



The Bike Shop

PRODUCT PERFORMANCE ANALYSIS

A close-up, low-angle shot of a bicycle wheel and frame against a dark green background. The wheel is the central focus, with its spokes radiating from the hub. The frame is dark and sleek, curving around the wheel. The background is a solid, dark green color, providing a high contrast for the white text.

PURPOSE OF ANALYSIS

THIS IS A MARKET RESEARCH ANALYSIS TO UNDERSTAND PRODUCT PERFORMANCE AT DIFFERENT “THE BIKE SHOP” OUTLETS THROUGHOUT THE UNITED STATES WHERE THE STORE BRAND HAS PRESENCE.

THE ANALYSIS WILL FOCUS ON THE TOTAL NUMBER OF PRODUCTS SOLD BETWEEN AND WOMEN, HIGHEST AND LOWEST SELLING PRODUCTS, THE HIGHEST AND LOWEST PERFORMING STATES, AND THE AGE GROUP AND GENDER IN WHICH MOST CUSTOMERS ARE COMPRISED TO BETTER UNDERSTAND THE CONSUMER CLIMATE AND OVERALL FEELINGS TOWARDS CYCLING.

DATASETS & DATA CLEANING

Collected some dummy data on kaggle.com. Other free sources of data include:

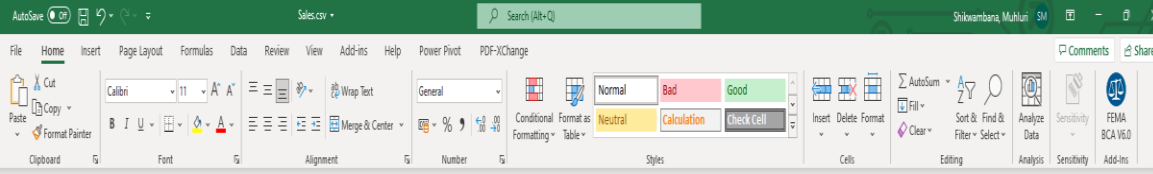
- STATS SA
- UNdata
- Google Public Data Explorer

Data collected was in a .csv file format. However data can be collected in different formats which include .xml, .xls, .txt, and various other formats depending on the source and programmes used.

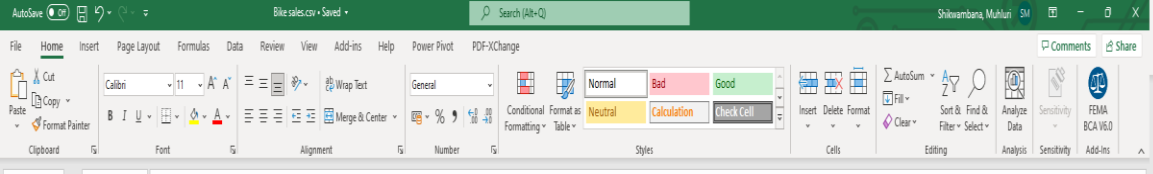
As abovementioned, the data used in this analysis was collected in a .csv format from kaggle.com. The data was unstructured and only differentiated by the use of commas. I then went onto cleaning the data on excel using the following steps:

1. Highlighting all the data in column A
2. Clicking on the Data tab in the ribbon, then clicking 'Text to Columns'
3. In the 'Text to Columns' wizard, clicked on "Delimited" radio button before clicking next.
4. I then set my delimiter to 'Comma' and clicked next again.
5. I did not change the format of my data as I was quite satisfied with the format, however if I wanted to change the format of a specific column in the data set, you could click on the specific column and change the data set before clicking 'Finish'.

Once the data is cleaned, and structured correctly, the data can be transformed and grouped if required for analysis



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1	Date,Day,Month,Year,Customer_Age,Age_Group,Customer_Gender,Country,State,Product_Category,Sub_Category,Product,Order_Quantity,Unit_Cost,Price,Profit,Cost,Revenue																												
2	2013-11-26,26,November,2013,19,Youth (<25),M,Canada,British Columbia,Accessories,Bike Racks,Hitch Rack - 4-Bike,8,45,120,590,360,950																												
3	2015-11-26,26,November,2015,19,Youth (<25),M,Canada,British Columbia,Accessories,Bike Racks,Hitch Rack - 4-Bike,8,45,120,590,360,950																												
4	2014-03-23,23,March,2014,49,Adults (35-64),M,Australia,New South Wales,Accessories,Bike Racks,Hitch Rack - 4-Bike,23,45,120,1366,1035,2401																												
5	2016-03-23,23,March,2016,49,Adults (35-64),M,Australia,New South Wales,Accessories,Bike Racks,Hitch Rack - 4-Bike,20,45,120,1188,900,2088																												
6	2014-05-15,15,May,2014,47,Adults (35-64),F,Australia,New South Wales,Accessories,Bike Racks,Hitch Rack - 4-Bike,4,45,120,238,180,418																												
7	2016-05-15,15,May,2016,47,Adults (35-64),F,Australia,New South Wales,Accessories,Bike Racks,Hitch Rack - 4-Bike,5,45,120,297,225,522																												
8	2014-05-22,22,May,2014,47,Adults (35-64),F,Australia,Victoria,Accessories,Bike Racks,Hitch Rack - 4-Bike,4,45,120,199,180,379																												
9	2016-05-22,22,May,2016,47,Adults (35-64),F,Australia,Victoria,Accessories,Bike Racks,Hitch Rack - 4-Bike,2,45,120,100,90,190																												
10	2014-02-22,22,February,2014,35,Adults (35-64),M,Australia,Victoria,Accessories,Bike Racks,Hitch Rack - 4-Bike,22,45,120,1096,990,2086																												
11	2016-02-22,22,February,2016,35,Adults (35-64),M,Australia,Victoria,Accessories,Bike Racks,Hitch Rack - 4-Bike,21,45,120,1046,945,1991																												
12	2013-07-30,30,July,2013,32,Young Adults (25-34),F,Australia,Victoria,Accessories,Bike Racks,Hitch Rack - 4-Bike,8,45,120,398,360,758																												
13	2015-07-30,30,July,2015,32,Young Adults (25-34),F,Australia,Victoria,Accessories,Bike Racks,Hitch Rack - 4-Bike,8,45,120,398,360,758																												
14	2013-07-15,15,July,2013,34,Young Adults (25-34),M,Australia,Victoria,Accessories,Bike Racks,Hitch Rack - 4-Bike,7,45,120,349,315,664																												
15	2015-07-15,15,July,2015,34,Young Adults (25-34),M,Australia,Victoria,Accessories,Bike Racks,Hitch Rack - 4-Bike,7,45,120,349,315,664																												
16	2013-08-02,2,August,2013,29,Young Adults (25-34),M,Canada,British Columbia,Accessories,Bike Racks,Hitch Rack - 4-Bike,5,45,120,369,225,594																												
17	2015-08-02,2,August,2015,29,Young Adults (25-34),M,Canada,British Columbia,Accessories,Bike Racks,Hitch Rack - 4-Bike,7,45,120,517,315,832																												



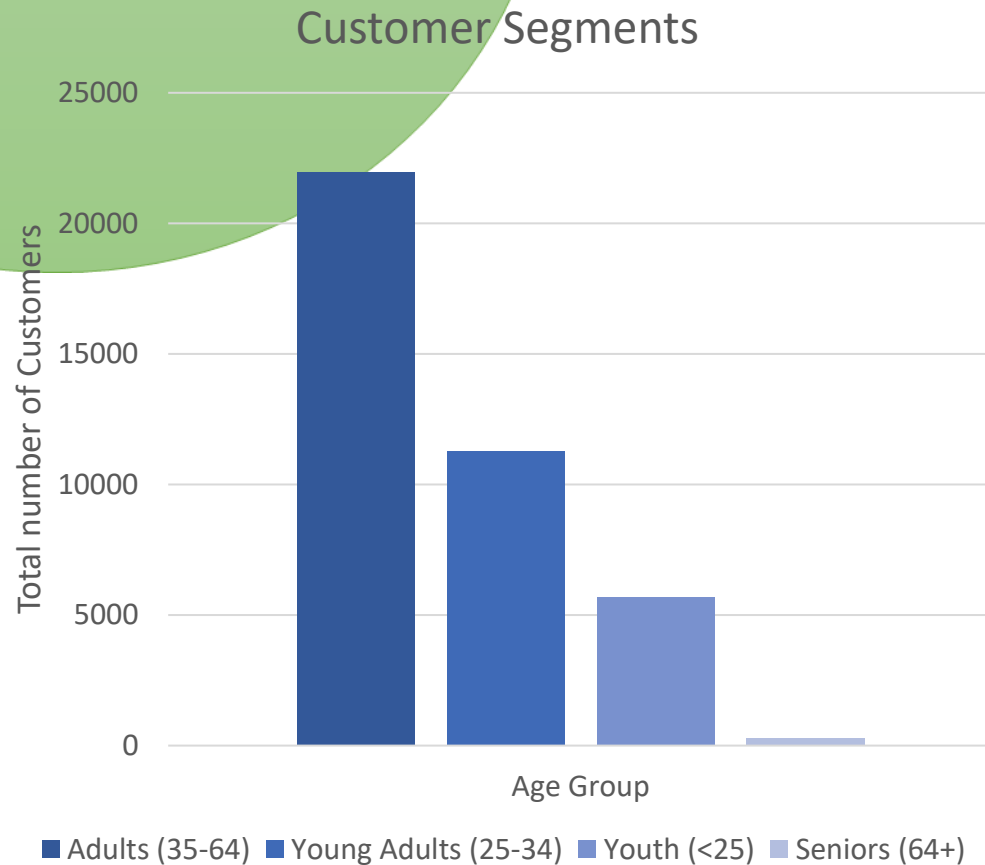
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	Date	Day	Month	Year	Customer_Age	Age_Group	Customer_Gender	Country	State	Product_Category	Sub_Category	Product	Order_Quantity	Unit_Cost	Price	Profit	Cost	Revenue			
2	2013/11/26 00:00	26	November	2013	19	Youth (<25)	Male	Canada	British Columbia	Accessories	Bike Racks	Hitch Rack - 4-Bike	8	45	120	590	360	950			
3	2015/11/26 00:00	26	November	2015	19	Youth (<25)	Male	Canada	British Columbia	Accessories	Bike Racks	Hitch Rack - 4-Bike	8	45	120	590	360	950			
4	2014/03/23 00:00	23	March	2014	49	Adults (35-64)	Male	Australia	New South Wales	Accessories	Bike Racks	Hitch Rack - 4-Bike	23	45	120	1366	1035	2401			
5	2016/03/23 00:00	23	March	2016	49	Adults (35-64)	Male	Australia	New South Wales	Accessories	Bike Racks	Hitch Rack - 4-Bike	20	45	120	1188	900	2088			
6	2014/05/15 00:00	15	May	2014	47	Adults (35-64)	Female	Australia	New South Wales	Accessories	Bike Racks	Hitch Rack - 4-Bike	4	45	120	238	180	418			
7	2016/05/15 00:00	15	May	2016	47	Adults (35-64)	Female	Australia	New South Wales	Accessories	Bike Racks	Hitch Rack - 4-Bike	5	45	120	297	225	522			
8	2014/05/22 00:00	22	May	2014	47	Adults (35-64)	Female	Australia	Victoria	Accessories	Bike Racks	Hitch Rack - 4-Bike	4	45	120	199	180	379			
9	2016/05/22 00:00	22	May	2016	47	Adults (35-64)	Female	Australia	Victoria	Accessories	Bike Racks	Hitch Rack - 4-Bike	2	45	120	100	90	190			
10	2014/02/22 00:00	22	February	2014	35	Adults (35-64)	Male	Australia	Victoria	Accessories	Bike Racks	Hitch Rack - 4-Bike	22	45	120	1096	990	2086			
11	2016/02/22 00:00	22	February	2016	35	Adults (35-64)	Male	Australia	Victoria	Accessories	Bike Racks	Hitch Rack - 4-Bike	21	45	120	1046	945	1991			
12	2013/07/30 00:00	30	July	2013	32	Young Adults (25-34)	Female	Australia	Victoria	Accessories	Bike Racks	Hitch Rack - 4-Bike	8	45	120	398	360	758			
13	2015/07/30 00:00	30	July	2015	32	Young Adults (25-34)	Female	Australia	Victoria	Accessories	Bike Racks	Hitch Rack - 4-Bike	8	45	120	398	360	758			
14	2013/07/15 00:00	15	July	2013	34	Young Adults (25-34)	Male	Australia	Victoria	Accessories	Bike Racks	Hitch Rack - 4-Bike	7	45	120	349	315	664			
15	2015/07/15 00:00	15	July	2015	34	Young Adults (25-34)	Male	Australia	Victoria	Accessories	Bike Racks	Hitch Rack - 4-Bike	7	45	120	349	315	664			
16	2013/08/02 00:00	2	August	2013	29	Young Adults (25-34)	Male	Canada	British Columbia	Accessories	Bike Racks	Hitch Rack - 4-Bike	5	45	120	369	225	594			
17	2015/08/02 00:00	2	August	2015	29	Young Adults (25-34)	Male	Canada	British Columbia	Accessories	Bike Racks	Hitch Rack - 4-Bike	7	45	120	517	315	832			

DATA VISUALIZATION

Data visualization is the use of graphs and charts to visualize and tell a story about the data gathered. There are various applications and software programmes that can be used to visualize data, and Microsoft PowerPoint is one of the tools that can be used to visualize data collected in excel.

The 'Customer Segments' chart was created on PowerPoint linking and transforming the cleaned data to represent the findings of "Total number of customers in a specific age group."

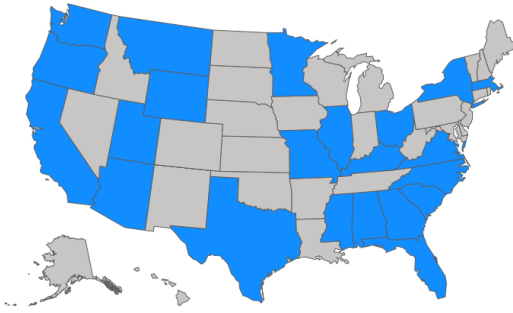
In the excel file, the total number of customers in an age group can be calculated using the COUNTIF function to count only the number of items in a specific range.



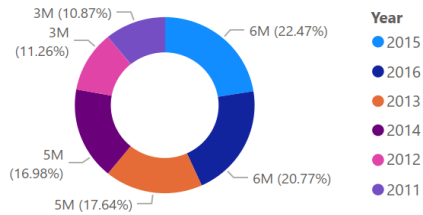
DATA VISUALIZATION cont.

THE BIKE SHOP PRODUCT AND REVENUE ANALYSIS

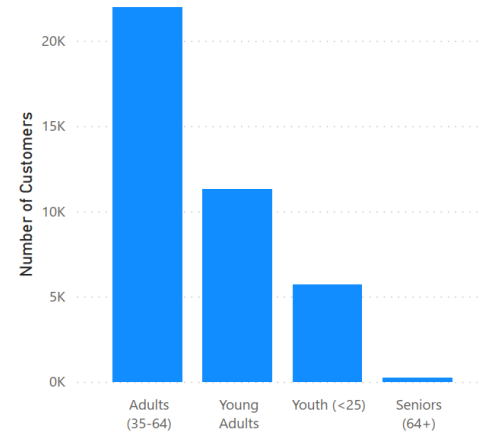
THE BIKE SHOP PRESENCE IN THE US



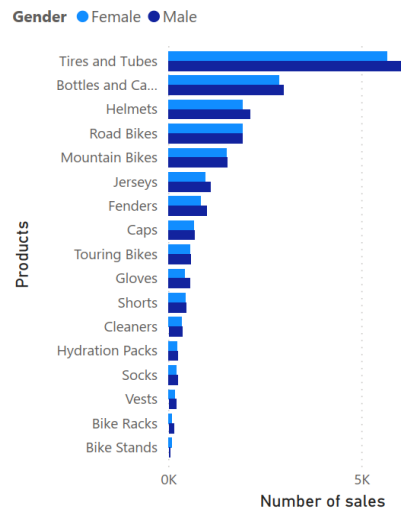
YEARLY GROSS REVENUE



CUSTOMER SEGMENTS



PRODUCTS PURCHASED BY GENDER



MONTH

- ☐ April
- ☐ August
- ☐ December
- ☐ February
- ☐ January
- ☐ July
- ☐ June
- ☐ March

Age Group

- ☐ Accessories
- ☐ Bikes
- ☐ Clothing

YEAR



PowerBI is another tool I used to visualize data from the The Bike Shop dataset that I cleaned. I used the following visuals to create my dashboard:

- Shaped map – to represent the states in which The Bike Shop has a store.
- Donut chart – to show the distribution of sales in % for the years the data has been collected.
- Clustered column chart – to visualize the customer segments by age group.
- Clustered bar chart – visualising the total number of products bought between Male and Female.

In the dashboard, I have also added two splicers to allow anyone interacting with the dashboard to filter the view of the entire dashboard, allowing them to view specific information.

It is worth noting that the dataset includes purchases from The Bike Shop in different countries, and I have managed to isolate the visualization by adding an overall filter to all the pages by clicking and dragging the 'Country' data tag into the 'Filter on all pages' data field. This ensures that only data from the United States is visualized.

INSIGHTS & ANALYSIS

Based on the visualizations, we can deduce the following insights about The Bike Shops' clientele;

1. Their largest customer segment is Male, with men spending more overall on the entire product catalogue.
2. Adults (35 – 64) make up the largest consumer segment, and seniors (+65) make up the smallest consumer segment.
3. The highest selling product in volume for both genders are tyres and tubes.
4. The Bike Shop has little to no presence in Midwest United States.

The following analysis can be made from the graphs in the dashboard;

- Although tyres and tubes are the highest selling items, mountain, road and touring bikes produce the highest revenue year-on-year.
- Young adults and adults make up the highest consumer segment because they are the most health conscious age groups and therefore are the most active.
- Adults replace the tyres and tubes on their bikes more frequently.
- Only seniors in the west coast (Washington, Oregon, and California) own bikes, which may mean seniors in other states either do not own bikes, have bought their bikes from other outlets, or there is no data recorded of their bike purchases, if any.

CONSUMER GENDER SEGMENTATION

■ Male ■ Female

