MARKET SEGMENTATION:

Team Lead: Rishi Solanki

Summary (steps 1 to 3 and 8,9):

Step: - 1. Deciding to Segment:

<u>What</u>:

Market segmentation is the process of dividing a heterogeneous market into smaller, more homogeneous segments based on specific criteria such as demographics, psychographics, and behavioral patterns. This step involves strategic decision-making to determine whether segmentation aligns with business objectives and can provide a competitive advantage. By segmenting the market, companies can better understand their customers & #39; needs and preferences, tailor marketing strategies accordingly, and ultimately, improve customer satisfaction and business performance.

<u>Why:</u>

Segmenting markets allows businesses to target specific customer groups more effectively, leading to enhanced marketing efficiency and effectiveness. It helps companies identify and prioritize segments with the greatest potential for profitability, ensuring optimal allocation of resources. Additionally, segmentation enables businesses to differentiate their offerings and messages to better resonate with diverse customer needs, leading to increased brand loyalty and market share. Moreover, segmentation helps companies address the challenges of serving a diverse customer base, leading to improved customer satisfaction and retention.

<u>How:</u>

- **Analyzing Market Heterogeneity:** Assessing the diversity in customer needs, preferences, and behaviors to identify commonalities and differences among them
- **Evaluating Business Objectives and Resources:** Aligning segmentation efforts with company goals and available resources to ensure feasibility and effectiveness.
- **Considering Competitive Dynamics:** Understanding how competitors segment the market and identifying opportunities for differentiation and competitive advantage.
- **Identifying Segmentation Variables:** Determining relevant criteria such as demographics, psychographics, and behavioral patterns to segment the market effectively and efficiently.
- **Examining Regulatory Compliance:** Ensuring compliance with legal and regulatory requirements when collecting and using customer data for segmentation purposes.

Example:

Segmenting a consumer electronics market based on demographics (age, income),

psychographics (lifestyle, interests), and behavior (purchase frequency) to offer targeted products and

promotions.

Real Use Case: Coca-Cola segments its market to target different consumer groups with customized

advertising campaigns, such as young adults for energy drinks and families for soft drinks.

Step: - 2. Specifying the Ideal Target Segment:

What:

After deciding to segment the market, the next step is to specify the ideal target segment. This involves defining the characteristics and attributes of the target audience based on criteria such as demographics, psychographics, geographic location, and behavioral patterns. By clearly defining the ideal target segment, businesses can focus their marketing efforts and resources more effectively, maximizing the impact of their campaigns and initiatives. This step is essential for ensuring that marketing messages resonate with the intended audience and that products or services meet their specific needs and preferences.

Why:

Specifying the ideal target segment allows businesses to streamline their marketing efforts and resources, reducing wastage and improving overall efficiency. By focusing on a specific audience segment, businesses can deliver more personalized and relevant messages, increasing the likelihood of engagement and conversion. Moreover, targeting the ideal segment enables businesses to differentiate themselves from competitors and position their offerings more effectively in the market. Additionally, by catering to the needs of a specific audience segment, businesses can build stronger relationships with customers, leading to increased loyalty and retention.

How:

- Defining Demographics, Psychographics, and Behavior: Identifying key traits and preferences of the target audience through comprehensive market research and analysis.
- Evaluating Segment Size and Growth Potential: Assessing the market size, growth potential, and profitability of each potential segment to prioritize them effectively.
- Assessing Segment Profitability: Determining the segment's willingness to pay and potential for generating revenue to ensure sustainable profitability.
- Analyzing Technological Trends: Incorporating emerging technological trends and innovations into segment specification to stay ahead of the competition and meet evolving customer needs.

Example:

Targeting young, urban professionals with high disposable income for a luxury fashion brand

due to their affinity for trendy and premium products.

Real Use Case: Apple identifies tech-savvy early adopters as its primary target segment for new product launches, focusing on innovation and cutting-edge technology to meet their needs and preferences.

Step: - 3. Collecting Data:

What:

Collecting data is a crucial step in the market segmentation process as it provides the foundation for identifying and understanding different customer segments. This step involves gathering relevant information from various sources, including surveys, internal data sources, market research reports, and customer feedback. By collecting comprehensive data on customer demographics, preferences, purchasing behavior, and other relevant factors, businesses can gain insights into the needs and preferences of different customer segments, informing their segmentation strategy and marketing efforts.

Why:

Data collection is essential for informed decision-making and strategy development in market segmentation. By collecting data on customer characteristics and behavior, businesses can identify patterns and trends that help them understand their target audience better. This insight allows businesses to tailor their products, services, and marketing messages to meet the specific needs and preferences of different customer segments, increasing the effectiveness of their marketing efforts. Moreover, data collection enables businesses to track changes in customer behavior over time, allowing them to adapt their segmentation strategy accordingly and stay ahead of evolving market trends. Additionally, data-driven segmentation helps businesses optimize resource allocation, ensuring that marketing efforts are focused on segments with the highest potential for return on investment.

How:

- Conducting Surveys and Questionnaires: Obtaining direct feedback from customers to understand their needs, preferences, and buying behaviors.
- Analyzing Internal Data and CRM Systems: Leveraging existing customer data and CRM systems to identify patterns, trends, and correlations.
- Utilizing Market Research Reports and Third-Party Data Sources: Accessing external data sources such as market research reports and industry databases for comprehensive market insights and validation.
- Exploring social media and Digital Analytics: Mining social media platforms and digital channels for valuable consumer insights and sentiment analysis.
- Implementing Data Privacy Measures: Ensuring compliance with data privacy regulations and ethical standards when collecting and analyzing customer data.

Example:

Collecting customer feedback through online surveys to understand satisfaction levels and

identify areas for improvement in product offerings and customer service.

Real Use Case: Amazon analyzes purchase history and browsing data to personalize recommendations for users, enhancing the shopping experience and driving customer loyalty.

Step: - 8. Selecting Target Segments:

What:

Once data has been collected and analyzed, the next step is to select target segments that align with the company's objectives and resources. This involves evaluating and prioritizing segments based on criteria such as size, growth potential, profitability, and compatibility with the company's offerings. By selecting target segments strategically, businesses can focus their marketing efforts and resources on segments that offer the greatest opportunity for success, maximizing the impact of their marketing initiatives and driving business growth.

Why:

Selecting target segments is critical for maximizing the effectiveness and efficiency of marketing efforts. By focusing on specific segments that align with the company's objectives and resources, businesses can tailor their marketing messages and strategies to resonate with the needs and preferences of their target audience, increasing the likelihood of engagement and conversion. Moreover, targeting the right segments allows businesses to allocate resources more effectively, ensuring that marketing efforts are directed towards segments with the highest potential for return on investment. Additionally, by selecting target segments strategically, businesses can differentiate themselves from competitors and position their offerings more effectively in the market, leading to increased market share and profitability. Finally, targeting specific segments enables businesses to build stronger relationships with customers, leading to increased loyalty and retention.

How:

- Assessing Segment Size, Growth Potential, and Profitability: Identifying segments with the greatest potential for revenue generation and long-term growth.
- Analyzing Competition Within Each Segment: Understanding competitive dynamics and market positioning to identify opportunities for differentiation and competitive advantage.
- Determining Strategic Fit with Business Objectives: Aligning segment priorities with overall company goals and objectives to ensure strategic alignment and coherence.
- Conducting Pilot Tests and Market Trials: Testing segment viability and market response through pilot tests and market trials to validate assumptions and hypotheses.
- Leveraging Predictive Analytics: Using predictive analytics and modeling techniques to forecast segment performance and anticipate future market trends.

Example:

 Prioritizing segments with high growth potential and low competition to maximize market share and profitability.

Real Use Case: Toyota targets environmentally conscious consumers with its hybrid vehicles, aligning with its commitment to sustainability and innovation to drive customer engagement and brand loyalty.

Step: - 9. Customizing the Marketing Mix:

What:

Once target segments have been identified, the final step is to customize the marketing mix to meet the needs and preferences of each segment. This involves tailoring the product, price, placement, and promotion strategies to align with the characteristics and preferences of the target audience. By customizing the marketing mix for each segment, businesses can create more relevant and compelling offerings that resonate with their customers, driving engagement, loyalty, and sales.

Why:

Customizing the marketing mix is essential for maximizing the effectiveness of marketing efforts and driving business success. By tailoring the product, price, placement, and promotion strategies to meet the specific needs and preferences of each segment, businesses can create more relevant and compelling offerings that resonate with their customers, increasing the likelihood of engagement and conversion. Moreover, customizing the marketing mix allows businesses to differentiate themselves from competitors and position their offerings more effectively in the market. Additionally, by customizing the marketing mix, businesses can optimize resource allocation, ensuring that marketing efforts are focused on activities that deliver the highest return on investment.

Finally, customizing the marketing mix enables businesses to build stronger relationships with customers, leading to increased loyalty and retention.

How:

- **Adapting Product Features and Pricing:** Modifying product features and pricing strategies to align with segment preferences and purchasing behaviors.
- **Personalizing Promotional Campaigns:** Developing targeted marketing messages and promotions that resonate with the interests and values of each segment.
- **Optimizing Distribution Channels and Placement:** Selecting distribution channels and placement strategies that maximize reach and accessibility for each target segment.
- **Leveraging Data-Driven Insights:** Utilizing data-driven insights and analytics to continuously optimize marketing efforts and refine segmentation strategies.
- **Enhancing Customer Experience:** Improving the overall customer experience through personalized interactions, seamless transactions, and exceptional service delivery.

Example:

Offering student discounts and educational resources for a software product targetinguniversities to appeal to student budget constraints and academic needs.

Real Use Case: McDonald's adapts its menu offerings to cater to local tastes and preferences in different countries, ensuring relevance and appeal to diverse customer segments to drive sales and customer satisfaction.

Conclusion:

 Market segmentation is a strategic approach that allows businesses to better understand and serve their customers. By deciding to segment, specifying the ideal target segment, collecting relevant

data, selecting target segments, and customizing the marketing mix, companies can effectively reach and engage with their target audience, driving business growth and success. Implementing a thoughtful segmentation strategy enables companies to allocate resources efficiently, tailor marketing efforts, and ultimately, build stronger relationships with customers.

Team Member1: Shambhavi Belagali

Summary (steps 1 to 3 and 4)

Step1: - Deciding to Segment

Deciding to segment in market segmentation entails a comprehensive assessment of market heterogeneity, business objectives, resource availability, competitive dynamics, and segmentation variables. It involves a strategic evaluation of whether dividing the market into smaller, more homogeneous segments aligns with the company's goals and can provide a competitive advantage. This decision-making process necessitates careful consideration of the costs and benefits associated with segmentation, including the allocation of resources and potential impact on marketing effectiveness. Once the decision is made to segment, businesses must identify relevant segmentation variables and develop a targeted strategy for each segment, with ongoing monitoring and adaptation to ensure relevance and effectiveness. Ultimately, the decision to segment hinges on the potential to enhance customer satisfaction, increase market share, and improve overall business performance through tailored marketing approaches that resonate with specific consumer groups.

In market segmentation, "deciding segment" refers to a specific step within the overall process. It's not a separate concept itself. Here's a breakdown of this step:

The Segmentation Process
Market segmentation involves dividing a broad target market into smaller, more defined groups. "Deciding segment" focuses on the initial stage where you assess whether segmentation is the right approach.

Key Considerations for Deciding to Segment

1. **Market Heterogeneity:** This essentially means how diverse your target market is. If your potential customers have very different needs, wants, and buying behaviors, then segmentation is likely a good idea.
2. **Resource Availability:** Segmenting your market can require more resources for marketing and potentially product development tailored to each segment. Consider if your company has the capacity to handle this effectively.
3. **Competitive Landscape:** Are your competitors already segmenting the market? If so, not segmenting yourself could put you at a disadvantage.

By analyzing these factors, you can decide if creating specific customer segments within your target market makes strategic sense for your business.

Step2: - Specifying the Ideal Target Segment:

Specifying the ideal target segment in market segmentation involves identifying a distinct group of consumers who are most likely to respond positively to the company's products or services, thereby maximizing marketing effectiveness and return on investment. This segment should exhibit specific characteristics, needs, behaviors, or preferences that align closely with what the business offers. Ideal target segments are typically characterized by a combination of factors such as demographics (age, gender, income), psychographics (lifestyle, values, attitudes), geographic location, and behavioral patterns (usage frequency, brand loyalty). Additionally, the segment should be sizable enough to warrant dedicated marketing efforts yet sufficiently homogeneous to allow for tailored messaging and product offerings. By pinpointing the ideal target segment, businesses can focus their resources and efforts on reaching and satisfying the most receptive audience, driving sales, and fostering long-term customer relationships.

In market segmentation, specifying the ideal target segment is a crucial step after you've decided to segment your market. This involves identifying the single most attractive group to focus your resources on. Here's a breakdown of this concept:

Why Identify an Ideal Segment?

While segmentation allows you to target multiple groups, focusing on just one ideal segment can offer significant advantages:

- **Resource Focus:** Directing your marketing budget and efforts towards a single segment allows for a more impactful and efficient campaign.
- **Brand Clarity:** A clear target segment helps you develop a consistent brand message and image that resonates strongly with that specific group.
- **Deeper Understanding:** By focusing on one segment, you can gain a deeper understanding of their needs, preferences, and buying behavior, allowing for more targeted product development and marketing strategies.

*Identifying the Ideal Segment

There's no one-size-fits-all approach to finding the ideal segment. However, some key factors to consider include:

- **Segment Attractiveness:** Is the segment large enough to be profitable? Is it growing? Is there low competition within this segment?
- **Profitability:** Does the segment have a willingness to pay a premium for your product or service?

*Match with Company Strengths: Can your company effectively cater to the needs of this segment with its existing resources and capabilities?

Step3: - Collecting Data:

Collecting data in market segmentation involves a multifaceted approach aimed at gathering insights into consumer behavior, preferences, and characteristics to inform the creation of distinct market segments. This process encompasses various methodologies, including surveys, market research, focus groups, customer feedback analysis, observational research, data analytics, CRM systems, and third-party data sources. Through surveys and questionnaires, businesses directly engage with consumers to gather quantitative and qualitative data, while market research provides broader insights into market trends and competitive landscapes. Focus groups facilitate in-depth discussions to uncover nuanced consumer perspectives, while customer feedback and reviews offer real-time insights into satisfaction levels and areas for improvement. Observational research enables businesses to observe consumer behavior firsthand, while data analytics and CRM systems provide comprehensive data analysis capabilities. Additionally, leveraging third-party data sources supplements internal data and enriches understanding of the target market. By synthesizing insights from these diverse sources, businesses can develop robust market segmentation strategies tailored to the needs and preferences of specific consumer segments, enhancing marketing effectiveness and driving business growth.

In market segmentation, collecting data is a fundamental step that fuels the entire process. This data allows you to identify the different groups (segments) within your target market and understand their characteristics. Here's a breakdown of data collection in market segmentation:

What Data Do You Need?

The specific data you need depends on the segmentation bases you choose. Here are some common types of data used for segmentation:

- **Demographics:** Age, gender, income, education level, family size, location (geographic segmentation).
- **Psychographics:** Values, interests, lifestyles, personality traits.
- **Behavior:** Purchasing habits, usage patterns, brand loyalty.
- **Needs & Benefits Sought:** What problems are your potential customers trying to solve? What benefits are they looking for?

Data Collection Methods:

There are various methods to gather data for market segmentation, each with its own advantages and limitations. Here are some common approaches:

- **Surveys:** Online surveys, phone surveys, in-person surveys. Allow you to gather a wide range of data points from a large sample size.
- **Customer Relationship Management (CRM) Data:** If you have an existing customer base, your CRM system likely holds valuable data on demographics, purchase history, and potentially psychographics through past interactions.
- **Website Analytics:** Tools like Google Analytics can provide insights into user demographics, interests, and behavior on your website.
- **Social Media Listening:** Monitoring social media conversations can reveal customer preferences, opinions, and brand sentiment.
- **Market Research Reports:** Purchasing reports from market research firms can provide valuable data on industry trends and consumer behavior.

Effective Data Collection:

Here are some tips for effective data collection in market segmentation:

- **Start with Clear Objectives:** Define what information you need to achieve your segmentation goals.
- **Choose the Right Method(s):** Select data collection methods that align with your budget, timeframe, and target audience.
- **Maintain Data Quality:** Ensure the accuracy and reliability of your data to avoid basing your segmentation on misconceptions.
- **Ethical Considerations:** Always collect data ethically and in accordance with privacy regulations.

By using a combination of these data collection methods and following best practices, you can gather the necessary information to effectively segment your target market and develop targeted marketing strategies.

Step4: -Exploring Data:

Exploring data in market segmentation involves a detailed analysis of collected information to uncover meaningful patterns, trends, and insights that can guide the segmentation process. This exploration typically begins with data cleaning and preparation to ensure accuracy and consistency across datasets. Businesses then utilize various analytical techniques, such as descriptive statistics, data visualization, clustering algorithms, and predictive modeling, to identify distinct segments within the target market. Descriptive statistics provide summary measures to understand the distribution of key variables, while data visualization techniques like charts and graphs help visualize relationships and trends within the data. Clustering algorithms, such as k-means or

hierarchical clustering, are employed to group similar observations together based on predefined criteria, enabling the identification of homogeneous market segments. Predictive modeling techniques, such as regression analysis or machine learning algorithms, can further uncover underlying relationships between variables and predict future behavior of different segments. By exploring data through these analytical approaches, businesses can gain deeper insights into consumer behavior, preferences, and characteristics, facilitating the development of targeted marketing strategies that resonate with specific market segments and drive business growth.

In market segmentation, exploring data is a crucial step after you've collected data on your target market. This exploration phase involves analyzing the data to uncover patterns, trends, and potential segments within your audience. Here's a breakdown of this process:

Why Explore the Data?

Data exploration allows you to gain a deeper understanding of your target market and identify groups with distinct characteristics. This is essential for:

- **Identifying Segmenting Variables:** By analyzing the data, you can discover which variables (demographics, psychographics, behavior, etc.) best differentiate potential customer groups.
- **Understanding Segment Needs:** Exploring data can reveal the needs, preferences, and pain points of different customer groups within your target market.
- **Refining Segmentation Strategy:** The exploration might highlight the need to refine your initial segmentation approach based on the discovered patterns in the data

Data Exploration Techniques

There are various techniques you can use to explore data for market segmentation. Some common methods include:

- **Frequency Tables & Crosstabs:** These tools help you analyze how different variables (e.g., age and income) are distributed across your data set.
- **Data Visualization:** Techniques like histograms, scatterplots, and boxplots can visually reveal patterns, trends, and potential relationships between variables.
- **Segmentation Techniques:** Statistical methods like cluster analysis can help automatically group data points into distinct segments based on shared characteristics.

Benefits of Effective Exploration
Here are some key benefits of effective data exploration in market segmentation:

- **Data-Driven Decisions:** Exploration allows you to base your segmentation strategy on real customer data, leading to more targeted and effective marketing strategies.

- **Uncover Hidden Insights:** The exploration process might reveal unexpected patterns or trends within your data, leading to the discovery of new customer segments.
- **Improve Targeting Accuracy:** By gaining a deeper understanding of your segments, you can refine your targeting efforts to reach the right customers with the right message.

Additional Tips

Here are some additional points to consider for effective data exploration:

- **Data Cleaning & Preparation:** Ensure your data is clean and free of errors before exploration to avoid misleading results.
- **Focus on Segmentation Goals:** Keep your segmentation objectives in mind while exploring the data to stay focused on uncovering relevant insights.
- **Iterative Process:** Data exploration is often iterative. As you discover new insights, you might need to refine your initial segmentation approach and explore the data further.

By effectively exploring your data, you can transform raw information into actionable insights that will guide your market segmentation strategy and lead to more successful marketing campaigns.

Team Member 2: Rahul Moolchandani

Summary (steps 1 to 3 and 5)

Step: -1. Deciding to Segment

- In this step we decide whether there is a need for market segmentation or not.
- In market segmentation the organization has to commit for long-term and has to follow that from start of business till the end.
- To maximize the profits of market segmentation, organizations need to organize around market segments rather than products.
- The decision to investigate the potential of market segmentation strategy must be made at highest executive level and must be continuously and systematically communicated to all organizational levels and across all organizational departments.
- There are many barriers in implementing market segmentation. Some of them are

- Lack of leadership
- Lack of market orientation
- Lack of training
- Resistance to change
- Lack of communication and sharing of insights
- Lack of consumer knowledge
- Lack of financial resources
- Lack of planning

- There are several questions which must be answered before implementing market segmentation otherwise it will be a waste of resources of the organization to proceed.
- One of the important questions is —organization is market oriented or not. If an organization is not market-oriented, even the finest of market segmentation analyses cannot be successfully implemented.
- The second important thing to be clear will be the objective of market segmentation analysis should always be clear before proceeding further.
- Third will be the structure of analysis should be properly defined.

Step: -2. Specifying the Ideal Target Segment:

- After market segment analysis the next step is to specify the ideal target segment.
- In this we can create several segments according to the need of organization like one segment will be the ideal others will be relatively low ideal.
- For example-- In Step 2 the organization must determine two sets of segment evaluation criteria. One set of evaluation criteria can be referred to as knock-out criteria. These criteria are the essential, non-negotiable features of segments that the organization would consider targeting. The second set of evaluation criteria can be referred to as attractiveness criteria. These criteria are used to evaluate the relative attractiveness of the remaining market segments – those in compliance with the knock-out criteria.
- Knock-out criteria are used to determine if market segments resulting from the market segmentation analysis qualify to be assessed using segment attractiveness criteria.
- The general thing is that following a structured process when assessing market segments is beneficial.
- 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 showing segment attractiveness along one axis, and organizational competitiveness on the other axis.
- The segment attractiveness and organizational competitiveness values are determined by the segmentation team.
- At the end of this step, the market segmentation team should have a list of approximately six segment attractiveness criteria. Each of these criteria should have a points attached to it to indicate how important it is to the organisation compared to the other criteria.

Step: - 3. Collecting Data:

- After predefining the structure and everything the collection of data from the market should start.
- To do the market segmentation analysis we need the segment variables which will use to split the sample data. These segmentation variables serve as the starting point for identifying naturally existing, or artificially creating market segments useful to the organisation.
- The organization must decide the segmentation criterion for the analysis. The term segmentation criterion relates to the nature of the information used for market segmentation. This decision requires prior knowledge of the industry.
- The most common segmentation criteria are geographic, socio-demographic, psychographic and behavioral segmentation.
- When geographic segmentation is used the consumer's location of residence serves as the only criterion to form market segments.
- Socio-demographic segmentation criteria include age, gender, income and education.
- When people are grouped according to psychological criteria, such as their beliefs, interests, preferences, aspirations, or benefits sought when purchasing a product, the term psychographic segmentation is used.
- When market segments are created based on frequency of purchase, amount spent on purchasing the product on each occasion, and information search behavior is known as behavioral market segmentation.
- The sample size of data should be enough so to explore the data, learn any model, evaluation can also be done without creating biasing or data leakage.

Step: -5. Extracting The Segments:

- After exploring the data then we have to create several clusters or segments of the same features.
- For this we have several methods like—
- Distance based methods
- Model based methods
- The methods are decided based on the features or characteristics of the final consumer.
- In distance-based methods the partitioning methods and, in that k-means clustering is used widely for market segmentation. It is also a very popular method for market segmentation.
- The k-means algorithm uses the squared Euclidean distance.
- Partitioning clustering methods divide these consumers into subsets (market segments) such that consumers assigned to the same market segment are as like one another as possible, while consumers belonging to different market segments are as dissimilar as possible.
- We can also use neural networks, two step clustering and many more.

Team Member 3: Aswathi Ajith

Summary (1 to 3 and 7)

Step 1: Deciding (not) to Segment

Implications of Market Segmentation as a Marketing Strategy

The article discusses the implications of committing to market segmentation as a marketing strategy, offering insights from McDonald and Dunbar (1995), Cahill (2006), and Croft (1994). Market segmentation is presented as a long-term commitment, not a short-term endeavor, requiring substantial changes and investments by organizations. Cahill emphasizes the costs involved in research, surveys, packaging, advertisements, and communication messages for segmentation, recommending segmentation only if the expected sales increase justifies the expenses. It may also necessitate changes in product development, pricing, distribution channels, and communication with the market, subsequently impacting the internal organizational structure.

Implementation Barriers

Senior Management Barriers: Lack of leadership, pro-active championing, commitment, and involvement by senior leadership can undermine the process, while insufficient allocation of resources for both initial analysis and long-term implementation hampers success.

Organizational Culture Barriers: Barriers such as lack of market or consumer orientation, resistance to change, lack of creative thinking, poor communication, short-term thinking, and office politics hinder successful implementation. Additionally, Croft (1994) developed a questionnaire to assess the extent of market

orientation as a barrier, while lack of training on market segmentation fundamentals and consequences can lead to failure.

Resource and Structural Barriers: The absence of a formal marketing function or qualified marketing experts within the organization, coupled with inadequate data management and analysis capabilities, presents significant challenges. Furthermore, objective restrictions like financial limitations or the inability to make structural changes can pose obstacles, alongside process-related barriers such as unclear objectives, lack of planning, absence of structured processes, undefined responsibilities, and time constraints.

Operational Barriers: Operational barriers arise from resistance to unfamiliar management techniques due to a lack of understanding. Addressing this challenge involves presenting segmentation analysis in an easy-to-understand manner, utilizing graphical visualizations.

Overcoming Barriers: Identifying and proactively removing barriers is crucial. If barriers persist, reconsidering market segmentation as a viable strategy should be considered. If proceeding, a resolute sense of purpose, dedication, patience, and willingness to address encountered problems are recommended (McDonald and Dunbar, 1995).

Overall, the article discusses the importance of careful consideration and planning before a company decides to pursue market segmentation and emphasizes the challenges they might face when implementing this strategy.

Step 2: Specifying the Ideal Target Segment

Segment Evaluation Criteria

Importance of User Input in Market Segmentation: The research paper focuses on the importance of user input in the third layer of market segmentation analysis. It emphasizes that user input should not be limited to the beginning or end of the process but should be involved in most stages of the market segmentation analysis.

The organization needs to make a significant contribution to market segmentation analysis by determining two sets of segment evaluation criteria in Step 2. The first set, known as knock-out criteria, includes essential, non-negotiable features of segments that the organization would consider targeting. The second set, called attractiveness criteria, is used to evaluate the relative attractiveness of the remaining market segments.

The paper discusses the distinction between knock-out criteria and attractiveness criteria and highlights the wide array of possible segment evaluation criteria proposed in the literature. The knock-out criteria are essential and non-negotiable, automatically eliminating some available market segments. On the other hand, the attractiveness criteria represent a diverse set of features that the segmentation team needs to select and assess the relative importance of for the organization.

Role of Segmentation Team in Applying Attractiveness Criteria : Furthermore, the paper stresses the role of the segmentation team in negotiating and applying the attractiveness criteria to determine the overall relative attractiveness of each market segment in Step 8. The team's selection of attractiveness criteria and assessment of their importance ultimately contribute to the process of target segment selection. It is crucial for the segmentation team to carefully consider and apply the attractiveness criteria to gauge the relative attractiveness of potential target segments.

Significance of User Input and Role of Segmentation Team: Overall, the paper underscores the significance of user input in market segmentation analysis and emphasizes the organization's active involvement in determining evaluation criteria. It provides insights into the distinction between knock-out criteria and attractiveness criteria and emphasizes the role of the segmentation team in selecting, negotiating, and applying the attractiveness criteria to assess the relative attractiveness of market segments. The findings stress the importance of a comprehensive and user-involved approach to market segmentation analysis, ultimately guiding the organization in target segment selection.

Knock-Out Criteria

Knock-out criteria serve to determine whether market segments resulting from segmentation analysis qualify for assessment using segment attractiveness criteria.

Initially proposed by Kotler (1994), these criteria include substantiality, measurability, and accessibility. Additional criteria recommended by various authors encompass:

- Homogeneity: Members within the segment must exhibit similarity.
- Distinctiveness: Segment members must be notably different from those in other segments.
- Size: The segment must contain a sufficient number of consumers to justify customized marketing efforts.
- Alignment with Organizational Strengths: The organization must possess the capability to meet the needs of segment members.
- Identifiability: Segment members should be recognizable within the market-place.
- Reachability: There must be a means to connect with segment members to ensure accessibility to the customized marketing mix.

Understanding these criteria is crucial for senior management, the segmentation team, and the advisory committee. While most criteria do not necessitate further specification, some, such as segment size, require clarification regarding the minimum viable size.

Attractiveness Criteria

- Apart from knock-out criteria, Table 4.1 presents numerous segment attractiveness criteria for consideration by the segmentation team.
- Unlike knock-out criteria, attractiveness criteria are not binary; segments are assessed on a continuum of attractiveness for each criterion.
- Each market segment is rated based on its attractiveness across all criteria, influencing its selection as a target segment in Step 8 of the segmentation analysis.

Implementing a Structured Process

- In segmentation literature, there's consensus on the benefits of following a structured process for assessing market segments.
- The most popular method for evaluating market segments is using a segment evaluation plot, depicting segment attractiveness versus organizational competitiveness.

- Both segment attractiveness and organizational competitiveness factors need to be negotiated and agreed upon by the segmentation team, as there's no standard set of criteria applicable to all organizations.
- McDonald and Dunbar recommend using no more than six factors for these criteria, ideally determined by a team of individuals representing various organizational units.
- Including representatives from different organizational units in the process ensures diverse perspectives and stakeholder involvement.
- While the segment evaluation plot is not completed in Step 2, selecting attractiveness criteria early ensures relevant data collection in Step 3 and facilitates target segment selection in Step 8.
- At the end of this step, the team should have approximately six attractiveness criteria, each weighted based on its importance to the organization, determined through negotiation and ideally approved by the advisory committee.

Step 3: Collecting Data

Segmentation Variables

Foundation of Segmentation: Empirical data forms the basis for both commonsense and data-driven market segmentation. It is utilized for identifying or creating market segments and subsequently describing these segments in detail.

Segmentation Variables: In commonsense segmentation, a single characteristic, such as gender, serves as the segmentation variable, splitting the sample into segments. Descriptor variables, like age and vacation preferences, are used to describe these segments. Data-driven segmentation involves multiple segmentation variables, starting with identifying naturally existing or artificially created market segments based on various characteristics beyond gender, such as vacation preferences.

Quality of Empirical Data: The quality of empirical data is critical for developing valid segmentation solutions in both commonsense and data-driven approaches. It ensures accurate assignment of individuals to segments and correct description of segments. Accurate segment descriptions are essential for customizing products, determining pricing strategies, selecting distribution and communication channels.

Sources of Empirical Data: Data for segmentation studies can originate from various sources including surveys, observations (e.g., scanner data), and experimental studies. Survey data, while common, may not always accurately reflect behavior, especially when socially desirable actions are involved. Exploring multiple data sources is recommended to ensure data closely aligns with actual consumer behavior.

Segmentation Criteria

Initial Decision: Organizations must decide on a segmentation criterion before segment extraction and data collection, which is crucial for effective segmentation strategy.

Segmentation Criterion vs. Segmentation Variable: The term "segmentation criterion" refers to the nature of information used for segmentation, while "segmentation variable" denotes a single measured value within that criterion.

Common Segmentation Criteria: Geographic, socio-demographic, psychographic, and behavioral criteria are among the most common used for market segmentation.

Relevance in Market Segmentation: Bock and Uncles emphasize the importance of consumer differences such as profitability, bargaining power, preferences, barriers to choose, and consumer interaction effects in segmentation.

Selecting the Optimal Criterion: With various segmentation criteria available, determining the most suitable one can be challenging. Guidance on the most appropriate criterion for a given marketing context is limited. The recommendation is often to opt for the simplest approach that meets the product or service requirements.

Principle of Simplicity: Cahill advises using the simplest segmentation approach that effectively addresses product or service needs, regardless of the sophistication of other criteria.

Geographic Segmentation

Origins and Usage: Geographic information was historically the primary segmentation criterion. It typically involves categorizing consumers based on their location of residence. Despite its simplicity, geographic segmentation remains widely used and relevant.

Examples of Application: National tourism organizations like Austria's may segment tourists based on language differences among neighboring countries. Global companies like Amazon and IKEA tailor their offerings and services based on customers' geographic locations.

Advantages: Easy assignment of consumers to geographic units facilitates targeted communication. Selection of communication channels becomes simpler, such as using local media for advertising.

Disadvantages: Geographic proximity doesn't necessarily imply shared preferences or characteristics. Differences in product preferences within geographic segments often stem from socio-demographic factors rather than location.

Revival and Challenges: Geographic segmentation has seen renewed interest in international market studies. Challenges include ensuring the relevance of segmentation variables across diverse geographic regions and addressing biases in surveys conducted across different cultural backgrounds.

Socio-Demographic Segmentation

Characteristics and Applications: Includes criteria like age, gender, income, and education. Commonly utilized in industries such as luxury goods, cosmetics, baby products, retirement villages, and tourism.

Advantages: Easily determines segment membership for each consumer. Can sometimes explain specific product preferences, such as vacation choices based on family status.

Limitations: Often insufficient for optimal segmentation decisions as socio-demographics may not be the primary driver of product preferences. Demographics typically explain a small percentage of consumer behavior variance, around 5%.

Alternative Perspectives: Some argue that values, tastes, and preferences are more influential in consumer buying decisions compared to socio-demographic factors.

Psychographic Segmentation

Definition and Scope: Groups individuals based on psychological criteria like beliefs, interests, preferences, aspirations, or benefits sought. Encompasses measures of the mind, covering various aspects of consumer behavior and mindset.

Types of Psychographic Segmentation: Benefit segmentation: Focuses on identifying benefits sought by consumers. Lifestyle segmentation: Based on people's activities, opinions, and interests.

Complexity and Variables: More complex than geographic or socio-demographic segmentation due to the multidimensional nature of psychographic characteristics. Often involves multiple segmentation variables, such as different travel motives or perceived risks.

Advantages: Reflects underlying reasons for differences in consumer behavior. Allows for a deeper understanding of consumer motivations and preferences.

Disadvantages: Increased complexity in determining segment memberships. Reliability and validity of empirical measures used are crucial for effective psychographic segmentation.

Behavioral Segmentation

Definition and Scope: Focuses on similarities in behavior or reported behavior among individuals. Utilizes various behavioral indicators such as prior product experience, purchase frequency, expenditure, and information search behavior.

Advantages: Uses actual behavior as the basis for segment extraction, providing insights into what matters most to consumers. Enables grouping based on relevant similarities in behavior. Avoids the need for developing measures for psychological constructs.

Examples: Tsai and Chiu (2004): Used actual consumer expenses as segmentation variables. Heilman and Bowman (2002): Utilized actual purchase data across product categories. Other studies have employed brand choice behavior over time as segmentation variables.

<u>Challenges:</u> Availability of behavioral data may be limited, especially for potential customers who haven't previously purchased the product. Relies on actual behavior rather than stated or intended behavior, which may not always be readily accessible.

Choice of Variables

<u>Importance of Variable Selection:</u> Critical for the quality of both commonsense and data-driven market segmentation solutions. Influences the effectiveness of segment extraction algorithms.

<u>Data-Driven Segmentation:</u> Requires inclusion of all variables relevant to the segmentation criterion while avoiding unnecessary ones. Unnecessary variables increase respondent fatigue, making responses lower in quality. Noisy or masking variables hinder algorithmic identification of correct segmentation solutions.

<u>Challenges and Recommendations:</u> Temptation to include redundant or unnecessary questions in surveys should be resisted. Redundant questions interfere with the ability of segmentation algorithms to identify correct solutions. Two-stage process involving exploratory and quantitative research ensures critical variables are included without redundancy.

<u>Role of Questionnaire Development:</u> Good questionnaire development involves exploratory and qualitative research to ensure inclusion of necessary variables and avoidance of redundancy. Insights from exploratory research inform the categorization of variables and answer options in the questionnaire.

Response Options

<u>Binary or Dichotomous Data:</u> Generated when respondents can choose only one of two options. Represented in a data set by 0s and 1s, with a clearly defined distance between the options. Suitable for segmentation analysis without complications.

<u>Nominal Variables:</u> Result from respondents selecting an option from a list of unordered categories. Can be transformed into binary data by introducing a binary variable for each option.

Metric Data: Generated when respondents indicate a number, such as age or nights stayed at a hotel. Allow for any statistical procedure to be performed, including distance measurement. Well-suited for segmentation analysis.

Ordinal Data: Commonly used in survey research with a limited number of ordered response options. Options are ordered, but the distance between adjacent options is not clearly defined. Complicates segmentation analysis due to ambiguous distance measures.

Preference for Binary or Metric Response Options: Binary or metric response options are preferred to avoid complications in segmentation analysis. Visual analogue scales, allowing respondents to indicate positions along a continuous line, can provide metric data. Binary options have been shown to outperform ordinal options, especially when formulated in a level-free way.

Response Styles

By definition,

Response bias: Systematic tendency to respond to questionnaire items based on factors other than item content.

Response style: Consistent bias displayed by a respondent over time, independent of specific survey questions.

Impact on Segmentation Results: Common segmentation algorithms may not distinguish between genuine beliefs and response styles. Response styles can distort segmentation outcomes, leading to misinterpretations of market segments.

Example: Market segmentation based on tourist spending preferences may misidentify a segment as high-spending due to response styles rather than actual behavior.

Mitigation Strategies: Minimize the risk of capturing response styles during data collection for segmentation purposes. Conduct additional analyses to identify and exclude segments influenced by response styles. Remove respondents affected by response styles before targeting identified market segments.

Sample Size

Sample Size Recommendations for Market Segmentation Analysis:

Importance of Sample Size: Insufficient sample size poses challenges for segmentation algorithms to determine correct market segments. Larger sample sizes enhance the correctness of segment extraction.

Factors Affecting Sample Size Requirements: Market Characteristics: Number of segments, segment size equality, and overlap. Data Characteristics: Sampling error, response biases, data quality, response options, irrelevant items, and correlation between items.

Simulation Studies: Dolnicar et al. (2016) conducted large-scale simulations to assess the impact of various factors on sample size requirements. Larger sample sizes consistently improve segmentation accuracy, but the extent varies based on market and data characteristics. Some challenging characteristics, like correlation between segmentation variables, cannot be compensated for by increasing sample size.

Recommendations: Ensure a sufficient sample size (at least 100 respondents per segmentation variable) to enable accurate segmentation. Collect high-quality, unbiased data with necessary items, no unnecessary items, and minimal correlation between items. Prefer binary or metric response options, free of response styles. Aim for a suitable sample size given the segmentation study's objectives and complexity. These recommendations emphasize the importance of adequate sample size and data quality in obtaining reliable market segmentation results.

Data from Internal Sources

Utilizing Internal Data for Market Segmentation:

Advantages: Represents actual consumer behavior rather than self-reported data, reducing biases related to imperfect memory and response styles. Data are automatically generated and easily accessible if stored appropriately, requiring minimal effort for collection.

Examples of Internal Data: Scanner data in grocery stores. Booking data from airline loyalty programs. Online purchase data.

Challenges: Internal data may be biased towards existing customers, potentially overlooking potential future customers with different consumption patterns.

Considerations: Organizations should be cautious of relying solely on internal data and consider supplementing it with external data sources to capture a broader market perspective. Utilizing internal data offers significant advantages in terms of accuracy and accessibility but requires careful consideration to ensure representativeness and avoid bias towards existing customers.

Data from Experimental Studies

Utilizing Experimental Data for Market Segmentation:

Source of Data: Experimental data can be derived from field or laboratory experiments. Examples include tests on consumer responses to advertisements, choice experiments, and conjoint analyses.

Applications: Response to advertisements can serve as a segmentation criterion. Choice experiments and conjoint analyses provide insights into consumer preferences for specific product attributes, which can be used for segmentation.

Advantages: Provides controlled settings for studying consumer behavior. Offers insights into consumer preferences and responses under controlled conditions.

Considerations: Experimental data should be interpreted within the context of the experiment's design and objectives. Findings from experiments should be validated and supplemented with other data sources for comprehensive market segmentation analysis.

Step 7: Describing Segment

Developing a Complete Picture of Market Segments

Conceptual Overview: Segment profiling involves understanding differences in segmentation variables across market segments. Segmentation variables are chosen early in the market segmentation process and form the basis for extracting market segments from empirical data.

Segment Profiling: Similar to segment description (Step 7). Involves investigating differences between segments based on segmentation variables. Provides insight into segment characteristics, preferences, and behaviors.

Segment Description: Utilizes additional information beyond segmentation variables. Descriptor variables include demographic, psychographic, socio-economic variables, media exposure, product attitudes, etc. Essential for developing a customized marketing mix tailored to each segment's needs and preferences.

Importance of Segment Description: Critical for gaining detailed insight into segment nature and behaviors. Essential for developing effective marketing strategies and communication methods tailored to each segment.

Methods for Studying Differences: Descriptive statistics and visualizations; Provide an overview of differences between segments in a user-friendly format. Inferential statistics; Traditionally used in marketing literature for statistical testing and tabular presentations of differences in descriptor variables.

Using Visualizations to Describe Market Segments

Visualizing descriptor variables in market segmentation involves employing graphical statistics, which offer two significant advantages: simplifying interpretation for both analysts and users, and integrating information on the statistical significance of differences, thus preventing the over-interpretation of insignificant disparities. Basic approaches cater to different types of variables, such as nominal and ordinal variables (e.g., gender, level of education) and metric variables (e.g., age, spending). Graphical representations are preferred for their intuitiveness and efficiency in conveying marketing research results, as evidenced by surveys indicating a preference among marketing managers. This approach not only aids in comprehending segmentation findings but also facilitates decision-making processes, making it a valuable tool in market analysis and strategy development.

Nominal and Ordinal Descriptor Variables

Visualizing Descriptor Variables: Visualizing differences in descriptor variables for market segmentation involves cross-tabulating segment membership with the

descriptor variable. This enables a comprehensive understanding of segment characteristics.

Gender Distribution: A stacked bar chart or a mosaic plot can be used to visualize gender distribution across segments. While stacked bar charts are simple, mosaic plots provide a clearer depiction, especially when segment sizes are unequal. These plots facilitate comparison of proportions across segments.

Income Association: Association between segment membership and income level can be visualized using mosaic plots. They reveal trends such as higher-income tourists being more prevalent in segments motivated by cultural experiences, while lower-income tourists are less likely to be in segments seeking luxury.

Moral Obligation and Environmental Behavior: Mosaic plots are effective in illustrating the association between segment membership and stated moral obligation to protect the environment. Segments driven by entertainment show lower moral obligation, while nature-loving segments exhibit higher moral obligation.

Inferential Statistics Integration: Mosaic plots can also incorporate inferential statistics, such as highlighting differences between observed and expected frequencies. This aids interpretation by identifying statistically significant disparities between segments.

Overall, visualizing descriptor variables using mosaic plots provides valuable insights into the characteristics and associations within market segments, facilitating informed decision-making in marketing strategies.

Metric Descriptor Variables

Conditional Plots for Segment Description: Conditional plots, available in R packages lattice and ggplot2, are ideal for visualizing differences in metric descriptor variables across market segments. These plots partition the data into sections, each representing a subset such as different market segments.

Segment Profile Plot: R package lattice can generate segment profile plots, as demonstrated in Section 8.3.1, illustrating the age distribution and moral obligation scores across segments. These plots enable a comparative analysis of descriptor variables among segments.

Histograms and Box-and-Whisker Plots: Histograms for age distribution and moral obligation scores for each segment are created using R package lattice. However, assessing differences between segments solely through histograms can be challenging. To gain additional insights, parallel box-and-whisker plots are employed. These plots display the distribution of variables separately for each segment, revealing subtle differences.

Incorporating Statistical Testing: Parallel box-and-whisker plots can incorporate statistical hypothesis testing elements. For instance, the width of the boxes can be proportional to segment sizes, and 95% confidence intervals for medians can be included. Statistical tests using notch plots can determine significant differences between segments.

Segment Level Stability Across Solutions (SLSA) Plot: A modified version of the segment level stability across solutions (SLSA) plot traces the mean moral obligation to protect the environment across different segmentation solutions. Nodes in the plot represent segments, with colors indicating moral obligation levels. This plot highlights segments consistently identified as attractive markets and reveals patterns of stability across solutions.

Testing for Segment Differences in Descriptor Variables

Simple statistical tests are employed to formally assess differences in descriptor variables across market segments.

Testing Nominal and Ordinal Variables: The $\chi2$-test is utilized to test for association between nominal segment membership and another nominal or ordinal variable, such as gender or level of education. Results are visualized through mosaic plots, which illustrate associations and differences.

Testing Metric Variables: For metric variables like age or expenditure, Analysis of Variance (ANOVA) is applied to test for significant differences in means among multiple market segments. Pairwise comparisons using t-tests identify specific segments with differing means, with p-values adjusted for multiple testing.

Alternative Testing Approaches: Tukey's honest significant differences can be plotted to compare means between pairs of segments, providing visual clarity on significant differences. Adjustments for multiple testing are essential to maintain

the overall error rate and ensure robust conclusions. Methods like Holm's procedure and the false discovery rate procedure are applied for p-value correction. These statistical tests and visualizations provide insights into the differences in descriptor variables across market segments, facilitating informed decision-making in marketing strategies.

Predicting Segments from Descriptor Variables

Another way of learning about market segments is to try to predict segment membership from descriptor variables. To achieve this, we use a regression model with the segment membership as categorical dependent variable, and descriptor variables as independent variables. We can use methods developed in statistics for classification, and methods developed in machine learning for supervised learning.

As opposed to the methods in Sect. 9.3, these approaches test differences in all descriptor variables simultaneously. The prediction performance indicates how well members of a market segment can be identified given the descriptor variables. We also learn which descriptor variables are critical to the identification of segment membership, especially if methods are used that simultaneously select variables. Regression analysis is the basis of prediction models. Regression analysis assumes that a dependent variable y can be predicted using independent variables or regressors x1,..., xp:

$$y \approx f(x_1, \ldots, x_p).$$

Regression models differ with respect to the function f ($\cdot$), the distribution assumed for y, and the deviations between y and f (x1,...,xp). The basic regression model is the linear regression model. The linear regression model assumes that function f ($\cdot$) is linear, and that y follows a normal distribution with mean f (x1,...,xp) and variance $\sigma 2$. The relationship between the dependent variable y and the independent variables x1,...,xp is given by:

$$y = \beta_0 + \beta_1 x_1 + \ldots + \beta_p x_p + \epsilon,$$

In R, regression models are specified using a formula interface, with the dependent variable on the left side of the ~ and independent variables on the right. In this case, the independent variable is segment membership, coded as a categorical variable with six categories. By default, the formula interface fits a regression

coefficient for each category, but for identifiability reasons, either the intercept or one category needs to be dropped. Dropping the intercept yields coefficients equal to the mean age in each segment, revealing that segment 5 has the youngest members at 39.4 years, while segment 6 has the oldest at 49.6 years. Including the intercept captures the effect of one segment, with the coefficient indicating an average age of 44.6 years for segment 1 and a 5-year age difference for segment 6 compared to segment 1. Linear regression models assume changes in the dependent variable are independent of absolute levels of other independent variables, with coefficients expressing how the dependent variable changes with one independent variable while others remain constant. Generalized linear models can accommodate a broader range of dependent variable distributions, crucial for categorical variables where the normal distribution is inappropriate.

In the linear regression model, the mean value of y given x1,...,xp is modelled by the linear function:

$$\mathbb{E}[y|x_1, \ldots, x_p] = \mu = \beta_0 + \beta_1 x_1 + \ldots + \beta_p x_p.$$

Generalized linear models (GLMs) extend beyond the normal distribution, accommodating various distributions for the dependent variable, such as Bernoulli, Poisson, binomial, and multinomial distributions. These models are essential when the dependent variable is not normally distributed, as in cases where it takes binary (0 or 1) or categorical values. GLMs address the limitation of linear regression by introducing a link function, denoted as g(·), which transforms the mean value of the dependent variable to a scale that allows for modeling within the constraints of the chosen distribution. Two notable special cases of GLMs are binary and multinomial logistic regression, where the dependent variable follows either a binary or multinomial distribution, respectively, and the link function is the logit function. These models are particularly useful for classification tasks, where the outcome is categorical and not continuous.

Binary Logistic Regression

- We can formulate a regression model for binary data using generalized linear models by assuming that f (y|μ) is the Bernoulli distribution with success

probability μ, and by choosing the logit link that maps the success probability μ ∈ (0, 1) onto (−∞,∞) by

$$g(\mu) = \eta = \log\left(\frac{\mu}{1-\mu}\right).$$

- In R, the function glm() is utilized to fit generalized linear models (GLMs), allowing for the specification of the distribution of the dependent variable and the link function through the family argument. For instance, to model a binary dependent variable using the Bernoulli distribution with the default logit link function, the family parameter is set as binomial(link = "logit") or simply binomial(). This distribution is a generalization of the Bernoulli distribution, accommodating cases where the dependent variable represents the number of successes out of multiple independent trials with the same success probability. By employing the formula interface, the glm() function can specify models with the dependent variable on the left side of ~ and independent variables on the right. For example, to predict the likelihood of a consumer belonging to a specific market segment based on their age and moral obligation score, a binary indicator of segment membership is constructed using I(C6 == 3). The output of glm() includes regression coefficients and model fit information such as degrees of freedom, null and residual deviance, and the AIC. In binomial logistic regression, the intercept provides the value of the linear predictor η when all independent variables are set to 0, akin to the mean value of the dependent variable in linear regression when independent variables are 0.
- The probability of being in segment 3 for a respondent with age 0 and a low moral obligation value is calculated by transforming the intercept with the inverse link function, in this case the inverse logit function:

$$g^{-1}(\eta) = \frac{\exp(\eta)}{1 + \exp(\eta)}.$$

- The glm() function in R facilitates the fitting of generalized linear models, allowing users to define the distribution of the dependent variable and the link function via the family argument. For binary outcomes like segment membership prediction, the binomial distribution with a default logit link is

commonly used. Models are specified using the formula interface, with the dependent variable on the left side of ~ and independent variables on the right, providing regression coefficients and model fit details in the output.

- Binary logistic regression coefficients in a model indicate changes in the linear predictor, corresponding to alterations in the log odds of success. Odds, the ratio between the probability of success and failure, are interpreted based on the coefficient values. For instance, a decrease in log odds due to aging suggests a lower likelihood of segment 3 membership for older tourists. The regression coefficients for categorical variables represent the change in log odds between their categories and a reference category, aiding in understanding group differences.

- To facilitate coefficient interpretation and effect visualization, R's package effects can be utilized. By calculating predicted values for different independent variable levels while holding others constant, effects aid in understanding how predictors influence outcomes. Predicted probabilities are then plotted, showing non-linear changes influenced by varying independent variable values.

- Statistical tests, such as z-tests and likelihood ratio tests, assess the significance of coefficients and model fit improvements, guiding model refinement and variable selection. In logistic regression, significance tests indicate the relevance of predictors in explaining the dependent variable variation. For instance, tests suggest that moral obligation significantly enhances model fit, making it a valuable predictor for segment 3 membership.

- Model evaluation includes comparing predictive performance between models with different sets of independent variables. Predicted probabilities generated by the predict() function allow for visualizing model discriminative ability through parallel boxplots. Assessing model performance aids in selecting the most informative predictors and ensuring the model accurately distinguishes between segment 3 members and non-members.

Multinomial Logistic Regression

- Multinomial logistic regression, employed when the dependent variable has more than two categories, fits a model predicting each segment simultane-

ously. In R, the multinom() function from the nnet package is utilized, specifying the model with a formula and a data frame, and suppressing progress information using trace = 0 during fitting.

- The fitted model provides regression coefficients for each segment except for the baseline category (segment 1), indicating changes in log odds with alterations in independent variables. Summary statistics display regression coefficients and standard errors, while Anova() assesses the significance of dropping variables, testing if their exclusion significantly reduces model fit.

- Model selection via stepwise procedures refines the model by selecting the best-fitting variables, optimizing the model's performance based on the Akaike Information Criterion (AIC). Predictive performance evaluation involves comparing predicted segment membership to observed membership using methods like mosaic plots and parallel boxplots.

- Mosaic plots illustrate the distribution of predicted and observed segment memberships, offering insights into model performance. Parallel boxplots depict predicted segment probabilities for specific segments, aiding in understanding the model's discriminative ability.

- To facilitate interpretation, allEffects function plots predicted probabilities against independent variables like age and moral obligation. These visualizations demonstrate how predicted segment membership probabilities change with varying independent variable values, shedding light on the model's predictive behavior and identifying trends across segments.

Tree-Based Methods

- Classification and regression trees (CARTs) offer an alternative approach for predicting binary or categorical dependent variables based on independent variables. CARTs are supervised learning techniques from machine learning, known for their ability to perform variable selection, ease of interpretation, and straightforward incorporation of interaction effects. Despite their advantages, CARTs can produce unstable results, as small changes in data may lead to entirely different trees.

- The tree-building process in CART involves a stepwise procedure where consumers are split into groups based on independent variables, aiming for

- groups to be as pure as possible concerning the dependent variable. This process, also known as recursive partitioning, results in a tree structure with nodes representing each split and terminal nodes indicating the final predicted outcomes.
- Various tree constructing algorithms differ in their approach to splitting, selection criteria for independent variables, stopping criteria, and final prediction methods. R packages such as rpart and partykit implement different algorithms, with partykit offering unbiased variable selection based on association tests and p-values.
- Using the ctree() function from the partykit package, conditional inference trees can be fitted. These trees, illustrated with the Australian travel motives dataset, display nodes representing splits based on independent variables, with terminal nodes showing predicted outcomes and associated proportions.
- Plotting the classification tree visually represents the tree's structure and predictions, aiding interpretation. The plot depicts nodes, splits, and terminal nodes, with stacked bar charts illustrating the proportion of respondents in each segment.
- Parameters for tree construction can be set using the control argument in ctree_control, influencing node selection, terminal node size, test statistics, and minimum criterion values. Adjusting these parameters allows for customization of the tree construction process.
- Fitting trees for categorical dependent variables with more than two categories involves similar steps, with nodes split based on categorical variables. The resulting tree visualizations depict segments and their proportions within terminal nodes, aiming for purity within segments.
- Overall, CARTs offer a versatile approach to predictive modeling, allowing for efficient variable selection, ease of interpretation, and visual representation of outcomes. By understanding the tree-building process and adjusting parameters, researchers can optimize model performance and interpretability.

Team Member 4: Kartik Sharma

Summary (1 to 3 and 6)

Step: - 1. DECIDING (NOT) TO SEGMENT:

IMPLICATIONS OF COMMITTING TO MARKET SEGMENTATION

Market segmentation is not merely a fleeting strategy but rather a long-term commitment that requires dedication, resources, and organizational alignment. McDonald and Dunbar (1995) aptly liken market segmentation to a marriage, emphasizing the need for sustained effort and investment from the organization. This commitment entails a willingness to make substantial changes and investments, as Cahill (2006) highlights.

Investment and Costs: Implementing a market segmentation strategy involves various costs, including market research, surveys, focus groups, product development, packaging design, and tailored communication messages. These expenses underscore the financial commitment required to effectively segment a market. The truism of segmentation strategy lies in ensuring that the benefits derived from using the segmentation scheme outweigh the costs associated with its development and implementation.

Organizational Changes: Embracing market segmentation often necessitates significant organizational changes. This may include the development of new products tailored to specific segments, modifications to existing products to meet segment needs, adjustments in pricing strategies, and shifts in distribution channels. Moreover, communication strategies must be tailored to resonate with each identified segment, further emphasizing the need for adaptability and agility within the organization.

Strategic Decision Making: Given the profound implications of committing to market segmentation, the decision to pursue this strategy must be made at the highest executive level within the organization. It requires a systematic approach to evaluating market segments, allocating resources, and aligning organizational objectives with segment-specific strategies. Continuous communication and reinforcement of the segmentation strategy across all levels and units of the organization are essential to ensure alignment and sustained commitment.

Conclusion: Market segmentation represents a strategic imperative for organizations seeking to effectively target and serve diverse customer segments. However, its successful

implementation requires more than just a superficial commitment. It demands a comprehensive, long-term organizational strategy accompanied by substantial investments, organizational changes, and strategic decision-making processes.

IMPLEMENTATION BARRIERS

Lack of Leadership and Commitment

Lack of proactive involvement and commitment from senior management can hamper market segmentation's performance. Without strong leadership backing the program, implementation attempts may falter.

Resource Allocation

Senior management's insufficient allocation of resources for market segmentation analysis and long-term strategy implementation can hinder progress. Without proper assistance, teams may struggle to perform detailed analysis and carry out effective initiatives.

Resistance to change by the Organization

Lack of openness to new ideas can hinder market segmentation implementation. Without a culture that values innovation and adaptation, efforts to segment markets and adjust strategy may be met with opposition.

Lack of Market Orientation and Communication

Organizations without a market or consumer orientation, as well as poor communication and information-sharing between departments, may struggle to conduct efficient market segmentation. Segmentation tactics may not resonate with target audiences unless they are based on a shared knowledge of customer wants and insights.

Lack of Training and Expertise

Barriers to successful market segmentation implementation include a lack of training and expertise among senior management and teams. Organisations without sufficient training and competence may fail to establish and implement successful segmentation strategies.

Lack of Qualified Marketing Resources

Implementing market segmentation might be challenging without a structured marketing function or qualified professionals within the organisation. Without the essential knowledge, organisations may lack the strategic direction required to handle difficult segmentation initiatives.

Financial Restrictions

Objective restrictions such as limited financial resources or structural constraints within the organization can impede market segmentation efforts. Inability to invest in necessary resources or make structural changes required for segmentation may hinder implementation success.

APPROACH TO OVERCOME IMPLEMENTATION BARRIERS

Identifying and Addressing Barriers:

Recognizing and understanding the barriers to market segmentation implementation is essential for organizations to devise effective strategies to overcome them. At a practical level, Doyle and Saunders (1985) advocate for making market segmentation analysis comprehensible to management by utilizing graphical visualizations to present results in an accessible manner.

Proactive Strategy:

Many barriers to market segmentation can be anticipated and mitigated proactively during the initial stages of a segmentation study. Organizations should adopt a proactive approach to identify and remove barriers to enhance the chances of successful implementation. However, if certain barriers cannot be adequately addressed, organizations should consider the option of reassessing the pursuit of market segmentation as a viable strategy.

Action Plan:

McDonald and Dunbar (1995) provide useful recommendations for conducting market segmentation study. They emphasise the significance of retaining a strong sense of purpose and determination, as well as patience and a willingness to face and overcome the inevitable problems that will arise during implementation.

STRATEGY BY MCDONALD'S

"Above all, a resolute sense of purpose and dedication is required, tempered by patience and a willingness to appreciate the inevitable problems which will be encountered in implementing the conclusions."

Simplified Communication:

McDonald's employs a strategy of simplifying market segmentation analysis and results for senior management's comprehension. Utilizing graphical visualizations and straightforward presentations, the company ensures that management can easily understand and interpret the insights derived from segmentation studies.

Proactive Barrier Identification:

McDonald's adopts a proactive approach to identify and address barriers to market segmentation implementation from the outset of a segmentation study. By anticipating potential challenges and devising strategies to overcome them, McDonald's enhances its ability to execute successful segmentation strategies.

Dedication and Patience:

In line with McDonald and Dunbar's recommendations, McDonald's maintains a steadfast commitment to market segmentation, tempered by patience and a willingness to navigate challenges. This dedication allows the company to persevere through obstacles and implement segmentation strategies effectively.

In summary, McDonald's approach to overcoming implementation barriers revolves around simplified communication, proactive barrier identification, and a resolute commitment to dedication and patience in executing segmentation strategies.

CHECKLIST

This checklist contains a list of tasks as well as questions which can give clarity whether market segmentation is needed/good for a company or not.

For example: If an organization (example McDonald's) is market oriented then it can proceed to next question in the list.

Questions to Assess Organizational Readiness:

- Is the organization's culture market-oriented?
- Is the organization genuinely willing to change?
- Does the organization take a long-term perspective?
- Is the organization open to new ideas?
- Is communication across organizational units good?
- Is the organization in a position to make significant (structural) changes?
- Does the organization have sufficient financial resources to support a market segmentation strategy?

Steps to Ensure Effective Implementation:

- Secure visible commitment to market segmentation from senior management.
- Secure active involvement of senior management in the market segmentation analysis.
- Secure required financial commitment from senior management.
- Ensure that the market segmentation concept is fully understood. If not, conduct training until understood.
- Ensure that the implications of pursuing a market segmentation strategy are fully understood. If not, conduct training until understood.
- Put together a team of 2-3 people to conduct the market segmentation analysis.
- Ensure that a marketing expert, a data expert, and a data analysis expert are on the team.
- Set up an advisory committee representing all affected organizational units.
- Ensure that the objectives of the market segmentation analysis are clear.
- Develop a structured process to follow during market segmentation analysis.
- Assign responsibilities to segmentation team members using the structured process.
- Ensure that there is enough time allocated to perform market segmentation.

SPECIFYING THE IDEAL TARGET SEGMENT

SEGMENT EVALUATION CRITERIA

This layer of market segmentation relies mainly on user input. For a market segmentation analysis to produce results that are useful to an organization, user input cannot be limited to either a briefing at the start of the process, or the development of marketing mix at the end.

McDonald's, employs a comprehensive set of evaluation criteria to assess and select market segments. These criteria encompass various factors across different dimensions:

Segment Factors:

Size, growth rate per year, sensitivity to price and service features, external factors such as cyclicality, seasonality, and bargaining power of upstream suppliers.

Competition:

Types of competition, degree of concentration, changes in type and mix, entries and exits, changes in share, substitution by new technology, degrees and type of integration.

Financial and Economic Factors:

Contribution margins, capacity utilization, leveraging factors such as experience and economies of scale, barriers to entry or exit.

Technological Factors:

Maturity and volatility, complexity, differentiation, patents and copyrights, manufacturing processes.

Socio-political Factors:

Social attitudes and trends, laws and government agency regulations, influence with pressure groups and government representatives, human factors such as unionization and community acceptanc

These criteria help McDonald's evaluate market segments comprehensively, ensuring alignment with its strategic goals and operational capabilities. Hence, Segment evaluation criteria are essential for organizations to effectively target and prioritize market segments. By considering diverse factors, organizations can identify segments that offer the greatest potential for profitability and growth, aligning with their strategic objectives and operational capabilities.

KNOCK OUT CRITERIA

Knock-out criteria are essential characteristics that a market segment must possess to be considered for targeting. These criteria serve as dealbreakers, ruling out segments that would not be a good fit for the business.
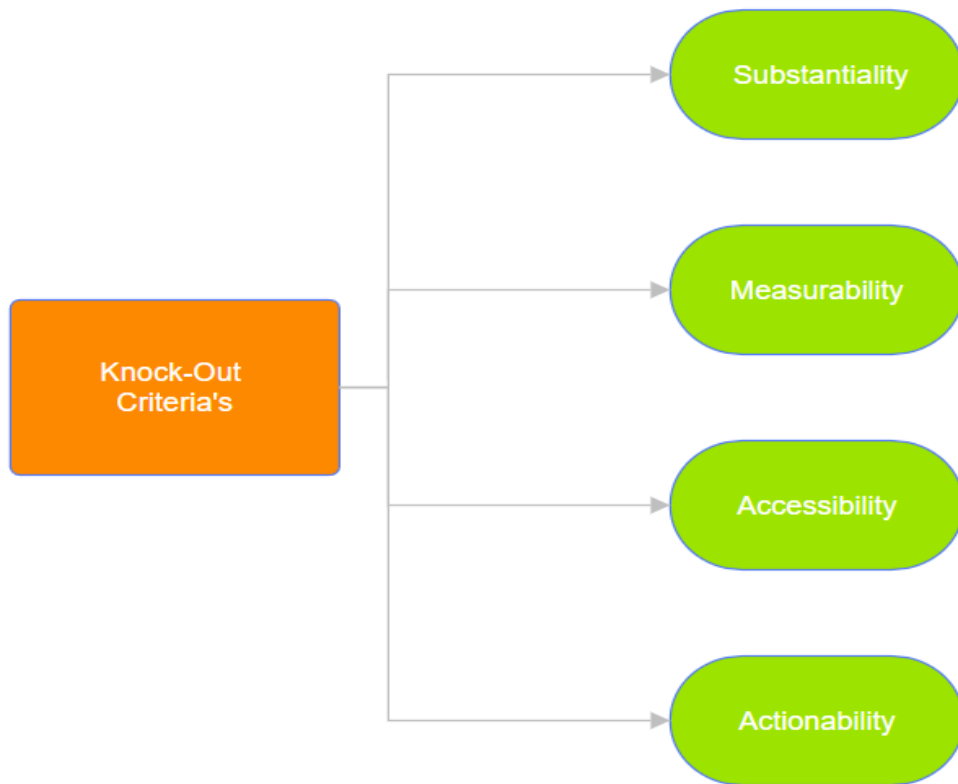
Here are some common knock-out criteria:

- **Substantiality:** Is the segment large enough to be profitable? A segment must have sufficient size and purchasing power to warrant investment in marketing efforts and resources.
- **Measurability:** Can the segment be easily identified and its size measured? It's crucial for a segment to be quantifiable and measurable to assess its potential and track performance accurately.
- **Accessibility:** Can the segment be reached through marketing and distribution channels? A segment should be accessible through existing or feasible marketing and distribution channels to effectively target and serve its needs.
- **Actionability:** Can the company develop and deliver marketing programs tailored to the segment? A segment should be actionable, meaning the company can develop and implement marketing strategies and programs that resonate with the segment's needs and preferences.

These knock-out criteria help organizations filter and prioritize market segments, ensuring that resources are allocated to segments with the greatest potential for profitability and growth.

2.3 ATTRACTIVENESS CRITERIA

Attractiveness criteria are employed after applying the knock-out criteria to evaluate the remaining segments and determine which ones are most appealing for the business. These criteria assist in prioritizing segments based on their potential for profitability and growth.
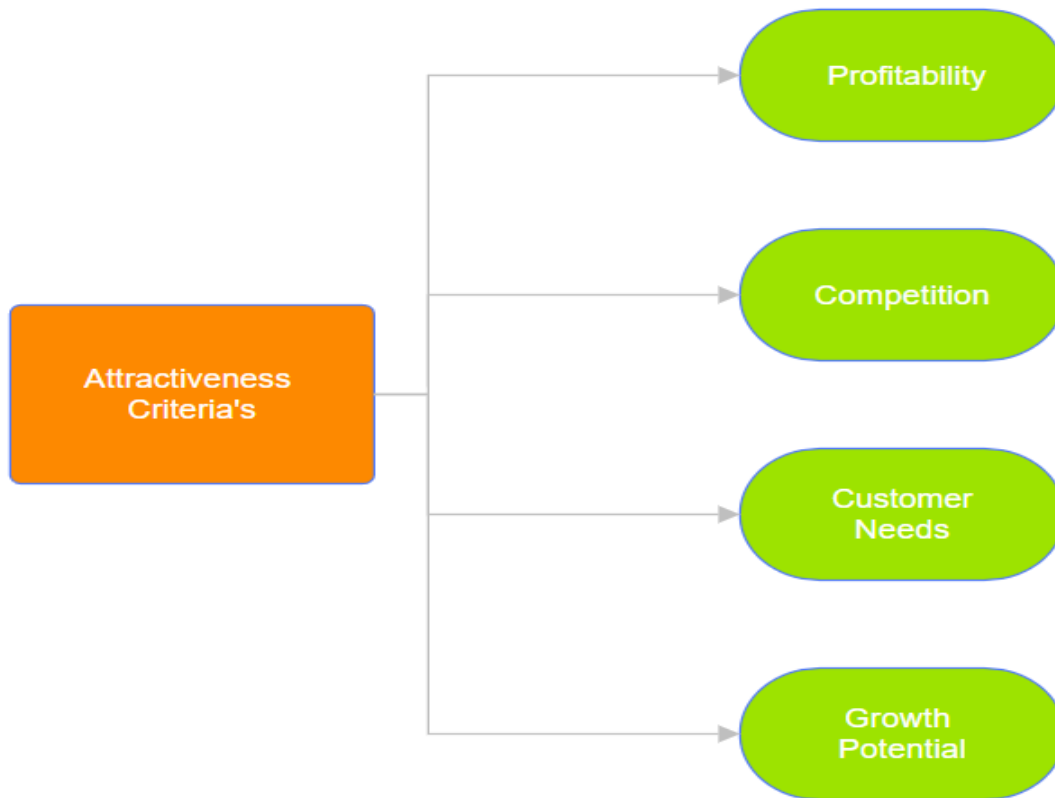
Here are some examples of attractiveness criteria:

Growth Potential: Is the segment expected to grow in size or purchasing power? Segments with significant growth potential offer opportunities for expanding market share and increasing revenue over time.

Profitability: Is the segment willing to pay a premium for the product or service? Segments that demonstrate a willingness to pay higher prices for value-added products or services are more attractive from a profitability standpoint.

Competition: How intense is the competition in the segment? Segments with low competition or where the company has a competitive advantage are more attractive as they offer opportunities for capturing market share and maintaining profitability.

Customer Needs: How well does the product or service align with the needs of the segment? Segments with needs that closely match the company's offerings are more attractive as they are likely to result in higher customer satisfaction and loyalty.

By considering these attractiveness criteria, organizations can prioritize segments that offer the greatest potential for long-term profitability and growth, aligning with their strategic objectives and capabilities.

IMPLEMENTED A STRUCTURED PROCESS (MCDONALD'S PERSPECTIVE)
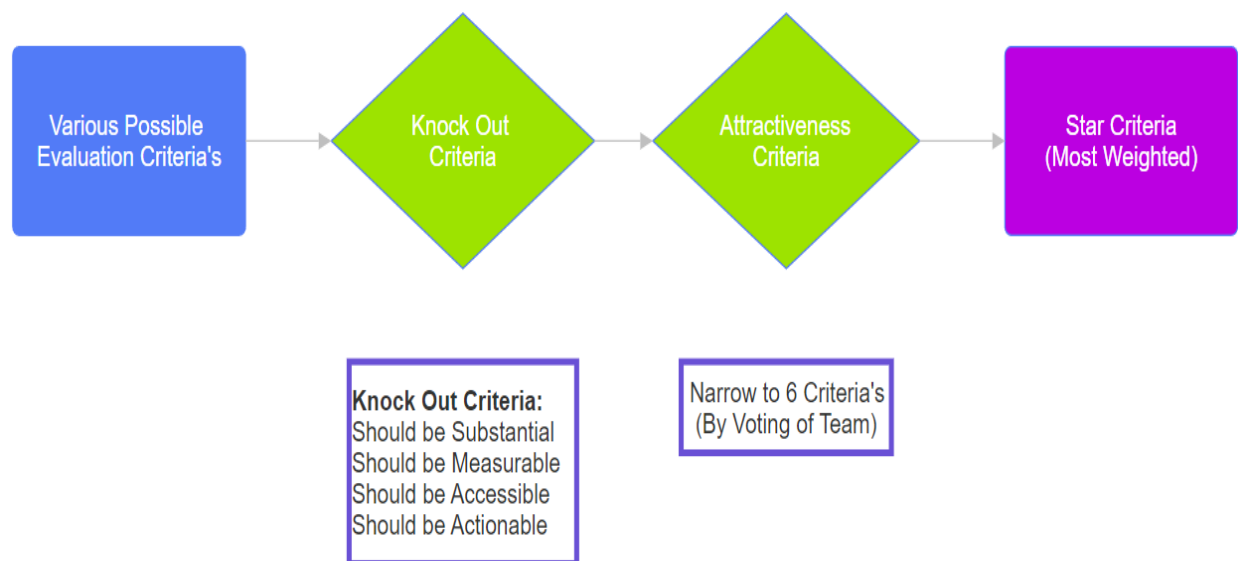
The above figure shows how Knock Out criteria works and only sends the evaluation criteria which meet some of its conditions. Then conditions of Attractiveness Criteria helps the segmentation team to narrow down from a number of criteria's to a number to six only. Finally, Star Criteria is found.

Market segmentation at McDonald's operates through a meticulous two-step filtering process: Knock-Out criteria and Attractiveness Criteria. These criteria synergize to pinpoint the most promising target markets for our business.

At McDonald's, the determination of segment attractiveness and organizational competitiveness values is entrusted to our segmentation team. Initially, a broad array of evaluation criteria is considered within our knock-out criteria framework. These criteria

are rigorously assessed to identify segments that meet essential characteristics for targeting.

Subsequently, a refined set of six criteria is selected to form our attractiveness criteria. These criteria represent the most influential factors contributing to segment desirability and organizational competitiveness. To quantify their importance, each of the six criteria is assigned a score out of 100 (distributed according to team members own choice), reflecting its relative weight in our market segmentation analysis. For example, criteria may be weighted as 30, 20, 10, 10, 15, and 15, summing up to 100 and here we can see the criteria/factor having maximum weight 30 is most crucial out of the others. This weighting process enables us to prioritize criteria based on their significance to McDonald's strategic objectives and operational capabilities.

Drawing from a core team of two to three individuals primarily responsible for market segmentation analysis, McDonald's initiates the process by proposing an initial solution. This proposal is then presented to our advisory committee, comprising representatives from all organizational units, for discussion and potential modification.

Involving representatives from diverse organizational units holds paramount importance for McDonald's. Firstly, each unit brings a distinct perspective on our business, enriching discussions with varied viewpoints. Secondly, since the segmentation strategy impacts every unit within our organization, all units become integral stakeholders in our market segmentation analysis.

Upon conclusion of this step, our market segmentation team meticulously compiles a list of approximately six segment attractiveness criteria. Each criterion is weighted to reflect its importance to McDonald's relative to others. The typical approach to weighting, as outlined by McDonald and Dunbar in 2012, involves soliciting input from all team members to distribute 100 points across the segmentation criteria. These allocations undergo negotiation until consensus is achieved, ensuring a balanced and strategic approach.

CHECKLIST

Convene Segmentation Team Meeting:

Schedule and organize a meeting with the segmentation team.

Define Knock-Out Criteria:

Ensure these criteria are agreed upon for automatic elimination of non-compliant segments.

Present Knock-Out Criteria to Advisory Committee:

Present the knock-out criteria to the committee for discussion and potential adjustment.

Knock Out Criteria are –

- Substantiality
- Measurability
- Accessibility
- Actionability
  4. <u>Study Market Segment Attractiveness Criteria:</u>

Individually study available criteria for assessing market segment attractiveness.

  5. <u>Discuss and Select Attractiveness Criteria:</u>
- Discuss attractiveness criteria with segmentation team members.
- Agree on a subset of no more than six criteria.
  6. <u>Distribute Points Across Attractiveness Criteria:</u>
- Individually distribute 100 points across the agreed-upon attractiveness criteria.
- Distribute points to reflect the relative importance of each criterion.
  7. <u>Discuss and Agree on Weightings:</u>
- Discuss weightings with other segmentation team members.
- Agree on weightings that reflect the importance of each attractiveness criterion.
  8. <u>Present Criteria and Weightings to Advisory Committee:</u>

Present the selected segment attractiveness criteria and proposed weightings to the advisory committee for discussion and potential adjustment.

STEP: -3 COLLECTING DATA:

Empirical data serves as the cornerstone for both common-sense and data-driven market segmentation. In the context of McDonald's fast-food chain, data collection is indispensable for crafting effective marketing strategies and refining market segmentation approaches.

Market segmentation allows McDonald's to divide its customer base into distinct groups with shared characteristics, behaviour's, and preferences. By collecting data on demographic factors such as age, gender, income level, and location, McDonald's gains insights into the diverse needs and preferences of its customers. This data informs targeted marketing campaigns tailored to specific customer segments, enhancing the relevance and effectiveness of promotional efforts.

Moreover, data on consumer behaviour and purchasing patterns enables McDonald's to understand the preferences and trends driving customer choices. By analysing behavioural data, such as past purchase history, frequency of visits, and menu preferences, McDonald's can identify opportunities for product innovation, menu optimization, and customer engagement initiatives. Data-driven insights empower McDonald's to anticipate evolving consumer preferences, adapt its offerings accordingly, and maintain a competitive edge in the fast-food industry.

In essence, data collection underpins McDonald's market segmentation and marketing strategies, enabling the company to deliver personalized experiences, drive customer engagement, and sustain long-term success in an ever-evolving market landscape.

3.1 SEGMENTATION VARIABLE AND CRITERIA

In strategizing market segmentation, McDonald's employs a pragmatic approach, aligning segmentation variables and criteria with its organizational goals and product offerings. While considering segmentation variables, McDonald's emphasizes the importance of empirical data to split its customer base into meaningful segments.

Traditionally, McDonald's has utilized common-sense segmentation, often focusing on single characteristics like demographics (e.g., age or gender) to create segments such as "families" or "young adults." However, in today's data-driven landscape, McDonald's recognizes the value of employing multiple segmentation variables. This approach allows for a more nuanced understanding of consumer behaviour and preferences, enabling McDonald's to tailor its offerings and marketing strategies more effectively.

Empirical data serves as the foundation of McDonald's market segmentation efforts, drawn from various sources such as surveys, loyalty programs, and observational studies. This data provides insights into consumer behaviour, purchasing patterns, and preferences, essential for crafting targeted marketing messages and offerings.

Before extracting segments, McDonald's carefully selects segmentation criteria, considering factors like geographic, sociodemographic, psychographic, and behavioural variables. Additionally, McDonald's evaluates criteria such as profitability, bargaining power, and consumer interaction effects to ensure alignment with its business objectives and product characteristics.

Despite the allure of more sophisticated segmentation approaches, McDonald's remains pragmatic in its strategy. The company prioritizes the segmentation approach that maximizes effectiveness at the least cost. Whether it's demographic, geographic, or psychographic segmentation, McDonald's chooses the approach that best serves its product offerings and resonates with its target market.

In essence, McDonald's adopts a data-informed, pragmatic approach to segmentation variables and criteria, leveraging empirical data and aligning with organizational objectives to drive customer engagement and satisfaction.

3.2 <u>SEGMENTATION CRITERIA</u>

McDonald's carefully considers various criteria to effectively target its diverse customer base. Let's explore how McDonald's employs geographic, socio-demographic, psychographic, and behavioural segmentation criteria in its approach:
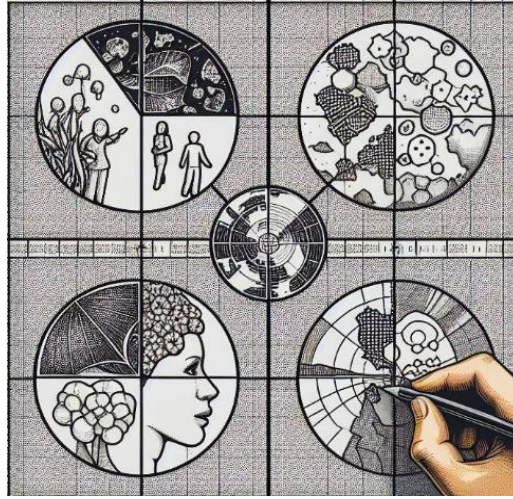
Geographic Segmentation

McDonald's utilizes geographic segmentation to understand regional preferences and tailor its offerings accordingly. By considering factors such as local tastes, cultural preferences, and economic conditions, McDonald's can adapt its menu and promotional activities to resonate with customers in different geographical areas. While geographic segmentation simplifies assigning consumers to specific regions, McDonald's recognizes the need to supplement this approach with additional criteria to capture nuanced consumer preferences comprehensively.

Socio-Demographic Segmentation

Socio-demographic segmentation, encompassing age, gender, income, and education, plays a significant role in McDonald's marketing strategies. Understanding the socio-demographic makeup of its customer base allows McDonald's to customize its menu offerings, pricing strategies, and advertising campaigns to appeal to specific demographic segments. By leveraging socio-demographic criteria, McDonald's can create targeted promotions for families, young adults, or seniors, maximizing engagement and satisfaction among different consumer groups.

Psychographic Segmentation

McDonald's delves into psychographic segmentation to gain insights into consumers' beliefs, interests, and preferences. By understanding the psychographic profiles of its customers, McDonald's can craft marketing messages and menu innovations that resonate with their underlying motivations and aspirations. While psychographic segmentation offers deeper insights into consumer behaviour, McDonald's acknowledges the complexity of determining segment memberships and invests in reliable empirical measures to capture psychographic dimensions effectively.

Behavioural Segmentation

Behavioural segmentation forms the backbone of McDonald's customer-centric approach. By analysing consumers' past behaviour's, purchase patterns, and interactions with the brand, McDonald's can identify key trends and preferences driving customer choices. While behavioural data may not always be readily available, especially for potential customers who haven't previously patronized McDonald's, the company leverages innovative methods to gather insights and tailor its offerings to meet evolving consumer needs effectively.

In summary, McDonald's strategically integrates geographic, socio-demographic, psychographic, and behavioural segmentation criteria to understand its customer base comprehensively. By leveraging these criteria, McDonald's can deliver personalized experiences, drive customer engagement, and maintain its position as a leader in the fast-food industry.

3.3 DATA SELECTION AND GATHERING

- **SURVEY DATA COLLECTION**

  McDonald's has undergone a significant evolution in its approach to data selection and gathering for market segmentation. Initially, like many organizations, McDonald's relied heavily on survey data for its market segmentation efforts. Survey data provided valuable insights into customer preferences and behaviour's, serving as the foundation for segmentation strategies.

  However, McDonald's recognized the limitations of survey data, particularly its susceptibility to biases and its inability to capture real-time consumer behaviour accurately. As technology advanced and new data sources became available, McDonald's shifted its approach to incorporate a more diverse range of data sources, including transactional data, social media analytics, and customer feedback.

This shift allowed McDonald's to gather more comprehensive and dynamic data, enabling a deeper understanding of customer preferences and behaviour's. By leveraging advanced analytics and machine learning algorithms, McDonald's could analyse vast amounts of data in real time, uncovering actionable insights to inform its segmentation strategies.

Today, McDonald's employs a multifaceted approach to data selection and gathering for market segmentation. While survey data still plays a role, it is complemented by a diverse range of data sources that provide a more holistic view of customer behaviour. McDonald's continues to refine its segmentation strategies to better meet the evolving needs and preferences of its customers.

Also, if the sample size is sufficient, it is very easy to determine the number and nature of segments. The sample size should be at least 2p (better five times 2p), where p is the number of segmentation variables in the data set.

In summary, McDonald's journey from relying solely on survey data to incorporating a diverse range of data sources reflects its commitment to innovation and adaptation in the pursuit of effective market segmentation strategies.

- **DATA FROM INTERNAL SOURCES**

McDonald's recognizes the value of leveraging internal data for market segmentation analysis, as it provides access to substantial amounts of valuable information. Examples of such internal data include scanner data from McDonald's locations, loyalty program booking data, and online purchase data.

Accessibility and Automatic Generation
One of the key advantages of using internal data is its accessibility and automatic generation. Internal data, such as scanner data from McDonald's outlets and booking data from loyalty programs, are often automatically generated. Additionally, if McDonald's has systems in place to store data efficiently, accessing this information requires minimal effort.

Potential Bias and Limitations

However, McDonald's acknowledges the potential limitations of relying solely on internal data for market segmentation analysis. One significant concern is the risk of systematic bias, particularly in over-representing existing customers. Internal data primarily capture the behaviour's and preferences of current customers, potentially overlooking valuable insights into prospective customers with different consumption patterns.

In addressing these limitations, McDonald's adopts a balanced approach, combining internal data with external sources to gain a more comprehensive understanding of market segments. By supplementing internal data with external market research and consumer insights, McDonald's aims to mitigate biases and ensure the effectiveness of its market segmentation strategies.

In summary, while internal data offer valuable insights into customer behaviour, McDonald's recognizes the importance of complementing this information with external sources to develop robust and inclusive market segmentation strategies.

- **DATA FROM EXPERIMENTAL STUDIES**

McDonald's explores experimental data as a source for market segmentation insights, leveraging experiments to understand consumer behaviour in controlled settings. These experiments encompass studies on advertisement response, choice experiments, and conjoint analyses, providing valuable insights into consumer preferences and purchasing decisions. By conducting experiments, McDonald's gains actionable insights into effective marketing strategies and product attributes that resonate with target segments.

While experimental data offer valuable insights, McDonald's acknowledges limitations such as the artificial nature of laboratory experiments and the need to validate findings in real-world settings. McDonald's integrates experimental data with other sources, such as survey and internal data, to develop comprehensive market segmentation strategies. By combining insights from experiments with real-world data, McDonald's enhances its understanding of consumer behaviour and tailors marketing efforts to effectively target different segments.

Step: -6. PROFILING SEGMENTS:

The aim of the profiling step is to gain insight into the market segments resulting from the extraction process. Profiling becomes essential when employing data-driven market segmentation techniques. While the segmentation solution may determine segments based on consumer benefits sought, the specific characteristics of these segments remain unknown until data analysis is conducted. Profiling involves characterizing each market segment individually and comparing them to others, aiming to identify defining characteristics in relation to the segmentation variables. This process enables a deeper understanding of each segment's unique attributes and facilitates targeted marketing strategies tailored to meet their specific needs and preferences.

6.1 APPROACHES TO PROFILING MARKET SEGMENTS

Data-driven segmentation solutions are typically presented to users, such as clients or managers, in one of two ways: either as high-level summaries simplifying segment characteristics to a point where they may be misleadingly trivial, or as large tables providing exact percentages for each segmentation variable within each segment. However, these tabular presentations can be challenging to interpret and may not offer a quick overview of key insights.

In response to this challenge, McDonald's employs visualizations as a crucial approach to profiling market segments. Graphics play a significant role in exploratory statistical analysis, particularly in techniques like cluster analysis, as they offer insights into the complex relationships between variables. The use of visualization techniques enhances the interpretability of results from market segmentation analyses, making it easier for stakeholders to understand and derive actionable insights from the segmented data.

6.2 IDENTIFYING DEFINING CHARACTERISTICS OF MARKET SEGMENTS

After employing visualizations and exploring the complex relationships between variables, the next step in profiling market segments involves identifying their defining

characteristics. This process aims to pinpoint the key attributes that differentiate one segment from another and provide valuable insights for targeted marketing strategies.

McDonald's utilizes advanced data analysis techniques to identify the defining characteristics of its market segments. By analysing customer preferences, behaviour's, and demographics, McDonald's can uncover patterns and trends that distinguish one segment from another. Through thorough analysis and interpretation of data, McDonald's can identify the unique traits and preferences of each segment, allowing for tailored marketing strategies and personalized experiences.

In its segmentation approach, McDonald's has selected 15 characteristics to represent various aspects of consumer preferences and behaviour's. These characteristics encompass a range of factors, including taste preferences, convenience, pricing perceptions, health considerations, and demographic factors such as age and gender. By understanding these defining characteristics, McDonald's can effectively target each segment with customized marketing campaigns and product offerings tailored to their specific needs and preferences.

6.3 CHARACTERISTICS USED FOR MARKET SEGMENTATION

McDonald's employs a comprehensive set of 15 characteristics to effectively cluster customers into distinct segments. These characteristics encompass various aspects of consumer preferences and behaviour's, providing valuable insights for targeted marketing strategies. Here are the 15 characteristics utilized by McDonald's for segment creation:
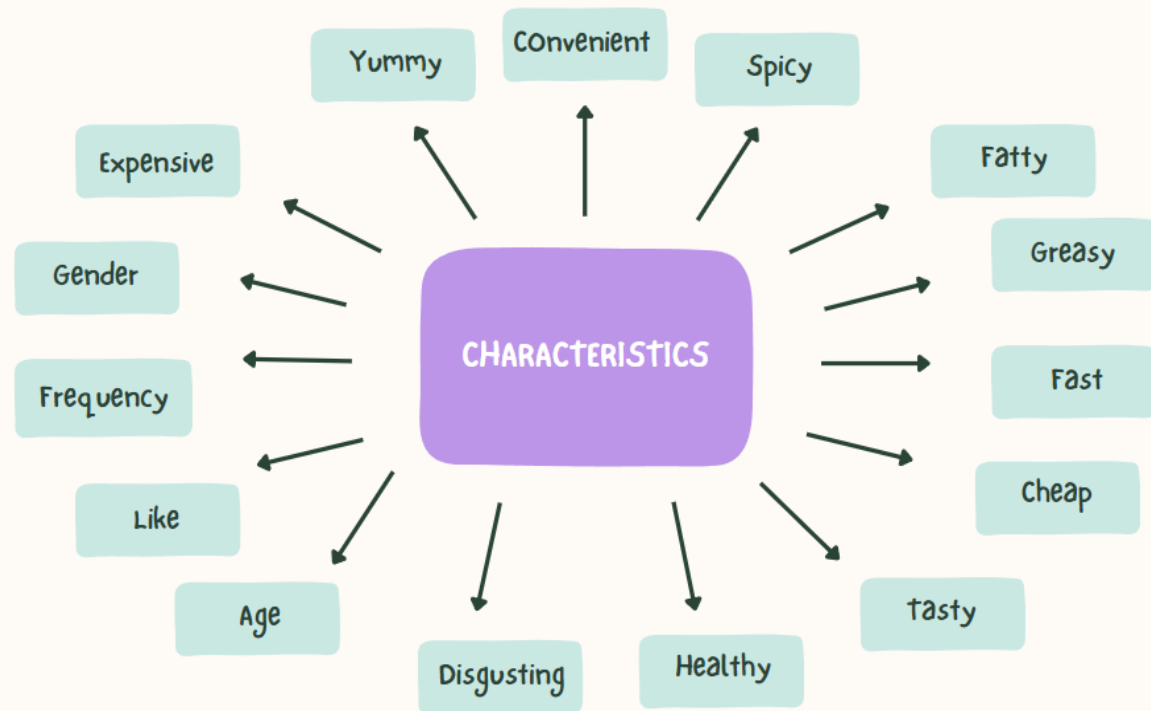
- **Yummy:** Assessing the overall taste and appeal of McDonald's menu items.
- **Convenient:** Evaluating the convenience and accessibility of McDonald's locations and services.
- **Spicy:** Identifying preferences for spicy flavours among customers.
- **Fattening:** Considering perceptions of the nutritional content and calorie density of McDonald's offerings.
- **Greasy:** Gauging attitudes towards the greasiness or oiliness of McDonald's food.
- **Fast:** Examining preferences for quick service and efficient dining experiences.
- **Cheap:** Assessing perceptions of affordability and value for money at McDonald's.
- **Tasty:** Evaluating overall taste satisfaction and enjoyment of McDonald's products.
- **Expensive:** Understanding perceptions of pricing and affordability compared to competitors.
- **Healthy:** Considering preferences for healthier options and nutritional content.
- **Disgusting:** Assessing negative perceptions or aversions towards certain menu items.
- **Like:** Capturing general preferences and overall satisfaction with McDonald's offerings.
- **Age:** Segmenting customers based on age demographics.
- **Visit Frequency:** Analysing the frequency of customer visits to McDonald's outlets.
- **Gender:** Considering gender demographics and preferences in segment creation.

By analysing these characteristics, McDonald's can segment their customer base into distinct groups with shared preferences. This empowers them to develop tailored marketing strategies. Imagine sending spicy burger coupons to customers who indicated a preference for "spicy," or promoting healthy Happy Meal options to health-conscious

families. Additionally, understanding customer segments allows McDonald's to personalize the customer experience. In-store displays or digital signage can showcase relevant menu items based on a customer's perceived preferences.

6.4 UNDERSTANDING THE DEFINING CHARACTERISTICS

A fundamental method for comprehending the defining characteristics of each market segment is to produce a segment profile plot. This visualization tool displays, for all segmentation variables, the unique differences between each market segment and the overall sample. Referred to as a panel plot, the segment profile plot presents each characteristic as a separate panel, with each panel representing one segment. Within each segment, the plot showcases the cluster centres, also known as centroids, which serve as representative points of the segments.

At McDonald's, while the importance of this method is recognized, specific approaches to segmentation and analysis may vary. The company acknowledges the significance of understanding the unique traits and preferences of different market segments. Through advanced data analysis techniques and visualizations, McDonald's continually evaluates various characteristics to gauge their impact on consumer behaviour. Factors such as taste preferences, convenience, pricing perceptions, health considerations, and demographic attributes like age and gender are meticulously examined to inform marketing strategies.

6.5 ASSESSING SEGMENT SEPARATION

Segment separation, crucial for understanding the distinctiveness of market segments, is often visualized through a segment separation plot. This plot illustrates the overlap of segments across all relevant dimensions of the data space. While segment separation plots are straightforward when the number of segmentation variables is limited, they become more intricate as the number of variables increases. Each plot provides a glimpse into one potential projection of the data space, offering insights into the degree of segregation among segments.

At McDonald's, while the importance of segment separation is acknowledged, the specific methodologies employed may vary. The company recognizes the significance of delineating clear boundaries between market segments to tailor marketing strategies effectively. Through comprehensive data analysis and visualization techniques, McDonald's endeavours to assess segment separation to identify distinct consumer groups with unique preferences and behaviour's. While the exact approach to segment separation visualization within McDonald's operations may not be publicly disclosed, the company

likely employs sophisticated analytical tools to evaluate segment distinctiveness and inform strategic decision-making.

6.6 CONCLUSION

McDonald's employs a multifaceted approach to market segmentation, leveraging 15 key characteristics of customers to delineate distinct consumer segments. These characteristics encompass various factors such as taste preferences, dietary considerations, convenience, and demographic attributes like age, visit frequency, and gender. Utilizing these parameters, McDonald's endeavours to understand and cater to the diverse needs and preferences of its customer base.

In our analysis, employing the elbow method on a dataset comprising 1453 rows of customer data and 15 columns of characteristics revealed the break point at 4 so we will divide our customers into 5 groups. This segmentation approach enables McDonald's to gain deeper insights into consumer behaviour and preferences, facilitating the development of targeted marketing strategies tailored to each segment's unique needs. By leveraging data-driven segmentation techniques, McDonald's remains poised to adapt to evolving consumer trends and enhance its competitive edge in the fast-food industry.

GITHUB LINKS:

The code work can be viewed in the given below github links:

1. Rishi Solanki: - [Click Here](#)
2. Shambhavi Belagali: - [Click Here](#)
3. Rahul Moolchandani: - [Click Here](#)
4. Aswathi Ajit: - [Click Here](#)
5. Kartik Sharma: - [Click Here](#)