

# **Australian Travel Motives**

## **Market Segmentation**



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## **Abstract**

Market segmentation is a critical strategy in the field of tourism that enables destinations to effectively cater to diverse consumer needs and preferences. This study focuses on the market segmentation of Australian tourism, a dynamic and multifaceted industry that attracts visitors from around the world. Drawing on a comprehensive analysis of various segmentation criteria, this research aims to identify distinct segments within the Australian tourism market, highlighting their unique characteristics and motivations.

Furthermore, the study examines the implications of these identified segments for Australian tourism stakeholders, including government agencies, destination management organizations, and businesses operating within the tourism sector. By tailoring marketing strategies, services, and infrastructure development to the distinct needs of these segments, Australia can enhance its competitiveness in the global tourism market while fostering sustainable growth.

## **Introduction**

Australian tourism stands as a dynamic and vibrant industry, captivating travelers from across the globe with its diverse landscapes, unique wildlife, rich cultural heritage, and urban sophistication. As one of the world's most sought-after travel destinations, Australia's tourism landscape is characterized by a multitude of factors, including its intricate demographic composition and the intricate travel behaviors exhibited by visitors. Understanding these components is pivotal in developing effective strategies for sustainable tourism growth and creating tailored experiences that resonate with different traveler segments.

Demographics play a fundamental role in shaping the contours of Australian tourism. The modern traveler demographic is marked by its remarkable diversity, comprising a mosaic of age groups, cultural backgrounds, income levels, and interests. The influx of international tourists brings together individuals seeking adventure, leisure, education, and business opportunities. Additionally, the domestic tourism market is equally multifaceted, with Australians themselves exploring their own country's offerings for leisure, relaxation, and exploration. Recognizing and accommodating the unique preferences of these diverse demographics is integral in curating experiences that cater to an array of needs and aspirations.

Complementing the demographic diversity is the intricate web of travel behaviors exhibited by tourists within Australia. Travelers' decision-making processes are influenced by a myriad of factors, such as motivations, preferences, interests, and past experiences. While some visitors are drawn to Australia's iconic natural wonders, others are captivated by its rich indigenous culture or bustling city life. Travel durations, expenditure patterns, accommodation choices, transportation modes, and engagement with local communities further contribute to the complex landscape of travel behaviour.



## Market Segmentation

### Types of Market Segmentation

There are four primary types of market segmentation. However, one type can usually be split into an individual segment and an organization segment. Therefore, below are five common types of market segmentation.

Market segmentation can be done in a handful of ways.

Within each, you can split them into smaller segments for an even more granular understanding of a market.

**Behavioural.** Essentially, this means how consumers interact with products or brands. It can include how and where they engage, their social media usage, or their wider consumer journey.

**Demographic.** Criteria can include gender, age, income, education, social class, religion, and nationality.

**Geographic.** This uses information on where they live, work, or even spend their weekends. This can be subdivided by nation, state, town, county, and so on.

**Psychographic.** This can include personality variables like introverted Ness and extroverted Ness, lifestyles, attitudes, likes, and dislikes.

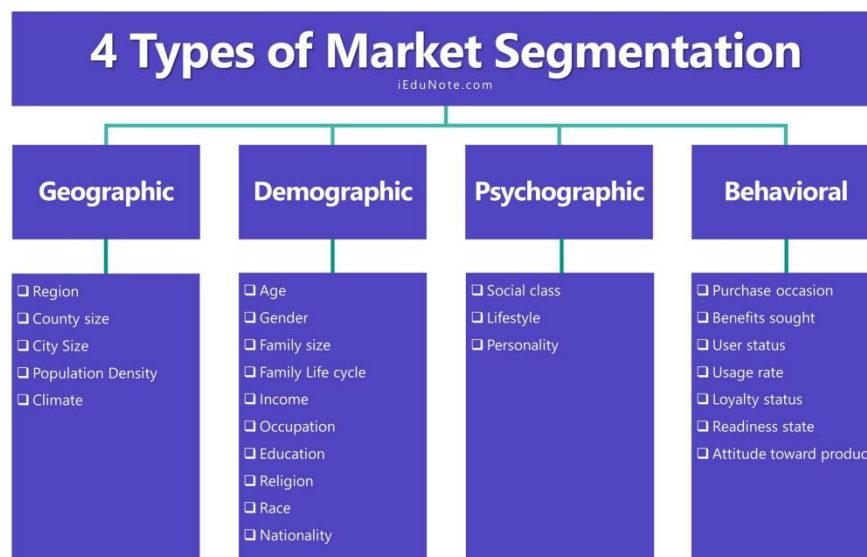


Figure 1: *Behavioral Segmentation*

### How to Determine Your Market Segment

There's no single universally accepted way to perform market segmentation. To determine your market segments, it's common for companies to ask themselves the following questions along their market segmentation journey.

#### Phase I: Setting Expectations/Objectives

- What is the purpose or goal of performing market segmentation?
- What does the company hope to find out by performing marketing segmentation?
- Does the company have any expectations on what market segments may exist?

## **Phase 2: Identify Customer Segments**

- What segments are the company's competitors selling to?
- What publicly available information (i.e. U.S. Census Bureau data) is relevant and available to our market?
- What data do we want to collect, and how can we collect it?
- Which of the five types of market segments do we want to segment by?

## **Phase 3: Evaluate Potential Segments**

- What risks are there that our data is not representative of the true market segments?
- Why should we choose to cater to one type of customer over another?
- What is the long-term repercussion of choosing one market segment over another?
- What is the company's ideal customer profile, and which segments best overlap with this "perfect customer"?

## **Phase 4: Develop Segment Strategy**

- How can the company test its assumptions on a sample test market?
- What defines a successful marketing segment strategy?
- How can the company measure whether the strategy is working?

## **Phase 5: Launch and Monitor**

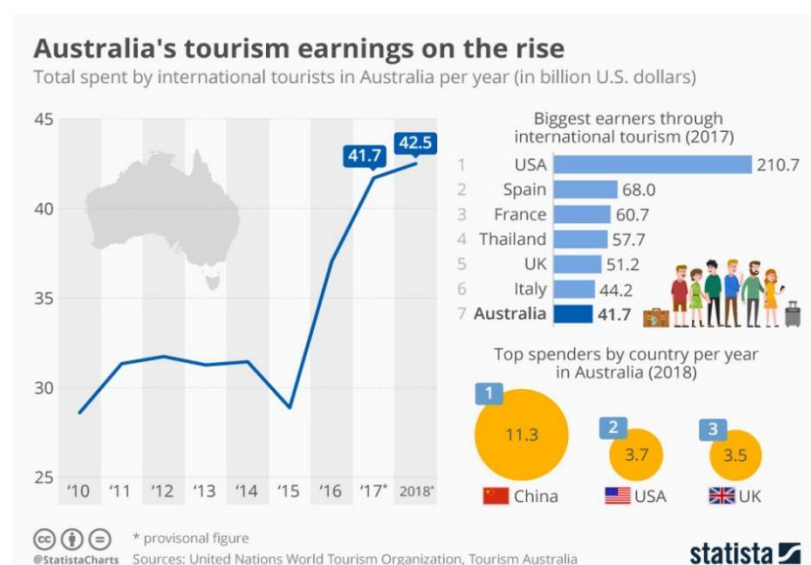
- Who are key stakeholders that can provide feedback after the market segmentation strategy has been unveiled?

- What barriers to execution exist, and how can they be overcome?
- How should the launch of the marketing campaign be communicated internally?

## Why Is Market Segmentation Important?

Market segmentation realizes that not all customers have the same interests, purchasing power, or consumer needs. Instead of catering to all prospective clients broadly, market segmentation is important because it strives to make a company's marketing endeavors more strategic and refined. By developing specific plans for specific products with target audiences in mind, a company can increase its chances of generating sales and being more efficient with resources. When a company has identified specific market segments, it helps them to focus on what segments they want to target with specific products/ services/ content/ blogs and campaigns. When a company has a focus on specific segments, they ensure they are targeting the right segment with the right product which will see the greatest ROI.

Even when product features and benefits are the same, it is important for companies to target segments with specific communication. For example, if your segment was senior engineers, they may respond better to technical information about a product in the form of white papers or infographics, but a project manager might respond better to information regarding cost savings, efficiencies etc in the form of a blog, case study or video. Messaging will be different for different segments. Platforms which are used to target different segments will be different also. The key is to understand your segments and target communication relevant to them on the relevant platforms.



## Case Study of Australian Travel Motives Dataset

The case study is the comprehensive guide to analyzing the Australian Travel Motives data set. The analysis involves several techniques, including **travel motives analysis, segmentation analysis, principal component analysis(PCA), competitive analysis, and visualization**. The travel motives analysis involves identifying the most common travel motivations among Australian travellers, such as rest and relaxation, luxury, adventure, and personal growth. The segmentation analysis involves dividing the data set into different groups based on demographic factors like age, income, and education, and travel preferences. The principal component analysis involves identifying the most important variables that explain the variation in the data set. The competitive analysis involves identifying the strengths and weaknesses of existing products or services in the market and identifying opportunities for differentiation.

The analysis also involves cleaning and preprocessing the data to ensure that it's ready for analysis. This may involve handling missing values, converting categorical variables into a suitable format, and standardizing or normalizing numerical variables if necessary. Once the data is cleaned and prepared, the analysis involves generating summary statistics for different columns, such as age distribution, income distribution, and more. The analysis also involves creating histograms, box plots, and scatter plots to visualize the distribution of different variables and explore potential relationships between them.

The goal of the analysis is to identify different types of travellers with unique characteristics and needs and to assess the feasibility, viability, and monetization of developing a product or service within a short-term timeframe. This involves identifying and prioritizing travel motives and preferences that align with current and emerging trends for short-term feasibility. It also involves identifying enduring travel motives that have remained popular over time for long-term viability. Additionally, understanding the correlation between certain demographics (such as income, education) and travel preferences can help target offerings more effectively for revenue generation.

## Implementation:

### ➤ Packages/Tools Used:

1. **NumPy**: To drop the null values.
2. **Pandas**: To read or load the datasets.
3. **Matplotlib**: To find the relationship among the features and then draw the graphs for each.
4. **Sklearn**: To perform the Principal Component Analysis(PCA) for 10 components.

### ➤ Data Pre-processing:

#### Data Cleaning:

The data collected is compact which contains a lot of NULL values. So, we used visualization purposes and performed clustering as well as Principal Component Analysis(PCA). Python libraries such as NumPy, Pandas, Matplotlib and Seaborn. Also the 'Income' column is converted into a numeric representation using categorical encoding.

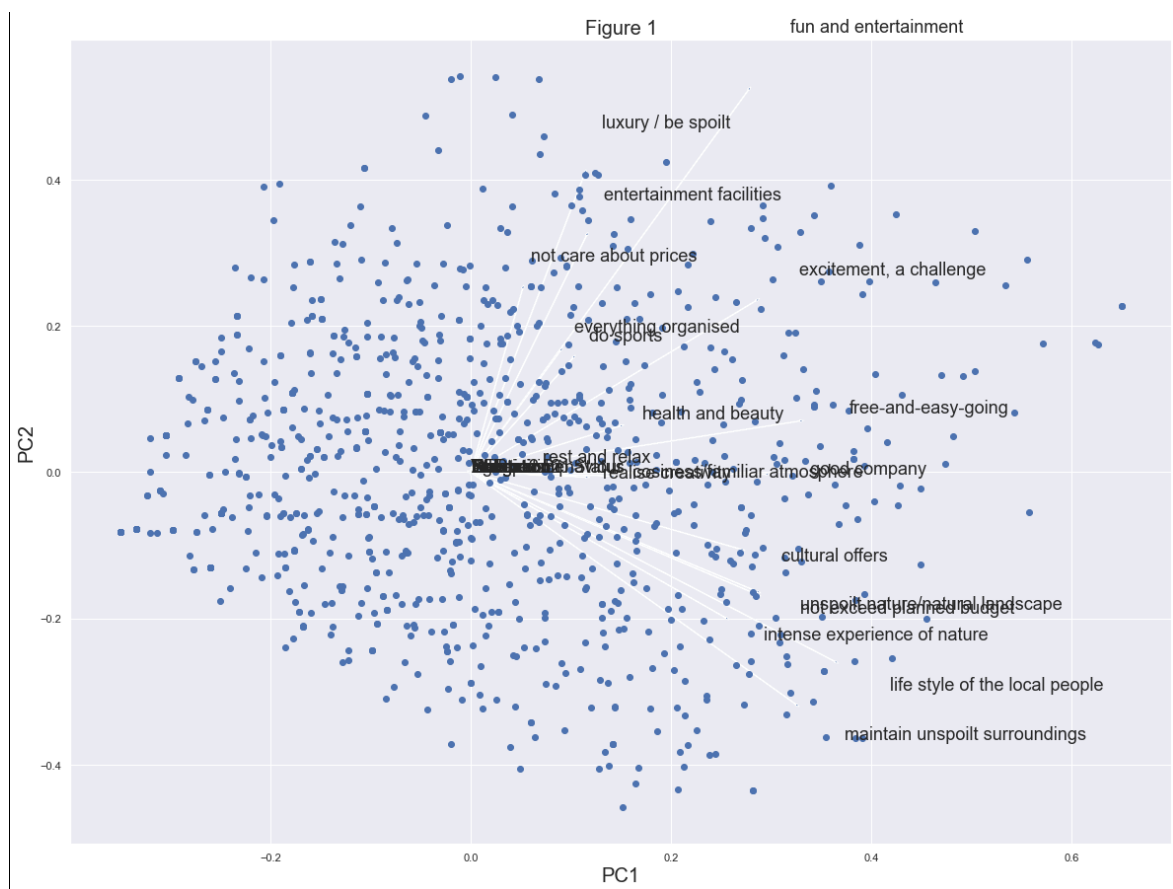
0	Gender	Age	Education	Income	Income2	Occupation	State	Relationship	Status	Obligation	Obligation2	...	entertainment facilities	not care about prices	style of the local people	intense experience of nature	cosiness/familiar atmosphere	maintain unspoilt surroundings	everything organised	unspoilt nature/natural landscape	culture off
0	Female	25	6.0	\$30,001 to \$60,000	30-60k	Clerical or service worker	VIC	single	4.800000	Q4	...	no	no	no	no	no	no	no	no	no	no
1	Female	31	8.0	\$120,001 to \$150,000	>120k	professional	WA	married	3.300000	Q1	...	no	no	yes	no	no	no	no	no	no	no
2	Male	21	3.0	\$90,001 to \$120,000	90-120k	NaN	NSW	single	3.400000	Q2	...	no	yes	yes	no	yes	no	no	no	no	no
3	Female	18	2.0	\$30,001 to \$60,000	30-60k	unemployed	NSW	single	2.633333	Q1	...	yes	no	no	yes	no	no	no	no	no	no
4	Male	61	3.0	Less than \$30,000	<30k	retired	WA	married	3.400000	Q2	...	no	no	yes	no	no	yes	no	no	no	no
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
995	Male	51	3.0	\$30,001 to \$60,000	30-60k	manager or administrator	VIC	separated or divorced	2.366667	Q1	...	yes	no	yes	yes	no	yes	no	no	no	no
996	Male	58	4.0	\$60,001 to \$90,000	60-90k	small business owner	WA	living with a partner	4.400000	Q4	...	no	no	yes	yes	no	yes	no	yes	no	yes
997	Male	41	8.0	\$60,001 to \$90,000	60-90k	professional	QLD	married	3.866667	Q3	...	no	no	no	no	no	no	no	no	no	no
998	Female	42	3.0	NaN	NaN	professional	VIC	living with a partner	4.000000	Q3	...	no	no	no	no	no	no	no	no	no	no
999	Female	32	6.0	\$120,001 to \$150,000	>120k	manager or administrator	WA	living with a partner	2.333333	Q1	...	no	no	yes	no	no	no	no	no	no	no
1000 rows x 32 columns																					

#### EDA:

We start the Exploratory Data Analysis with some data Analysis drawn from the data without performing Principal Component Analysis and with that some PCA in the dataset obtained from the combination of all the data



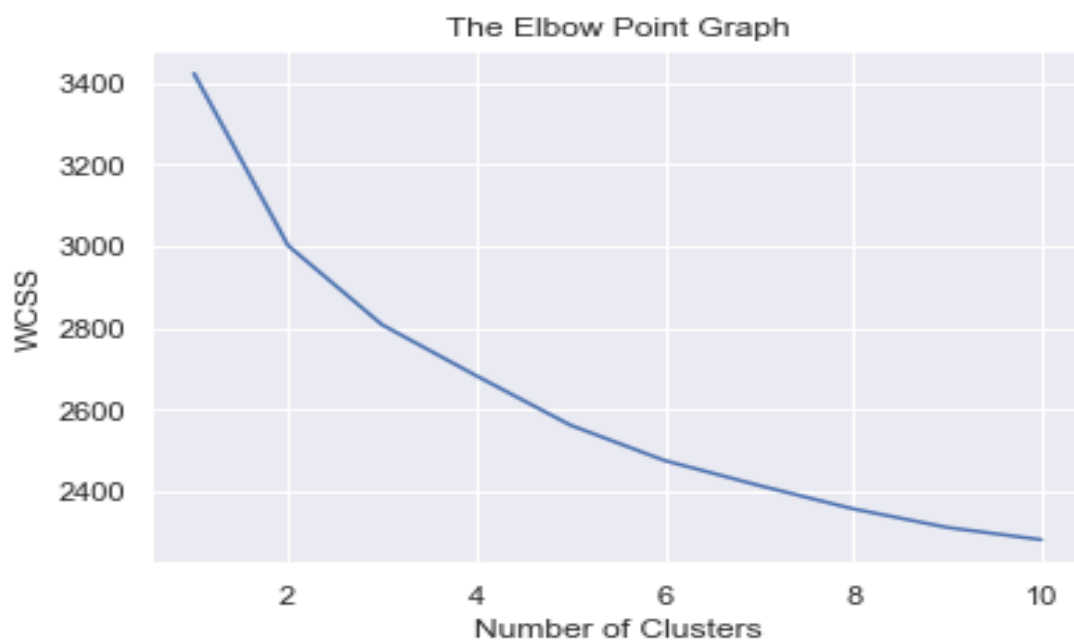
we have. Since the dataset was bit discrete and contained some NULL values we dropped those values and then visualized the data to show the relationship between the feature by plotting graphs, heatmap etc. PCA is a statistical process that converts the observations of correlated features into a set of linearly uncorrelated features with the help of orthogonal transformation. The process helps in reducing dimensions of the data to make the process of classification/regression or any form of machine learning, cost-effective.

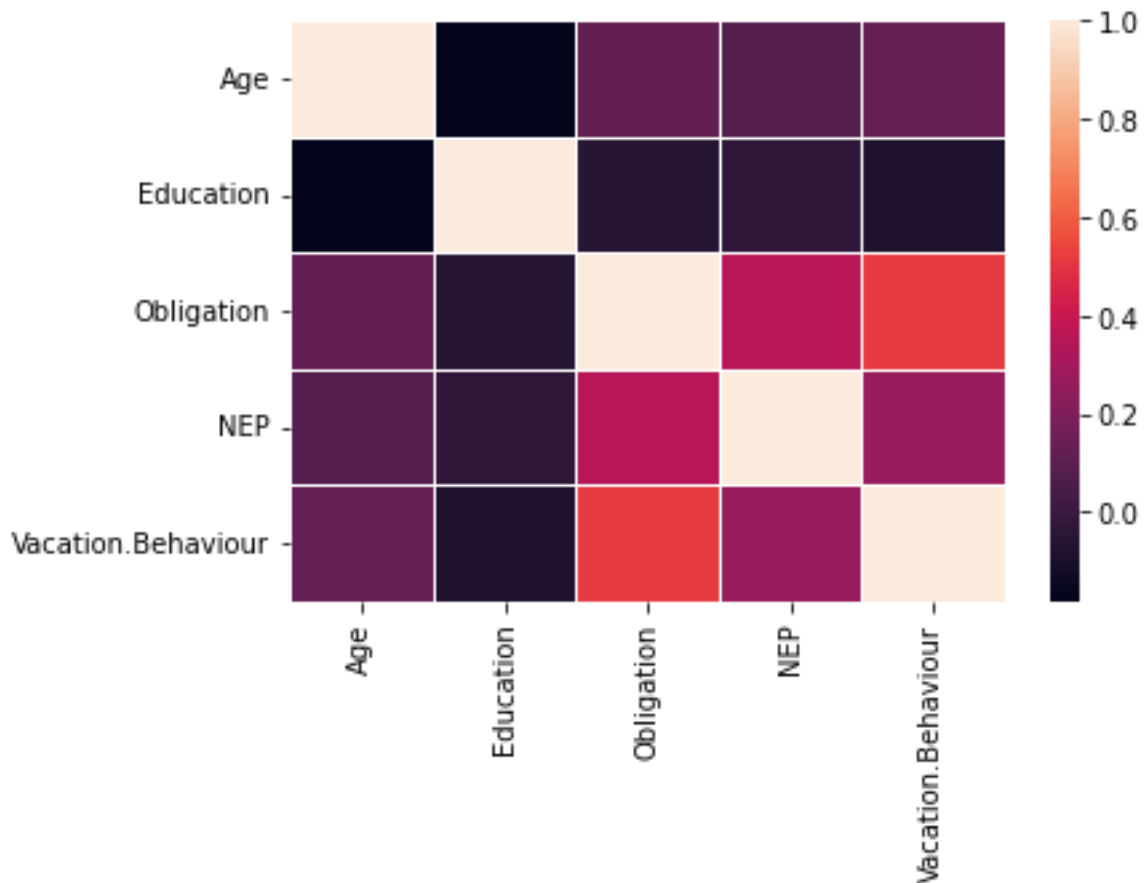


### Elbow Method:

The Elbow method is a popular method for determining the optimal number of clusters. The method is based on calculating the Within-Cluster-Sum of Squared Errors(WSS) for a different number of clusters(k) and selecting the k for which change in WSS first starts to diminish. The idea behind the elbow method is that the explained variation changes rapidly for a small number of clusters and then it slows down leading to an elbow formation in the curve. The elbow point is the number of clusters we can for our clustering algorithm.

The K-Elbow Visualizer function fits the K-Means model for a range of clusters values between 2 to 8. As show in Figure, the elbow point is achieved which is highlighted by the function itself. The function also inform us about how much time was needed to plot models for various number od clusters through the green line.





## Analysis and Approached used for segmentation

### Clustering:

**Clustering** is one of the most common exploratory data analysis techniques used to get an intuition about the structure of the data. It can be defined as the task of identifying subgroups in the data such that data points in the same subgroup (cluster) are very similar while data points in different clusters are very different. In other words, we try to find homogeneous subgroups within the data such that data points in each cluster are as similar as possible according to a similarity measure such as Euclidean based distance or correlation-based distance.

The decision of which similarity measure to use is application-specific.

Clustering analysis can be done on the basis of features where we try to find subgroups of samples based on features or on the basis of samples where we try to find subgroups of features based on samples.

### K Means Algorithm:

**K Means algorithm** is an iterative algorithm that tries to partition the dataset into pre-defined distinct non-overlapping subgroups (clusters) where each data point belongs to **only one group**. It tries to make the intra-cluster data points as similar as possible while also keeping the clusters as different (far) as possible. It assigns data points to a cluster such that the sum of the squared distance between the data points and the cluster's centroid (arithmetic mean of all the data points that belong to that cluster) is at the minimum. The less variation we have within clusters, the more homogeneous (similar) the data points are within the same clusters.

### **Principle Component Analysis(PCA):**

**Principle Component Analysis** is utilized in segmentation processing primarily for dimensionality reduction, noise reduction, and texture analysis. By transforming image data into a lower-dimensional space, PCA aids in simplifying subsequent segmentation algorithms and denoising images. Additionally, it helps extract meaningful texture-related features for distinguishing regions, while also facilitating colour space transformations and multi-modal image fusion. While not a direct segmentation method, PCA plays a supportive role in enhancing preprocessing and feature extraction stages, ultimately contributing to more effective segmentation outcomes.

### **Applications:**

**K means algorithm** is very popular and used in a variety of applications such as market segmentation, document clustering, image segmentation and image compression, etc.

The goal usually when we undergo a cluster analysis is either:

- Get a meaningful intuition of the structure of the data we're dealing with.
- Cluster-then-predict where different models will be built for different subgroups if we believe there is a wide variation in the behaviours of different subgroups.

The **k-means clustering algorithm** performs the following tasks:

- Specify number of clusters K

- Initialize centroids by first shuffling the dataset and then randomly selecting K data points for the centroids without replacement.
- Compute the sum of the squared distance between data points and all centroids.
- Assign each data point to the closest cluster (centroid).
- Compute the centroids for the clusters by taking the average of the all data points that belong to each cluster.
- Keep iterating until there is no change to the centroids. That is, the assignment of data points to clusters isn't changing.

**Principle Component Analysis (PCA)** finds an application in various fields such as image processing, computer vision and data analysis. For image segmentation specifically, PCA can be applied in medical imaging for identifying and segmenting structures like tumours or organs, in satellite imagery to classify land cover types, in surveillance for object detection and tracking, and in quality control for industry inspection by segmenting defects or anomalies. It also helps in reducing the data dimensionality, enhancing feature extraction, and aiding noise reduction, PCA contributes to improve the accuracy and efficiency in these segmentation tasks, enabling better understanding and decision-making based on segmented regions within complex data.

## **Conclusion:**

In conclusion, the analysis of Australian travel motives reveals a nuanced landscape of diverse preferences and motivations among travellers. This market segmentation project has illuminated key insights into the factors driving

Australians to explore both domestic and international destinations. From the allure of adventure and cultural immersion to the pursuit of relaxation and personal enrichment, the motivations vary widely, reflecting the multifaceted nature of the Australian traveler. Understanding these motives not only assists the travel industry in tailoring their offerings but also provides valuable insights for destination marketers to effectively engage with this dynamic audience. As the travel landscape continues to evolve, acknowledging and catering to these motives will undoubtedly play a pivotal role in shaping successful travel experiences and fostering long-lasting connections with Australian travellers.

### **References:**

[Quarterly Tourism In Australia | Kaggle](#)

### **GitHub Links:**

[https://github.com/ShaiikhSara96/Travels\\_Motives](https://github.com/ShaiikhSara96/Travels_Motives)