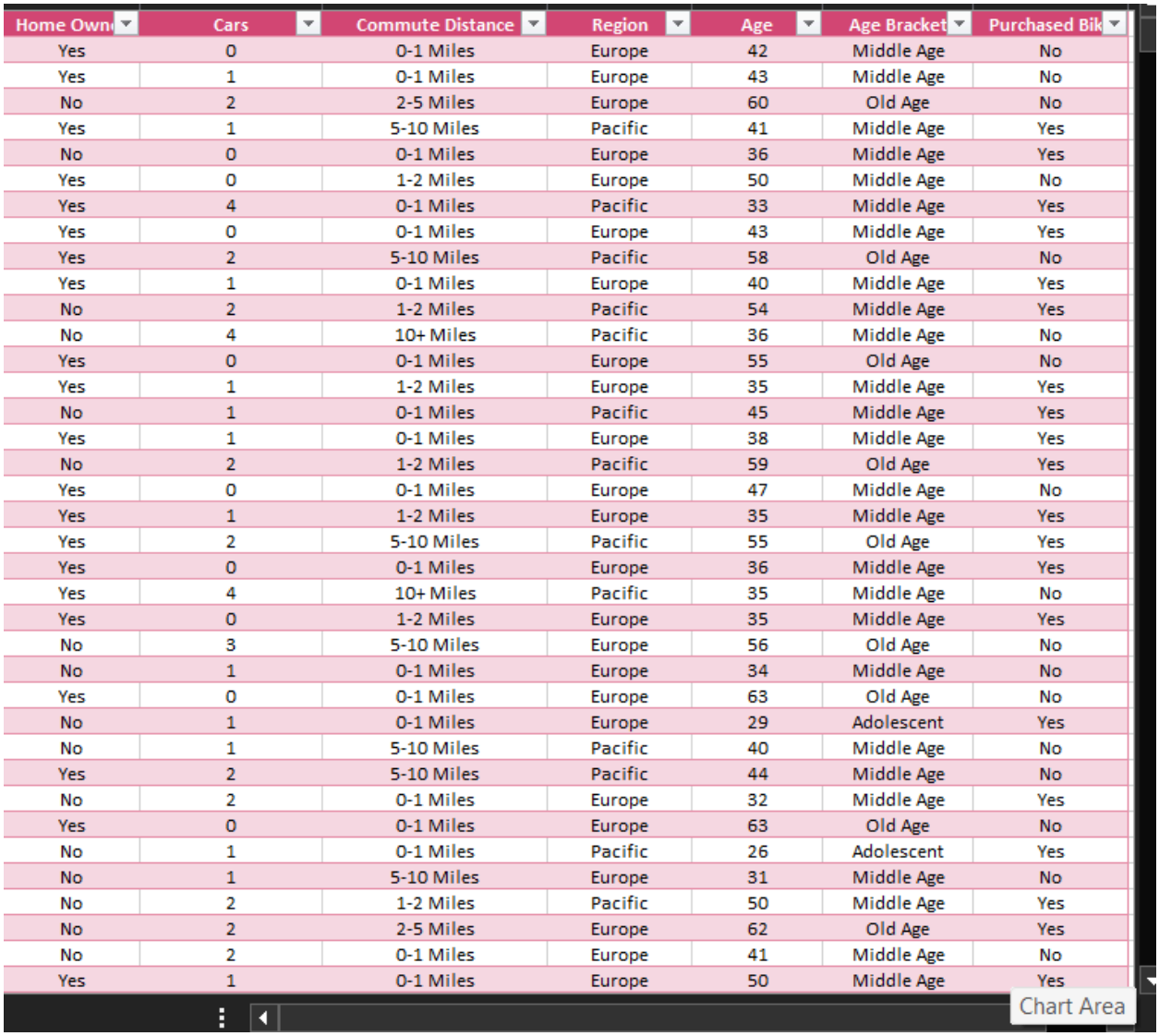
# Bike Dekho - Bike Sales Analysis Excel Project

## Insights drawn from the analysis -

### 1. Excel Data Cleaning -

| ID | Marital Status | Gender | Income | Children | Education | Occupation |
|---|---|---|---|---|---|---|
| 12496 | Married | Female | 40000 | 1 | Bachelors | Skilled Manual |
| 24107 | Married | Male | 30000 | 3 | Partial College | Clerical |
| 14177 | Married | Male | 80000 | 5 | Partial College | Professional |
| 24381 | Single | Male | 70000 | 0 | Bachelors | Professional |
| 25597 | Single | Male | 30000 | 0 | Bachelors | Clerical |
| 13507 | Married | Female | 10000 | 2 | Partial College | Manual |
| 27974 | Single | Male | 160000 | 2 | High School | Management |
| 19364 | Married | Male | 40000 | 1 | Bachelors | Skilled Manual |
| 22155 | Married | Male | 20000 | 2 | Partial High School | Clerical |
| 19280 | Married | Male | 120000 | 2 | Partial College | Manual |
| 22173 | Married | Female | 30000 | 3 | High School | Skilled Manual |
| 12697 | Single | Female | 90000 | 0 | Bachelors | Professional |
| 11434 | Married | Male | 170000 | 5 | Partial College | Professional |
| 25323 | Married | Male | 40000 | 2 | Partial College | Clerical |
| 23542 | Single | Male | 60000 | 1 | Partial College | Skilled Manual |
| 20870 | Single | Female | 10000 | 2 | High School | Manual |
| 23316 | Single | Male | 30000 | 3 | Partial College | Clerical |
| 12610 | Married | Female | 30000 | 1 | Bachelors | Clerical |
| 27183 | Single | Male | 40000 | 2 | Partial College | Clerical |
| 25940 | Single | Male | 20000 | 2 | Partial High School | Clerical |
| 25598 | Married | Female | 40000 | 0 | Graduate Degree | Clerical |
| 21564 | Single | Female | 80000 | 0 | Bachelors | Professional |
| 19193 | Single | Male | 40000 | 2 | Partial College | Clerical |
| 26412 | Married | Female | 80000 | 5 | High School | Management |
| 27184 | Single | Male | 40000 | 2 | Partial College | Clerical |
| 12590 | Single | Male | 30000 | 1 | Bachelors | Clerical |
| 17841 | Single | Male | 30000 | 0 | Partial College | Clerical |
| 18283 | Single | Female | 100000 | 0 | Bachelors | Professional |
| 18299 | Married | Male | 70000 | 5 | Partial College | Skilled Manual |
| 16466 | Single | Female | 20000 | 0 | Partial High School | Manual |
| 19273 | Married | Female | 20000 | 2 | Partial College | Manual |
| 22400 | Married | Male | 10000 | 0 | Partial College | Manual |
| 20942 | Single | Female | 20000 | 0 | High School | Manual |
| 18484 | Single | Male | 80000 | 2 | High School | Skilled Manual |
| 12291 | Single | Male | 90000 | 5 | Partial College | Professional |
| 28380 | Single | Female | 10000 | 5 | Partial High School | Manual |
| 17891 | Married | Female | 10000 | 2 | Partial College | Manual |

Dasboard | Pivot Tables | BDDC



| Home Own | Cars | Commute Distance | Region | Age | Age Bracket | Purchased Bik |
|---|---|---|---|---|---|---|
| Yes | 0 | 0-1 Miles | Europe | 42 | Middle Age | No |
| Yes | 1 | 0-1 Miles | Europe | 43 | Middle Age | No |
| No | 2 | 2-5 Miles | Europe | 60 | Old Age | No |
| Yes | 1 | 5-10 Miles | Pacific | 41 | Middle Age | Yes |
| No | 0 | 0-1 Miles | Europe | 36 | Middle Age | Yes |
| Yes | 0 | 1-2 Miles | Europe | 50 | Middle Age | No |
| Yes | 4 | 0-1 Miles | Pacific | 33 | Middle Age | Yes |
| Yes | 0 | 0-1 Miles | Europe | 43 | Middle Age | Yes |
| Yes | 2 | 5-10 Miles | Pacific | 58 | Old Age | No |
| Yes | 1 | 0-1 Miles | Europe | 40 | Middle Age | Yes |
| No | 2 | 1-2 Miles | Pacific | 54 | Middle Age | Yes |
| No | 4 | 10+ Miles | Pacific | 36 | Middle Age | No |
| Yes | 0 | 0-1 Miles | Europe | 55 | Old Age | No |
| Yes | 1 | 1-2 Miles | Europe | 35 | Middle Age | Yes |
| No | 1 | 0-1 Miles | Pacific | 45 | Middle Age | Yes |
| Yes | 1 | 0-1 Miles | Europe | 38 | Middle Age | Yes |
| No | 2 | 1-2 Miles | Pacific | 59 | Old Age | Yes |
| Yes | 0 | 0-1 Miles | Europe | 47 | Middle Age | No |
| Yes | 1 | 1-2 Miles | Europe | 35 | Middle Age | Yes |
| Yes | 2 | 5-10 Miles | Pacific | 55 | Old Age | Yes |
| Yes | 0 | 0-1 Miles | Europe | 36 | Middle Age | Yes |
| Yes | 4 | 10+ Miles | Pacific | 35 | Middle Age | No |
| Yes | 0 | 1-2 Miles | Europe | 35 | Middle Age | Yes |
| No | 3 | 5-10 Miles | Europe | 56 | Old Age | No |
| No | 1 | 0-1 Miles | Europe | 34 | Middle Age | No |
| Yes | 0 | 0-1 Miles | Europe | 63 | Old Age | No |
| No | 1 | 0-1 Miles | Europe | 29 | Adolescent | Yes |
| No | 1 | 5-10 Miles | Pacific | 40 | Middle Age | No |
| Yes | 2 | 5-10 Miles | Pacific | 44 | Middle Age | No |
| No | 2 | 0-1 Miles | Europe | 32 | Middle Age | Yes |
| Yes | 0 | 0-1 Miles | Europe | 63 | Old Age | No |
| No | 1 | 0-1 Miles | Pacific | 26 | Adolescent | Yes |
| No | 1 | 5-10 Miles | Europe | 31 | Middle Age | No |
| No | 2 | 1-2 Miles | Pacific | 50 | Middle Age | Yes |
| No | 2 | 2-5 Miles | Europe | 62 | Old Age | Yes |
| No | 2 | 0-1 Miles | Europe | 41 | Middle Age | No |
| Yes | 1 | 0-1 Miles | Europe | 50 | Middle Age | Yes |



**Data Cleaning Process :**

**Formatting of Headers:**

- For readability, all column headers were made bold.
- All columns now have filters applied to make sorting and filtering during analysis simpler.

**Managing Null or Missing Values:**

- Looked for any missing, null, or blank values in the dataset.

- There were no significant missing values discovered (if applicable, briefly describe the methods used to handle missing data, such as imputation or removal).

**Making Categorical Values Standard:**

**Status of Marriage:**

- changed "M" to "Married."
- changed "S" to "Single."

**Gender:**

- substituted 'Female' for 'F'
- changed "M" to "Male."

**Formatting Income:**

- As necessary for consistency or currency formatting, income values were converted from whole numbers to decimal format.

**Columns Derived**

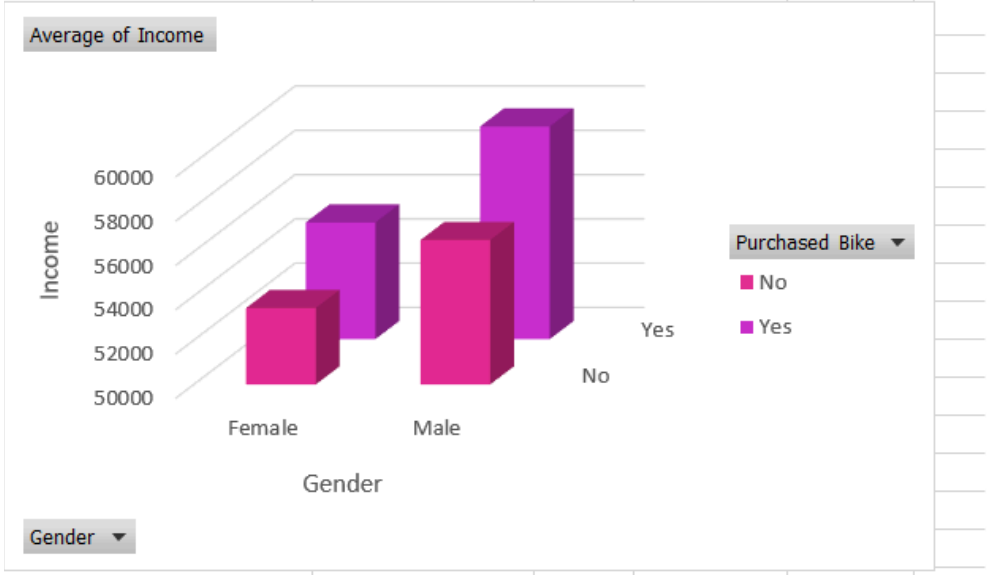
**Age Bracket:**

- Used the following guidelines to create a new categorical column named "Age Bracket":
- Below 30 → 'Adolescent'
- 31–54 → ‘Middle Age’
- >= 55 → ‘Old Age’

## Pivot Tables:

1. **Gender vs Average Income and Bike Purchase Chart**

| Average of Income | Column Labels | | |
|---|---|---|---|
| **Row Labels** | **No** | **Yes** | **Grand Total** |
| Female | 53449.6124 | 55267 | 54331.3373 |
| Male | 56520.14652 | 59603 | 58000 |
| **Grand Total** | **55028.24859** | **57475** | **56208.577** |




**The Chart's Goal:**

- to evaluate the average income of male and female clients according to whether or not they bought a bike.

**Type of Data Used:**

- Average Income is displayed in a pivot table that is grouped by gender and purchase decision (yes/no).

- The same data is shown graphically in a 3D column chart.

**Important Points to Note:**

- Regardless of what they decide to buy, men make more money on average than women.

- 59,603 males (yes)
- 55,267 females (yes)
- 56,520 males (no)
- 53,449 women (no)
- Men who bought a bike have the highest average income.
- Women who did not buy a bike have the lowest average income.

**Grand Average Salary:**

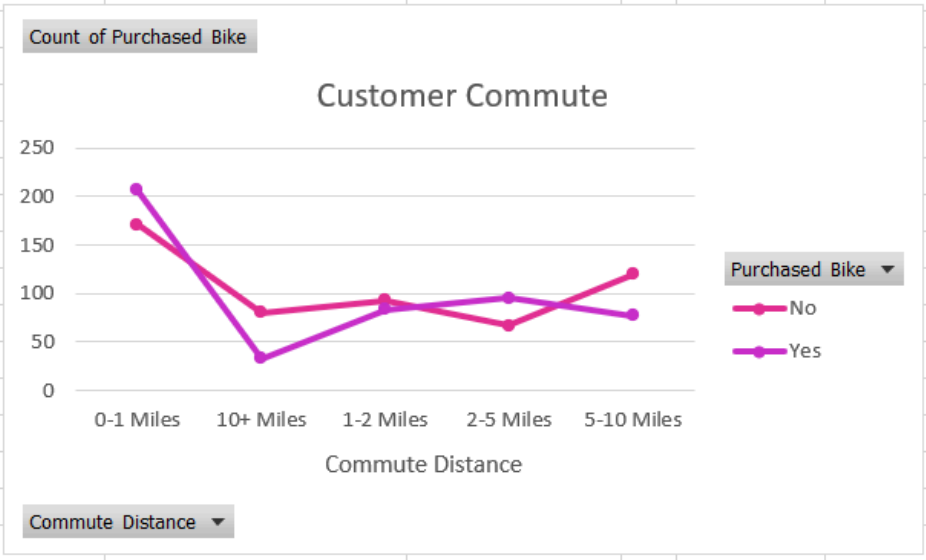
- Average salary for everyone as a whole:
- No - 55,028
- Yes - 57,475
- Grand Total - 56,208

**Notes on Visual Style:**

- Dual-color 3D column chart
- Pink: "No" to buying a bike
- Purple: "Yes" to buying a bike
- Depending on how the slicer is configured, it can be filtered by gender or purchase status.

2. **Customer Commute Analysis – Bike Purchase**

| Count of Purchased Bike | Column Labels | | |
|---|---|---|---|
| Row Labels | No | Yes | Grand Total |
| 0-1 Miles | 171 | 207 | 378 |
| 10+ Miles | 80 | 33 | 113 |
| 1-2 Miles | 93 | 83 | 176 |
| 2-5 Miles | 67 | 95 | 162 |
| 5-10 Miles | 120 | 77 | 197 |
| **Grand Total** | **531** | **495** | **1026** |




**Data Overview:**

- A pivot table that displays the number of clients who bought a bike (yes) or did not (no) for varying commuting distances.
- These figures are shown in the "Customer Commute" Corresponding Line Chart.

**Important Findings: Most Purchased Bikes:**

- Customers who commuted 0–1 miles bought the most bikes (207), followed by those who commuted 2–5 miles (95).

**Lowest Purchases of Bicycles:**

- Commuters who commuted more than 10 miles had the lowest bike purchases (33), as well as the lowest overall engagement (113 total customers).

**Impact on Commute:**

- Bicycle purchase rates often decrease as commute distances exceed one mile, particularly for long-distance commuters (10+ miles).

**Interesting Pattern:**

- There are more "Yes" responses than "No" responses in the 2–5 mile range, indicating that this is the sweet spot when riding a bike becomes more feasible.

**Grand Totals:**

- Total Clients: 1026
- Yes, I bought a bike: 495
- Purchased Bike Number: 531

**Notes on Visual Style:**

- Two-series line chart
- Pink (No): No bike was bought.
- Purple: Acquired a bicycle.
- Commute Distance on the horizontal axis.
- Vertical axis: Number of Clients.

3. **Customer Age Bracket – Bike Purchase Analysis**

| Count of Purchased Bike | Column Labels | | |
|---|---|---|---|
| **Row Labels** | **No** | **Yes** | **Grand Total** |
| Adolescent | 71 | 41 | 112 |
| Middle Age | 326 | 393 | 719 |
| Old Age | 134 | 61 | 195 |
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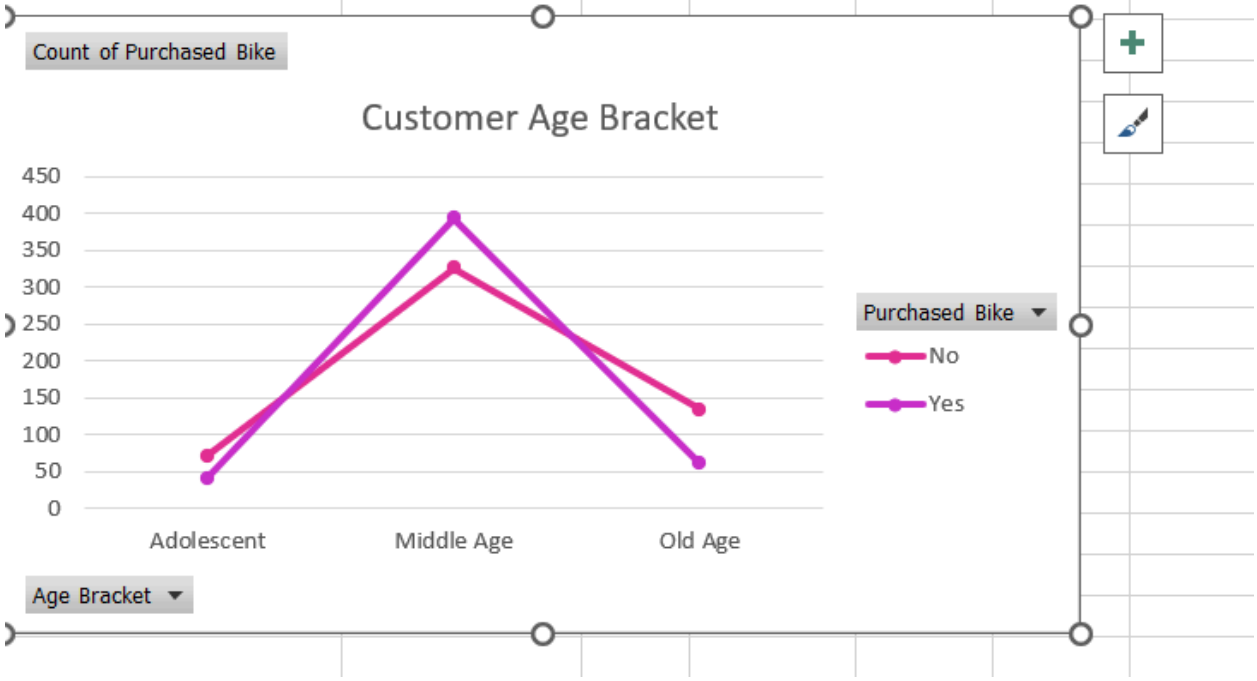


**Overview of the Data:**

- Three age groups are used by the pivot table to group customers:
- Adolescent (≤30)
- Age range: Middle Age (31–54)
- Old age (above 55)
- The graph displays the proportion of consumers in each bracket who bought a bike ("Yes") as opposed to those who didn't ("No").

**Important Findings:**

- Middle Age is the Dominant Segment.
- The majority of bike purchases—393 out of 719—come from middle-aged consumers.
- Demonstrates a significant market presence by having the highest overall participation as well.

**Teenagers:**

- They are the least likely to buy a bike, with only 41 purchases out of 112 total.
- Their "No" count (71) is significantly greater than their "Yes" count.

**Elderly:**

- 61 purchases, or the second-lowest participation rate, out of 195 total.
- They had more than twice as many "No" responses (134) as "Yes" responses.

**Trend in Purchase Behavior:**

- The graph indicates a peak in middle age, followed by a decline in both purchases and the total number of people in old age.
- Indicates that the most likely target market for bike marketing is middle-aged people.

**Summary of the Chart:**

**A pink-toned line chart showing:**

- Hot Pink (No): Clients who didn't buy.
- Light Pink: Those who made a purchase.
- Age Bracket on the X-axis
- Y-axis: The quantity of clients

## Dashboards:

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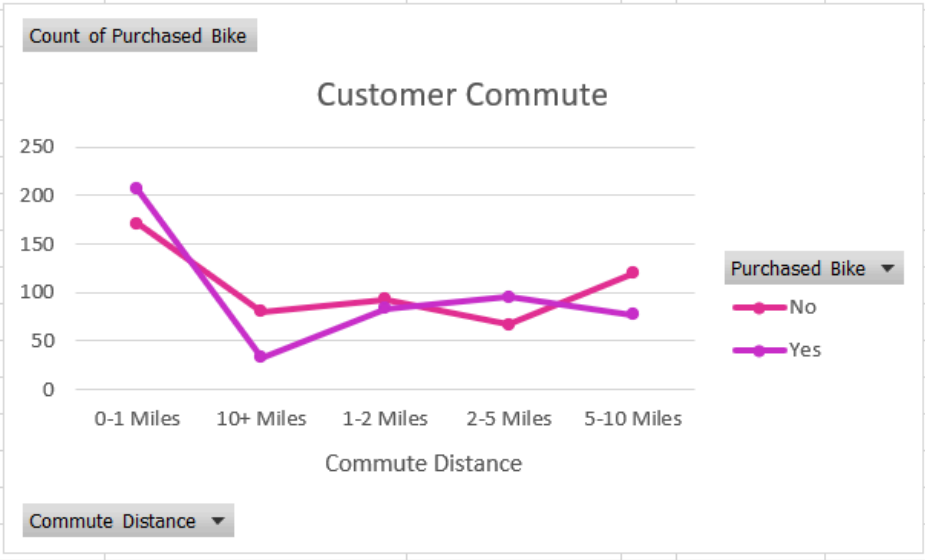

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