Case Study(Market Sagmentation)

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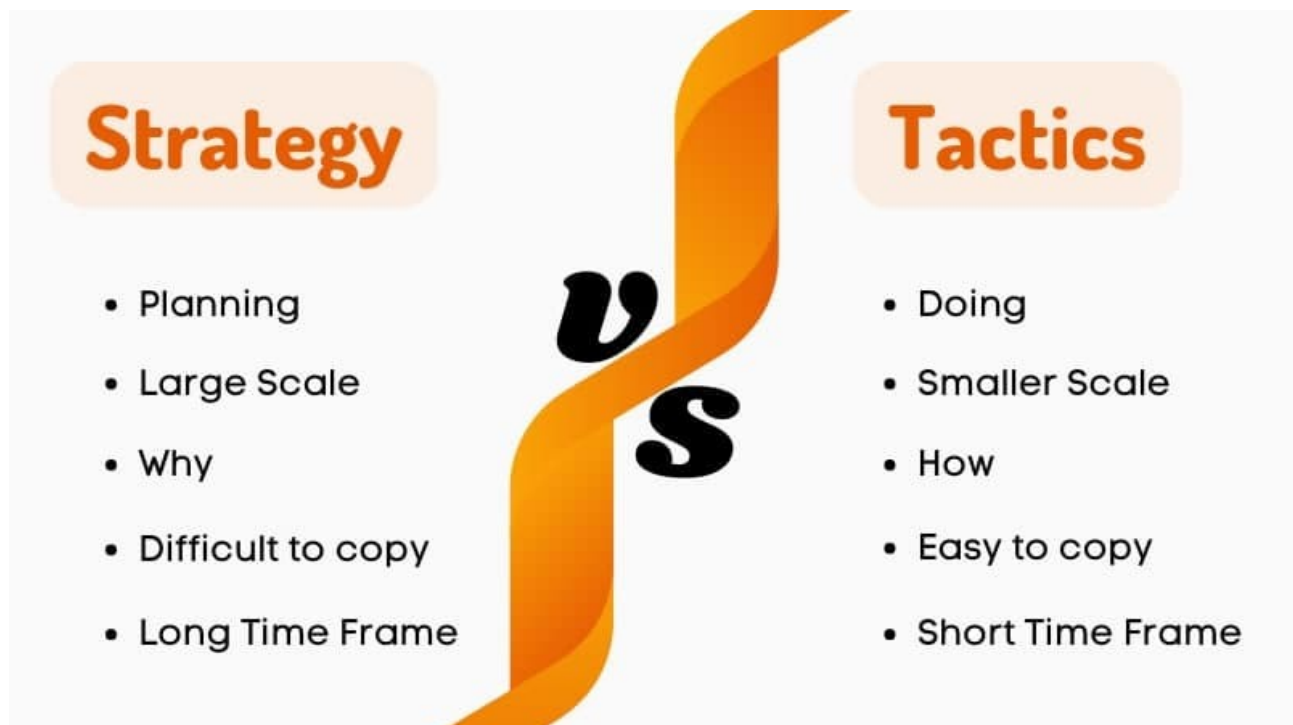
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Introduction:

Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.

A **marketing plan** is the advertising strategy that a business will implement to sell its product or service. A marketing plan consists of two components: a **strategic** and a **tactical** marketing plan. While strategy is the action plan that takes you where you want to go, the tactics are the individual steps and actions that will get you there.

Strategy vs Tactics

Strategy
- Planning
- Large Scale
- Why
- Difficult to copy
- Long Time Frame

Tactics
- Doing
- Smaller Scale
- How
- Easy to copy
- Short Time Frame

Market segmentation is one of the key building blocks of strategic marketing. Market segmentation is a marketing strategy in which select groups of consumers are identified so that certain products or product lines can be presented to them in a way that appeals to their interests.

Market segmentation analysis is the process of grouping consumers into naturally existing or artificially created segments of consumers who share similar product preferences or characteristics.
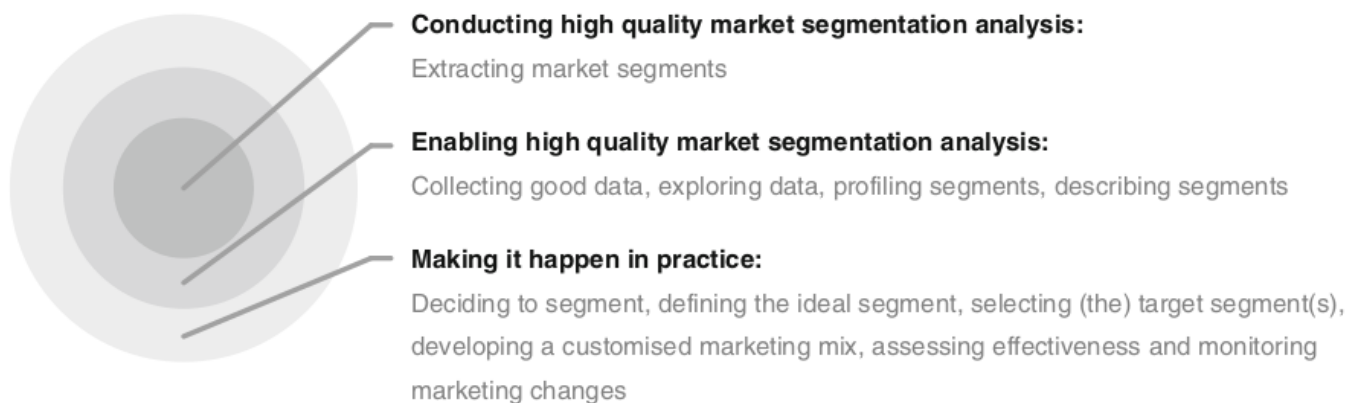

Conducting high quality market segmentation analysis:
Extracting market segments

Enabling high quality market segmentation analysis:
Collecting good data, exploring data, profiling segments, describing segments

Making it happen in practice:
Deciding to segment, defining the ideal segment, selecting (the) target segment(s), developing a customised marketing mix, assessing effectiveness and monitoring marketing changes

Fig. 2.1 The layers of market segmentation analysis

Approaches to Market Segmentation Analysis Their are two approaches, one uses as its basis the extent to which the organisation conducting the market segmentation study is willing or able to make changes to their current approach of targeting the market or a segment of the market and has been proposed by Dibb and Simkin (2008). It is based on the premise that organisations are not in the position to choose any of the available approaches to market segmentation analysis due to organisational constraints. The second systematics is based on the nature of the segmentation variable or variables used in the market segmentation analysis.

Market Segmentation Analysis Step-by-Step ten-steps approach to market segmentation analysis.

Commonsense segmentation	Data-driven segmentation

STEP 1 - Deciding (not) to segment

Is the market suitable?	Is the market suitable?
Can you make a long-term commitment?	Can you make a long-term commitment?

STEP 2 - Specifying the ideal target segment

What would your ideal target segment look like?	What would your ideal target segment look like?

STEP 3 - Collecting data

Collect data	Collect data
(segmentation variable and descriptor variables)	(segmentation and descriptor variables)

STEP 4 - Exploring data

Explore data, pre-process if required.	Explore data, pre-process if required.

STEP 5 - Extracting segments

Split consumers into segments using the segmentation variable.	Use distance-based, model-based or hybrid algorithms.

STEP 6 - Profiling segments

--	Determine key features of the extracted market segments.

STEP 7 - Describing segments

Describe segments in detail.	Describe segments in detail.

STEP 8 - Selecting (the) target segment(s)

Evaluate segments and select target segment(s).	Evaluate segments and select target segment(s).

STEP 9 - Customising the marketing mix

Develop a customised marketing mix.	Develop a customised marketing mix.

STEP 10 - Evaluation and monitoring

Evaluate success, monitor changes.	Evaluate success, monitor changes.

Step 1: Deciding (not) to Segment

The first step involved in margekt segmentation is to deside whether we shall take furhter steps in market segementation or not, by comparing the advantages and disadvantages of market segmentation. Market segmentation is not always the best decision to pursue such strategy, so we should understand the importance of it.

Step 1 Checklist:

Task	Who is responsible?	Completed?
Ask if the organisation's culture is market-oriented. If yes, proceed. If no, seriously consider not to proceed.		☐
Ask if the organisation is genuinely willing to change. If yes, proceed. If no, seriously consider not to proceed.		☐
Ask if the organisation takes a long-term perspective. If yes, proceed. If no, seriously consider not to proceed.		☐
Ask if the organisation is open to new ideas. If yes, proceed. If no, seriously consider not to proceed.		☐
Ask if communication across organisational units is good. If yes, proceed. If no, seriously consider not to proceed.		☐
Ask if the organisation is in the position to make significant (structural) changes. If yes, proceed. If no, seriously consider not to proceed.		☐
Ask if the organisation has sufficient financial resources to support a market segmentation strategy. If yes, proceed. If no, seriously consider not to proceed.		☐
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 it is not: conduct training until the market segmentation concept is fully understood.		☐
Ensure that the implications of pursuing a market segmentation strategy are fully understood. If they are not: conduct training until the implications of pursuing a market segmentation strategy are fully understood.		☐
Put together a team of 2-3 people (segmentation team) to conduct the market segmentation analysis.		☐

Task	Who is responsible?	Completed?
Ensure that a marketing expert is on the team.		☐
Ensure that a data expert is on the team.		☐
Ensure that a data analysis expert is on the team.		☐
Set up an advisory committee representing all affected organisational 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 to conduct the market segmentation analysis without time pressure.		☐

Step 2: Specifying the Ideal Target Segment

Next, the organisation needs to specify characteristics of their ideal market segment. In this step the organisation 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 organisation 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.

Step 2 Checklist:

Task	Who is responsible?	Completed?
Convene a segmentation team meeting.		☐
Discuss and agree on the knock-out criteria of homogeneity, distinctness, size, match, identifiability and reachability. These knock-out criteria will lead to the automatic elimination of market segments which do not comply (in Step 8 at the latest).		☐
Present the knock-out criteria to the advisory committee for discussion and (if required) adjustment.		☐
Individually study available criteria for the assessment of market segment attractiveness.		☐
Discuss the criteria with the other segmentation team members and agree on a subset of no more than six criteria.		☐
Individually distribute 100 points across the segment attractiveness criteria you have agreed upon with the segmentation team. Distribute them in a way that reflects the relative importance of each attractiveness criterion.		☐
Discuss weightings with other segmentation team members and agree on a weighting.		☐
Present the selected segment attractiveness criteria and the proposed weights assigned to each of them to the advisory committee for discussion and (if required) adjustment.		☐

Step 3: Collecting Data

The characteristics of people that are used to determine if the people are similar are called **segmentation variables**. For example, if segmenting a market is based on the age of people, then age is the segmentation variable. While the **descriptor variables** are the variables that will describe and help locate the segments once they are defined.

The difference between commonsense and data-driven market segmentation is that data-driven market segmentation is based not on one, but on multiple segmentation variables. Segmentation involves creating homogenous groups made up of individuals with identifiable common characteristics. These might be place of residence, age, lifestyle or even how they behave on your website: these are what we call **segmentation criteria**.
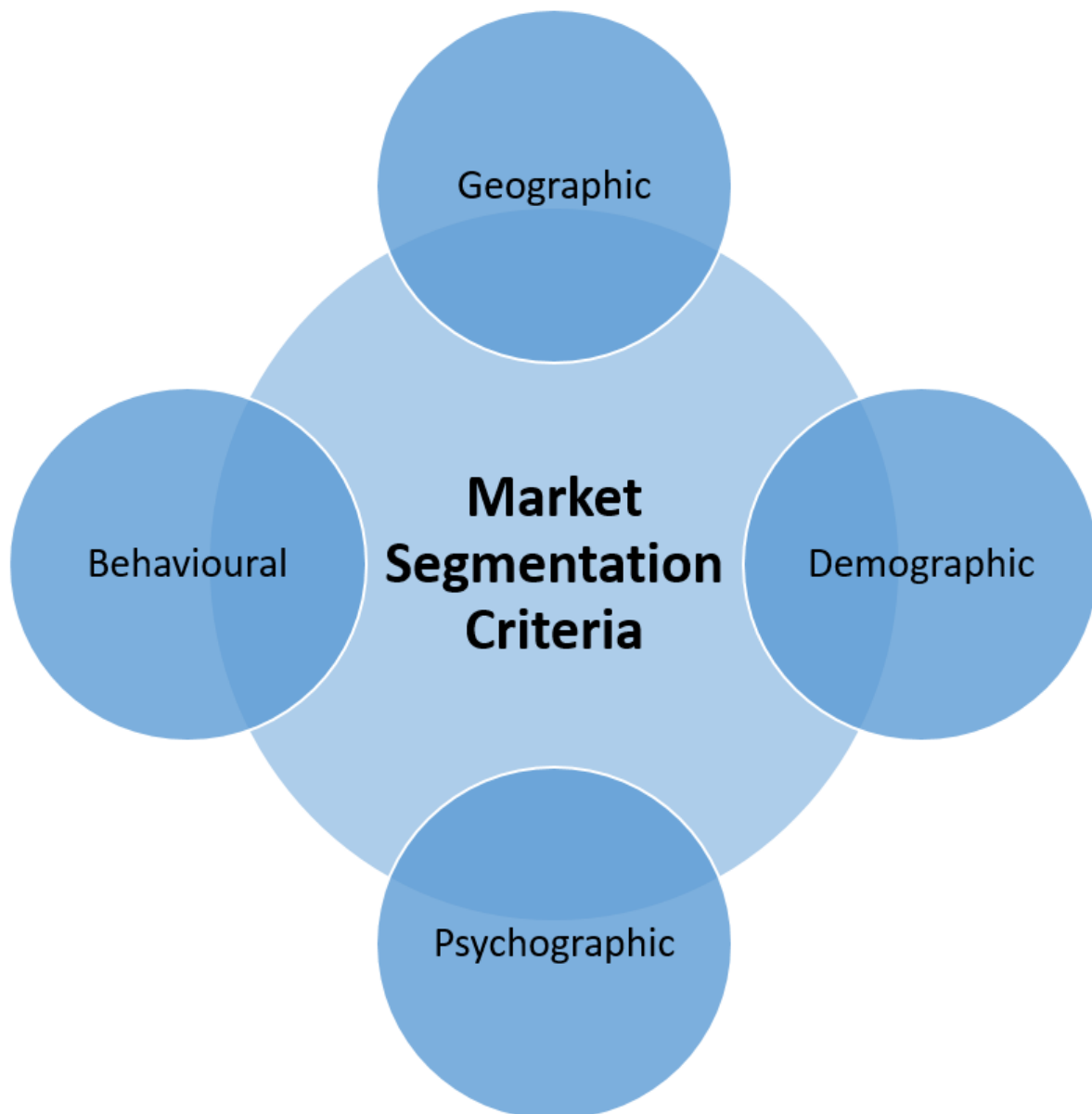
Geographic segmentation involves segmenting your audience based on the region they live or work in. This can be done in any number of ways: grouping customers by the country they live in, or smaller geographical divisions, from region to city, and right down to postal code.

Socio-demographic characteristics enable you to segment your customers according to their age, sex, profession, education, etc. They are essential when designing targeted marketing campaigns.

Psychographic segmentation is the research methodology used for studying consumers and dividing them into groups using psychological characteristics including personality, lifestyle, social status, activities, interests, opinions, and attitudes.

Behavioral segmentation refers to a process in marketing which divides customers into segments depending on their behavior patterns when interacting with a particular business or website.

Most market segmentation analyses are based on **survey data**. Survey data is cheap and easy to collect, making it a feasible approach for any organisation. But survey data – as opposed to data obtained from observing actual behaviour – can be contaminated by a wide range of biases. Such biases can, in turn, negatively affect the quality of solutions derived from market segmentation analysis. It can be concluded the effects of survey data quality on the quality of market segmentation results based on such data that, optimally, data used in market segmentation analyses should:

- contain all necessary items;
- contain no unnecessary items;
- contain no correlated items;
- contain high-quality responses;
- be binary or metric;
- be free of response styles;
- include responses from a suitable sample given the aim of the segmentation study
- include a sufficient sample size given the number of segmentation variables (100 times the number of segmentation variables).

An i**nternal data source** is defined as information that your organization is generating. One of the most valuable internal data sources you can collect is sales data. With proper data governance, you can create a rich dataset that details your customer's buying behavior.

Another possible source of data that can form the basis of market segmentation analysis is **experimental data**. Experimental data can result from field or laboratory experiments. For example, they can be the result of tests how people respond to certain advertisements.

Step 4: Exploring Data

Qualitative data analysis is a fascinating and rewarding process that challenges researchers to properly engage with their material and explore it in great detail. The software will not do this for you, but it does provide a number of tools to support you in your explorative work. You can make notes and comments, record questions and ideas, highlight anything that seems important, and search for words or word combinations in texts using lexical search functions. At first, working with digitized texts may seem much like working with a physical reference book. But digital tools are far more powerful, because text passages can be linked to each other, for example, as well as to other documents, websites, images, or geographical locations. In this first phase of your analysis, you will not only get to know your material, but you will also begin to build a large network of connections, comments, ideas, and hypotheses. You can begin to explore images and video recordings, too—a task that is certainly very different from exploring textual data. Video data is multidimensional, appeals to different senses, and can affect the viewer much more potently than texts can. After data collection, exploratory data analysis cleans and – if necessary – pre- processes the data. This exploration stage also offers guidance on the most suitable algorithm for extracting meaningful market segments. At a more technical level, data exploration helps to:

  (1) identify the measurement levels of the variables

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

  (3) assess dependency structures between variables

Data scientists have a lot of useful instruments for helping companies to make the right decision. One of the powerful tools: segmentation. If we use this tool for the market it allows businesses to get to know their customers. Also helps identify what is needed in this particular market segment, and determine how businesses can best meet those needs with their product or service.

How market segmentation helps?

> • Create stronger marketing messages
>
> • Create the most effective marketing tactics
>
> • Create targeted ads

That means when marketing messages are clear, direct, and targeted they attract the right people.
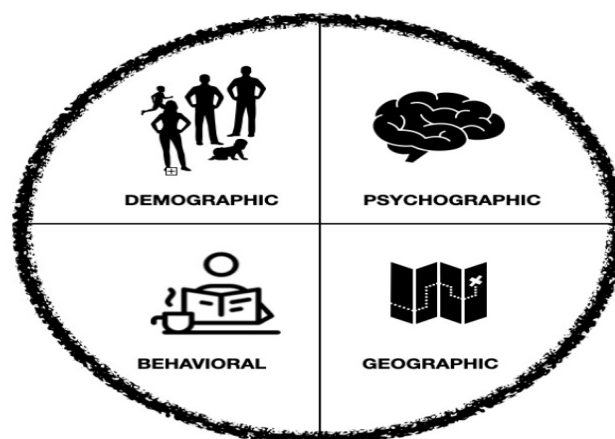
Data Exploring Tools: A popular tool for manual data exploration is Microsoft Excel spreadsheets, which can be used to create basic charts for data exploration, to view raw data, and to identify the correlation between variables. To identify the correlation between two continuous variables in Excel, use the function CORREL() to return the correlation. To identify the correlation between two categorical variables in Excel, the two-way table method, the stacked column chart method, and the chi-square test are effective.

Data Exploration in Machine Learning A Machine Learning project is as good as the foundation of data on which it is built. In order to perform well, machine learning data exploration models must ingestlarge quantities of data, and model accuracy will suffer if that data is not thoroughly explored first. Data exploration steps to follow before building a machine learning model include:

- Variable identification: define each variable and its role in the dataset
- Univariate analysis: for continuous variables, build box plots or histograms for each variable independently; for categorical variables, build bar charts to show the frequencies
- Bi-variable analysis - determine the interaction between variables by building visualization tools
- ~Continuous and Continuous: scatter plots
- ~Categorical and Categorical: stacked column chart
- ~Categorical and Continuous: boxplots combined with swarmplots
- Detect and treat missing values
- Detect and treat outliers

Data Cleaning: Data cleaning is the process of preparing data for analysis by weeding out information that is irrelevant or incorrect. This is generally data that can have a negative impact on the model or algorithm it is fed into by reinforcing a wrong notion.Data cleaning not only refers to removing chunks of unnecessary data, but it's also often associated with fixing incorrect information within the train-validation-test dataset and reducing duplicates. The importance of data cleaning Data cleaning is a key step before any form of analysis can be made on it. Datasets in pipelines are often collected in small groups and merged before being fed into a model. Merging multiple. Data cleaning is therefore an important part of any machine learning pipeline.
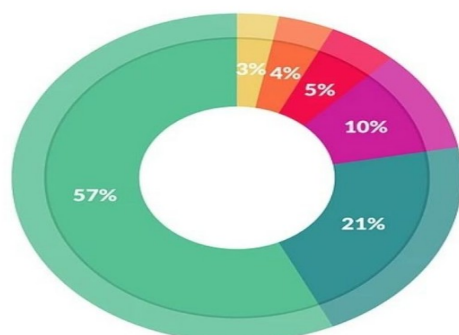
What's the least enjoyable part of data science?

- Building training sets: 10%
- Cleaning and organizing data: 57%
- Collecting data sets: 21%
- Mining data for patterns: 3%
- Refining algorithms: 4%
- Other: 5%

How to clean data for

Machine Learning? As research suggests— Data cleaning is often the least enjoyable part of data science—and also the longest.

Indeed, cleaning data is an arduous task that requires manually combing a large amount of data in order to:

      a) reject irrelevant information.

      b) analyze whether a column needs to be dropped or not.

Automation of the cleaning process usually requires a an extensive experience in dealing with dirty data. It's kinda tricky to implement in a manner that doesn't bring about data loss.

Remove duplicate or irrelevant data Data that's processed in the form of data frames often has duplicates across columns and rows that need to be filtered out. Duplicates can come about either from the same person participating in a survey more than once or the survey itself having multiple fields on a similar topic, thereby eliciting a similar response in a large number of participants. While the latter is easy to remove, the former requires investigation and algorithms to be employed. Columns in a data frame can also contain data highly irrelevant to the task at hand, resulting in these columns being dropped before the data is processed further.

Fix syntax errors: Data collected over a survey often contains syntactic and grammatical issues, due mainly to the fact that a huge demographic is represented through it. Common syntax issues like date, birthday and age are simple enough to fix, but syntax issues involving spelling mistakes require more effort. Algorithms and methods which find and fix these errors have to be employed and iterated through the data for the removal of typos and grammatical and spelling mistakes. Syntax errors, meanwhile, can be prevented altogether by structuring the format in which data is collected, beforerunning checks to ensure that the participants have not wrongly filled in known fields. Setting strict boundaries for fields like State, Country, and School goes a long way to ensuring quality data .

Filter out unwanted outliers: Unwanted data in the form of outliers has to be removed before it can be processed further. Outliers are the hardest to detect amongst all other inaccuracies within the data. Thorough analysis is generally conducted before a data point or a set of data points can be rejected as an outlier. Specific models that have a very low outlier tolerance can be easily manipulated by a good number of outliers, therefore bringing down the prediction quality.

Handle missing data: Unfortunately, missing data is unavoidable in poorly designed data collection procedures. It needs to be identified and dealt with as soon as possible. While these artifacts are easy to identify, filling up missing regions often requires careful consideration, as random fills can have unexpected outcomes on the model quality. Often, rows containing missing data are dropped as it's not worth the hassle to fill up a single data point accurately. When multiple data points have missing data for the same attributes, the entire column is dropped.

Validate data accuracy: Data accuracy needs to be validated via cross-checks within data frame columns to ensure that the data which is being processed is as accurate as possible. Ensuring the accuracy of data is, however, hard to gauge and is possible only in specific areas where a predefined idea of the data is known.

Descriptive Analysis is the type of analysis of data that helps describe, show or summarize data points in a constructive way such that patterns might emerge that fulfill every condition of the data. It is one of the most important steps for conducting statistical data analysis.

Two pre-processing procedures are often used for categorical variables. One is merging levels of categorical variables before further analysis, the other one is converting categorical variables to numeric ones, if it makes sense to do so. Merging levels of categorical variables is useful if the original categories are too differentiated (too many).

The range of values of a segmentation variable affects its relative influence in distance-based methods of segment extraction. If, for example, one of the segmentation variables is binary (with values 0 or 1 indicating whether or not a tourist likes to dine out during their vacation), and a second variable indicates the expenditure in dollars per person per day (and ranges from zero to $1000), a difference in spend per person per day of one dollar is weighted equally as the difference between liking to dine out or not. To balance the influence of segmentation variables on segmentation results, variables can be standardised. **Standardising variables** means transforming them in a way that puts them on a common scale.

Principal Component Analysis, or PCA, is a dimensionality-reduction method that is often used to reduce the dimensionality of large data sets, by transforming a large set of variables into a smaller one that still contains most of the information in the large set.

Things to do: Moreover, what researchers can do to complete descriptive analysis are:

- The things they must overlook, and the format in which the data must be provided.
- They must gather data after identifying the goals.
- Cleaning up the data is the next stage.
- Different analytical approaches are used once the data has been cleaned.
- After the data set has been analyzed, researchers may interpret the findings in light of the goals. The analysis was successful if the conclusions were what was anticipated.
- When you're presenting your analysis to non-technical stakeholders and teams, it might be challenging to communicate the findings. Data visualization helps to complete this task efficiently. To give the results, researchers might use a variety of data visualizationapproaches, such as charts, pie charts, graphs, and others.

Step 5: Extracting Segments

A **consumer group** is a set of consumers which cooperate to consume data from some topics. The partitions of all the topics are divided among the consumers in the group.
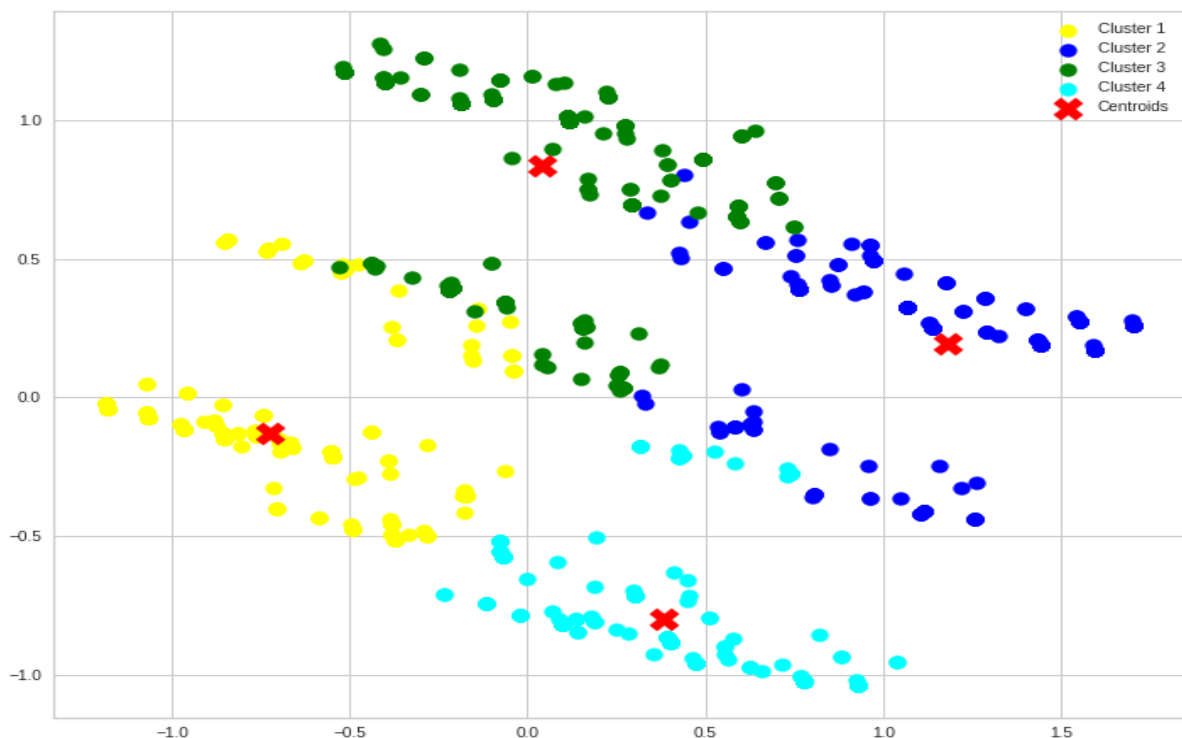
Distance-based methods use a particular notion of similarity or distance between observations (consumers), and try to find groups of similar observations (market segments).

Hierarchical clustering methods are the most intuitive way of grouping data because they mimic how a human would approach the task of dividing a set of n observations (consumers) into k groups (segments). Hierarchical clustering methods are particularly well suited for the analysis of small data sets with up to a few hundred observations.
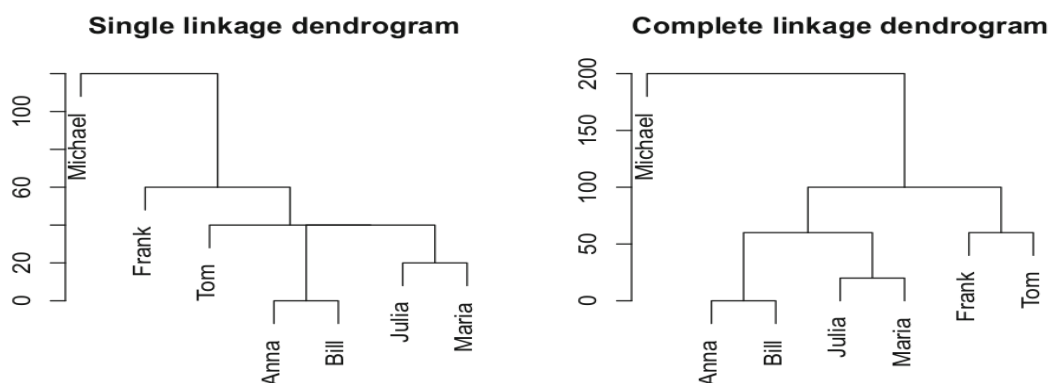
Fig. 7.4 Single and complete linkage clustering of the tourist data shown in Table 7.2

A **partitioning clustering algorithm** aiming to extract five market segments, in contrast, would only have to calculate between 5 and 5000 distances at each step of the iterative or stepwise process (the exact number depends on the algorithm used). In addition, if only a few segments are extracted, it is better to optimise specifically for that goal, rather than building the complete dendrogram and then heuristically cutting it into segments.

K-means clustering uses "centroids", K different randomly-initiated points in the data, and assigns every data point to the nearest centroid. After every point has been assigned, the centroid is moved to the average of all of the points assigned to it.
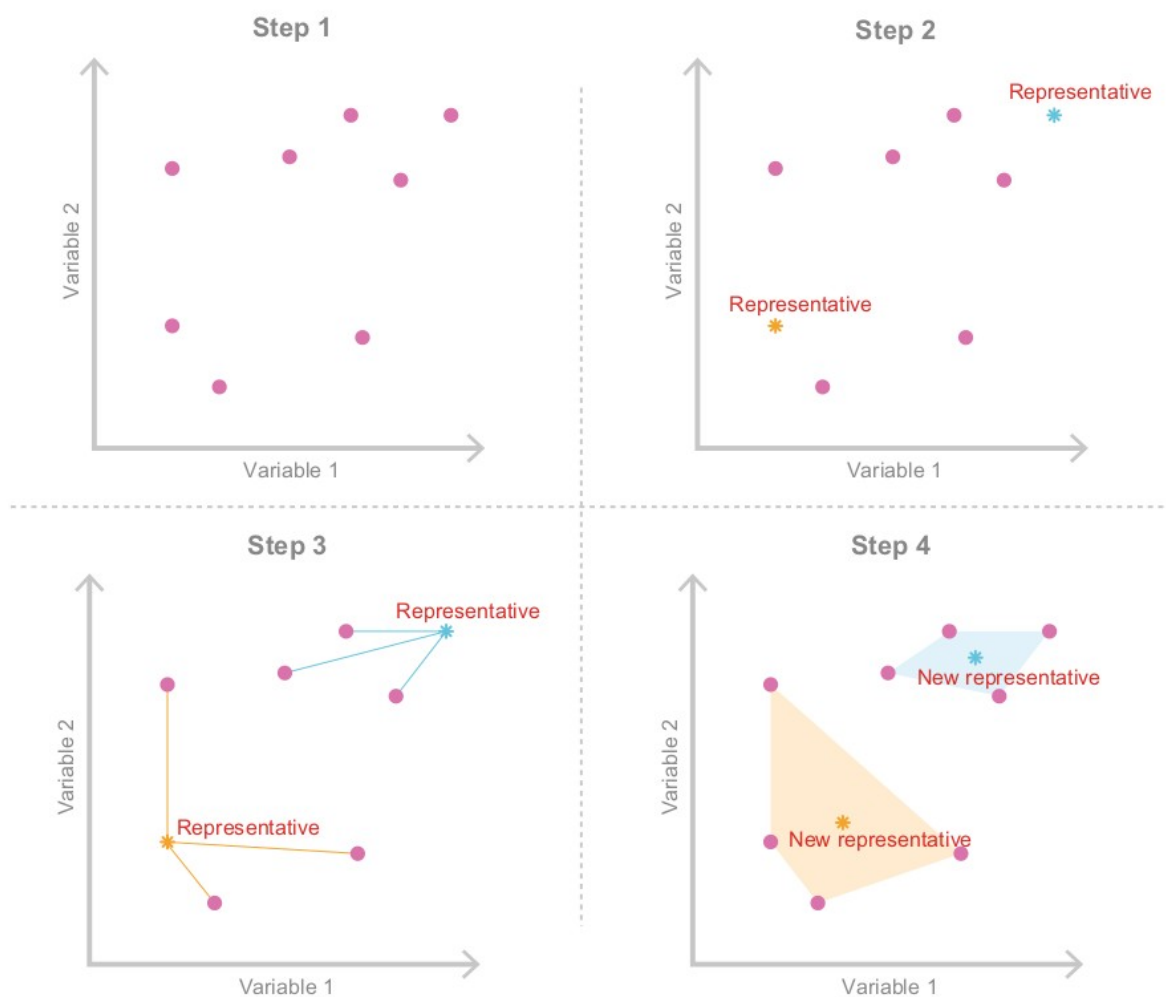
Fig. 7.7 Simplified visualisation of the *k*-means clustering algorithm

Hybrid techniques are a combination of two or more computational techniques which provide more advantage to detect components than any other individual technique. It helps to improve data analysis. The hybrid technique helps qualitative research to be effective.

As opposed to distance-based clustering methods, **model-based segment** extraction methods do not use similarities or distances to assess which consumers should be assigned to the same market

segment. Instead, they are based on the assumption that the true market segmentation solution – which is unknown – has the following two general properties: (1) each market segment has a certain size, and (2) if a consumer belongs to market segment A, that consumer will have characteristics which are specific to members of market segment A. These two properties are assumed to hold, but the exact nature of these properties – the sizes of these segments, and the values of the segment-specific characteristics – is not known in advance. The simplest case of model-based clustering has no independent variables x, and simply fits a distribution to y. To compare this with distance-based methods, **finite mixtures of distributions** basically use the same segmentation variables: a number of pieces of information about consumers, such as the activities they engage in when on vacation.

Finite mixtures of distributions are similar to distance-based clustering methods and – in many cases – result in similar solutions. Compared to hierarchical or partitioning clustering methods, mixture models sometimes produce more useful, and sometimes less useful solutions.

In **Biclustering Algorithms** and **factor-cluster** analysis, in this two-step approach, segmentation variables are compressed into factors before segment extraction. Biclustering simultaneously clusters both consumers and variables. Biclustering algorithms exist for any kind of data, including metric and binary. The term factor-cluster analysis refers to a two-step procedure of data-driven market segmentation analysis. In the first step, segmentation variables are factor analysed. The raw data, the original segmentation variables, are then discarded. In the second step, the factor scores resulting from the factor analysis are used to extract market segments.

Data structure analysis provides valuable insights into the properties of the data. These insights guide subsequent methodological decisions. Most importantly, stability-based data structure analysis provides an indication of whether natural, distinct, and well-separated market segments exist in the data or not. If they do, they can be revealed easily. If they do not, users and data analysts need to explore a large number of alternative solutions to identify the most useful segment(s) for the organisation. A simple method to assess how well segments are separated, is to look at the distances of each consumer to all segment respresentatives. An alternative approach to data structure analysis that can be used for both distance- and model-based segment extraction techniques is based on **resampling methods**. Resampling methods offer insight into the stability of a market segmentation solution across repeated calculations. To assess the global stability of any given seg-mentation solution, several new data sets are generated using resampling methods, and a number of segmentation solutions are extracted.

Step 6: Profiling Segments

Identifying Key Characteristics of Market Segments: The profiling step aims to get to know the market segments resulting from the extraction step. Profiling is only required when data-driven market segmentation is used. For commonsense segmentation, the profiles of the segments are predefined. If, for example, age is used as the segmentation variable for commonsense segmentation, it is obvious that the resulting segments will be age groups. Therefore, Step 6 is not necessary when commonsense segmentation is conducted. The situation is quite different in the case of data-driven segmentation: users of the segmentation solution may have decided to extract segments based on the benefits sought by consumers. Yet – until after the data has been analysed – the defining characteristics of the resulting market segments are unknown. Identifying these defining characteristics of market segments concerning the segmentation variables is the aim of profiling. Profiling consists of characterising the market segments individually, but also in comparison to the other market segments. If winter tourists in Austria are asked about their vacation activities, most state they are going alpine skiing. Alpine skiing may characterise a segment, but alpine skiing may not differentiate a segment from other market segments. At the profiling stage, we inspect several alternative market segmentation solutions. This is particularly important if no natural segments exist in the data, and either a reproducible or a constructive market segmentation approach has to be taken. Good profiling is the basis for the correct interpretation of the resulting segments. A correct interpretation, in turn, is critical to making good strategic marketing decisions. Regardless of your approach, a useful segmentation should include these six characteristics:

1) Identifiable. You should be able to identify customers in each segment and measure their characteristics, like demographics or usage behaviour.

2) Substantial. It's usually not cost-effective to target small segments — a segment, therefore, must be large enough to be potentially profitable.

3) Accessible. It sounds obvious, but your company should be able to reach its segments via communication and distribution channels. When it comes to young people, for example, your company should have access to Twitter and Tumblr and know how to use them authentically— or, as Clearblue smartly did, reach out to celebrities with active Twitter presences to do some of your marketing for you.

4) Stable. For a marketing effort to be successful, a segment should be stable enough for a long enough period to be marketed strategically. For example, lifestyle is often used as a way to segment. But research has found that, internationally, lifestyle is dynamic and constantly evolving. Thus, segmenting based on that variable globally might not be wise.

5) Differentiable. The people (or organizations, in B2B marketing) in a segment should have similar needs that are different from the needs of other people in other segments.

6) Actionable. You have to be able to provide products or services to your segments. One U.S. insurance company, for example, spent a lot of time and money identifying a segment, only to discover that it couldn't find any customers for its insurance product in that segment, nor was the organization able to design any actions to target them.

Traditional Approaches to Profiling Market Segments: The four different traditional market segmentation approaches are frequently used in marketing research. These segmentation variables are referred to as geographic, demographic, psychographic, and behavioural variables and consumers can be segmented according to them. Geographic variables are such variables as country, city, locality and density. Demographic variables involve dividing consumers about their age, sex, life cycle, income and occupation. The psychographic variables cover social class, lifestyle and personality. Behavioral variables consist of benefits sought, usage rate and purchase occasion. (Kotler et al 2005).

Segment Profiling with Visualisations: Neither the highly simplified, nor the very complex tabular representation typically used to present market segmentation solutions make much use of graphics, although data visualisation using graphics is an integral part of statistical data analysis. , in times of big and increasingly bigger data, visualisation offers a simple way of monitoring developments over time. Both McDonald and Dunbar (2012) and Lilien and Rangaswamy (2003) recommend the use of visualisation techniques to make the results of a market segmentation analysis easier to interpret. Visualisations are useful in the data-driven market segmentation process to inspect, for each segmentation solution, one or more segments in detail. Statistical graphs facilitate the interpretation of segment profiles. They also make it easier to assess the usefulness of a market segmentation solution. The process of segmenting data always leads to a large number of alternative solutions. Selecting one of the possible solutions is a critical decision. Visualisations of solutions assist the data analyst and user with this task.

Identifying Defining Characteristics of Market Segments: A good way to understand the defining characteristics of each segment is to produce a segment profile plot. The segment profile plot shows – for all segmentation variables – how each market segment differs from the overall sample. The segment profile plot is the direct visual translation of tables. Broadly speaking, identifying a market segment requires the following three criteria. To start, the main needs of a sub-group must be homogenous. Second, the segment must share distinct characteristics. Finally, the segment produces a similar response to marketing techniques. Prospective buyers are grouped into various segments, often based on how much value they place on a product or service. Consider a company that markets health and beauty products to both men and women. These products, such as razors or skin care, are typically more expensive for women than they are for men. The product packaging also differs—products targeted at women have pinks andfloral accents that align with

gender stereotypes. On the other hand, the company's male- targeted products are characterized by more rugged blacks and greys.

Principal Component Plot
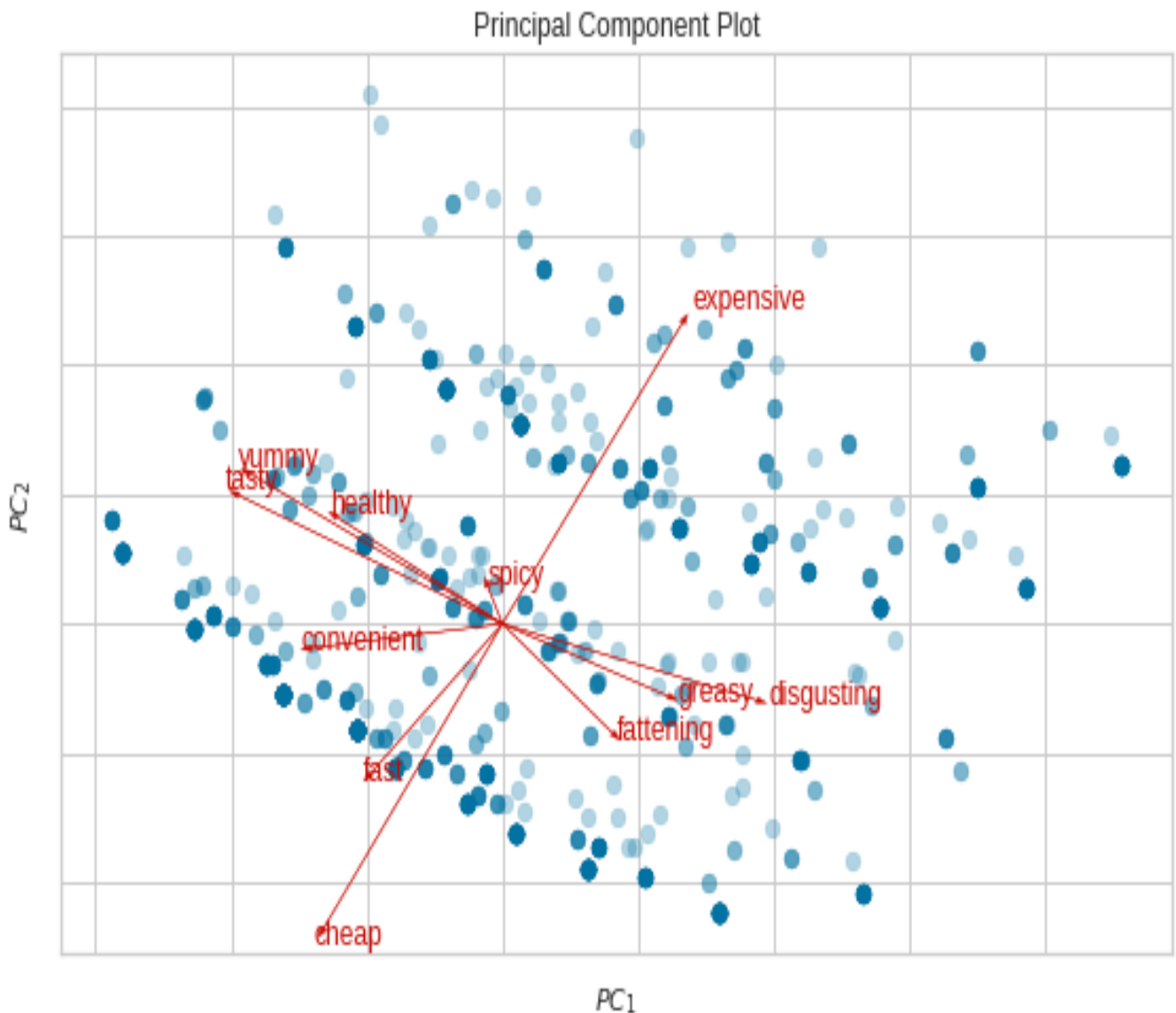
Good visualisations facilitate interpretation by managers who make long-term strategic decisions based on segmentation results. Such long-term strategic decisions imply substantial financial commitments to the implementation of a segmentation strategy. Good visualisations, therefore, offer an excellent return on investment.

Assessing Segment Separation

Segment separation can be visualised in a segment separation plot. Segment separation plots are very simple if the number of segmentation variables is low, but become complex as the number of

segmentation variables increases. But even in such complex situations, segment separation plots offer data analysts and users a quick overview of the data situation, and the segmentation solution.
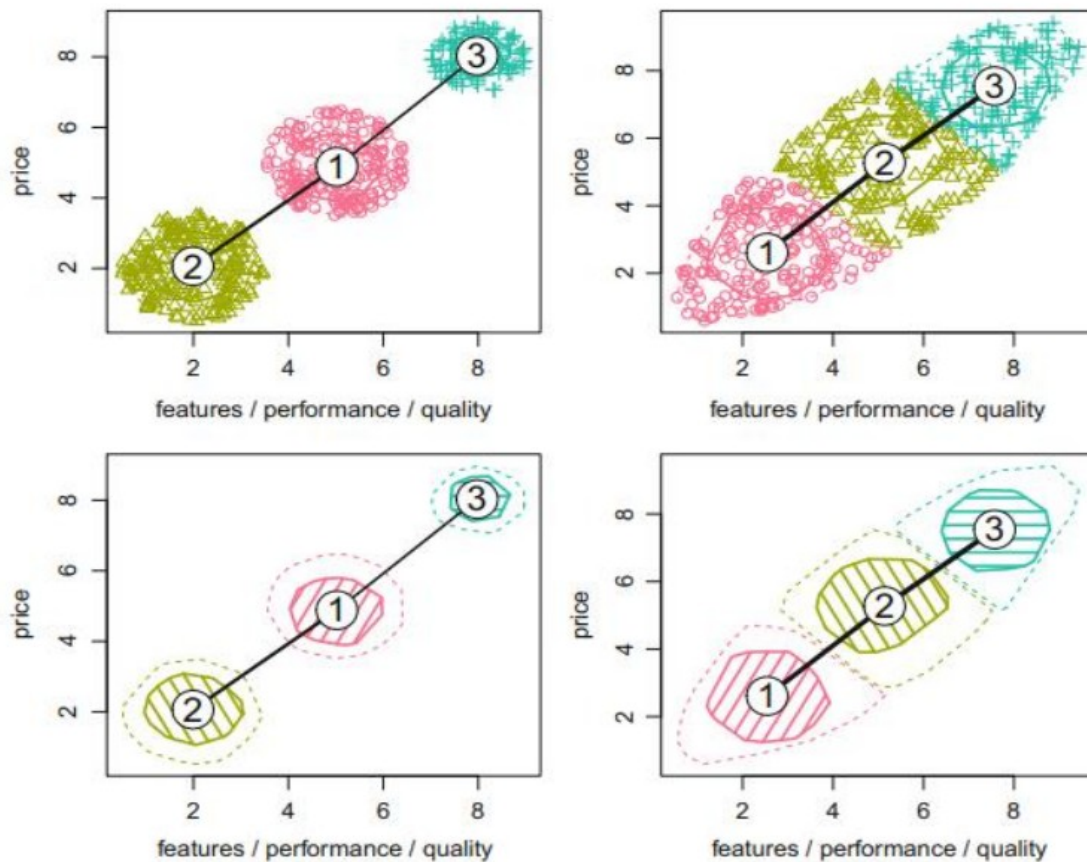

Fig. 8.4 Segment separation plot including observations (first row) and not including observations (second row) for two artificial data sets: three natural, well-separated clusters (left column); one elliptic cluster (right column)

Step6: Checklist

| Task	Who is responsible?	Completed?
Use the selected segments from Step 5.		☐
Visualise segment profiles to learn about what makes each segment distinct.		☐
Use knock-out criteria to check if any of the segments currently under consideration should already be eliminated because they do not comply with the knock-out criteria.		☐
Pass on the remaining segments to Step 7 for describing.		☐

Step 7: Describing Segments

Developing a Complete Picture of Market Segments: Segment profiling is about understanding differences in segmentation variables across market segments. Segmentation variables are chosen early in the market segmentation analysis process: conceptually in Step 2 (specifying the ideal target segment), and empirically in Step 3 (collecting data). Segmentation variables form the basis for extracting market segments from empirical data. Step 7 (describing segments) is similar to the profiling step. The only difference is that the variables being inspected have not been used to extract market segments. Rather, in Step 7 market segments are described using additional information available about segment members. If committing to a target segment is like a marriage, profiling and describing market segments is like going on many dates to get to know the potential spouse as well as possible in an attempt to give the marriage the best possible chance, and avoid nasty surprises down the track. As van Raaij and Verhallen (1994, p. 58) state: segment . . . should be further described and typified by crossing them with all other variables, i.e. with psychographic ..., demographic and socio-economic variables, media exposure, and specific product and brand attitudes or evaluations. For example, when conducting a data-driven market segmentation analysis using the Australian travel motives data set, profiling means investigating differences between segments for the travel motives themselves. We can study differences between market segments concerning descriptor variables in two ways: we can use descriptive statistics including visualisations, or we can analyse data using inferential statistics. The marketing literature traditionally relies on statistical testing and tabular presentations of differences in descriptor variables. Visualisations make segment descriptions more user-friendly.

Using Visualisations to Describe Market Segments: A wide range of charts exist for the visualisation of differences in descriptor variables. Here, we discuss two basic approaches suitable for nominal and ordinal descriptor variables (such as gender, level of education, country of origin), or metric descriptor variables (such as age, number of nights at the tourist destinations, money spent on accommodation).

After profiling the segment, comes describing the segment which is quite similar to profiling except the variables are not used to extract market segments. To describe the segment visualization plays an important role. Using proper visualization tools could help us look deep into our descriptor variables which help us with our segments. Visualization helps making segments user friendly. Looking for the differences in the descriptor variables across the market segments is the next procedure. These differences are segment membership which is assignment of each consumer to one market segment. Any test for the association between the nominal variable and another variable is will work for the difference. Various other methods are used as well.

Predicting Segments from Descriptor Variables: After getting the differences between the descriptor variables, predicting segment membership with the help of those descriptor variables is next. We use different machine learning model to do so. The prediction performance indicates how good the relation between the descriptor variable and the segment is. It also tells us which descriptor variable helped the most to predict the segment. Various regression models can be used to do so. Regression analysis is the basis of prediction models. Regression analysis assumes that a dependent variable y can be predicted using an independent variable.

- Linear Regression will be the first regression model that is applied.
- The next regression model is logistic regression here we try to predict segment 3 by providing their age and moral obligation score.
- Using CART is also a good option as it works great with large numbers of independent variables, but the results could be unstable.
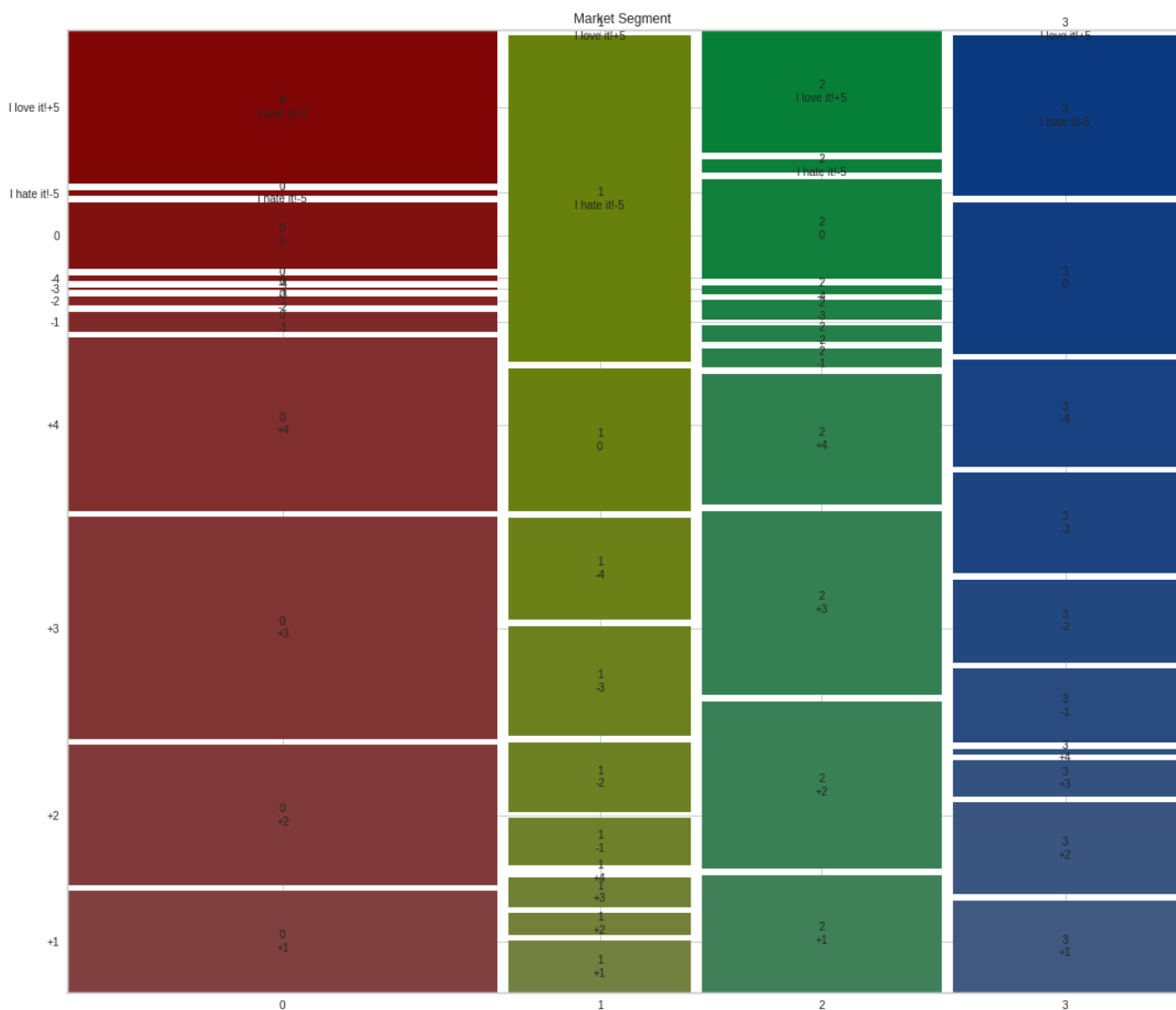
Step 8 - Selecting the Target Segment

After doing all the prediction and getting our model tuned and making it work efficiently, the next step would be `Selecting The Target Segment `. This where we double check our segment even after the knock out criteria and look that How attractive is the segment to us? And How attractive are we to the segment? The Segmentation team asks a number of questions which falls into two broad categories:

1. Which of the market segments would the organization most like to target? Which segment would the organization like to commit to?

2. Which of the organizations offering the same product would each of the segments most like to buy from? How likely is it that our organization would be chosen? How likely is it that each segment would commit to us?

Answering these two questions forms the basis of the target segment decision. After calculating the attractiveness of all the appealing segments. We will try to plot it on the evaluation plot. This plotting is computed by multiplying the weight of the segment attractiveness criterion with the value of the segment attractiveness criterion for each market segment. Of all the segments on the plot we look for the one, which attracts us the most and has good profit potential. All this considered so that the organization can benefit from it the most. If we want to target more than one segment we should make sure that the selected targeted segments are compatible with each other.
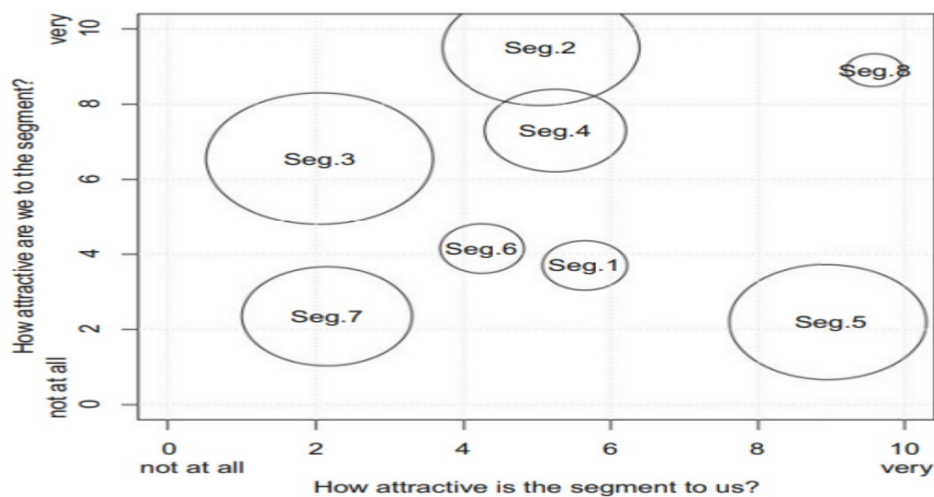
The above evaluation plot is an example that tells us that segment 8 is very attractive as a segment but the profit ratio is very less. While segment 5 here is both very profitable and attractive but the segment is not as fond of the organization as the organization is fond of the segment. . Segment 2 loves the organization, has decent profit potential, and is about equally attractive to the organization as segments 1, 4 and 6 all of which, unfortunately, are not very fond of the organization's offer.

Step 9 : Customising The Markiting Mix

Mass customization in marketing refers to the action of altering a product or service to create custom experiences for customers. Many industries use this technique, from retail companies to software designers or financial businesses to modular home construction. In this article, we define mass customization and explore the four primary types, explain its benefits and how it differs from personalization in marketing. Mass customization is the art of manufacturing goods or services to best meet an individual customer's needs through packaging, marketing, cosmetics or by creating a product that naturally adapts to its environment. Mass customization makes a product feel more personal to buyers and gives a company the benefit of flexibility and integration to develop custom-made products with lower costs on a mass production scale. How mass customization works in marketing Companies use mass customization in marketing strategies to have a competitive advantage against rival companies or ones who offer only generic products. The key is letting customers know they can design certain elements of a product, in a made-to-order or mix-and-match offering. This often creates a deeper feeling of ownership for a customer and can lead to brand loyalty. By advertising the ability to customize a product at a reasonable price without compromising quality, companies can:

- Increase sales
- Keep costs at mass production rates
- Generate more profit customers
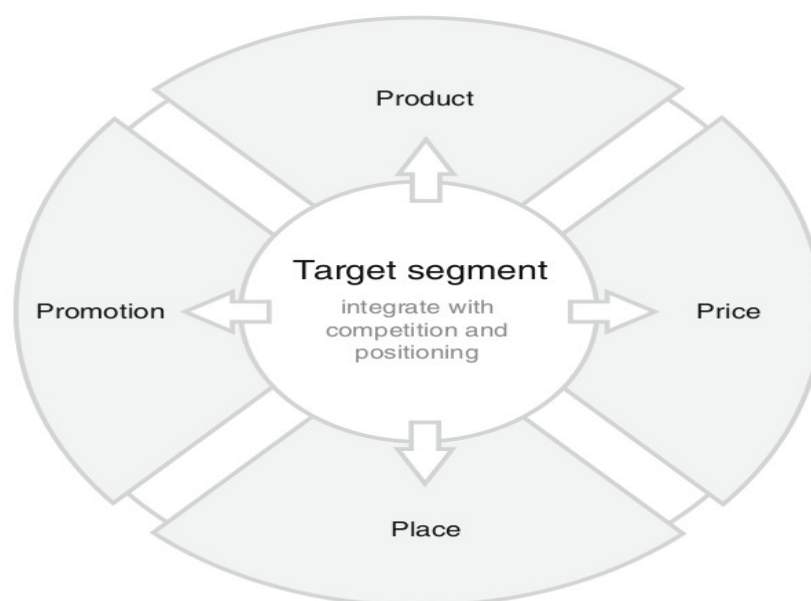- Build brand Be perceived as flexible
- Engage loyalty

Fig. 11.1 How the target segment decision affects marketing mix development

Category	Definition/Explanation/Concept	Typical Marketing Decisions
Product	A product refers to an item that satisfies the consumer's needs or wants. Products may be tangible (goods) or intangible (services, ideas or experiences).	• Product design – features, quality • Product assortment – product range, product mix, product lines • Branding • Packaging and labeling • Services (complimentary service, after-sales service, service level) • Guarantees and warranties • Returns • Managing products through the life-cycle
Price	Price refers to the amount a customer pays for a product. Price may also be a consumer's expectation for getting a certain product (e.g. time or effort). Price is the only variable that has implications for revenue. Price is the only part of the marketing mix that talks about the value for the firm. Price also includes considerations of customer perceived value.	• Price strategy • Price tactics • Price-setting • Allowances – e.g. rebates for distributors • Discounts – for customers • Payment terms – credit, payment methods
Place	Refers to providing customer access Considers providing convenience for consumer.	Strategy such as intensive distribution, selective distribution, exclusive distribution⁾ • Franchising; • Market coverage • Channel member selection and channel member relationships • Assortment • Location decisions • Inventory • Transport, warehousing and logistics
Promotion	Promotion refers to marketing communications May comprise elements such as advertising, PR, direct marketing and sales promotion.	• Promotional mix - appropriate balance of advertising, PR, direct marketing and sales promotion • Message strategy - what is to be communicated • Channel/ media strategy - how to reach the target audience • Message Frequency - how often to communicate

McDonald's Market Segmentation:

- **Implementation Link**
- **Dataset Link**