MARKET SEGMENTATION

INTRODUCTION

Strategic and Tactical Marketing

The purpose of marketing is to match the genuine needs and desires of consumers with the offers of suppliers particularly suited to satisfy those needs and desires.

A marketing plan consists of two components:

- **Strategic**: The strategic plan outlines the long-term direction of an organisation, but does not provide much detail on short term marketing action required to move in this long-term direction.
- **Tactical:** The tactical marketing plan does the opposite. It translates the long-term strategic plan into detailed instructions for short-term marketing action.

The strategic marketing plan states where the organisation wants to go and why. The tactical marketing plan contains instructions on what needs to be done to get there.

A SWOT analysis explicitly states an organisation's strengths (*S*), weaknesses (*W*), opportunities (*O*), and threats (*T*). As such, the SWOT analysis outlines one side of the matching process: what the supplier is particularly suitable to offer consumers.

Once organisational strengths have been established, potential interference by external factors have been assessed, and consumer needs and desires have been thoroughly investigated, two key decisions must be made as part of the strategic marketing planning process:

- which consumers to focus on (segmentation and targeting)
- which image of the organisation to create in the market (positioning).

Definitions of Market Segmentation

Market segmentation is a decision-making tool for the marketing manager in the crucial task of selecting a target market for a given product and designing an appropriate marketing mix. Market segmentation is one of the key building blocks of strategic marketing.

Market segmentation is essential for marketing success: the most successful firms drive their businesses based on segmentation). Market segmentation lies at the heart of successful marketing, tools such as segmentation have the largest impact on marketing decisions.

The segmentation criterion can be one single consumer characteristic or it can contain a larger set of consumer characteristics.

- **Concentrated market strategy:** A concentrated strategy is attractive for organisations who are resource-poor, but are facing fierce competition in the market. Concentrating entirely on satisfying the needs of one market segment can secure the future for such an organisation. It does, however, come at the price of the higher risk associated with depending on one single market segment entirely.
- **Differentiated market strategy:** In such a case, all aspects of the marketing mix would have to be customised for each of the three target segments. A differentiated strategy is suitable in mature markets where consumers are capable of differentiating between alternative products. Product variations can thus be customised to meet the needs several market segments.
- **Undifferentiated market strategy:** this is the one in which same product is marketed using the same marketing mix to the entire market. Examples of undifferentiated marketing include petrol and white bread; they are not particularly targeted at any group within the marketplace. Such an approach may be viable for resource-rich organisations.

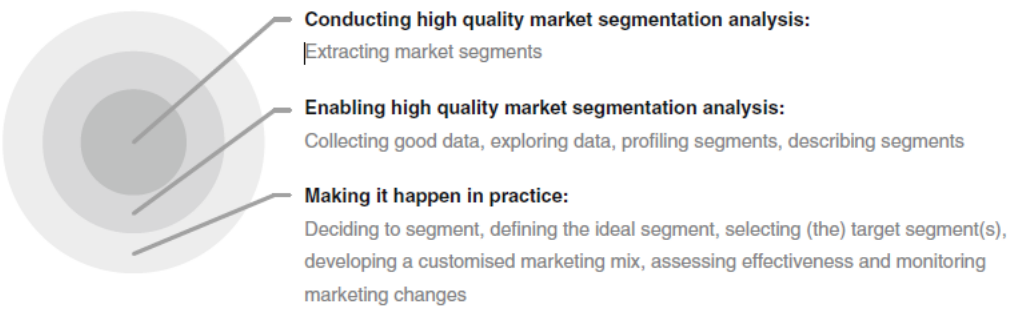
The Benefits of Market Segmentation

Market segmentation offers an opportunity to think and rethink, and leads to critical new insights and perspectives. Market segmentation has also been shown to be effective in sales management because it allows direct sales efforts to be targeted at groups of consumers rather than each consumer individually.

The Costs of Market Segmentation

Implementing market segmentation requires a substantial investment by the organisation. Many people must dedicate a substantial amount of time to conduct a thorough market segmentation analysis.
The evaluation of the success of the segmentation strategy, and the continuous monitoring of market dynamics (that may point to the need for the segmentation strategy to be modified) imply an ongoing commitment of resources.

The Layers of Market Segmentation Analysis



Approaches to Market Segmentation Analysis

- Based on Organisational Constraints
    1. **Segment revolution:** It refers to the approach requiring the most radical change in the organisation. It is like jumping on a sandcastle and building a new one. It starts from zero.
    2. **Segment evolution:** which is like refining an existing sandcastle. If the sandcastle is robust, and not too close to the water, this is a perfectly reasonable approach.
    3. **Mutation:** The least radical approach is not even a segmentation approach; it is like walking down the beach and seeing a huge pile of sand and thinking: this would make a fantastic sandcastle. It is a random discovery.
- Based on the Choice of (the) Segmentation Variable(s):

A more technical way of systematising segmentation approaches is to use as a basis the nature of consumer characteristics used to extract market segments.

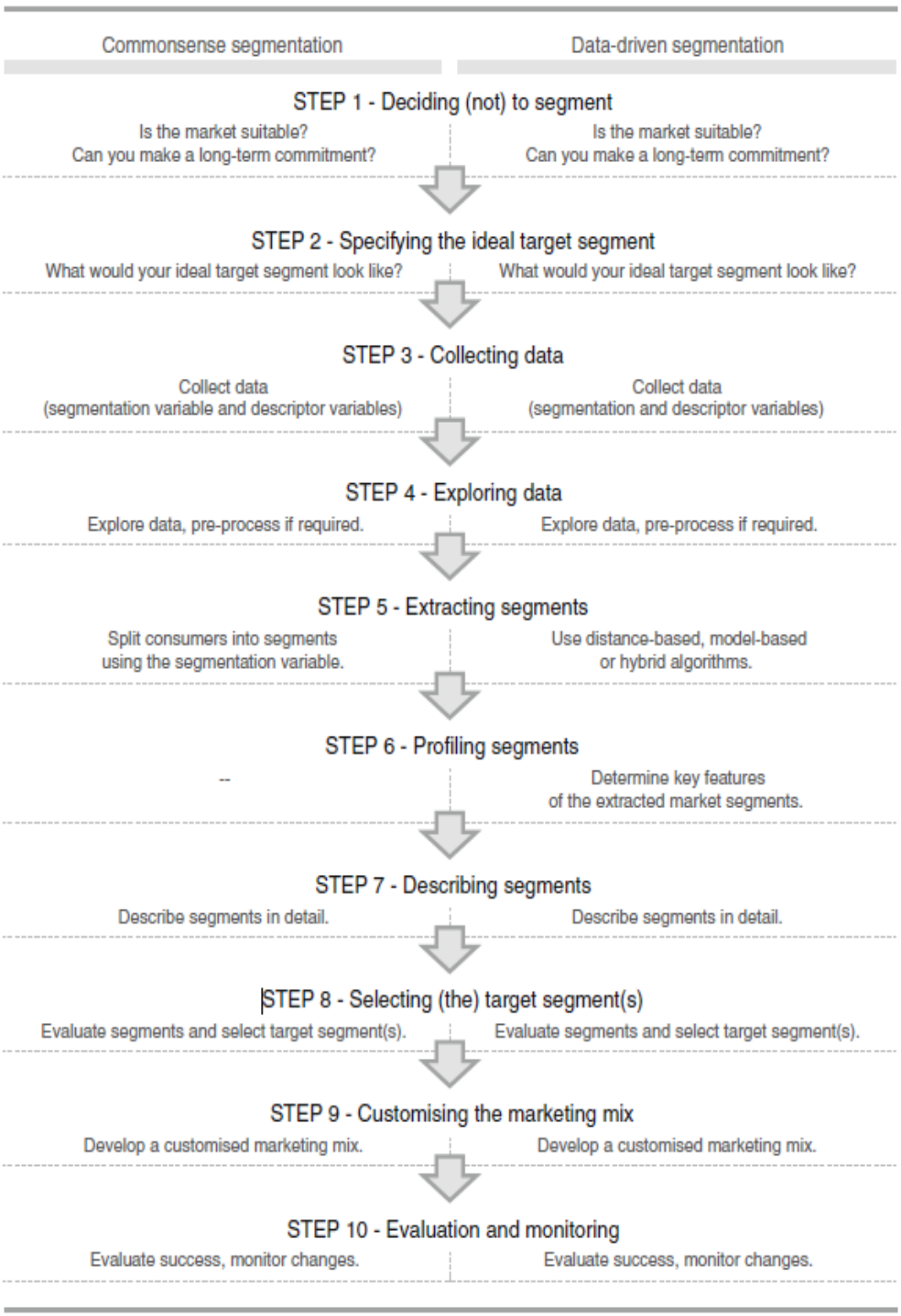
Sometimes one single piece of information about consumers (one segmentation variable) is used. This statistical problem is unidimensional. One example is age. The resulting segments are age groups, and older consumers could be selected as a target segment.

In other cases, multiple pieces of information (multiple segmentation variables) about consumers are important. In this case, the statistical problem becomes multidimensional.

Data Structure and Data-Driven Market Segmentation Approaches

When conducting data-driven market segmentation, data analysts and users of market segmentation solutions often assume that market segments naturally exist in the data. Such naturally occurring segments, it is assumed, need to merely be revealed and described. In real consumer data, naturally existing, distinct, and well separated market segments rarely exist.

Market Segmentation Analysis Step-by-Step



Although the ten steps of market segmentation analysis are the same for commonsense and data-driven segmentation, different tasks need to be completed for each one of those approaches. Typically, data-driven segmentation requires additional decisions to be made.

Step 1: Deciding (not) to Segment

Implications of Committing to Market Segmentation:

The organization must be sure to make a market segmentation strategy for a long term. This process is not free. It requires performing the research, fielding surveys, and focus groups, designing multiple packages, and designing multiple advertisements and communication messages and all these require capital. The company should be sure if they need to segment their customers or not.

Implementation Barriers:

1. Lack of management from seniors: A market segmentation strategy is prone to failure if the seniors of the company son not have proper commitment and involvement due to any given reason.

2. Organizational culture: Market segmentation fails if the organization has one or more of the following issues:

- Resistance to change or new ideas
- Bad communication
- Lack of creative thinking
- Lack of market or consumer orientation
- Short – term thinking
- Not sharing information
- Office politics etc.

3. Improper Training: If the team associated with market segmentation does not have the proper knowledge or skillset required for the job, then it is not going to be successful.

4. Objective obstacles: if the company is facing issues like lack of capital or inability to make structural changes, then success of the segmentation process is difficult.

Checklist:

This first checklist includes not only tasks, but also a series of questions which, if not answered in the affirmative, serve as knock-out criteria. For example: if an organisation is not market-oriented, even the finest of market segmentation analyses cannot be successfully implemented.

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

Segment Evaluation Criteria

The third layer of market segmentation analysis depends primarily on user input. After having committed to investigating the value of a segmentation strategy in Step 1, the organisation must make a major contribution to market segmentation analysis in Step 2. While this contribution is conceptual in nature, it guides many of the following steps, most critically Step 3 (data collection) and Step 8 (selecting one or more target segments).

In Step 2 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*.

1. Knock-out criteria – These are the essentials and associate's attributes like substantiality, measurability, and accessibility. These are –
• The segments should be homogeneous.
• The segments must be distinct.
• The segments should be large enough for data to make sense.
• The segments should match the strength of the organization.
• Members of the segment must be identifiable – It must be possible to spot them.
• The segment should be reachable to the targeted consumer.

2. Attractiveness Criteria – These are not compulsory and can vary from company to company.
Ex - Segment factors (size, growth rate per year, sensitivity to price, service features and external factors, cyclicality, seasonality, 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 utilisation, 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 unionisation and community acceptance), etc.

Implementing a Structured Process:

A team of about 6 people determine segment attractiveness and organisational competitiveness values. These criteria are important as it is necessary because there is a huge benefit in selecting the attractiveness criteria for market segments at the early stage in the process of segmentation.

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

Segmentation Variables

There are primarily two kinds of variables we use in context of market segmentation. These are:
1. Segmentation Variable: When one single characteristic of the consumer plays the primary role in segmentation process, then it is called segmentation variable. Ex – Gender, age, etc.
2. Descriptor Variables: The variables used to describe a segment in detail is called Descriptor Variable. Typical descriptor variables include sociodemographic, along with information about media behaviour, allowing marketers to reach their target segment with communication messages.

Segmentation Criteria

Segmentation criteria involves a broad domain. It is mostly related to the nature of data used for data segmentation. The different types of segmentation criteria are –
1. Geographic Segmentation: This involves the consumer's location of residence as the primary factor for segmentation. It is particularly easy to use and helps in target communication messages, and select communication channels (such as local newspapers, local radio, and TV stations) to reach the selected geographic segments. Disadvantage is if the consumers have mostly same country of residence or if the product does not necessarily facilitate location as its key feature.
2. Socio-Demographic Segmentation: socio-demographic segmentation criteria include age, gender, income, and education. For example: luxury goods (associated with high income),

cosmetics (associated with gender; even in times where men are targeted, the female and male segments are treated distinctly differently), baby products (associated with gender), retirement villages (associated with age), tourism resort products (associated with having small children or not).

3. Psychographic Segmentation: 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. The psychographic approach has the advantage that it is generally more reflective of the underlying reasons for differences in consumer behaviour. The disadvantage is that itis not easy to implement it because of its heavy complexity.

4. Behavioural Segmentation: In behavioural Segmentation we search for similarities in behaviour or reported behaviour. Advantage is that it segments people based on similar behavioural interests, but the data for segmentation based on behaviour is not readily available.

Data from Survey Studies

The most common source of data to be used for market segmentation is collection of data via surveys. Survey data depends on the following factors:

1. Choice of Variables: Variables relevant to the construct need to be included for segmentation and the variables that are not useful should be discarded immediately. The variable that are not useful increase dimensionality of data and increases complexity. Such variables are also called noisy variables. So, it is necessary to ask relevant and necessary questions only while conducting the survey for data collection.

2. Response Options: The responses to a question to be answered by a consumer can be of following types:

- binary or dichotomous data: The options of the form yes/no, correct/incorrect with only two possibilities fall in this category.
- binary or dichotomous data: Options allowing respondents to select an answer from a range of unordered categories fall in this category.
- metric data: options allowing the customer to enter a number indicates metric data. Ex – Age.

Response Styles

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

Sample Size

The size on the sample plays a crucial role in producing nice results on segmentation. If inadequate number of samples are present, it becomes impossible to determine which the correct number of market segments is.

Checklist

Task	Who is responsible?	Completed?
Convene a market segmentation team meeting.		☐
Discuss which consumer characteristics could serve as promising segmentation variables. These variables will be used to extract groups of consumers from the data.		☐
Discuss which other consumer characteristics are required to develop a good understanding of market segments. These variables will later be used to describe the segments in detail.		☐
Determine how you can collect data to most validly capture both the segmentation variables and the descriptor variables.		☐
Design data collection carefully to keep data contamination through biases and other sources of systematic error to a minimum.		☐
Collect data.		☐

Step 4: Exploring Data

A First Glimpse at the Data

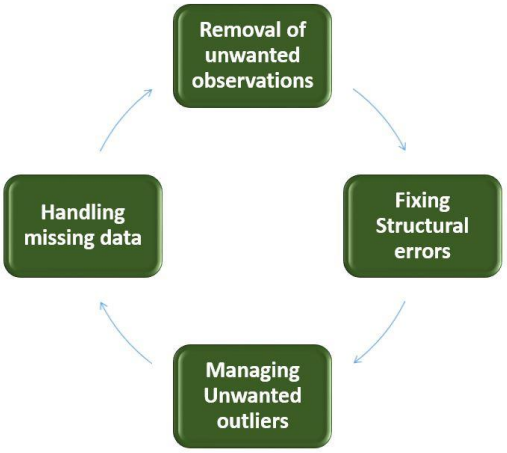
After data collection, exploratory data analysis cleans and – if necessary – preprocesses the data. This exploration stage also offers guidance on the most suitable algorithm for extracting meaningful market segments. At a more technical level, data exploration helps to
(1) identify the measurement levels of the variables;
(2) investigate the univariate distributions of each of the variables; and
(3) assess dependency structures between variables.

Data Cleaning

The first step before commencing data analysis is to clean the data. This includes checking if all values have been recorded correctly, and if consistent labels for the levels of categorical variables have been used. For example, age (in years) can be expected to lie between 0 and 110. It is easy to check whether any implausible values are contained in the data, which might point to errors during data collection or data entry.

Similarly, levels of categorical variables can be checked to ensure they contain only permissible values. For example, gender typically has two values in surveys: female and male. Unless the questionnaire did offer a third option, only those two should appear in the data.

1.Data Inspection and exploration
2. Removal of unwanted observations
3. Handling missing data
4. Handling Outliers
5. Data Transformation



Descriptive Analysis

- Being familiar with the data avoids misinterpretation of results from complex analyses.
- Descriptive numeric and graphic representations provide insights into the data. In R, we obtain a numeric summary of the data with command summary (). This command returns the range, the quartiles, and the mean for numeric variables. For categorical variables, the command returns frequency counts. The command also returns the number of missing values for each variable.
- Helpful graphical methods for numeric data are histograms, boxplots, and scatter plots. Bar plots of frequency counts are useful for the visualisation of categorical variables. Mosaic plots illustrate the association of multiple categorical variables.

Pre-Processing

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

the measurement level or scale of variables. Sometimes it is possible to transform categorical variables into numeric variables.

- **Numeric Variables:** The range of values of a segmentation variable affects its relative influence in distance-based methods of segment extraction. 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. The default standardisation method in statistics subtracts the empirical mean $\bar{x}$ and divides by the empirical standard deviation *s*:
  zi = (*xi* – x')*/s,* with

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i, \qquad s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2,$$

for the *n* observations of a variable ***x*** = {*x*1*, ... xn*}. This implies that the empirical mean and the empirical standard deviation of ***z*** are 0 and 1, respectively. Standardisation can be done in R using function scale (). Alternative standardisation methods may be required if the data contains observations located very far away from most of the data (outliers). In such situations, robust estimates for location and spread – such as the median and the inter quartile range – are preferable.

Principal Components Analysis

- Principal components analysis (PCA) transforms a multivariate data set containing metric variables to a new data set with variables – referred to as principal components – which are uncorrelated and ordered by importance. The first variable (principal component) contains most of the variability, the second principal component contains the second most variability, and so on.
- Principal components analysis works off the covariance or correlation matrix of several numeric variables. If all variables are measured on the same scale, and have similar data ranges, it is not important which one to use. If the data ranges are different, the correlation matrix should be used (which is equivalent to standardising the data).
- In most cases, the transformation obtained from principal components analysis is used to project high-dimensional data into lower dimensions for plotting purposes. The first two principal components can easily be inspected in a scatter plot. More than two principal components can be visualised in a scatter plot matrix.

Checklist

Task	Who is responsible?	Completed?
Explore the data to determine if there are any inconsistencies and if there are any systematic contaminations.		☐
If necessary, clean the data.		☐
If necessary, pre-process the data.		☐
Check if the number of segmentation variables is too high given the available sample size. You should have information from a minimum of 100 consumers for each segmentation variable.		☐
If you have too many segmentation variables, use one of the available approaches to select a subset.		☐
Check if the segmentation variables are correlated. If they are, choose a subset of uncorrelated segmentation variables.		☐
Pass on the cleaned and pre-processed data to Step 5 where segments will be extracted from it.		☐

GITHUB LINK:

https://github.com/PreethiEdara/Mcdonalds_market_segmentation_analysis.git