROI and Small Organization Survival**: A targeted marketing mix yields higher ROI and is essential for small organizations focusing on distinct consumer needs due to limited resources (Haley, 1985).

1.4 Cost of Market Segmentation

- Market segmentation demands significant upfront investment in time and resources for analysis, customized marketing, and ongoing market monitoring.

- Poor execution can result in wasted resources and staff demoralization, yielding no return.

- Organizations must weigh the long-term commitment and potential benefits before adopting a segmentation strategy.

Market SEGMENT Analysis

1 The Layers of Market Segmentation Analysis

Market segmentation analysis involves grouping consumers into segments based on similar product preferences or characteristics. This process, although statistical, is exploratory and influenced by decisions made by the data analyst. To ensure the analysis is beneficial for an organization, both a skilled data analyst and a user who understands the organization□s broader mission must be involved. Here, "user" refers to the person or department utilizing the segmentation results to develop a marketing plan.

The quality of the segmentation depends heavily on several tasks. These tasks include collecting good data, as the statistical process cannot compensate for poor data. After data collection, the data needs to be explored to gain preliminary insights before actual segment extraction. Once consumers are grouped into segments, each segment must be profiled and described in detail to help users understand and target them effectively. This profiling informs the development of a customized marketing mix.

If these tasks are well-implemented, a theoretically excellent market segmentation solution can be achieved. However, for it to be meaningful, users must convert this solution into strategic and tactical marketing actions, requiring implementation tasks. These non-technical tasks include assessing the feasibility of a market segmentation strategy, committing to it long-term, and making decisions about data collection and target segment selection. Users must then develop a marketing plan and design a customized marketing mix for the selected segments.

2.2 Approaches to Market Segmentation Analysis

There is no single best approach to market segmentation analysis. Approaches can be systematized in various ways, including by the extent to which an organization is willing or able to change its current marketing approach and by the nature of the segmentation variable(s) used.

2.2.1 Based on Organizational Constraints

Dibb and Simkin (2008) identify three approaches to market segmentation based on organizational constraints:

Quantitative Survey-Based Approach (Segment Revolution): This approach involves starting from scratch, willing to forget past marketing methods, and developing a new marketing plan based on the segmentation analysis. It offers the highest potential benefits but is often not viable due to organizational resistance to change.

Segment Evolution: This approach refines and sharpens the focus of existing segments, informed by data and possibly market research. It is less radical and involves improving existing marketing strategies rather than overhauling them.

Exploratory Research (Segment Mutation): This approach involves stumbling upon segments during exploratory research or data mining. It represents a more opportunistic discovery of segments, allowing organizations to adapt to emerging market structures.

2.2.2 Based on the Choice of Segmentation Variable(s)

Segmentation approaches can also be based on the nature of consumer characteristics used to extract segments:

A Priori (Commonsense) Segmentation: Uses one segmentation variable decided in advance, such as age or gender. This approach relies on managerial intuition or existing data and is straightforward but may not capture complex consumer behaviors.

A Posteriori (Data-Driven) Segmentation: Uses multiple segmentation variables, identified through data analysis, to explore and profile different market segments. This approach is more exploratory and detailed, aiming to create actionable segments based on primary research.

Combining these approaches can be effective. For example, starting with a commonsense segmentation variable and further refining with data-driven insights can provide a balanced and comprehensive segmentation strategy.

2.3 Data Structure and Data-Driven Market Segmentation Approaches

Data-driven market segmentation assumes that market segments naturally exist in the data and need to be revealed and described. However, natural segments are rare in real consumer data.

Three conceptual approaches to data-driven segmentation are:

Natural Segmentation: Assumes distinct market segments exist in the data.

Reproducible Segmentation: Generates the same segmentation solution repeatedly, even if natural segments are not distinct.

Constructive Segmentation: Creates useful segments from data with no inherent cluster structure.

Even when natural segmentation is not possible, creating artificial segments can still be valuable for targeting specific consumer groups. The choice of approach depends on the data structure and the organization's goals.

Ten Steps of Market Segmentation Analysis.

Step 1: Deciding (Not) to Segment

Implications of Committing to Market Segmentation:

Long-Term Commitment: Adopting a market segmentation strategy is a long-term commitment, similar to a permanent relationship rather than a temporary one. It requires substantial changes and investments.

Costs: Implementing segmentation incurs costs such as research, surveys, focus groups, and the development of multiple products and marketing materials.

Cost-Benefit Justification: The advantages of segmentation must surpass its costs. The potential increase in sales and profitability should justify the investment required for segmentation.

Required Adjustments: Segmentation may require creating new products, altering existing ones, adjusting pricing strategies, and modifying distribution channels. These adjustments can also impact the organization□s internal structure.

Decision-Making Authority: The decision to pursue segmentation should be made at the highest executive level and needs to be communicated and supported across the entire organization.

Implementation Barriers:

Senior Management Issues:

Leadership and Engagement: Effective market segmentation demands active support and involvement from senior management. Without their commitment, implementing the strategy may be challenging.

Resource Allocation: Insufficient resources for initial analysis and ongoing implementation can hinder segmentation efforts.

Market Focus: An organization□s lack of focus on market needs and resistance to new approaches can obstruct successful segmentation.

Resistance to Change: A culture that resists change, has poor communication, or prioritizes short-term goals can impede segmentation.

Cultural Assessment: Assess whether the organizational culture is a barrier to successful segmentation through tools like questionnaires.

Training and Expertise Issues:

Knowledge and Training: Management and team members need a solid understanding of market segmentation. Without proper training, efforts to implement segmentation may fail.

Structural Issues:

Marketing Function: A lack of a formal marketing department or skilled marketing professionals can be a significant obstacle.

Data Management: Absence of experienced data managers and analysts can impede the segmentation process.

Objective Restrictions:

Financial Constraints: Limited financial resources may restrict the ability to effectively implement segmentation.

Structural Limitations: Inability to make necessary structural changes can be a barrier.

Process-Related Barriers:

Objective Clarity and Planning: Unclear objectives, poor planning, and lack of structured processes can hinder successful segmentation. Effective planning and clear responsibility allocation are essential.

Time Constraints: Pressure to deliver quickly can impact the thoroughness of segmentation efforts.

Operational Level Issues:

Understanding and Adoption: Management may struggle with unfamiliar techniques. Simplifying and visualizing results can improve understanding and acceptance.

Checklist for Step 1:

Market Orientation: Ensure the organization is focused on understanding market needs.

Barrier Identification: Identify and address potential barriers early on.

Consider Abandoning: If barriers cannot be overcome, consider whether to abandon the segmentation effort.

Commitment and Patience: Maintain dedication and patience while navigating and addressing challenges.

Chapter 9 `

Step 7: Describing Segments

Developing a Complete Picture of Market Segments

Introduction

Segment profiling and description are crucial components of market segmentation analysis. Profiling involves understanding how segmentation variables differ across market segments, while description provides deeper insights into segment members. This comprehensive approach is essential for developing targeted marketing strategies and customized marketing mixes.

Segment Profiling

Segment profiling begins with identifying key segmentation variables selected early in the analysis process. These variables form the foundation for extracting meaningful segments from empirical data. Profiling focuses on analysing differences in variables such as demographics, geographic information, and psychographic factors across segments. The objective is to uncover patterns that define each segment, which is critical for tailoring marketing strategies to meet specific needs and preferences.

Segment Description

The segment description step involves incorporating additional information about segment members to gain a more comprehensive understanding. This step is akin to getting to know a potential partner before committing to a relationship, offering insights into demographics, behaviors, and spending patterns. This enriched understanding is vital for creating targeted marketing strategies that address the unique attributes of each segment.

Visualization Techniques

Visualizations are integral to describing market segments and simplifying complex data analysis. They provide a user-friendly way to interpret differences between segments and reveal underlying patterns. Key visualization techniques include:

- **Stacked Bar Charts:** Useful for comparing proportions across nominal and ordinal variables. These charts help illustrate segment performance in various categories, facilitating comparison and analysis.
- **Mosaic Plots:** Effective for visualizing associations between segment membership and descriptor variables. Mosaic plots display where observed data diverges from expected patterns, highlighting significant differences and associations within the data.
- **Box-and-Whisker Plots:** Used for metric variables to show data distribution across segments. These plots reveal variations in metrics such as age or spending, offering a clear view of how these metrics differ within and across segments.

Predictive Modelling

Predictive modelling uses statistical techniques to forecast segment membership based on descriptor variables. This process includes several methods:

- **Regression Analysis:** Assesses the relationship between dependent variables (e.g., segment membership) and independent variables (e.g., age, income). Linear regression is employed when the dependent variable follows a normal distribution, while Generalized Linear Models (GLMs) accommodate various distributions and link functions for non-normally distributed variables.

- **Binary Logistic Regression:** Predicts the likelihood of membership in one of two categories, evaluating how well descriptor variables can identify segment membership.
- **Multinomial Logistic Regression:** Applied when the dependent variable is categorical with more than two categories. The multinom() function from the nnet package in R estimates coefficients for each category except the baseline, helping to understand how changes in independent variables affect segment probabilities.

Tree-Based Methods

Tree-based methods offer an alternative approach for predicting segment membership through decision rules:

- **Classification and Regression Trees (CART):** Builds a decision tree using stepwise splitting based on predictor variables. Each node represents a decision rule, and branches indicate outcomes. This method helps in understanding the decision-making process and how different factors contribute to segment classification.

Segment Analysis Example

In the analysis of the Australian travel motives dataset, segment profiling and description focus on differences in travel motives between segments. Additional descriptor variables such as age, gender, and spending patterns provide a more detailed picture. For instance:

- **Terminal Nodes Analysis:** Nodes in the decision tree provide insights into segment membership. For example, node 3 contains 481 respondents, with a high incorrect prediction rate of 73% for segment membership. Conversely, node 4, with 286 respondents, predicts segment membership correctly 77% of the time, though the majority are not in segment 1.

- **Moral Obligation Analysis:** Segments split based on moral obligation scores reveal different tendencies. For instance, node 7, with 30 consumers, shows that 57% do not belong to the predicted segment, highlighting the need for careful interpretation of moral obligation metrics.

Model Selection and Prediction

- To assess the performance of the fitted models, we use settings to suppress the display of progress information during the iterative fitting process. The final model includes three variables: `EDUCATION`, `NEP`, and `VACATION.BEHAVIOUR`. To evaluate the effectiveness of this model, we compare it to another model incorporating `AGE` and `MORAL.OBLIGATION`.
- A well-predicting model should assign a high probability of being in segment 3 to members of segment 3 and a low probability to all other consumers. The predicted probabilities are visualized using parallel boxplots.
- **Figure 9.12** compares the predicted probabilities of segment 3 membership for the two models. Ideally, the boxes for segment 3 should be located at the top of the plot (close to 1) and the boxes for all other consumers should be at the bottom (close to 0). The observed results indicate that neither model performs optimally, with median predicted values only slightly higher for segment 3 in both models. The stepwise model shows slightly better predictive performance.

Multinomial Logistic Regression

- Multinomial logistic regression fits a model predicting each segment simultaneously. With more than two market segments, the dependent variable `y` is categorical and follows a multinomial distribution, using the logistic function as the link function.
- In this method, the multinomial logistic regression model includes regression coefficients for each segment except the baseline category (segment 1). The coefficients indicate changes in log odds for each independent variable.
- Model selection is performed starting with the full model and assessing whether dropping any variable significantly reduces model fit.

Tree-Based Methods

- Classification and regression trees (CARTs) are used to predict a binary or categorical dependent variable based on independent variables. CARTs handle large numbers of independent variables well and perform variable selection, while incorporating interaction effects. However, results can be unstable, with small data changes leading to different trees.
- The conditional inference tree is used to fit a classification tree. This tree starts with all consumers in a root node and splits based on variables such as `VACATION.BEHAVIOUR`. The classification tree plot visualizes the proportion of segment 3 members in different nodes.
- The tree plot shows that the group with a low mean score for environmentally friendly behavior on vacation contains the highest proportion of segment 3 members. In contrast, the group with a high score for environmental behavior and moral obligation contains the smallest proportion of segment 3 members.