Steps of Market Segmentation Analysis

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Step 1: Deciding (not) to Segment

Implications of Committing to Market Segmentation:

Market segmentation is utilized by many organizations to improve their marketing strategies

Commitment to market segmentation cannot exist without the willingness and ability of the organization to make substantial changes and investments.

Changes that might be needed include developing new products, modifying existing ones, changing pricing and distribution channels, and adapting communication with the market.

The internal structure of the organization may need to be adjusted to target different market segments.

Organizations should plan their strategies around market segments, rather than around the products.

The decision to pursue market segmentation must be made known to all the units of the organization the same must be systematically communicated to them.

Market segmentation should only be pursued if the expected increase in sales justifies implementing a segmentation strategy, and if using the scheme is more profitable than marketing without it, net of the expense of developing and using the scheme itself.

Implementation Barriers:

1)Senior management:

Lack of leadership, pro-active championing, commitment, and involvement in the market segmentation process by senior leadership can undermine the success of market segmentation

2)Organizational culture:

A lack of market or consumer orientation, lack of creative thinking, bad communication short-term thinking etc. are the major reasons preventing the successful implementation of market segmentation

3)Lack of training:

Lack of knowledge about market segmentation on senior management and lack of qualified data manager and analyst can also cause hindrances in successfully implementing market segmentation strategies.

4)Lack of financial resources, or the inability to make the structural changes required.

Step 2: Specifying the Ideal Target Segment

Segment Evaluation Criteria:

In Step 2 the organization must determine two sets of segment evaluation criteria.

Knock-out criteria:

It is used to refer to essential and non-negotiable features of segments. It is a short set.

Attractiveness criteria:

The attractiveness criteria is used to evaluate the relative attractiveness of the remaining market segments. It is a much longer and much more diverse set.

Knock-Out Criteria

It is used to determine if market segments resulting from the market segmentation analysis qualify to be assessed using segment attractiveness criteria.

These are the six criteria for effective market segmentation: -

Homogeneity: Members of the segment must be similar to one another.

Distinctiveness: Members of the segment must be distinctly different from members of other segments.

Size: The segment must be large enough to make it worthwhile to spend extra money on customizing the marketing mix for them.

Compatibility: The organization must have the capability to satisfy segment members' needs.

Identifiability: Members of the segment must be identifiable in the marketplace.

Reachability: There has to be a way to get in touch with members of the segment in order to make the customized marketing mix accessible to them.

Attractiveness Criteria

Apart from Knock-out criteria, attractiveness criteria are available to the segmentation team to consider when deciding which attractiveness criteria are most useful to their specific situation. These attractiveness criteria are not binary; rather, each market segment is rated based on how attractive it is with respect to a specific criterion. The attractiveness across all criteria determines whether a market segment is ultimately selected as a target segment in the market segmentation process.

Implementing a Structured Process

The most popular structured approach for evaluating market segments in

view of selecting them as target markets is the use of a segment evaluation plot. The use of a segment evaluation plot, which shows segment attractiveness and organizational competitiveness, is the most popular method. The values for these factors need to be determined by the segmentation team, and it is recommended to use no more than six factors. This task should ideally be completed by a team of people, including representatives from all organizational units. The segment evaluation plot cannot be completed at this early stage, but selecting attractiveness criteria early in the process ensures that all relevant information is captured.

STEP 3. Collecting Data:

Segmentation Variables:

Empirical data is the basis of both commonsense and data-driven market segmentation.

Segmentation variable is the variable in the empirical data used in commonsense segmentation to split the sample into market segments.

In commonsense segmentation, the segmentation variable is typically one single characteristic of the consumers in the sample.

Descriptor variables are other personal characteristics available in the data that are used to describe the segments in detail.

Data-driven market segmentation is based on multiple segmentation variables.

Data quality is critical to both assigning each person in the sample to the correct market segment and being able to correctly describe the segments.

Empirical data for segmentation studies can come from a range of sources, such as survey studies, observations, or experimental studies.

Survey data can be unreliable in reflecting behavior, so a range of possible sources should be explored to find the one that delivers data most closely reflecting actual consumer behavior.

Segmentation Criteria:

The organization must choose a segmentation criterion before collecting data or extracting segments.

Segmentation criterion is a broader term than segmentation variable

It relates to the nature of information used for market segmentation

The decision of which criterion to use requires prior knowledge about the market and cannot be easily outsourced

The most common segmentation criteria are geographic, socio-demographic, psychographic, and behavioral

Bock and Uncles identify profitability, bargaining power, preferences, barriers, and consumer interaction as the most relevant differences between consumers for segmentation

The recommendation is to use the simplest approach that works for the product or service at the least possible cost.

Geographic Segmentation

Geographic information is seen as the original segmentation criterion used for the

purpose of market segmentation. Typically – when geographic segmentation is used – the consumer's location of residence serves as the only criterion to form market segments.

The key advantage of geographic segmentation is that each consumer can easily

be assigned to a geographic unit. As a consequence, it is easy to target communication messages, and select communication channels (such as local newspapers, local

radio and TV stations) to reach the selected geographic segments.

The key disadvantage is that living in the same country or area does not necessarily mean that people share other characteristics relevant to marketers, such as benefits they seek when purchasing a product.

Socio-Demographic Segmentation

Socio-demographic segmentation criteria, which include age, gender, income, and education. While socio-demographic segmentation can be useful in some industries, such as luxury goods, cosmetics, baby products, retirement villages, and tourism resort products, it has limitations. Like geographic segmentation, socio-demographic segmentation has the advantage of easily determining segment membership for every consumer. However, in many instances, the socio-demographic criterion is not the cause for product preferences, thus not providing sufficient market insight for optimal segmentation decisions.

Psychographic Segmentation

Psychographic segmentation is when people are grouped according to psychological criteria, such as their beliefs, interests, preferences, aspirations, or benefits sought when purchasing a product. Benefit segmentation is the most popular approach, while lifestyle segmentation is based on people's activities, opinions and interests. Psychographic criteria are more complex than geographic or socio-demographic criteria, and most psychographic segmentation studies use a number of segmentation variables. The advantage of the psychographic approach is that it is more reflective of the underlying reasons for differences in consumer behavior. However, the power of the approach depends heavily on the reliability and validity of the empirical measures used to capture the psychographic dimensions of interest.

Behavioral Segmentation

The approach of using behavioral similarities or reported behavior to extract segments is an alternative to traditional geographic or demographic variables. This approach can include various behaviors such as prior experience, frequency of purchase, and information search behavior. Using actual behavior rather than stated or intended behavior as the basis of segment extraction is advantageous as it groups people by the similarity that matters most. Behavioral data also avoids the need for the development of valid measures for psychological constructs. However, behavioral data is not always readily available, especially if the aim is to include potential customers who have not previously purchased the product. Examples of behavioral segmentation analyses include using actual expenses of consumers, actual purchase data across product categories, and brand choice behavior over time.

Data from Survey Studies

Survey data is cheap and easy to collect, making it a feasible approach for any organization. But survey data – as opposed to data obtained from observing actual behavior – can be contaminated by a wide range of biases.

Survey data can be contaminated by biases, which can affect the quality of solutions derived from market segmentation analysis.

Choice of Variables

Carefully selecting the variables that are included as segmentation variables in data-driven segmentation is critical to the quality of the market segmentation solution. Unnecessary variables can make questionnaires long and tedious, increase the dimensionality of the segmentation problem, and divert the attention of the segment extraction algorithm away from information critical to the extraction of optimal market segments.

Response Options

Options allowing respondents to answer in only one of two ways, generate binary or dichotomous data. Such responses can be represented in a data set by 0s and 1s. The distance between 0 and 1 is clearly defined and, as such, poses no difficulties for subsequent segmentation analysis. Options allowing respondents to select an answer from a range of unordered categories correspond to nominal variables.

Response Styles

A wide range of response styles manifest in survey answers, including respondents' tendencies to use extreme answer options (STRONGLY AGREE, STRONGLY DISAGREE), to use the midpoint (NEITHER AGREE NOR DISAGREE), and to agree with all statements. Response styles affect segmentation results because commonly used segment extraction algorithms cannot differentiate between a data entry reflecting the respondent's belief from a data entry reflecting both a respondent's belief and a response style.

Sample Size

1. Sample size recommendations are not commonly provided for market segmentation analysis.

2. A Viennese psychologist recommends a sample size of at least 2p, where p is the number of segmentation variables.

3. Qiu and Joe recommend a sample size of at least $10 \cdot p \cdot k$, where k represents the number of segments and the smallest segment should contain a sample of at least $10 \cdot p$ if segments are unequally sized.

4. Dolnicar et al. conducted extensive simulation studies with artificial data sets and recommend a sample size of at least $60 \cdot p$ for a typical data scenario and at least $70 \cdot p$ for a more difficult scenario.

5. Dolnicar et al. also investigated the effect of market and data characteristics on sample size requirements, finding that larger sample sizes always improve the ability to identify correct market segmentation

solutions but the extent to which this is the case varies substantially across market and data characteristics. Correlation between segmentation variables is a particularly challenging characteristic that cannot be compensated for by increasing sample size.

Data from Internal Sources

Increasingly organizations have access to substantial amounts of internal data that can be harvested for the purpose of market segmentation analysis. Typical examples are scanner data available to grocery stores, booking data available through airline loyalty programs, and online purchase data. The strength of such data lies in the fact that they represent actual behavior of consumers, rather than statements of consumers about their behavior or intentions, known to be affected by imperfect Memory. Another advantage is that such data are usually automatically generated and if organizations are capable of storing data in a format that makes them easy to access– no extra effort is required to collect data.

Data from Experimental Studies

The response to the advertisement could then be used as a segmentation criterion. Experimental data can also result from choice experiments or conjoint analysis. The aim of such studies is to present consumers with carefully developed stimuli consisting of specific levels of specific product attributes. Consumers then indicate which of the products – characterized by different combinations of attribute levels – they prefer. Conjoint studies and choice experiments result in information about the extent to which each attribute and attribute level affects choice. This information can also be used as a segmentation criterion.

STEP 4 EXPLORING DATA

1.A First Glimpse at the Data

Data exploration helps to

(1) identify the measurement levels of the variables

(2) investigate the univariate distributions of each of the variables

(3) assess dependency structures between variables

2 .Data Cleaning

The first step before commencing data analysis is to clean the data. This includes checking if all values have been recorded correctly.

Reproducibility is important from a documentation point of view and enables other data analysts to replicate the analysis. In addition, it enables the use of the exact same procedure when new data is added on a continuous basis or in regular intervals, as is the case when we monitor

segmentation solutions on an ongoing basis. Cleaning data using code, requires time and discipline, but makes all steps fully documented and reproducible. After cleaning the data set, we save the corresponding data frame using the function save(). We can easily re-load this data frame in future R work sessions using function load().

3. Descriptive Analysis

Descriptive numeric and graphic representations provide insights into the data. Statistical software packages offer a wide variety of tools for descriptive analysis. In R, we obtain a numeric summary of the data with command summary(). This command returns the range, the quartiles, and the mean for numeric variables. For categorical variables, the command returns frequency counts. The command also returns the number of missing values for each variable. Helpful graphical methods for numeric data are histograms, boxplots, and scatter plots. Bar plots of frequency counts are useful for the visualization of categorical variables. Mosaic plots illustrate the association of multiple categorical variables.

Binning: To obtain a histogram, we first need to create categories of values. We call this binning. The bins must cover the entire range of observations and must be adjacent to one another. Usually, they

are of equal length. Once we have created the bins, we plot how many of the observations fall into each bin using one bar for each bin. We plot the bin range on the x-axis and the frequency of observations in each bin on the y-axis.

4.Pre-Processing

4.1.Categorical Variables

Two pre-processing procedures are often used for categorical variables. One is merging levels of categorical variables before further analysis, the other one is converting categorical variables to numeric ones.

4.2. Numeric Variables

To balance the influence of segmentation variables on segmentation

results, variables can be standardized. Standardizing variables means transforming them in a way that puts them on a common scale.

4.3 Principal Components Analysis

Principal components analysis (PCA) transforms a multivariate data set containing metric variables to a new data set with variables – referred to as principal components – which are uncorrelated and ordered by importance. The first variable (principle component) contains most of the variability, the second principle component contains the second most variability, and so on.