

Project documentation

Bike Sales Dataset

Hamza Lamrabet

Master Wirtschaftsinformatik

lamrabet@uni-hildesheim.de



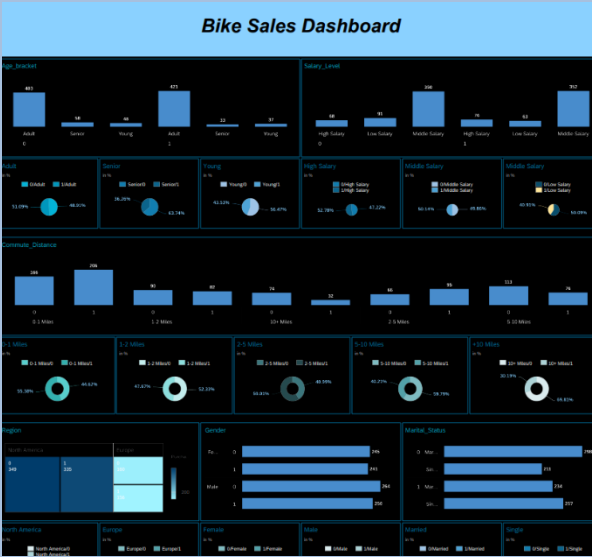
From Chaos to Clarity

- Transforming raw data into valuable insights.

BEFORE

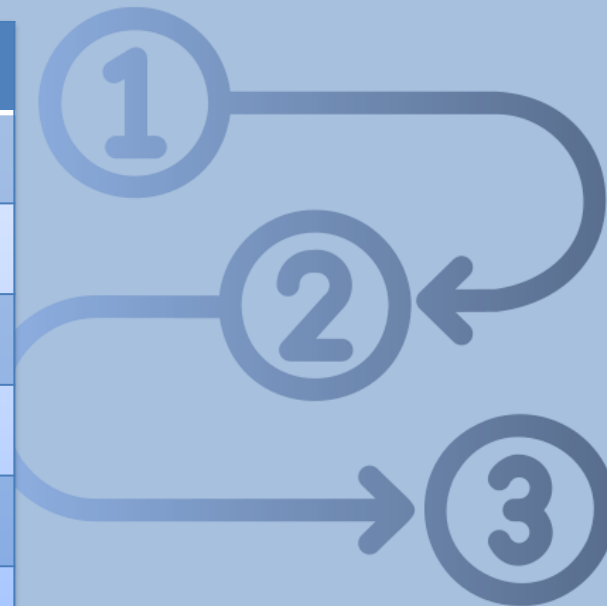
ID	Marital	Statu	Gender	Income	Children	Education	Occupation	Home Owner	Cars	Commute Di	Region	Age	Purchased	Bike
1	12496	M	F	\$40,000.00	1	Bachelors	Skilled Manu	Yes	0	0-1 Miles	Europe	42	No	
2	24107	M	M	\$30,000.00	3	Partial Colleg	Clerical	Yes	1	0-1 Miles	Europe	43	No	
3	14177	M	M	\$80,000.00	5	Partial Colleg	Professional	No	2	2-5 Miles	Europe	60	No	
4	24383	S	M	\$70,000.00	0	Bachelors	Professional	Yes	1	5-10 Miles	North Ameri	41	Yes	
5	25597	S	M	\$30,000.00	0	Bachelors	Clerical	No	0	0-1 Miles	Europe	36	Yes	
6	13307	M	F	\$10,000.00	2	Partial Colleg	Manual	Yes	0	1-2 Miles	Europe	50	No	
7	27918	S	M	\$160,000.00	2	High School	Management	Yes	4	0-1 Miles	North Ameri	33	Yes	
8	19364	M	M	\$40,000.00	1	Bachelors	Skilled Manu	Yes	0	0-1 Miles	Europe	43	Yes	
9	22155	M	M	\$20,000.00	2	Partial High S	Clerical	Yes	2	5-10 Miles	North Ameri	58	No	
10	19280	M	M	\$120,000.00	2	Partial Colleg	Manual	Yes	1	0-1 Miles	Europe	40	Yes	
11	22175	M	F	\$30,000.00	3	High School	Skilled Manu	No	2	1-2 Miles	North Ameri	54	Yes	
12	12075	S	F	\$90,000.00	0	Bachelors	Professional	No	4	10+ Miles	North Ameri	36	No	
13	11434	M	M	\$170,000.00	5	Partial Colleg	Professional	Yes	0	0-1 Miles	Europe	55	No	
14	25323	M	M	\$40,000.00	2	Partial Colleg	Clerical	Yes	1	1-2 Miles	Europe	35	Yes	
15	23542	S	M	\$60,000.00	1	Partial Colleg	Skilled Manu	No	1	0-1 Miles	North Ameri	45	Yes	
16	20870	S	F	\$10,000.00	2	High School	Manual	Yes	1	0-1 Miles	Europe	38	Yes	
17	23116	S	M	\$30,000.00	3	Partial Colleg	Clerical	No	2	1-2 Miles	North Ameri	59	Yes	
18	12610	M	F	\$30,000.00	1	Bachelors	Clerical	Yes	0	0-1 Miles	Europe	47	No	
19	27383	S	M	\$40,000.00	2	Partial Colleg	Clerical	Yes	1	1-2 Miles	Europe	35	Yes	
20	25940	S	M	\$20,000.00	2	Partial High S	Clerical	Yes	2	5-10 Miles	North Ameri	55	Yes	
21	25590	M	F	\$40,000.00	0	Graduate Deg	Clerical	Yes	0	0-1 Miles	Europe	36	Yes	
22	21564	S	F	\$80,000.00	0	Bachelors	Professional	Yes	4	10+ Miles	North Ameri	35	No	
23	19193	S	M	\$40,000.00	2	Partial Colleg	Clerical	Yes	0	1-2 Miles	Europe	35	Yes	
24	26412	M	F	\$80,000.00	5	High School	Management	No	3	5-10 Miles	Europe	56	No	
25	27184	S	M	\$40,000.00	2	Partial Colleg	Clerical	No	1	0-1 Miles	Europe	34	No	
26	12590	S	M	\$30,000.00	1	Bachelors	Clerical	Yes	0	0-1 Miles	Europe	63	No	
27	17843	S	M	\$30,000.00	0	Partial Colleg	Clerical	No	1	0-1 Miles	Europe	29	Yes	
28	18283	S	F	\$100,000.00	0	Bachelors	Professional	No	1	5-10 Miles	North Ameri	40	No	
29	18299	M	M	\$70,000.00	5	Partial Colleg	Skilled Manu	Yes	2	5-10 Miles	North Ameri	44	No	
30	16466	S	F	\$20,000.00	0	Partial High S	Manual	No	0	0-1 Miles	Europe	32	Yes	
31	19279	M	F	\$20,000.00	2	Partial Colleg	Manual	Yes	0	0-1 Miles	Europe	63	No	
32	22400	M	M	\$10,000.00	0	Partial Colleg	Manual	No	1	0-1 Miles	North Ameri	26	Yes	
33	20942	S	F	\$20,000.00	0	High School	Manual	No	1	5-10 Miles	Europe	31	No	
34	18484	S	M	\$80,000.00	2	High School	Skilled Manu	No	2	1-2 Miles	North Ameri	50	Yes	
35	12293	S	M	\$90,000.00	5	Partial Colleg	Professional	No	2	2-5 Miles	Europe	62	Yes	
36	28395	S	F	\$10,000.00	8	Partial High S	Manual	No	3	0-1 Miles	Europe	41	No	

AFTER



Agenda

Data Description and Source
Technologies Used
Skills Applied
Data Cleaning and Preparation
Analysis and Visualizations
Attachment



Data Description and Source

This project uses a customer information dataset from **Kaggle**, which includes demographic details (such as marital status, gender, income, education, occupation, children, and age), lifestyle factors (home ownership, number of cars, commute distance, and region), and whether a customer purchased a bike. The dataset is licensed under the **Apache License 2.0**, which allows use, modification, and distribution with proper attribution. In this project, the dataset is used solely for educational purposes, specifically to practice data analysis and visualization, with no commercial intent.

Source: Kaggle Dataset — *Customer Information (Bike Buyers)*, licensed under **Apache 2.0**.

- **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.**

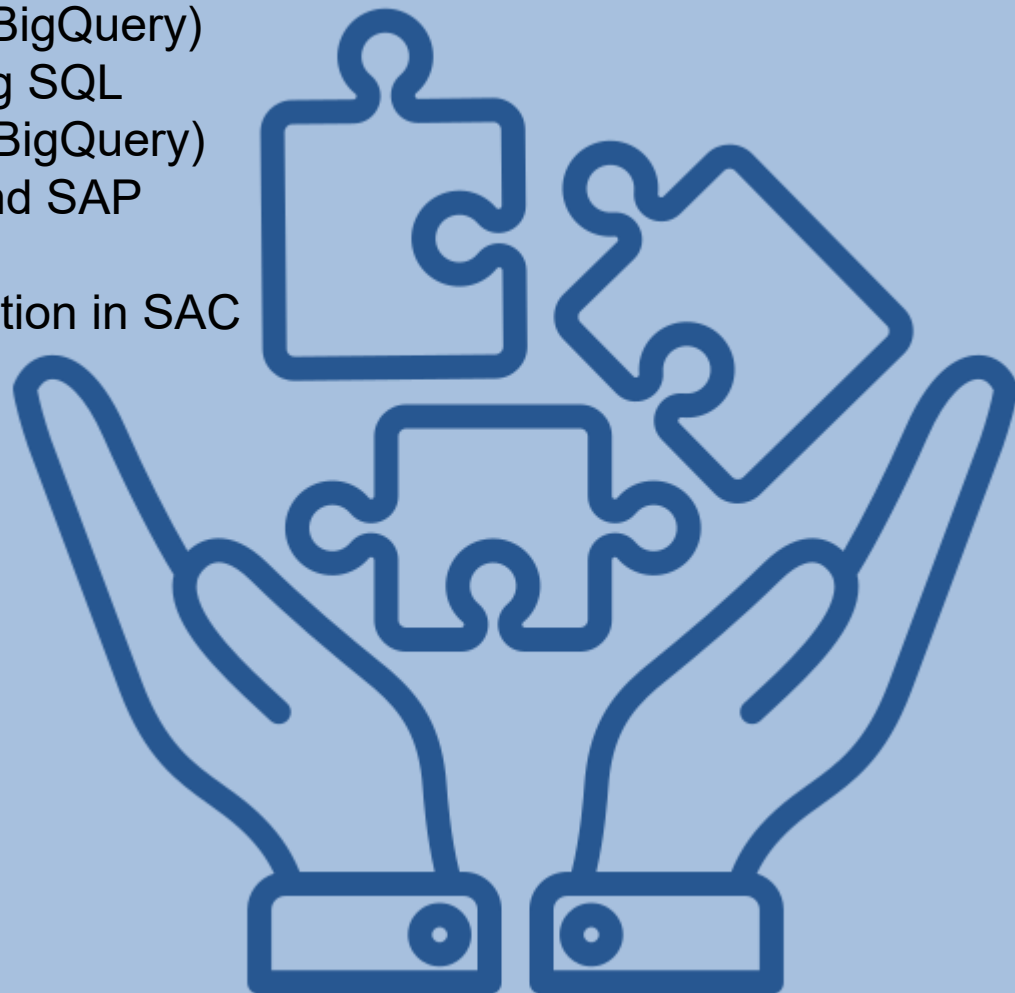
Technologies Used

- **CSV (Comma-Separated Values):** Data storage and table format
- **Google BigQuery:** Cloud data warehouse for uploading and managing the dataset
- **SQL (Structured Query Language):** Data cleaning, transformation, and querying in BigQuery
- **SAP Analytics Cloud (SAC):** Business intelligence platform for data visualization and analysis



Skills Applied

- Data loading and integration (CSV → BigQuery)
- Data cleaning and preprocessing using SQL
- Cloud-based database management (BigQuery)
- Data connection between BigQuery and SAP Analytics Cloud
- Data visualization and dashboard creation in SAC



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. "M" 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 :

- Charts: make trends and patterns easier to understand.
- Dashboards: gather key insights in one interactive place.



Attachment

Row Dataset

Automatisches Speichern

Bike Buyer • Auf "diesem PC" gespeichert

Suchen

DateiStartEinfügenZeichnenSeitenlayoutFormelnDatenÜberprüfenAnsichtAutomatisierenHilfe

Einfügen

Aptos Narrow11A^A

F^BK^IU^U

Standard

Bedingte Formatierung

Als Tabelle formatieren

Zellenformatvorlagen

EinfügenLöschenFormat

AutoSumme

Ausfüllen

Sortieren und Filtern

Suchen und Auswählen

Add-Ins

Datenanalyse

Copilot

Zwischenablage

Schriftart

Ausrichtung

Zahl

Formatvorlagen

Zellen

Bearbeiten

Add-Ins

J7

✕✓fx

12496,M,F,"\$40,000.00",1,Bachelors,Skilled Manual,Yes,0,0-1 Miles,Europe,42,No

24107,M,M,"\$30,000.00",3,Partial College,Clerical,Yes,1,0-1 Miles,Europe,43,No

14177,M,M,"\$80,000.00",5,Partial College,Professional,No,2,2-5 Miles,Europe,60,No

24381,S,M,"\$70,000.00",0,Bachelors,Professional,Yes,1,5-10 Miles,North America,41,Yes

25597,S,M,"\$30,000.00",0,Bachelors,Clerical,No,0,0-1 Miles,Europe,36,Yes

13507,M,F,"\$10,000.00",2,Partial College,Manual,Yes,0,1-2 Miles,Europe,50,No

27974,S,M,"\$160,000.00",2,High School,Management,Yes,4,0-1 Miles,North America,33,Yes

19364,M,M,"\$40,000.00",1,Bachelors,Skilled Manual,Yes,0,0-1 Miles,Europe,43,Yes

22155,M,M,"\$20,000.00",2,Partial High School,Clerical,Yes,2,5-10 Miles,North America,58,No

19280,M,M,"\$120,000.00",2,Partial College,Manual,Yes,1,0-1 Miles,Europe,40,Yes

22173,M,F,"\$30,000.00",3,High School,Skilled Manual,No,2,1-2 Miles,North America,54,Yes

12697,S,F,"\$90,000.00",0,Bachelors,Professional,No,4,10+ Miles,North America,36,No

11434,M,M,"\$170,000.00",5,Partial College,Professional,Yes,0,0-1 Miles,Europe,55,No

25323,M,M,"\$40,000.00",2,Partial College,Clerical,Yes,1,1-2 Miles,Europe,35,Yes

23542,S,M,"\$60,000.00",1,Partial College,Skilled Manual,No,1,0-1 Miles,North America,45,Yes

20870,S,F,"\$10,000.00",2,High School,Manual,Yes,1,0-1 Miles,Europe,38,Yes

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18283,S,F,"\$100,000.00",0,Bachelors,Professional,No,1,5-10 Miles,North America,40,No

18299,M,M,"\$70,000.00",5,Partial College,Skilled Manual,Yes,2,5-10 Miles,North America,44,No

316466,S,F,"\$20,000.00",0,Partial High School,Manual,No,2,0-1 Miles,Europe,32,Yes

19273,M,F,"\$20,000.00",2,Partial College,Manual,Yes,0,0-1 Miles,Europe,63,No

22400,M,M,"\$10,000.00",0,Partial College,Manual,No,1,0-1 Miles,North America,26,Yes

20942,S,F,"\$20,000.00",0,High School,Manual,No,1,5-10 Miles,Europe,31,No

18484,S,M,"\$80,000.00",2,High School,Skilled Manual,No,2,1-2 Miles,North America,50,Yes

12291,S,M,"\$90,000.00",5,Partial College,Professional,No,2,2-5 Miles,Europe,62,Yes

28380,S,F,"\$10,000.00",5,Partial High School,Manual,No,2,0-1 Miles,Europe,41,No

Bike Buyer

Bereit

Bedienungshilfen: nicht verfügbar

100%

Data Cleaning and Preparation

Results

Results per page: 50 1 – 50 of 1026 < > >|

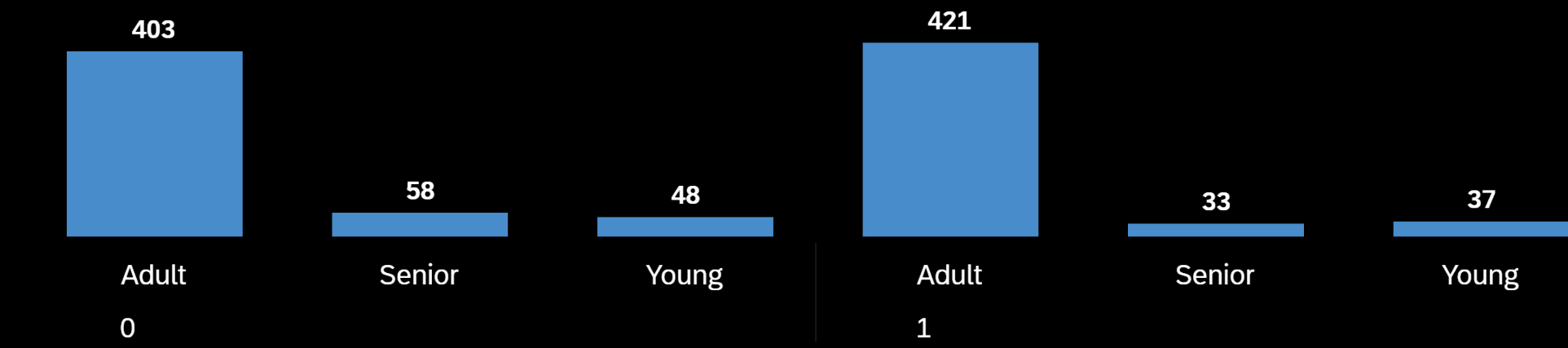
Attachment

Analysis and Visualizations

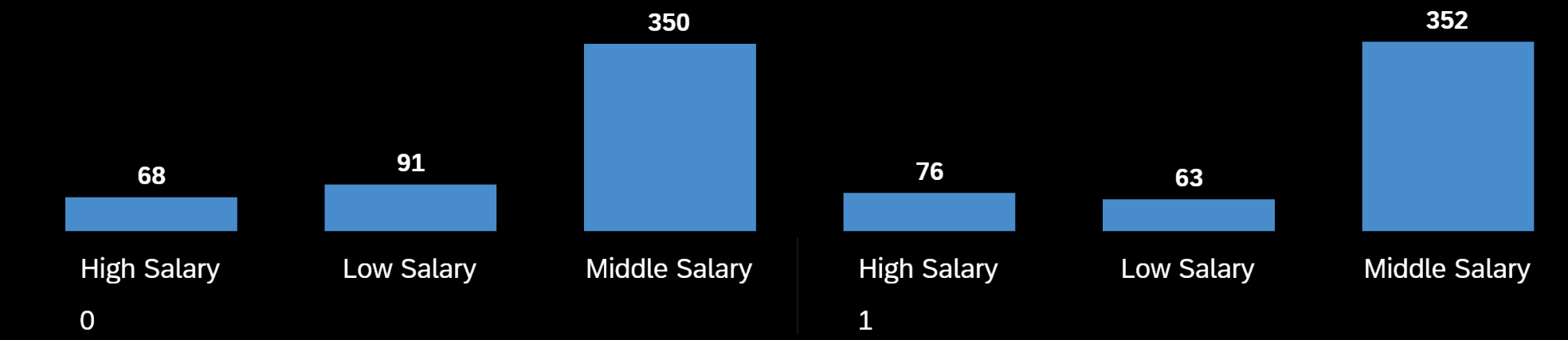


Bike Sales Dashboard

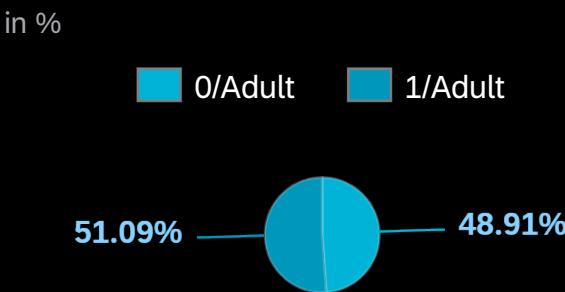
Age_bracket



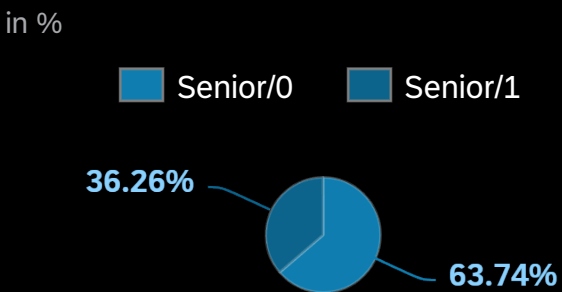
Salary_Level



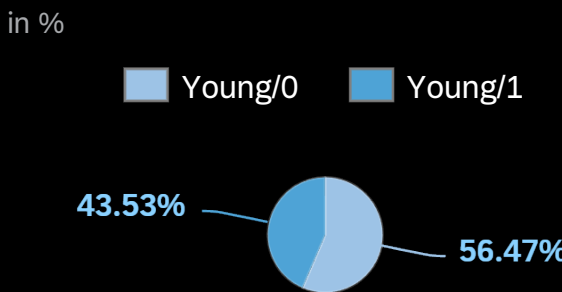
Adult



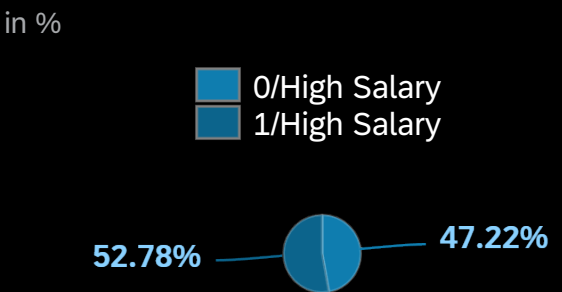
Senior



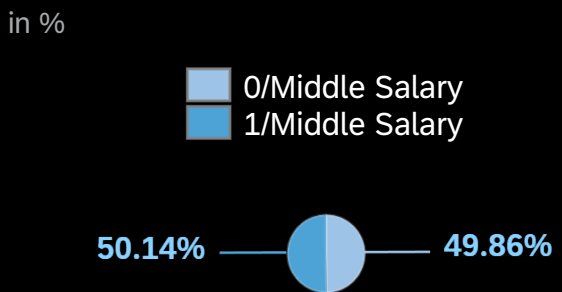
Young



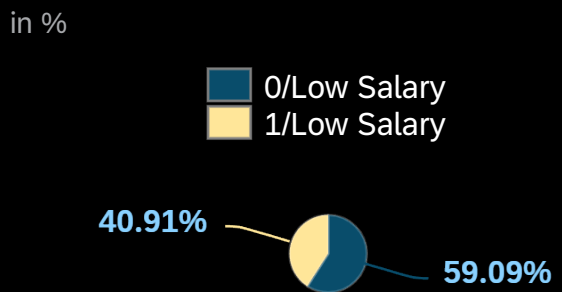
High Salary



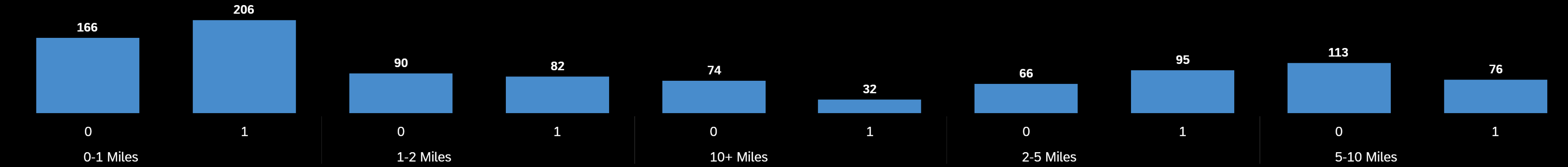
Middle Salary



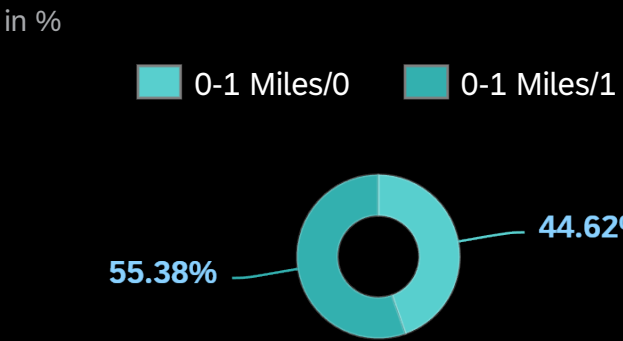
Middle Salary



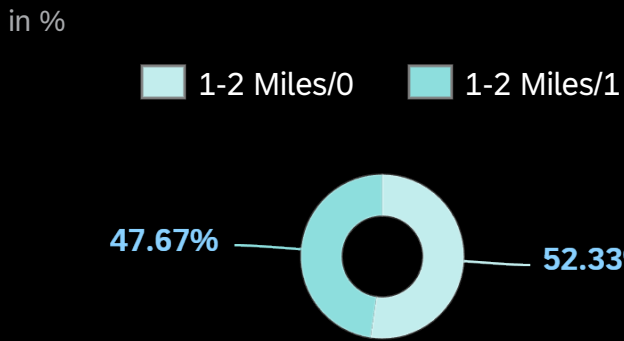
Commute_Distance



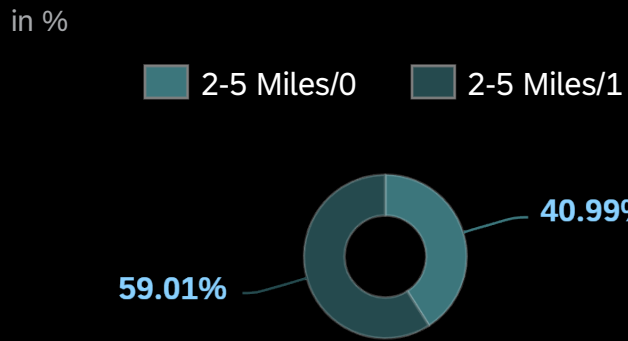
0-1 Miles



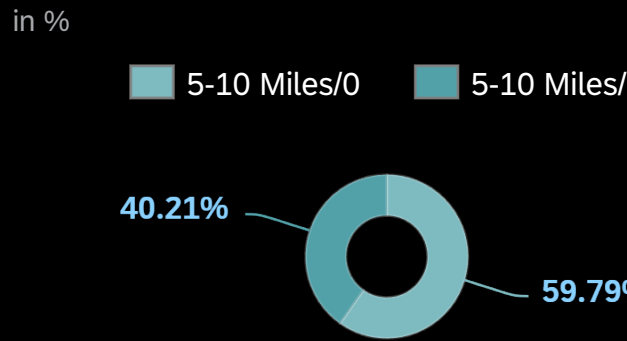
1-2 Miles



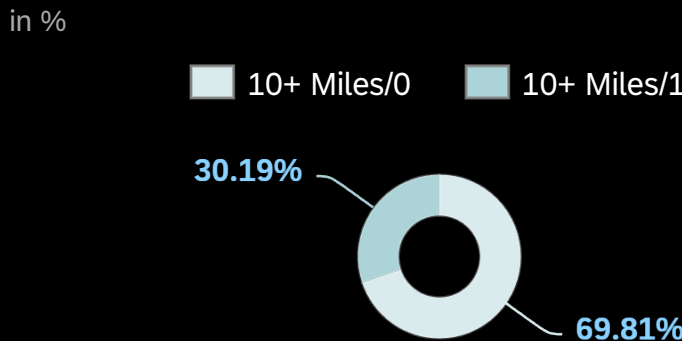
2-5 Miles



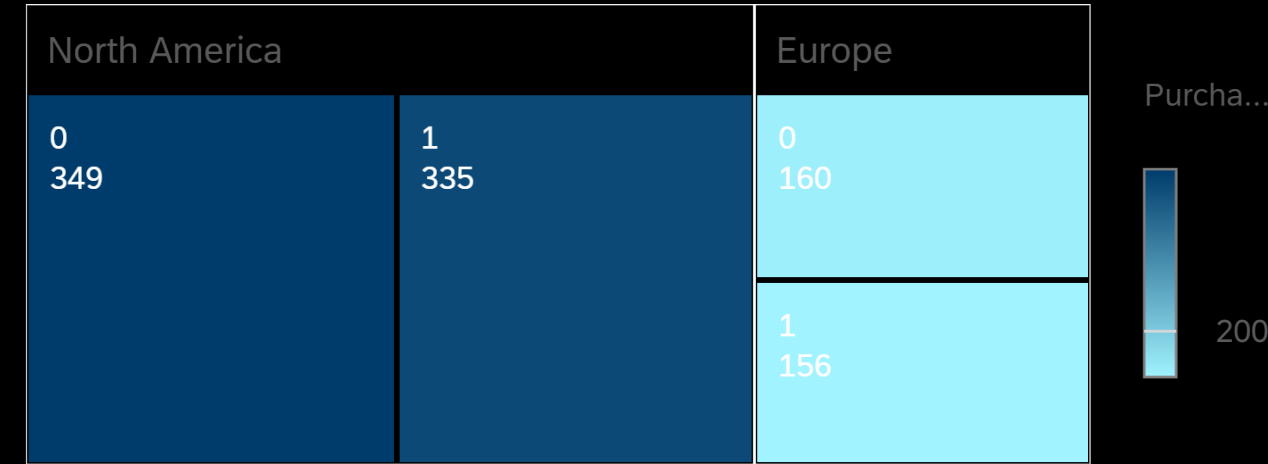
5-10 Miles



+10 Miles



Region



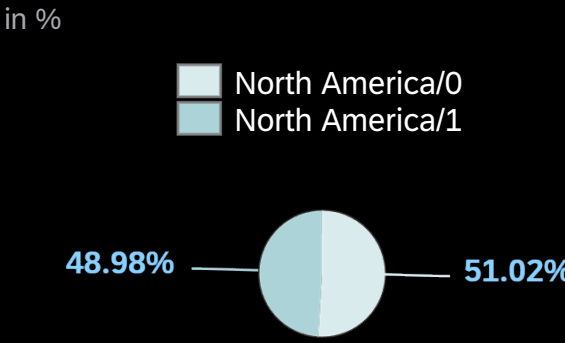
Gender



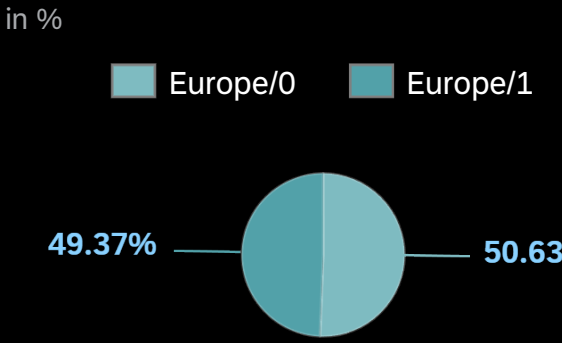
Marital_Status



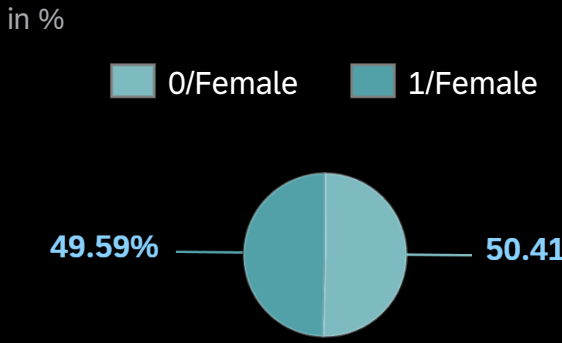
North America



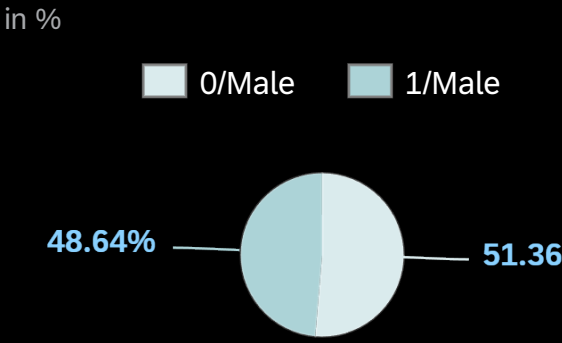
Europe



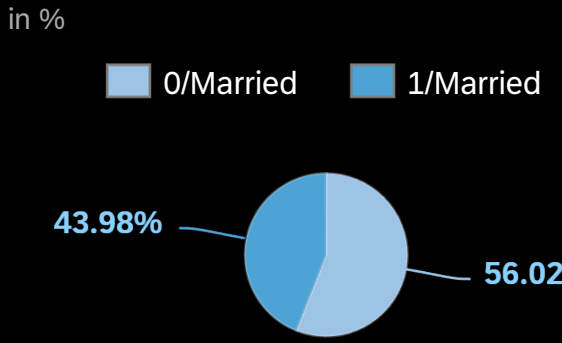
Female



Male



Married



Single

