

Market Segmentation Study Task

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Abstract:

Businesses often face the challenge of meeting the diverse needs of all their customers consistently. Catering to the unique preferences of each individual customer can be a daunting task, given the inherent variations in people's tastes. Consequently, many companies opt for a strategic approach known as target marketing. This involves segmenting the market and tailoring products or services to specific segments. Target marketing strategies are designed to align closely with the distinct needs and desires of customers, making it imperative to clearly define the target markets a company aims to serve. Marketing managers considering the adoption of target marketing typically break down the market into segments and prioritize those with the highest profitability. To meet the preferences of each group of consumers, they may customize various elements of their marketing mix, such as products, prices, distribution channels, and promotional tactics.

The Market Segment

A market segment refers to a cluster of individuals, groups, or organizations that exhibit common interests, traits, and characteristics. These consumer segments often share similar needs, wants, and expectations. Consequently, businesses face the crucial decision of identifying which segments to target. To address this, companies must explore effective methods to distinguish and differentiate their various segments. Once these segments have been identified, businesses can proceed to tailor their strategies accordingly.

STEP - 1: Deciding (not) to Segment

Market segmentation is the process of categorizing a diverse customer base into groups or clusters based on common criteria. While this model is often embraced by businesses seeking to cater to a broad spectrum of customers, its applicability to various organizations and their workforce remains a critical consideration. This step delves into the potential challenges and barriers that may hinder the effectiveness of the market segmentation strategy, emphasizing the importance of addressing these issues for successful implementation. To optimize the advantages of market segmentation, organizations should shift their focus from product-centric structures to those centered around identified market segments.

Key considerations for deciding whether to proceed with market segmentation include:

- The organization's orientation should be market-focused.
- Willingness to adapt to ongoing changes and foster innovative ideas is crucial.
- Viewing the strategy as a long-term plan is essential for sustained success.
- Effective communication must be established across all organizational units.
- Adequate financial resources are necessary to serve diverse customer segments.
- Senior managers need unwavering commitment and active involvement throughout.
- A thorough understanding of market segmentation is vital, with ongoing training if needed.
- Consistency in market segmentation analysis is essential, overseen by senior analysts.
- Cross-functional teams comprising marketing, data, and analysis experts are imperative.
- Committees representing all units should be established to ensure comprehensive input.
- A clear, structured process should guide the market segmentation analysis.
- Team members should operate without undue work or time pressure for efficient outcomes.

If any barriers, as indicated by a negation of the above points, are present, it may be advisable to reconsider the implementation of market segmentation.

STEP - 2: Specifying the Ideal Target Segment

Market segmentation is intricately tied to user input, extending beyond initial negotiations and culminating in the development of a comprehensive marketing mix. In this step, the organization must actively involve users in various stages of the technical aspects of market segmentation analysis. The focus here is on establishing two crucial segment evaluation criteria: knock-out criteria and attractiveness criteria.

KNOCK-OUT CRITERIA:

These criteria serve as the initial filter to assess whether market segments qualify for further evaluation based on segment attractiveness criteria. The knock-out criteria include:

- Homogeneity
- Distinctness
- Size
- Match
- Identifiability
- Reachability

Segments failing to meet these criteria are automatically excluded. It is imperative that senior management, the segmentation team, and the advisory committee from Step 1 comprehend and align with these knock-out criteria.

Determining the Most Attractive Segment:

ATTRACTIVENESS CRITERIA:

The overall attractiveness of a market segment is evaluated based on a set of criteria. These criteria should be thoroughly examined and discussed among the members of the segmentation team. Six criteria should be selected, and their relative importance should be distributed accordingly. Negotiations within the segmentation team should determine the weights assigned to each criterion, reflecting their perceived significance. The final selection of attractiveness criteria and their corresponding weights should be presented to the advisory committee for further discussions if necessary. This collaborative approach ensures a comprehensive and well-balanced evaluation of potential target segments.

STEP - 3: Collecting Data

The success of market segmentation relies significantly on empirical data, blending both common sense and data-driven perspectives. To develop a valid segmentation solution, high-quality empirical data is essential. The segmentation variable, a critical element in this process, refers to the variable in empirical data used to divide the sample into market segments. In common sense segmentation, this is typically a single characteristic of consumers, while data-driven segmentation involves multiple features.

Segmentation Criteria vs. Segmentation Variable:

While the segmentation variable is a measured value, the segmentation criterion pertains to the nature of information used for market segmentation. Relevant differences between consumers, critical for segmentation, include:

- Profitability
- Bargaining power
- Preferences for benefits or products
- Barriers to choice
- Consumer interaction effects

Common Segmentation Criteria:

- **Geographic Segmentation:** Originating as the original segmentation criterion, it utilizes consumers' residence locations to form market segments. While advantageous for targeted communication, it may not capture other relevant characteristics shared by residents.

- **Socio-Demographic Segmentation:** Criteria include age, gender, education, and income. While ensuring segment membership for every consumer, it may not always elucidate product preferences.
- **Psychographic Segmentation:** Encompassing beliefs, interests, preferences, and aspirations, it offers insights into underlying reasons for consumer behavior differences. However, it can be complex in determining segment memberships.
- **Behavioural Segmentation:** Focuses on similarities in behavior, such as prior product experience, purchase frequency, and spending habits. This approach is often superior to geographic variables as it uses actual behavior as the basis for segment extraction.

Survey Data Considerations:

Survey data is a feasible approach but prone to biases. Key aspects to consider include:

- **Choice of Variables:** Include only relevant variables to avoid unnecessary complexity.
- **Response Options:** Tailor response options based on the type of data required.
- **Response Styles:** Minimize consistent biases to ensure accurate data representation.
- **Sample Size:** Ensure an adequate sample size for robust segmentation, following recommended guidelines based on the number of segmentation variables and segments.

Alternative Data Sources:

Internal data, like scanner, booking, or online purchase data, representing actual consumer behavior, can be harvested. While it may over-represent existing customers, it surpasses the limitations of survey data. Experimental data, gathered through advertisements or choice experiments, provides valuable insights for market segmentation.

STEP - 4: Exploring the data

The subsequent step involves delving into the data, comprehending its nuances, and rectifying any quality issues that may arise. Data exploration is pivotal in identifying measurement levels, assessing univariate distributions, and understanding dependencies between variables. Loading the data and obtaining basic statistical information, such as the number of data points and columns, is the initial stage. Ensure the accuracy and consistency of recorded values, and verify the use of consistent labels, checking for any implausible values.

Exploring Numeric Data:

For numeric data, utilize histograms, box plots, and scatter plots. Histograms offer insights into the distribution of numeric variables, indicating whether they are unimodal, symmetric, or skewed. Box plots summarize the dataset's distributional properties, assuming unimodality.

Exploring Categorical Data:

For categorical data, employ bar plots to visualize frequency counts and mosaic plots for a comprehensive overview.

Pre-Processing:

Handling Categorical Variables:

- Reduce the number of categorical variables for relevance.
- Convert categorical variables into numeric ones.
- Ordinal data can be converted to numeric data with caution, considering the uncertainty in distances between scale points.

Handling Numeric Variables:

- Standardize variables to ensure consistent ranges, as variable ranges impact distance-based methods in segment extraction.

Principal Component Analysis (PCA):

- PCA transforms the dataset into uncorrelated principal components, ordered by importance.
- If variable ranges differ, PCA computes the correlation matrix.
- PCA aids in projecting high-dimensional data into lower dimensions for visualization.
- Consider the use of PCA to reduce the number of segmentation variables before extracting market segments. This is beneficial when the initial variables collectively contribute to insights, making it challenging to project data into lower dimensions without losing valuable information.

By thoroughly exploring and pre-processing the data, potential issues can be identified and addressed, setting the stage for more accurate and meaningful market segmentation analysis.

STEP - 5: Extracting Segments

Grouping Consumers:

The success of segmentation heavily relies on the chosen method and assumptions about segment structures, often derived from cluster analysis where market segments correspond to clusters. Selecting an appropriate clustering method involves aligning data analytic features with context-dependent requirements. Exploring market segmentation solutions from various clustering methods is crucial to understanding how algorithms shape extracted segments.

Algorithm Selection:

- No single algorithm suits all datasets; the choice depends on data characteristics and desired segment characteristics.
- Binary segmentation variables require consideration of symmetric or asymmetric treatment.
- Distance-Based Methods: Utilize notions of similarity or distance, including Euclidean distance, Manhattan distance, and Asymmetric Binary Distance.
 - Hierarchical Clustering: Divisive and Agglomerative methods with Single, Complete, and Average Linkage.
 - Dendrograms often guide the selection of the number of market segments.
- Partitional Methods: Includes k-means and k-centroid clustering, aiming to minimize the sum of squared distances between consumers and cluster centers.
 - Improved k-means: Refinements to enhance the algorithm's performance.
 - Hard Competitive Learning: Assigns each consumer to their closest centroid.
 - Neural Gas: Adjusts the location of segment representatives based on consumer proximity.
- Combining Hierarchical and Partitional Methods: Efforts to leverage strengths of both methods.

Model-Based Methods:

- Binary and Normal Distributions considered.
- Algorithms with Integrated Variable Selection: Integrate variable selection within clustering algorithms.
- Bi-Clustering Algorithms: Simultaneously cluster consumers and variables, focusing on binary data.
- Variable Selection Procedure for Clustering Binary Data: Applies k-means with variable selection to improve clustering solutions.
- Factor-Cluster Analysis: Factor analyzes segmentation variables in a two-step procedure.

Data Structure Analysis:

- Global Stability Analysis: Compares segmentation solutions obtained using different algorithms, assessing consistency.
- Segment Level Stability Analysis: Examines stability of individual segments across various data sub-samples.

In the extraction step, segments are extracted from the data using one or more algorithms, each with its strengths and considerations. The process requires a thoughtful selection of methods tailored to the unique characteristics of the dataset and the objectives of market segmentation.

STEP - 6: Profiling Segments

The objective of the profiling step is to gain a comprehensive understanding of the market segments derived from the extraction step. Profiling becomes imperative when employing data-driven market segmentation. Common sense segmentation, which predefines segment profiles, may not necessitate profiling, as segments like age groups are evident.

Segment Inspection:

Segment extraction yields one or more solutions, often pre-selected based on statistical criteria. However, statistical criteria alone cannot substitute user assessment. Profiling allows the segmentation team to scrutinize and characterize resulting market segments, guiding the selection of segments for subsequent steps.

Traditional Approaches to Profiling:

Four common segmentation approaches—geographic, demographic, psychographic, and behavioral—employ variables to categorize consumers. Data-driven solutions are often presented as summaries or detailed tables, the latter requiring careful interpretation to identify defining characteristics

Segment Profiling with Visualizations:

Visualizations, an integral part of statistical data analysis, are underutilized in presenting market segmentation solutions. Graphics, crucial for exploring complex variable relationships, provide insights. In an era of big data, visualizations simplify monitoring trends over time.

Identifying Defining Characteristics:

A market segment comprises individuals with similar preferences in an otherwise homogeneous market. Defining characteristics include homogeneity, distinctiveness, and a predictable response to marketing. Segment profile plots visually represent how each segment differs from the overall sample across all segmentation variables.

Market Segments in Action:

Market segments aid companies in tailoring products and services to meet specific segment needs. They help identify a target market and optimize marketing strategies.

Criteria for Identifying Market Segments:

To identify a market segment, three criteria must be met: homogeneity in main needs, shared distinct characteristics, and a similar response to marketing techniques. Prospective buyers are grouped based on their perceived value of a product or service.

Example of Market Segmentation:

Consider a company marketing health and beauty products to both genders, with varying prices and packaging based on gender stereotypes. Visual cues like pinks and floral accents cater to gender-specific expectations.

Segment Separation Visualization:

Segment separation plots depict the overlap of segments across relevant dimensions of the data space. These plots offer a quick overview of data situations and segmentation solutions, even in complex scenarios with numerous segmentation variables. In conclusion, profiling segments is pivotal for informed decision-making in strategic marketing. The combination of traditional approaches, visualizations, and careful analysis of defining characteristics ensures a thorough understanding of market segments.

STEP - 7: Describing Segments

In the seventh step of the market segmentation process, the focus shifts to describing the identified segments comprehensively. This involves developing a complete picture of market segments, utilizing visualizations, testing for differences in descriptor variables across segments, and predicting segments from these variables.

Developing a Complete Picture of Market Segments:

To ensure a thorough understanding of market segments, it is essential to develop a complete picture. This includes examining key characteristics, behaviors, and preferences that distinguish each segment. By delving into various aspects, such as demographics, psychographics, and behaviors, a holistic view of each segment can be constructed.

Using Visualizations to Describe Market Segments:

Visualizations play a crucial role in conveying complex information about market segments. Depending on the nature of descriptor variables, different visualization techniques are employed.

- **Nominal and Ordinal Descriptor Variables:** For nominal and ordinal variables, graphical representations like bar charts and mosaic plots provide clear insights into the distribution of segment characteristics. These visualizations aid in identifying patterns and differences among segments.
- **Metric Descriptor Variables:** When dealing with metric variables, visualizations such as histograms, box plots, and scatter plots become instrumental. These representations offer a visual understanding of the distribution, central tendency, and variability of numeric descriptor variables within each segment.

Testing for Segment Differences in Descriptor Variables:

Statistical testing is employed to assess whether significant differences exist in descriptor variables across segments. Techniques like analysis of variance (ANOVA) or non-parametric tests help quantify variations and determine the statistical significance of observed differences.

Predicting Segments from Descriptor Variables:

Prediction models are constructed to anticipate segment membership based on descriptor variables. Several methods can be applied for this purpose.

- **Binary Logistic Regression:** Binary logistic regression is utilized when dealing with two distinct segment categories. It models the relationship between the descriptor variables and the probability of belonging to a particular segment.
- **Multinomial Logistic Regression:** In cases where there are more than two segments, multinomial logistic regression is employed. This method extends logistic regression to accommodate multiple segment categories.
- **Tree-Based Methods:** Tree-based methods, such as decision trees or random forests, offer an alternative approach for predicting segment membership. These methods provide a hierarchical structure illustrating the most influential descriptor variables in segment determination.

Checklist:

At this stage, it is crucial to ensure that:

- A comprehensive view of each segment is developed.
- Visualizations effectively convey segment characteristics.
- Statistical tests are performed to assess differences in descriptor variables.
- Prediction models are constructed and validated for accurate segment anticipation.

By systematically addressing these components, Step 7 contributes to a well-informed and detailed depiction of market segments, facilitating strategic decision-making in subsequent stages of the market segmentation process.

STEP - 8: Selecting the Target Segment(s)

This step holds significant importance for any organization as it involves the critical decision of choosing one or more market segments as targets. Before proceeding with the selection, it is imperative to ensure that all considered market segments meet the criteria established in Step 2. The focus is on evaluating the attractiveness of each segment and assessing the organization's competitiveness relative to these segments.

Key Considerations:

Segment Evaluation Plot:

- The segmentation team employs a segment evaluation plot with axes labeled as "How attractive is the segment to us?" (X-Axis) and "How attractive are we to the segment?" (Y-Axis).
- The location of each market segment on the plot is determined by multiplying the weight of the segment attractiveness criterion (established in Step 2) with the value of the segment attractiveness criterion for each market segment.
- The values are assigned by the segmentation team based on the detailed profiles and descriptions generated in Steps 6 and 7.
- Each segment is rated on a scale of 1 to 10, where 1 is the least attractive, and 10 is the most attractive.

Decision-Making Questions:

- The segmentation team engages in discussions to answer critical questions:
 - Which segments should the organization target, and which to omit?
 - Among competitive organizations, which are the consumers most likely to choose, and how likely is our organization to be chosen or committed to?

Plotting Segments:

- Segments are plotted on the evaluation plot based on their calculated X and Y values.
- The segment located towards the far-right corner of the plane is deemed the most attractive, while the segment at the bottom-left is considered the least attractive.

Outcome:

The result of this step is a visual representation of each segment's attractiveness to the organization and the organization's attractiveness to each segment. This graphical representation aids in the informed selection of target segments, ensuring alignment with organizational goals and competitive positioning.

By systematically evaluating and plotting the segments, the organization can make strategic decisions on which segments to prioritize and commit resources to, fostering effective and efficient market penetration.

STEP - 9: Customising the Marketing Mix

The marketing mix encompasses crucial factors that significantly influence consumers' decisions to purchase products. It revolves around the 4 P's: Product, Price, Promotion, and Place. In the context of the segmentation-targeting-positioning (STP) approach, the segmentation process plays a vital role as the initial step in this sequential process. STP unfolds in a sequence starting with market segmentation, followed by targeting, and concluding with positioning.

Key Considerations:

Product:

Customer-Centric Specification: Tailor the product specifications based on customer needs.

Additional Decisions: Consider decisions related to product naming, packaging, warranty requirements, and post-sales support services.

Price:

Pricing Decisions: Make decisions regarding setting the price for a product and determining applicable discounts.

Promotion:

Distribution Decisions: Illuminate how the product will be distributed to customers.

Online vs. Offline Presence: Decide whether the product should be made available offline, online, or through a combination of both.

Distribution Models: Determine whether manufacturer or retailer models should be employed.

Place:

Advertising Strategies: Develop strategies for advertisements, effective communication channels, public relations, personal selling, and sponsorship.

Customization for Target Segments:

To maximize the benefits of a market segmentation strategy, it is imperative to customize the marketing mix for each target segment. Each segment may have unique preferences, needs, and behaviors, and tailoring the marketing mix ensures that the product is well-aligned with these specific characteristics.

Significance of Customization:

Customizing the marketing mix to the target segment enhances the relevance and appeal of the product in the eyes of consumers. This approach acknowledges the diversity among different segments and allows for a more precise and effective marketing strategy.

By integrating the insights gained from the segmentation process into the marketing mix decisions, organizations can enhance their competitiveness and resonance with the

target audience, ultimately leading to more successful market penetration and customer satisfaction.

Github link

<https://github.com/Kaviswar45/Market-Segmentation-Analysis-Of-McDonald-s-Fast-Food-Case-Study>