Project documentation

Bike Sales Dataset

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From Chaos to Clarity

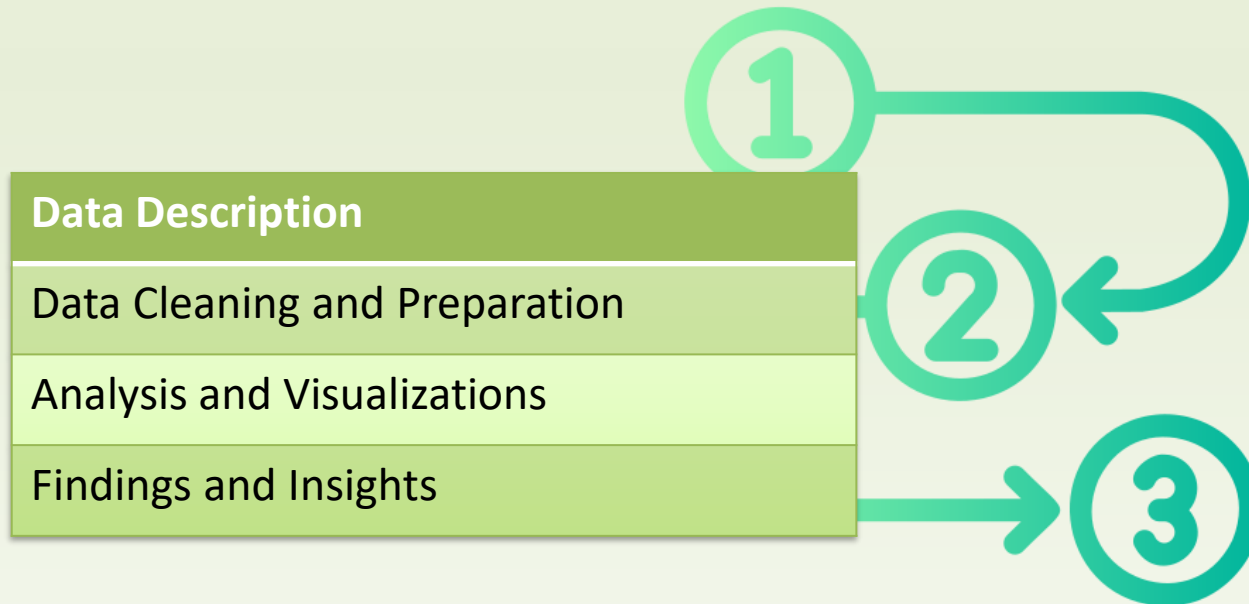o Transforming raw data into valuable insights.

BEFORE

AFTER

Agenda

Data Description
Data Cleaning and Preparation
Analysis and Visualizations
Findings and Insights

Data Description

This dataset contains customer information, including demographic details (such as **marital status, gender, income, education, occupation, children, and age**), lifestyle factors (**homeownership, number of cars, commute distance, region**), and whether they **purchased a bike.**

- **The aim of this survey is to analyze bicycle preferences so that we can target the optimal customer segments to improve sales opportunities in the bicycle market.**

Data Cleaning and Preparation

steps in the data cleaning and preparation phase, which are essential for making the dataset ready for analysis and visualization:

- Remove Duplicates: Ensured each record is unique.

- Find and Replace Values: Corrected inconsistencies in data (e.g. "Male" vs "male").

- Categorize Data: Grouped values like income into categories (e.g. low, medium, high).

Other important cleaning tasks to focus on:

- Handling Missing Data.

- Converting Data Types.

Analysis and Visualizations

The process combines both **analysis** and **visualization** to not only explore the data but also present it in an engaging, interactive format.

Process :

- Pivot Tables: help summarize and analyze the data effectively.

- Charts: make trends and patterns easier to understand.

- Dashboards: gather key insights in one interactive place.

- Slicers: add interactivity, allowing easy filtering of data.

Findings and Insights

Income
People with higher incomes (over $80,000) and those with a good salary ($30,000 - $80,000) have more interest in purchasing a bike than people with a low income.

Commute Distance
People with a daily commute distance between one to five miles are more likely to purchase a bike, and those with a distance greater than five miles show even higher interest in bikes.

Region
In Europe and North America, around 49% of people from Europe and 47% from North America have purchased a bike, showing a similar interest across these regions.

Gender
There's almost an equal interest in bike purchases between males (47%) and females (48%), with only a 1% difference.

Age
Adults between 25 and 39 years old, as well as people aged 40 to 60, show more interest in buying bikes compared to those over 61. Especially adults aged 40 to 60, with 55% of them already owning a bike.

These insights give you a clearer picture of the factors influencing bike purchases, which could be useful for targeting specific customer groups.

Attachment

Row Dataset

Attachment

Data Cleaning and Preparation

ID	Marital Status	Gender	Income	Salary Level	Children	Education	Occupation	Home Owr	Cars	Commute Distance	Region	Age	Age Brackets	Purchased Bike
12496	Married	Female	€ 40.000	Good	1	Bachelors	Skilled Manual	Yes	0	0-1 Miles	Europe	42	Middle age	No
24107	Married	Male	€ 30.000	Good	3	Clerical	Clerical	Yes	1	0-1 Miles	Europe	43	Middle age	No
14177	Married	Male	€ 80.000	High	5	Partial College	Professional	No	2	2-5 Miles	Europe	60	Middle age	No
24381	Single	Male	€ 70.000	Good	0	Bachelors	Professional	Yes	1	5-10 Miles	North America	41	Middle age	Yes
25597	Single	Male	€ 30.000	Good	0	Bachelors	Clerical	No	0	0-1 Miles	Europe	36	Adult	Yes
13507	Single	Female	€ 10.000	Low	2	Partial College	Manual	Yes	0	1-2 Miles	Europe	50	Middle age	No
27974	Single	Male	€ 160.000	High	2	High School	Management	Yes	4	0-1 Miles	North America	33	Adult	Yes
19364	Married	Male	€ 40.000	Good	1	Bachelors	Skilled Manual	Yes	0	0-1 Miles	Europe	43	Middle age	Yes
22155	Married	Male	€ 20.000	Low	2	Partial High School	Clerical	Yes	2	5-10 Miles	North America	58	Middle age	No
19280	Married	Male	€ 120.000	High	2	Partial College	Manual	Yes	1	0-1 Miles	Europe	40	Middle age	Yes
22173	Married	Female	€ 30.000	Good	3	High School	Skilled Manual	No	2	1-2 Miles	North America	54	Middle age	Yes
12697	Single	Female	€ 90.000	High	0	Bachelors	Professional	No	4	10+ Miles	North America	36	Adult	No
11434	Married	Male	€ 170.000	High	5	Partial College	Professional	No	5	0-1 Miles	Europe	55	Middle age	No
25323	Married	Male	€ 40.000	Good	2	Partial College	Clerical	Yes	1	1-2 Miles	Europe	35	Adult	Yes
23542	Single	Male	€ 60.000	Good	1	Partial College	Skilled Manual	No	1	0-1 Miles	North America	45	Middle age	Yes
20870	Single	Female	€ 10.000	Low	2	High School	Manual	Yes	1	0-1 Miles	Europe	38	Adult	Yes
23316	Single	Male	€ 30.000	Good	3	High School	Clerical	No	2	1-2 Miles	North America	59	Middle age	Yes
12610	Married	Female	€ 30.000	Good	1	Bachelors	Clerical	Yes	0	0-1 Miles	Europe	47	Middle age	No
27183	Single	Male	€ 40.000	Good	2	Partial College	Clerical	Yes	1	1-2 Miles	Europe	35	Adult	Yes
25940	Single	Male	€ 20.000	Low	2	Partial High School	Clerical	Yes	2	5-10 Miles	North America	55	Middle age	Yes
25598	Married	Female	€ 40.000	Good	0	Graduate Degree	Clerical	Yes	0	0-1 Miles	Europe	36	Adult	Yes
21564	Single	Female	€ 80.000	High	0	Bachelors	Professional	Yes	4	10+ Miles	North America	35	Adult	No
19193	Single	Male	€ 40.000	Good	2	Partial College	Clerical	Yes	0	1-2 Miles	Europe	35	Adult	Yes
26412	Married	Female	€ 80.000	High	5	High School	Management	No	3	5-10 Miles	Europe	56	Middle age	No
27184	Single	Male	€ 40.000	Good	2	Partial College	Clerical	No	1	0-1 Miles	Europe	34	Adult	No
12590	Single	Male	€ 30.000	Good	1	Bachelors	Clerical	Yes	0	0-1 Miles	Europe	63	Old	No
17841	Single	Male	€ 30.000	Good	0	Partial College	Clerical	Yes	1	0-1 Miles	Europe	29	Adult	Yes
18283	Single	Female	€ 100.000	High	0	Bachelors	Professional	No	1	5-10 Miles	North America	40	Middle age	No
18299	Married	Male	€ 70.000	Good	5	Partial College	Skilled Manual	Yes	2	5-10 Miles	North America	44	Middle age	No
16466	Single	Female	€ 20.000	Low	0	Partial High School	Manual	No	2	0-1 Miles	Europe	32	Adult	No
19273	Married	Female	€ 20.000	Low	2	Partial College	Manual	Yes	0	0-1 Miles	Europe	63	Old	No
22400	Married	Male	€ 10.000	Low	0	Partial College	Manual	No	1	0-1 Miles	North America	26	Adult	Yes
20942	Single	Female	€ 20.000	Low	0	High School	Manual	No	1	5-10 Miles	Europe	31	Adult	No
18484	Single	Male	€ 80.000	High	2	High School	Skilled Manual	No	2	1-2 Miles	North America	50	Middle age	Yes
12291	Single	Male	€ 90.000	High	5	Partial College	Professional	No	2	2-5 Miles	Europe	62	Old	Yes
28380	Single	Female	€ 10.000	Low	5	Partial High School	Manual	No	2	0-1 Miles	Europe	41	Middle age	No

bike_buyers | Data Cleaning | Pivot table | dashboard

Attachment

Analysis and Visualizations
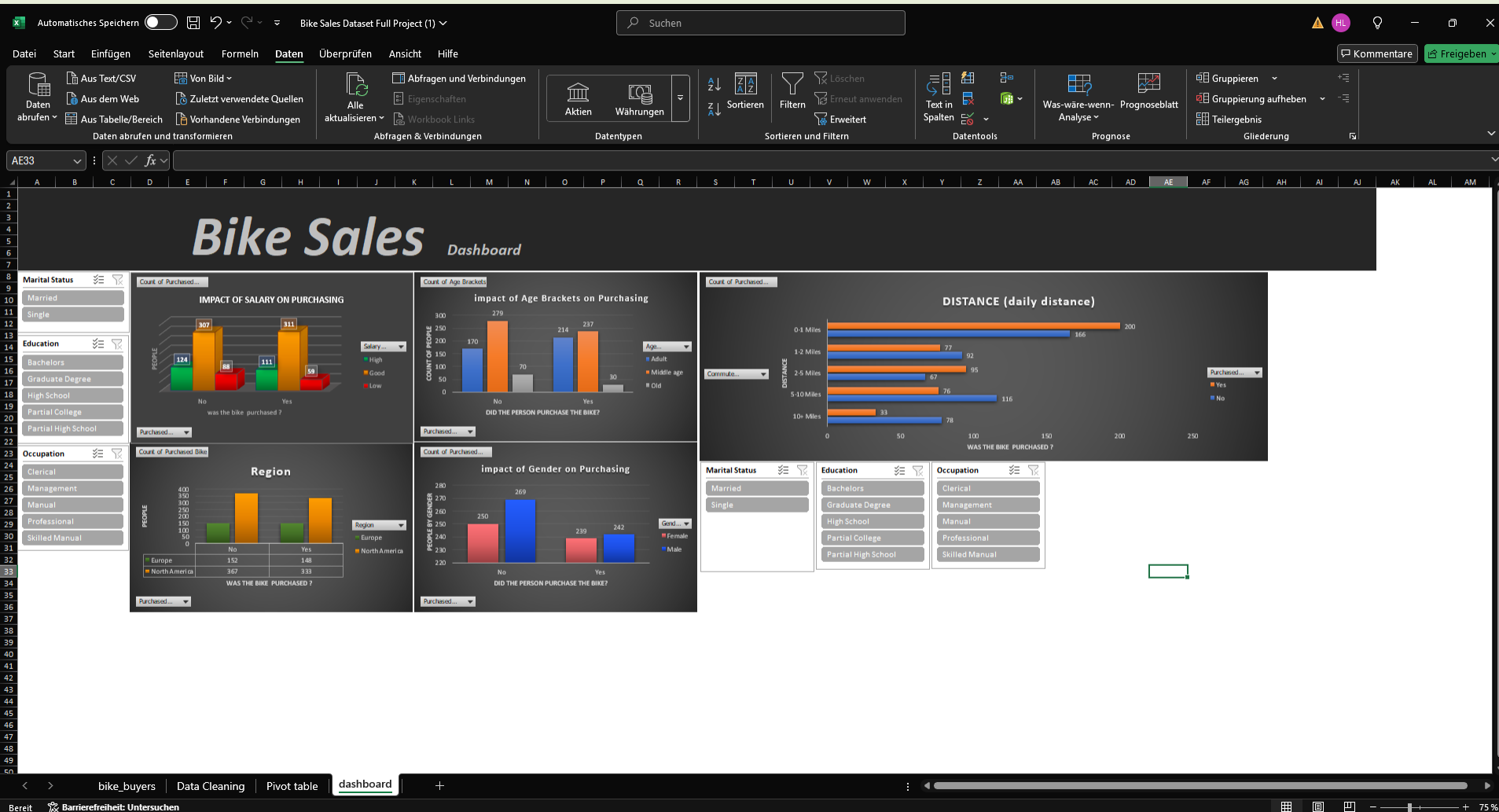
Thank you for your attention