ASK PHASE

Business Goal: Create a comprehensive and interactive dashboard using Excel spreadsheet to analyze bike sales count data across various regions, Education, and Marital status identifying demand for bike.

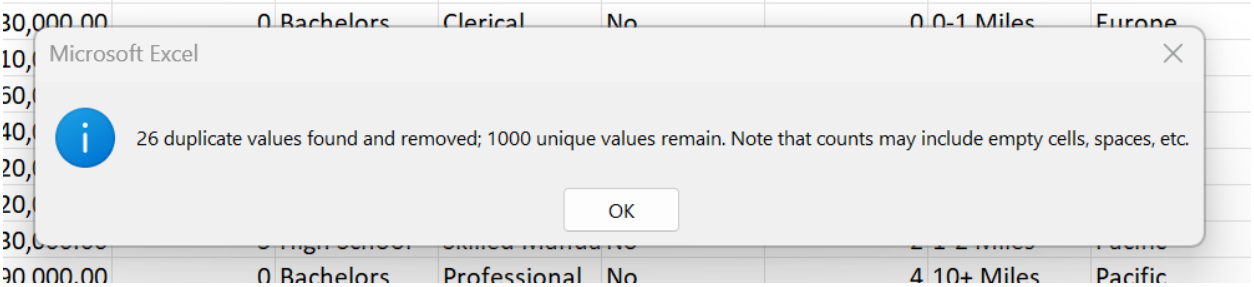
PREPARE PHASE

The source of data is from github provided by AlextheAnalyst, which is an open platform allowing public access to everyone. The dataset is organized in a long format, containing over 13,000 rows. The dataset provides basic demographic information such as Age and Gender living in different regions.

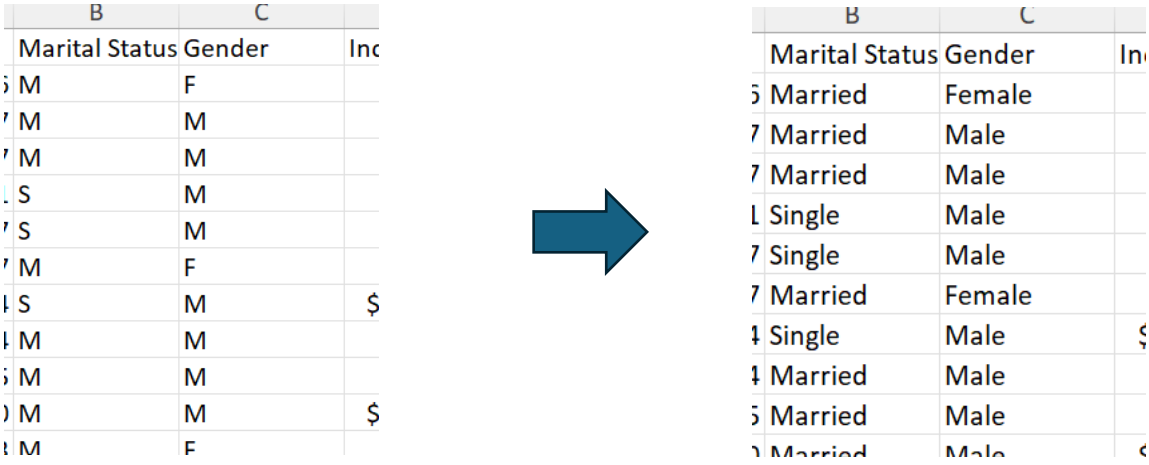
PROCESS PHASE

I used Excel spreadsheets as there's only one .csv file with 13 columns to share my results and recommendations with stakeholders. I created a working sheet to perform data cleaning and followed the below data cleaning processes to remove any duplicates, spaces, and special characters, find and replace, and formatting.

First and foremost, I removed any duplicates residing in the spreadsheet for accuracy. 26 duplicate values were removed prior to proceeding to the next step.



Next, I noticed that both Marital Status and Gender shares the same alphabet initial as F and M. In order to prevent any confusion, I wrote out the full abbreviated terms as below:

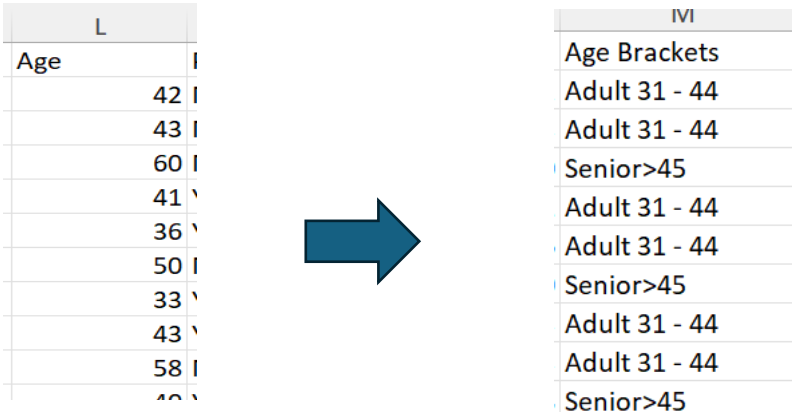


	B	C	
	Marital Status	Gender	Inc
5	M	F	
6	M	M	
7	M	M	
8	S	M	
9	S	M	
10	M	F	
11	S	M	$
12	M	M	
13	M	M	
14	M	M	$
15	M	F	

	B	C	
	Marital Status	Gender	In
5	Married	Female	
7	Married	Male	
7	Married	Male	
1	Single	Male	
7	Single	Male	
7	Married	Female	
1	Single	Male	$
1	Married	Male	
5	Married	Male	
1	Married	Male	$

Moving onto the next step, I wanted to create a new custom column called Age Brackets to extract additional information from the dataset, rather than listing out each individual's age. I used IF function to break down into 3 groups

=IF(L9<30,"Young Adult<30",IF(L9<45,"Adult 31 - 44","Senior>45"))



L	
Age	I
42	I
43	I
60	I
41	Y
36	Y
50	I
33	Y
43	Y
58	I

M
Age Brackets
Adult 31 - 44
Adult 31 - 44
Senior>45
Adult 31 - 44
Adult 31 - 44
Senior>45
Adult 31 - 44
Adult 31 - 44
Senior>45

ANALYZE/SHARE PHASE

Once I was done with data wrangling, prior to creating a dashboard, I created a new sheet called Pivot tables to perform various analysis on summarizing the data and visually get valuable information by creating charts, graphs and tables.

There were 3 criteria to look at for capturing business goal.

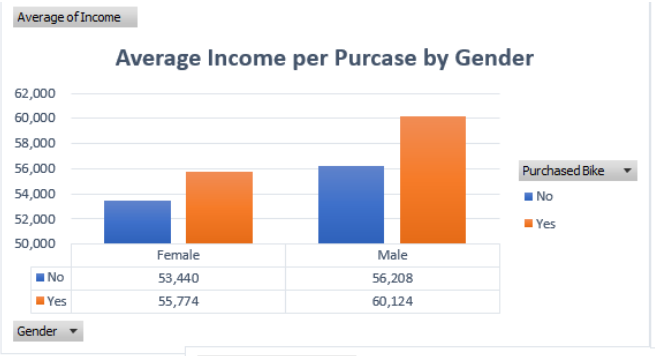
1) Average Income per Purchase by Gender
2) Customer Commute by Distance
3) Age Group per Purchase

Then I created a comprehensive and interactive dashboard demonstrating all key metrics with multiple slicers, which allows stakeholders to interact with the data and understand customer preferences.

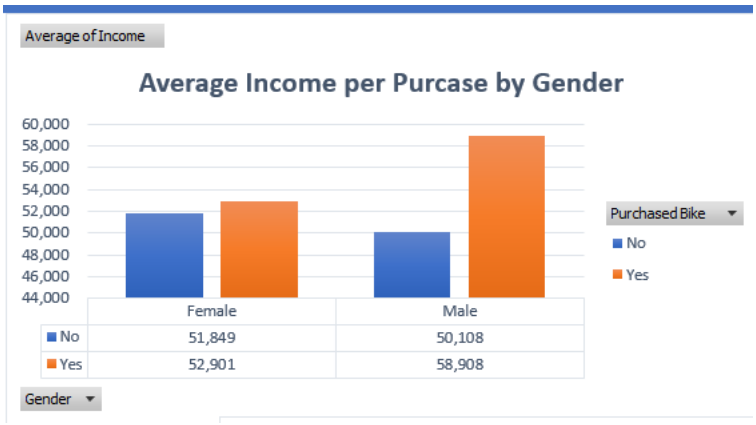
ACT PHASE

Key Findings:

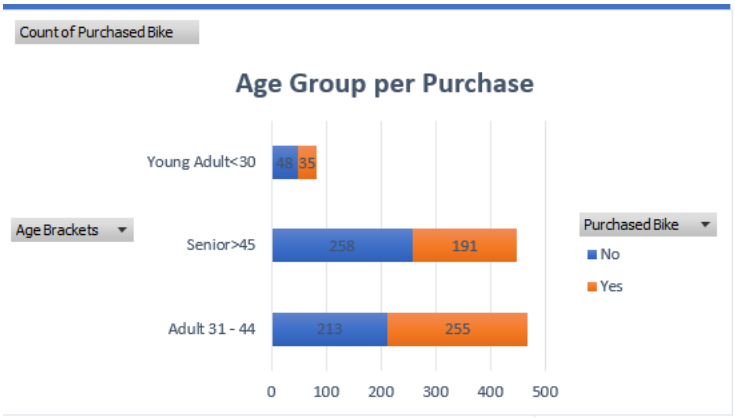
For those who purchased bikes, the average income for males was $60,124, compared to females who made 7% less average income than males at $55,774.

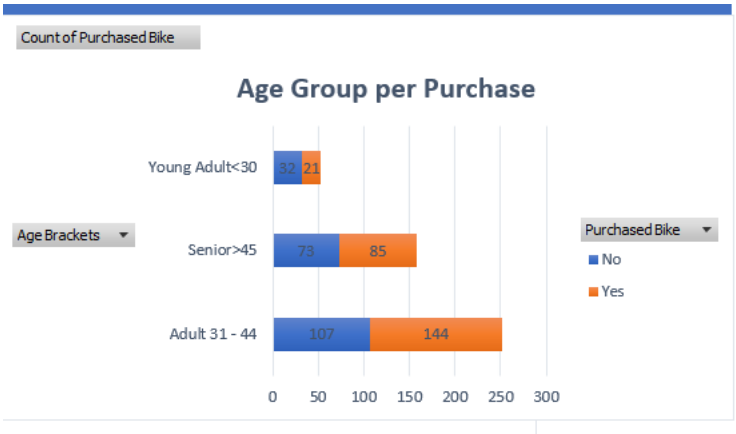


Interestingly, there were significant difference between single males who purchased bikes versus didn't purchase bikes, whereas there weren't much different between single females.



Adults between 31 and 44 years old purchased 7 times more than Young Adults less than 30 years old. Same as previous analysis, single adults between 31 and 44 years old purchased approximately 6 times more than young adults less than 30 years old.





People purchased bikes more for shorter commutes (less than 1 miles) in general. Both Europe and Pacific regions purchased bikes more for shorter commutes whereas North America purchased more bikes for 2-5 miles commute.

Europe(top), North America (Middle) and Pacific (Bottom)

After performing detailed analysis, I was able to gain some insights impacting sales performance, customer behaviour and overall business performance. I established Data-Driven Targets as a single male between 31 and 41 years old for sales improvements related to target audience and building a strong customer relationship in the long run.