

# BUSINESS INTELLIGENCE

## ASSIGNMENT 01

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SELECTED DATASET: BIKE SALES

DATASET LINK: <https://www.kaggle.com/datasets/sadiqshah/bike-sales-in-europe>

We have selected Bikes sales datasets with 18 columns indicating the sales of bikes across different European countries. The data has different types of customers, bikes categories, and revenue details.

### Understanding dataset:

**Facts:** Order\_Quantity, Unit\_Cost, Unit\_Price, Profit, Cost, Revenue

**Dimensions:** customer\_age, Sub\_Category, Product, date, Age\_group, Customer\_gender, Country, State, Product\_category, day, month, year

**Useless Variables:** none

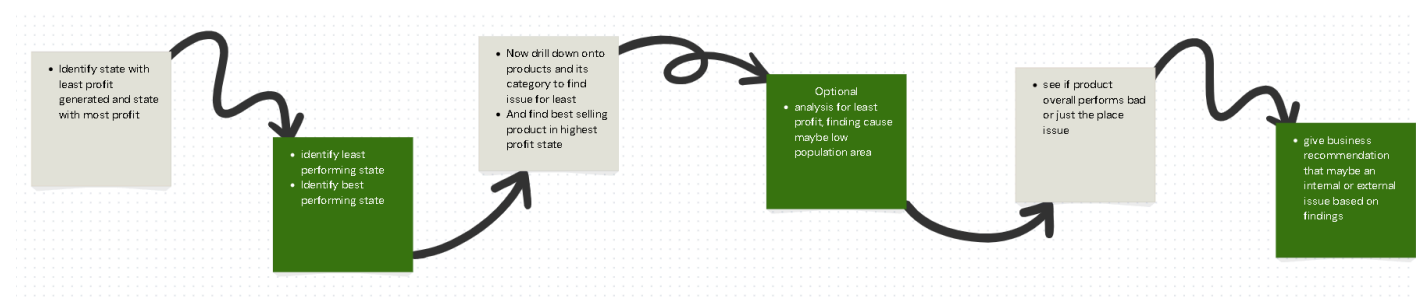
### Identified Problems:

#### PROBLEM 1: PROFIT ANALYSIS

##### 1. Introduction of problem

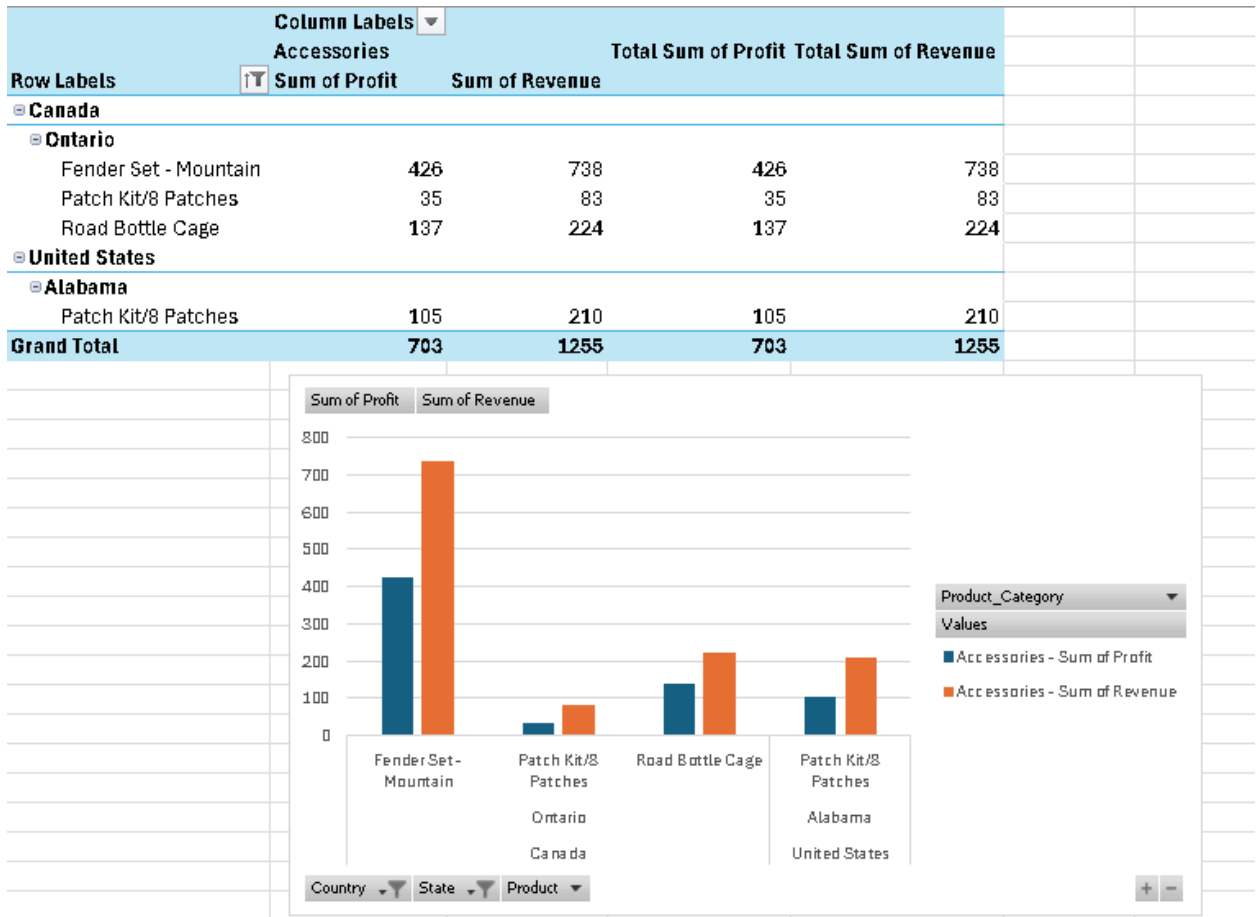
- Profit analysis to find Country and city wise highest and lowest revenue and type of product/accessories that is causing low revenue/high revenue.

##### 2. Drill-Down Process Diagrams

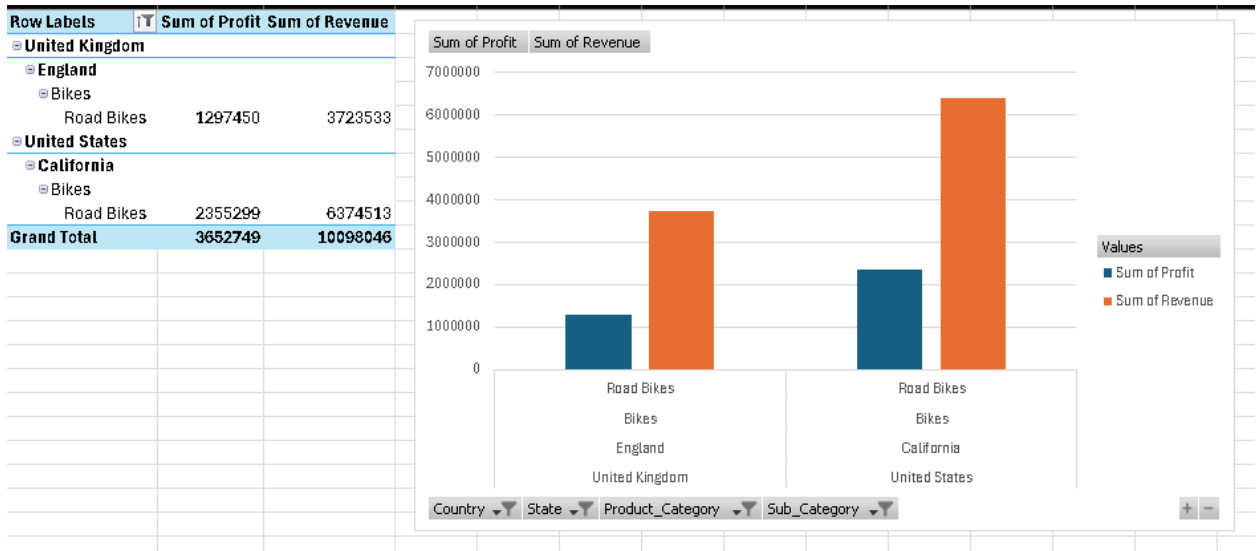


##### 3. Business Recommendations

- Least performing states are Ontario, Canada and Alabama, USA where patch kit is sold the least and fenders set the most in Ontario by profit and only patch kit sold in the USA.



- Highest performing product is Road bikes by profit in California, USA and England, UK. Overall most revenue is generated in California and England.



#### 4. Recommended solution

- Put sales on other products which are not being sold, and sell the things that are being sold in packages with other minor cost products to boost revenue, hence more profit generation.

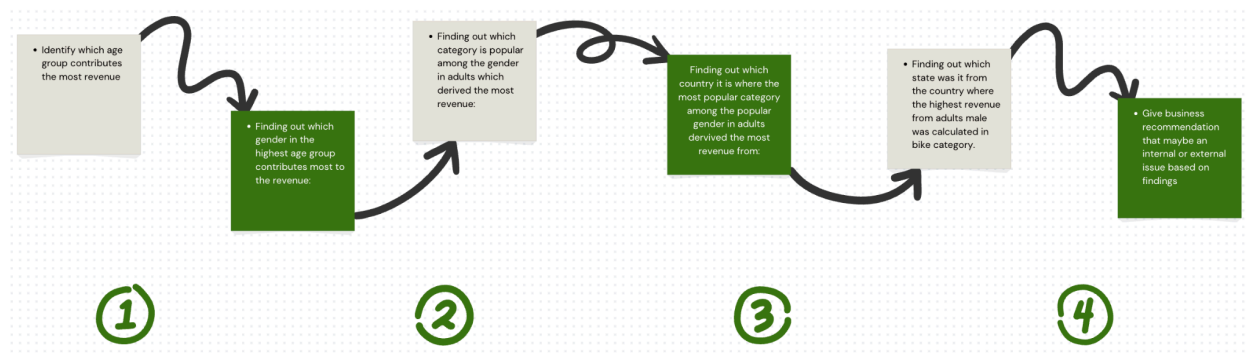
## 5. Resource used

- Kaggle code submission/code notebook read to see what approach others have taken.

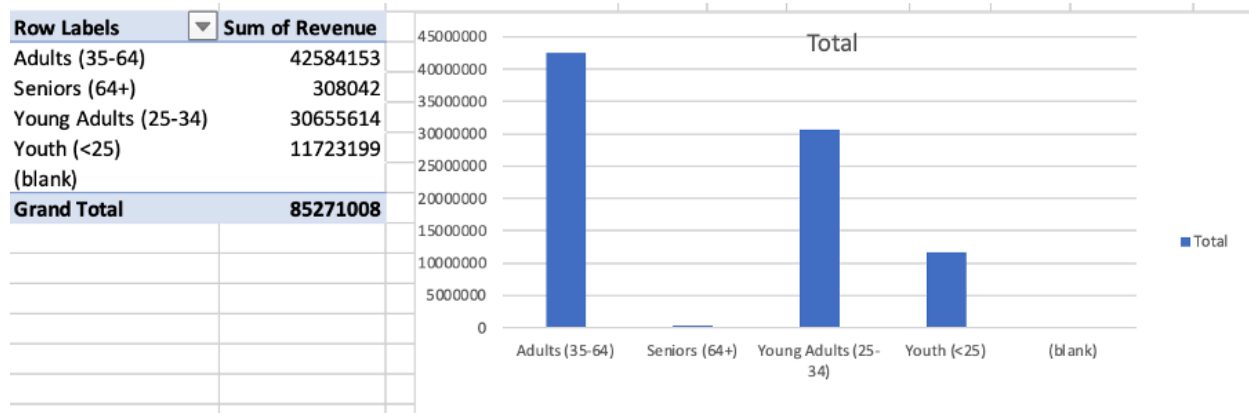
## PROBLEM 2: Customer Demographics Analysis

**About the problem:** We have to identify the customer demographics about what type of customer based on their age and gender had their popular category to be. We further drill down to find out which country and state these customers belong to.

### Drilldown:

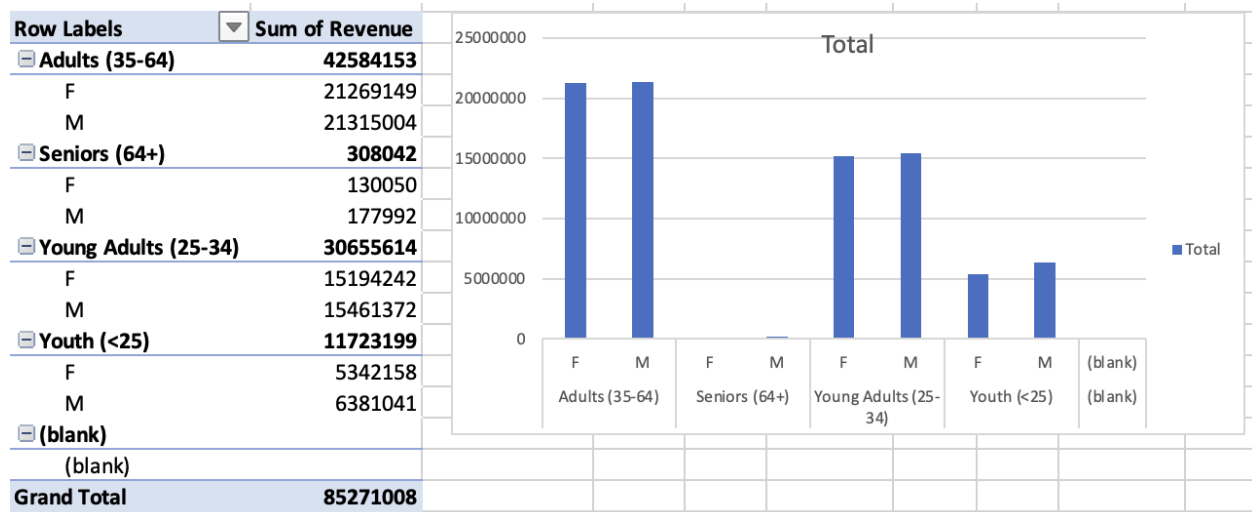


### Identify which age group contributes the most revenue:



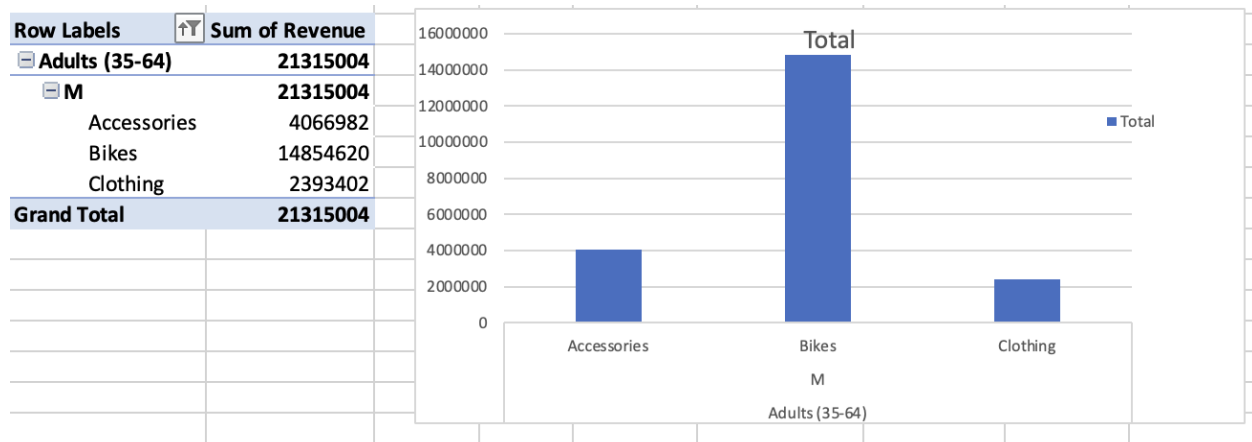
As from the chart we can see that adults (35-64) brought in the most amount of revenue to the store.

**Finding out which gender in the highest age group contributes most to the revenue:**



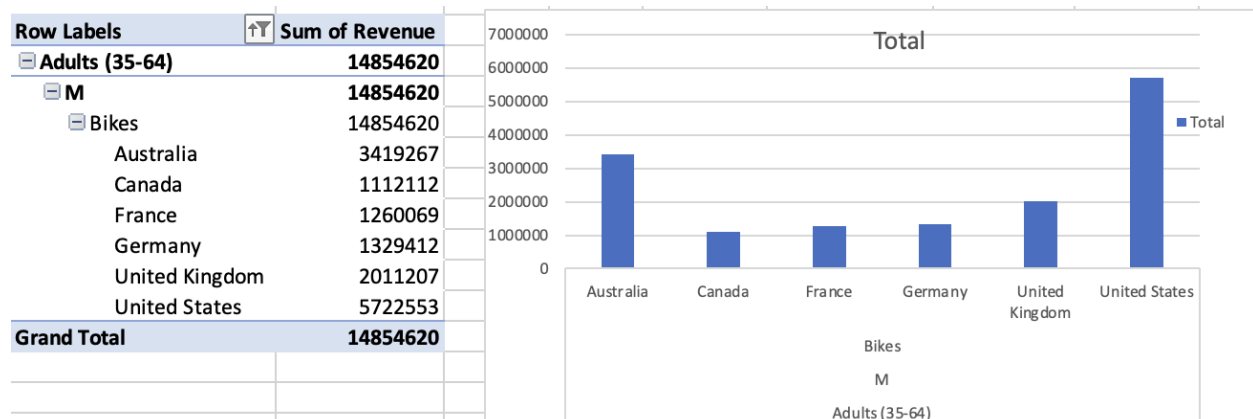
We can see from the chart that Male gender contributed most to the revenue from the age group adult.

**Finding out which category is popular among the gender in adults which derived the most revenue:**



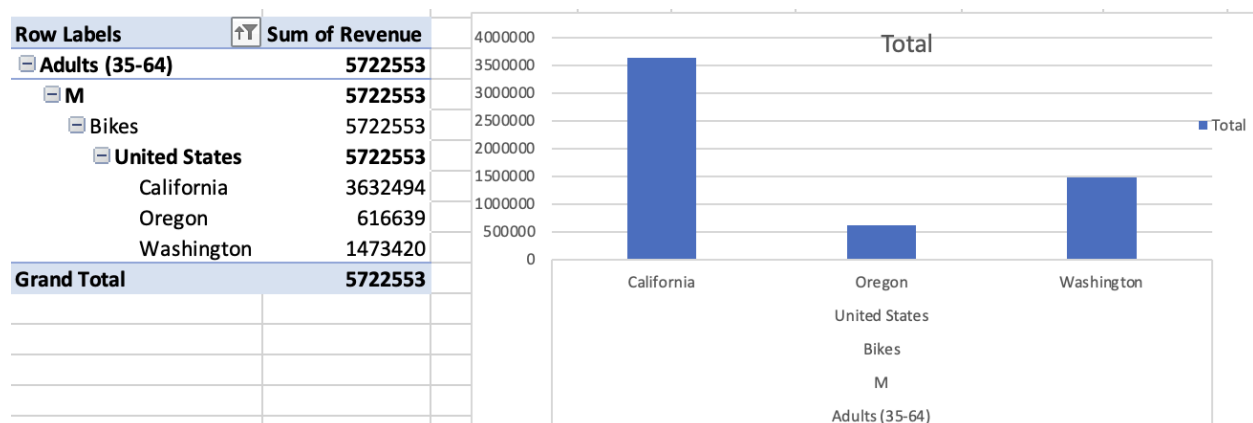
While drilling down, we can see that among males from adult age group, they bought most from Bikes categories.

## Which country is it where males bought the most bike:



We can see that Males from the adult age group bought the most bikes and the most popular country for it was the United States, exceeding about double the revenue from it generated by Australia.

## Finding out which state is it where most bikes were sold in united states:



We drilled down more and found out that the customer lived in California mostly within the United States where they bought most bikes and were male within the age group of adults.

## Recommendation:

Since we successfully figured out that the highest revenue was generated from the adult age group (35-64) and among that were males that contributed most to their popular categories of bikes. I believe this data is the most valuable for the company when running social media ads, or any other type of promotional activities such as discounts and deals, then they need to target males of adult age group. Specifically i drilled down

the problem more by finding out which country and state were the popular and increased revenue than any other and found out that California, United States had more that double as compared to other countries and states. This information can also be used to target ads specifically within that region to increase ROI (return on investment from the ads). It will significantly improve the revenue for the popular categories among males and in the popular region. I also recommend that ads should be placed more on this audience (Males, adults, USA, California) to boost sales even more and increase production of bikes to this region as well because it can be used to better manage inventory levels for the future.

Another thing to notice is that seniors(65+) bought the least from the store regardless of category, so wasting ads campaign resources on this audience might be a loss for the company .Also we can see from chart 2 that clothing category wasn't popular among males which shows that these inventory placements should be kept low as well as the revenue generated is low so less ads campaign can be spend here.