

Market Segmentation Analysis

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Step 1 - Deciding not to segment

- Implications of Committing to Market Segmentation:
- Not always the best strategy
- Long-term commitment, not a short-term fix (like a marriage, not a date)
- Costs involved in research, surveys, focus groups, designing multiple packages, and creating various advertisements
- Should not segment unless an expected increase in sales is anticipated
- May require the development of new products or modifications to existing ones
- Changes can influence the internal structure
- Creating strategic business units ensures ongoing focus on changing needs
- Decision should be made at the highest executive level within the organization
- Needs systematic and continuous communication and reinforcement

Implementation Barriers:

Senior Management Barriers:

- Lack of leadership, pro-active championing, commitment, and involvement can undermine the process
- Active interest and understanding of the process are crucial
- Insufficient allocation of resources

Organizational Culture Barriers:

- Lack of market or consumer orientation
- Resistance to new ideas and poor communication
- Short-term thinking, unwillingness to make changes, and office politics
- Training as a Potential Problem:
- Training is essential to ensure a solid understanding of segmentation principles and potential impact

Step 2 - Specifying the Ideal Target Segment

Segment Evaluation Criteria:

- User input is crucial, extending beyond a briefing
- Users need to be actively engaged in most stages
- Commitment to segmentation requires a significant conceptual contribution
- Two sets of criteria: knock-out criteria and attractiveness criteria
- Knock-out criteria are essential and non-negotiable, automatically eliminating some segments
- Attractiveness criteria are diverse and negotiable, used to evaluate the relative attractiveness of remaining market segments
- Team applies attractiveness criteria to determine overall segment attractiveness

Knock-Out Criteria:

- Initial set suggested by Kotler (1994) includes substantiality, measurability, and accessibility
- Other criteria include homogeneity, distinctiveness, size sufficiency, alignment with organizational strengths, identifiability, and reachability
- Knock-out criteria automatically eliminate some segments
- Criteria need to be understood

Attractiveness Criteria:

- Diverse and not binary, rated on a continuum for each criterion
- Cumulative ratings across all criteria decide target segment selection
- Six criteria with assigned weights are identified by the team
- Weighting involves allocating points and negotiating for agreement

Implementing a Structured Process:

- Agreement on the benefits of a structured process in segmentation literature
- Segment Evaluation Plot: Popular method using axes of segment attractiveness and organizational competitiveness
- Determining Values: Team assigns values with no universal criteria, criteria negotiation is essential
- Involvement of Units: Team includes representatives from different organizational units, advisory committee discusses and modifies choices
- Benefits of Unit Involvement: Diverse perspectives from different units, all units are key stakeholders
- Segment Evaluation Plot Timing: Plot not completed in Step 2, but early criteria selection ensures relevant data collection in Step 3, facilitates easier target segment selection in Step 8
- Defining Attractiveness Criteria: Team identifies approximately six criteria with assigned weights, advisory committee approval ensures broader organizational alignment

Step 3 - Collecting Data

Segmentation Variables:

- Empirical Data: Basis for commonsense and data-driven market segmentation.
- Segmentation Variable (Commonsense): Single characteristic splitting samples into segments (e.g., gender).
- Descriptor Variables (Commonsense): Other personal characteristics for detailed segment descriptions.
- Data-Driven Segmentation: Uses multiple variables, identifies naturally existing or artificially created segments.
- Quality of Empirical Data: Critical for valid segmentation solutions.

Segmentation Criteria:

- Pre-Extraction Decision: Choosing segmentation criterion before data extraction.
- Segmentation Criterion vs. Segmentation Variable: Criterion broader than variable, includes constructs like benefits sought.
- Decision-Making Considerations: Requires prior market knowledge, common criteria include geographic, sociodemographic, psychographic, and behavioral.
- Choosing the Best Segmentation Criterion: Limited guidelines, recommendation is to use the simplest approach that works.

Geographic Segmentation:

- Original Criterion: Historical use, often based on consumer residence.
- Simplicity and Appropriateness: Often suitable, enables targeted communication.
- Advantage: Easy assignment of consumers to geographic units.
- Disadvantage: Residence may not guarantee shared characteristics relevant to marketers.

Socio-Demographic Segmentation:

- Criteria: Age, gender, income, and education.
- Applicability: Used in luxury goods, cosmetics, baby products, retirement villages, and tourism.
- Advantages: Easy determination of segment membership.
- Limitations: Not always the cause for product preferences, demographics explain a small percentage of variance.

Psychographic Segmentation:

- Groups based on psychological criteria like beliefs, interests, and benefits sought.
- Types: Benefit Segmentation and Lifestyle Segmentation.
- Advantages: Reflective of underlying reasons for consumer behavior.
- Disadvantages: Increased complexity in determining segment memberships.

Behavioral Segmentation:

- Based on similarities in behavior or reported behavior.
- Types: Prior product experience, purchase frequency, amount spent, and information search behavior.
- Advantages: Based on actual behavior, not stated or intended behavior.
- Challenges: Behavioral data not always readily available for potential customers.

Data Source: Survey Studies:

- Most market segmentation analyses rely on survey data.
- Advantages: Cheap and easy to collect.
- Limitations: Biases in survey data can impact the quality of segmentation solutions.

Choice of Variables:

- Critical for the quality of market segmentation solutions.
- Data-Driven Segmentation: Include all relevant variables, avoid unnecessary ones.

Response Options:

- Binary or metric options preferable for meaningful segmentation analysis.
- Considerations for Ordinal Scales: Challenges in applying standard distance measures.

Response Styles:

- Response bias and style impact segmentation analysis.
- Mitigating Impact: Minimize capturing response styles during data collection.

Sample Size:

- Importance in market segmentation analysis.
- Recommendations: Sample size should be sufficient, considering the number of segmentation variables and desired segments.

Data from Internal Sources:

- Internal data increasingly used for market segmentation.
- Advantages: Represents real consumer behavior, automatically generated.
- Considerations: Potential bias towards existing customers, complement with external sources.

Experimental Data:

- Derived from experiments like choice experiments or conjoint analyses.
- Advantages: Controlled settings allow systematic testing of consumer reactions.
- Considerations: Experimental data should align with segmentation analysis objectives, relevant to real-world scenarios.

Step 7 - Describing Segments

Importance:

- Critical for detailed insights into segment nature.
- Essential for developing a customized marketing mix.

Visualizations:

- Mosaic Plot for Nominal and Ordinal Variables.
- Conditional Plots for Metric Descriptor Variables.

Conclusion:

- Visualizations enhance user-friendly and informative segment descriptions.
- Testing for Segment Differences in Descriptor Variables:

Nominal or Ordinal Variables:

- Visualized using cross-tabulation and mosaic plot.
- χ^2 -test for formal testing.

Metric Variables:

- Visualized using parallel boxplots.
- Analysis of Variance (ANOVA) for formal testing.
- Pairwise Comparisons:
- Identify differing segments after rejecting the null hypothesis.
- Tukey's HSD test or pairwise t-tests.

P-value Adjustment:

- Holm's method or other procedures for multiple testing.
- Segment Characteristics Table (Example):
- Mean values for age and moral obligation by market segment.
- ANOVA p-values indicating statistical significance.

Conclusion:

- Statistical tests provide a robust method to assess differences in descriptor variables.
- Nominal and ordinal variables: Use χ^2 -test.
- Metric variables: Use ANOVA followed by pairwise comparisons.
- Adjust p-values for multiple testing.
- Visualization aids in understanding significant differences between specific segments.

Predicting Segments from Descriptor Variables:

Approach:

- Regression model with segment membership as the categorical dependent variable.
- Utilizes statistics for classification and machine learning for supervised learning.

Regression Analysis:

- Linear regression model as the basis.
- Coefficients indicate mean differences between segments.

Generalized Linear Models:

- Extend beyond normal distribution.
- Binary Logistic Regression for categorical dependent variables.

Model Evaluation:

- Coefficients indicate log odds changes.
- Odds of success and interpretation of coefficients.

Effect Visualization:

- Use of package effects in R to visualize effects of variables.

Model Selection:

- Inclusion of additional descriptor variables.
- Stepwise model selection using AIC.

Multinomial Logistic Regression:

Objective:

- Predicting multiple segments simultaneously.

R Package Used:

- nnet package, multinom() function.

Model Specification:

- Formula and data frame used to specify the model.

Interpretation of Coefficients:

- Coefficients represent the change in log odds for each segment.

Model Summary and Standard Errors:

- Output includes coefficients, residual deviance, and AIC.

Model Assessment and Variable Dropping:

- Use of the Anova() function to assess variable significance.

Model Selection:

- Application of the `step()` function for model selection.

Predictive Performance Assessment:

- Comparison of predicted to observed segment memberships.

Tree-Based Methods - Classification and Regression Trees (CARTs):

- Machine learning approach for predicting dependent variables.
- Supervised learning with advantages like variable selection and ease of interpretation.

Tree Construction:

- Utilizes recursive partitioning to create nodes and terminal nodes.

Algorithm Differences:

- Parameters differ in terms of splits, stopping criterion, and final prediction.

R Packages for Tree Construction:

- `rpart` and `partykit` packages.
- Implementation using `partykit` Package:
- `ctree()` function fits a conditional inference tree.

Tree Visualization:

- Visual representation using `plot()` function.

Parameters and Control:

- `ctree_control` function controls tree construction parameters.

GitHub Link:

https://github.com/jerushanaomi/Feynn_Labs_Internship