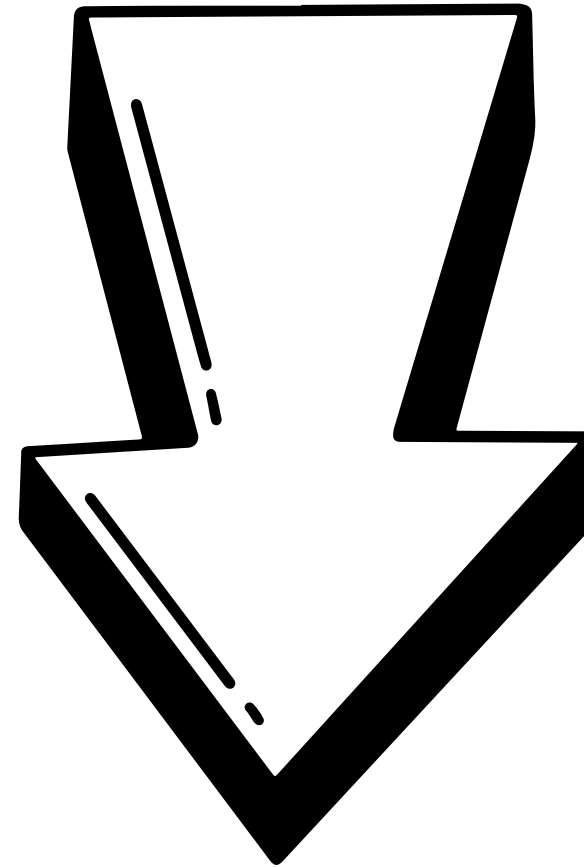


# Bike Dekho – Bike Sales Analysis

- This project involves the analysis of customer demographic and behavioral data from a fictional bike retail platform to identify potential buyer segments, sales patterns, and customer characteristics influencing bike purchases. The dataset includes variables such as gender, age, income, education, marital status, commute distance, and purchasing behavior.
- The objective of this analysis is to derive actionable insights through data cleaning, enrichment, and advanced Excel functions such as IF, COUNTA, COUNTIFS. Additional columns like Age Bracket, Income Category, Family Size, Car Ownership, and Potential Buyer Score were created to better segment users. These enhancements allowed for deeper insights into customer personas and their likelihood to purchase bikes.
- Using Pivot Tables, KPI metrics, and interactive dashboards with charts (bar graphs, pie charts, and stacked visuals), the project highlights key insights—such as higher purchase rates among mid-aged, high-income males, and regional trends in bike buying. This analysis enables data-driven decision-making for marketing strategy, customer targeting, and inventory planning.

# Formulas Used in Excel



# For Data Preprocessing

- **Age Bracket:** =IF(L2<30, "Young", IF(L2<50, "Mid-Aged", "Old-Aged")) [Here L = Age]
- **Income Flag:** =IF(D2<40000, "Low", IF(D2<70000, "Medium", "High")) [Here D = Income]
- **Family Members:** =IF(B2="Married", E2 + 2, E2 + 1) [Here B = Marital Status, E = Children]
- **Family Size:** =IF(P2<=3, "Small", IF(P2<=5, "Medium", "Large")) [Here P = Family Members]
- **Car Ownership:** =IF(I2>0,"Yes","No") [Here I = Cars]
- **Potential Buyer Score:** =IF(D2>60000,"High",IF(D2>40000,"Medium","Low")) [Here D = Income]

# For KPI(Key Performance Indicator)

- **Total IDs:** =COUNTA('Cleaned Data'!A2:A1005) [Here A = ID]
- **Total Bikes Purchased:** =COUNTIFS('Cleaned Data'!N2:N1005, "Yes") [Here N = Purchased Bike]
- **Total Male Buyers:** =COUNTIFS('Cleaned Data'!C1:C1005,"Male", 'Cleaned Data'!N1:N1005,"Yes") [Here C = Gender, N = Purchased Bike]
- **Total Female Buyers:** =COUNTIFS('Cleaned Data'!C1:C1005,"Female", 'Cleaned Data'!N1:N1005,"Yes") [Here C = Gender, N = Purchased Bike]
- **Total Married Buyers:** =COUNTIFS('Cleaned Data'!B2:B1005,"Married", 'Cleaned Data'!N2:N1005,"Yes") [Here B = Marital Status, N = Purchased Bike]
- **Total Single Buyers:** =COUNTIFS('Cleaned Data'!B2:B1005,"Single", 'Cleaned Data'!N2:N1005,"Yes") [Here B = Marital Status, N = Purchased Bike]
- **Total High Income Flag Buyers:** =COUNTIFS('Cleaned Data'!O2:O1005, "High", 'Cleaned Data'!N2:N1005, "Yes") [Here O = Income Flag, N = Purchased Bike]

- **Total Medium Income Flag Buyers:** =COUNTIFS('Cleaned Data'!O2:O1005, "Medium",'Cleaned Data'!N2:N1005, "Yes") [Here O = Income Flag, N = Purchased Bike]
- **Total Low Income Flag Buyers:** =COUNTIFS('Cleaned Data'!O2:O1005, "Low",'Cleaned Data'!N2:N1005, "Yes") [Here O = Income Flag, N = Purchased Bike]
- **Total Buyers From Pacific:** =COUNTIFS('Cleaned Data'!K2:K1005, "Pacific",'Cleaned Data'!N2:N1005, "Yes") [Here K = Region, N = Purchased Bike]
- **Total Buyers From Europe:** =COUNTIFS('Cleaned Data'!K2:K1005, "Europe",'Cleaned Data'!N2:N1005, "Yes") [Here K = Region, N = Purchased Bike]
- **Total Buyers From North America:** =COUNTIFS('Cleaned Data'!K2:K1005, "North America",'Cleaned Data'!N2:N1005, "Yes") [Here K = Region, N = Purchased Bike]
- **Total Old-Aged Buyers:** =COUNTIFS('Cleaned Data'!M2:M1005, "Old-Aged",'Cleaned Data'!N2:N1005, "Yes") [Here M = Age Bracket, N = Purchased Bike]

- **Total Mid-Aged Buyers:** =COUNTIFS('Cleaned Data'!M2:M1005, "Mid-Aged",'Cleaned Data'!N2:N1005, "Yes") [Here M = Age Bracket, N = Purchased Bike]
- **Total Young Buyers:** =COUNTIFS('Cleaned Data'!M2:M1005, "Young",'Cleaned Data'!N2:N1005, "Yes") [Here M = Age Bracket, N = Purchased Bike]
- **Total Buyers With Car Ownership:** =COUNTIFS('Cleaned Data'!R2:R1005, "Yes",'Cleaned Data'!N2:N1005, "Yes") [Here R = Car Ownership, N = Purchased Bike]
- **Total Buyers Without Car Ownership:** =COUNTIFS('Cleaned Data'!R2:R1005, "No",'Cleaned Data'!N2:N1005, "Yes") [Here R = Car Ownership, N = Purchased Bike]
- **Total Buyers With House Ownership:** =COUNTIFS('Cleaned Data'!H2:H1005, "Yes",'Cleaned Data'!N2:N1005, "Yes") [Here H = House Owner, N = Purchased Bike]

- **Total Buyers Without House Ownership:** =COUNTIFS('Cleaned Data'!H2:H1005, "No",'Cleaned Data'!N2:N1005, "Yes") [Here H = House Owner, N = Purchased Bike]
- **Total Bachelors Education Buyers:** =COUNTIFS('Cleaned Data'!F2:F1005, "Bachelors",'Cleaned Data'!N2:N1005, "Yes") [Here F = Education, N = Purchased Bike]
- **Total High School Education Buyers:** =COUNTIFS('Cleaned Data'!F2:F1005, "High School",'Cleaned Data'!N2:N1005, "Yes") [Here F = Education, N = Purchased Bike]
- **Total Graduate Education Buyers:** =COUNTIFS('Cleaned Data'!F2:F1005, "Graduate",'Cleaned Data'!N2:N1005, "Yes") [Here F = Education, N = Purchased Bike]
- **Total Partial College Education Buyers:** =COUNTIFS('Cleaned Data'!F2:F1005, "Partial College",'Cleaned Data'!N2:N1005, "Yes") [Here F = Education, N = Purchased Bike]



- **Total Partial High School Education Buyers:** =COUNTIFS('Cleaned Data'!F2:F1005, "Partial High School",'Cleaned Data'!N2:N1005, "Yes") [Here F = Education, N = Purchased Bike]
- **Total Professional Occupation Buyers:** =COUNTIFS('Cleaned Data'!G2:G1005, "Professional",'Cleaned Data'!N2:N1005, "Yes") [Here G = Occupation, N = Purchased Bike]
- **Total Clerical Occupation Buyers:** =COUNTIFS('Cleaned Data'!G2:G1005, "Clerical",'Cleaned Data'!N2:N1005, "Yes") [Here G = Occupation, N = Purchased Bike]
- **Total Management Occupation Buyers:** =COUNTIFS('Cleaned Data'!G2:G1005, "Management",'Cleaned Data'!N2:N1005, "Yes") [Here G = Occupation, N = Purchased Bike]
- **Total Skilled Manual Occupation Buyers:** =COUNTIFS('Cleaned Data'!G2:G1005, "Skilled Manual",'Cleaned Data'!N2:N1005, "Yes") [Here G = Occupation, N = Purchased Bike]

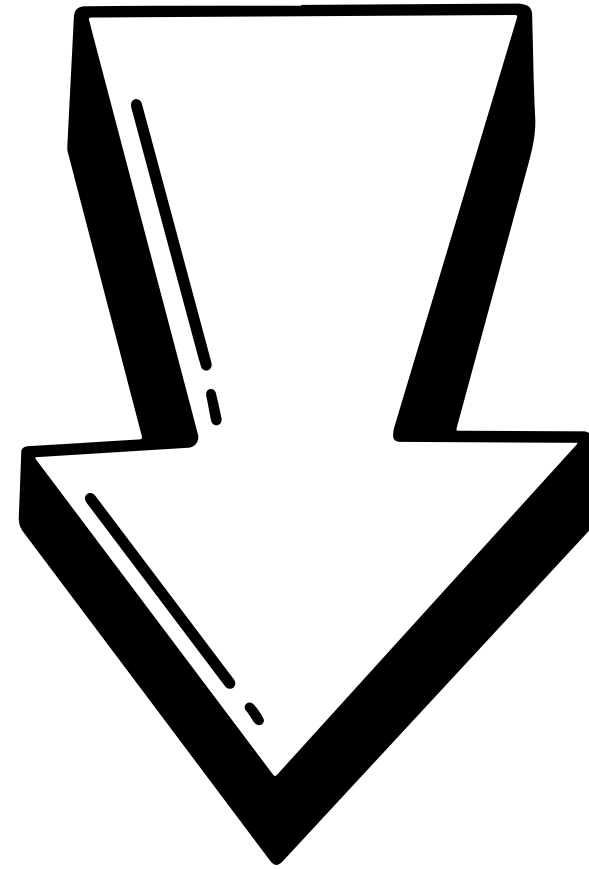


- **Total Manual Occupation Buyers:** =COUNTIFS('Cleaned Data'!G2:G1005, "Manual",'Cleaned Data'!N2:N1005, "Yes") [Here G = Occupation, N = Purchased Bike]
- **Total Buyers With 0-1 Miles Commute Distance:** =COUNTIFS('Cleaned Data'!J2:J1005, "0-1 Miles",'Cleaned Data'!N2:N1005, "Yes") [Here J = Commute Distance, N = Purchased Bike]
- **Total Buyers With 1-2 Miles Commute Distance:** =COUNTIFS('Cleaned Data'!J2:J1005, "1-2 Miles",'Cleaned Data'!N2:N1005, "Yes") [Here J = Commute Distance, N = Purchased Bike]
- **Total Buyers With 2-5 Miles Commute Distance:** =COUNTIFS('Cleaned Data'!J2:J1005, "2-5 Miles",'Cleaned Data'!N2:N1005, "Yes") [Here J = Commute Distance, N = Purchased Bike]
- **Total Buyers With 5-10 Miles Commute Distance:** =COUNTIFS('Cleaned Data'!J2:J1005, "5-10 Miles",'Cleaned Data'!N2:N1005, "Yes") [Here J = Commute Distance, N = Purchased Bike]

- **Total Buyers With 10+ Miles Commute Distance:** =COUNTIFS('Cleaned Data'!J2:J1005, "10+ Miles",'Cleaned Data'!N2:N1005, "Yes") [Here J = Commute Distance, N = Purchased Bike]
- **Total Buyers With Small Family Size:** =COUNTIFS('Cleaned Data'!Q2:Q1005, "Small",'Cleaned Data'!N2:N1005, "Yes") [Here Q = Family Size, N = Purchased Bike]
- **Total Buyers With Medium Family Size:** =COUNTIFS('Cleaned Data'!Q2:Q1005, "Medium",'Cleaned Data'!N2:N1005, "Yes") [Here Q = Family Size, N = Purchased Bike]
- **Total Buyers With Large Family Size:** =COUNTIFS('Cleaned Data'!Q2:Q1005, "Large",'Cleaned Data'!N2:N1005, "Yes") [Here Q = Family Size, N = Purchased Bike]
- **Total Buyers With low Potential Buyer Score:** =COUNTIFS('Cleaned Data'!S2:S1005, "Low",'Cleaned Data'!N2:N1005, "Yes") [Here S = Potential Buyer Score, N = Purchased Bike]

- **Total Buyers With Medium Potential Buyer Score:** =COUNTIFS('Cleaned Data'!S2:S1005, "Medium",'Cleaned Data'!N2:N1005, "Yes") [Here S = Potential Buyer Score, N = Purchased Bike]
- **Total Buyers With High Potential Buyer Score:** =COUNTIFS('Cleaned Data'!S2:S1005, "High",'Cleaned Data'!N2:N1005, "Yes") [Here S = Potential Buyer Score, N = Purchased Bike]

# MS Excel Charts with Insights



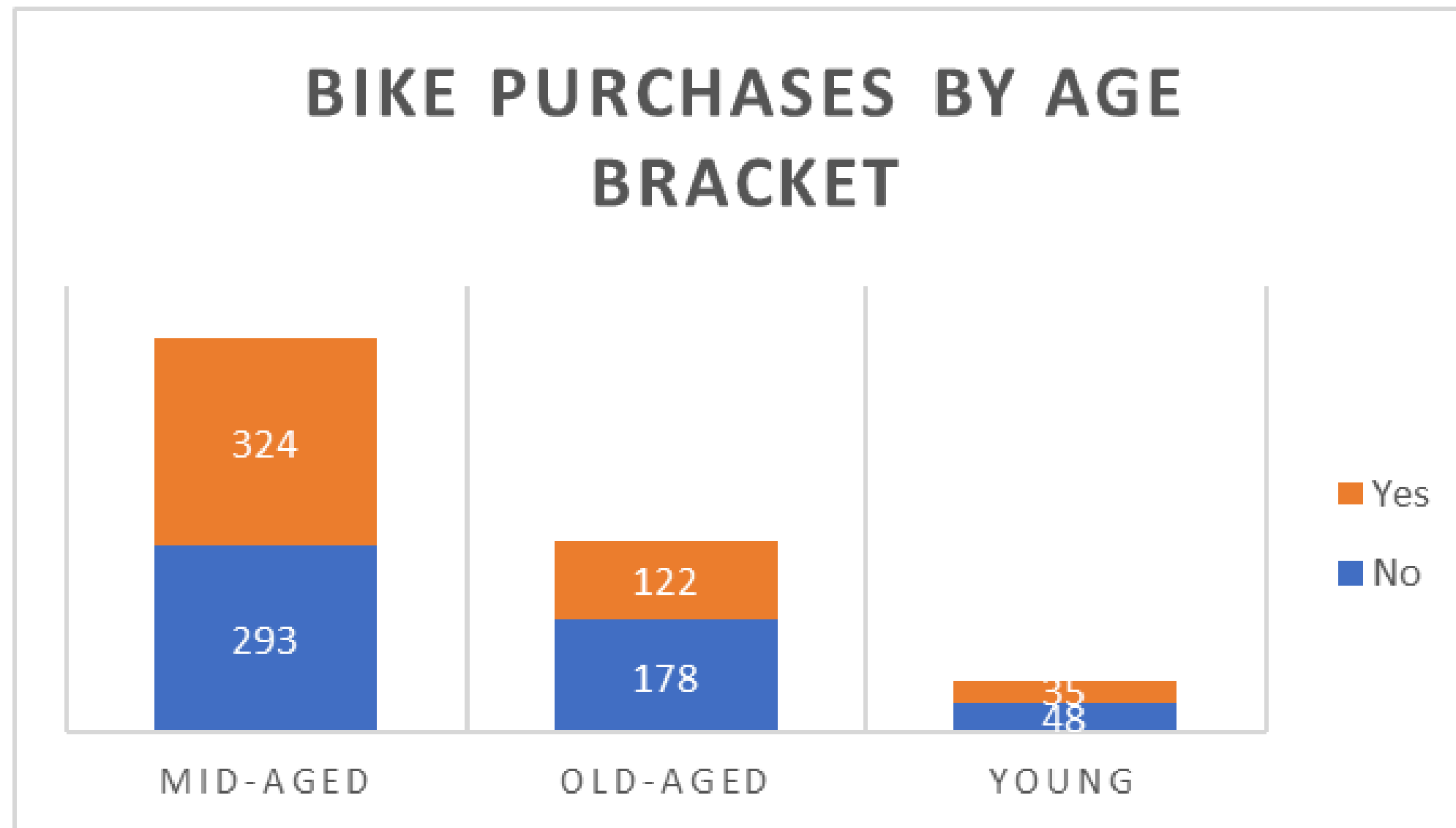


fig. 1

## Key Insights

1. Mid-Aged users are the most engaged buyers, showing strong interest in purchasing bikes compared to other age groups.
2. Old-Aged individuals are less likely to purchase, even though they form a significant part of the audience, suggesting potential barriers or lower intent.
3. Young users show the least involvement in bike purchases, indicating either affordability issues or different preferences.

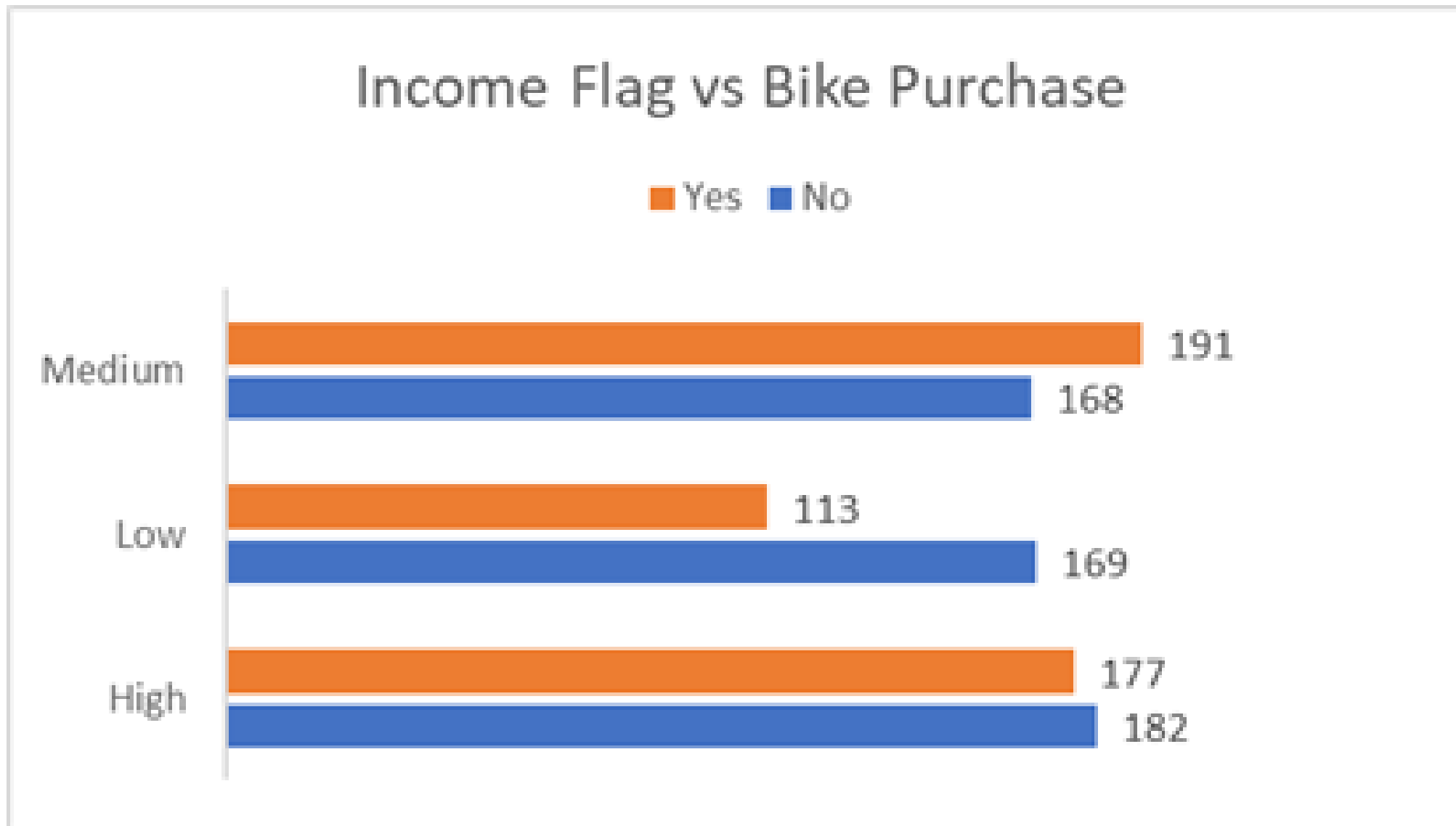


fig. 2

## Key Insights

1. Medium income individuals are the most likely to purchase bikes, showing a healthy balance of affordability and intent.
2. High income group shows mixed behavior, indicating that higher income doesn't directly correlate with higher purchase rates.
3. Low income individuals are the least likely to make a purchase, possibly due to financial limitations or different transportation preferences.

## Region-wise Bike Buyers

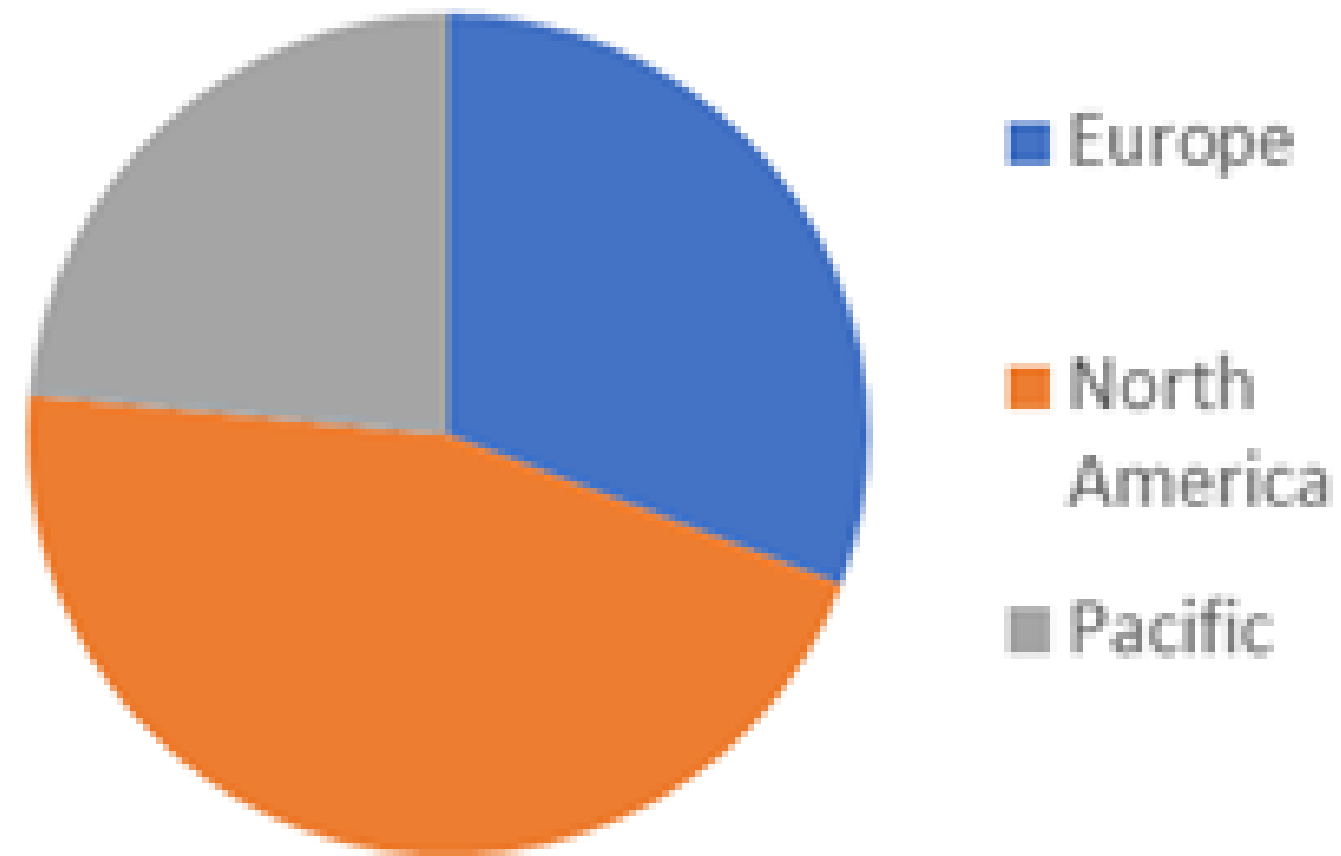


fig. 3

## Key Insights

1. North America leads in bike purchases, indicating a higher preference or accessibility for bikes in this region.
2. Europe follows, suggesting a moderately strong interest in bike ownership.
3. The Pacific region shows the least number of bike purchases, highlighting potential market growth or lower demand.



Key Insights

- 1. Professional and Management roles show the highest buyer potential, indicating they are key target segments for marketing efforts.
- 2. Clerical and Manual occupations mostly fall under low potential, suggesting limited conversion likelihood in these groups.
- 3. Skilled Manual workers exhibit a balanced distribution, making them a moderately promising audience for targeted campaigns.
- 4. Professionals dominate the high potential segment, making them the most promising group for premium product promotions.
- 5. Manual workers, despite their presence, show minimal high potential, implying that resources should be cautiously allocated toward them.

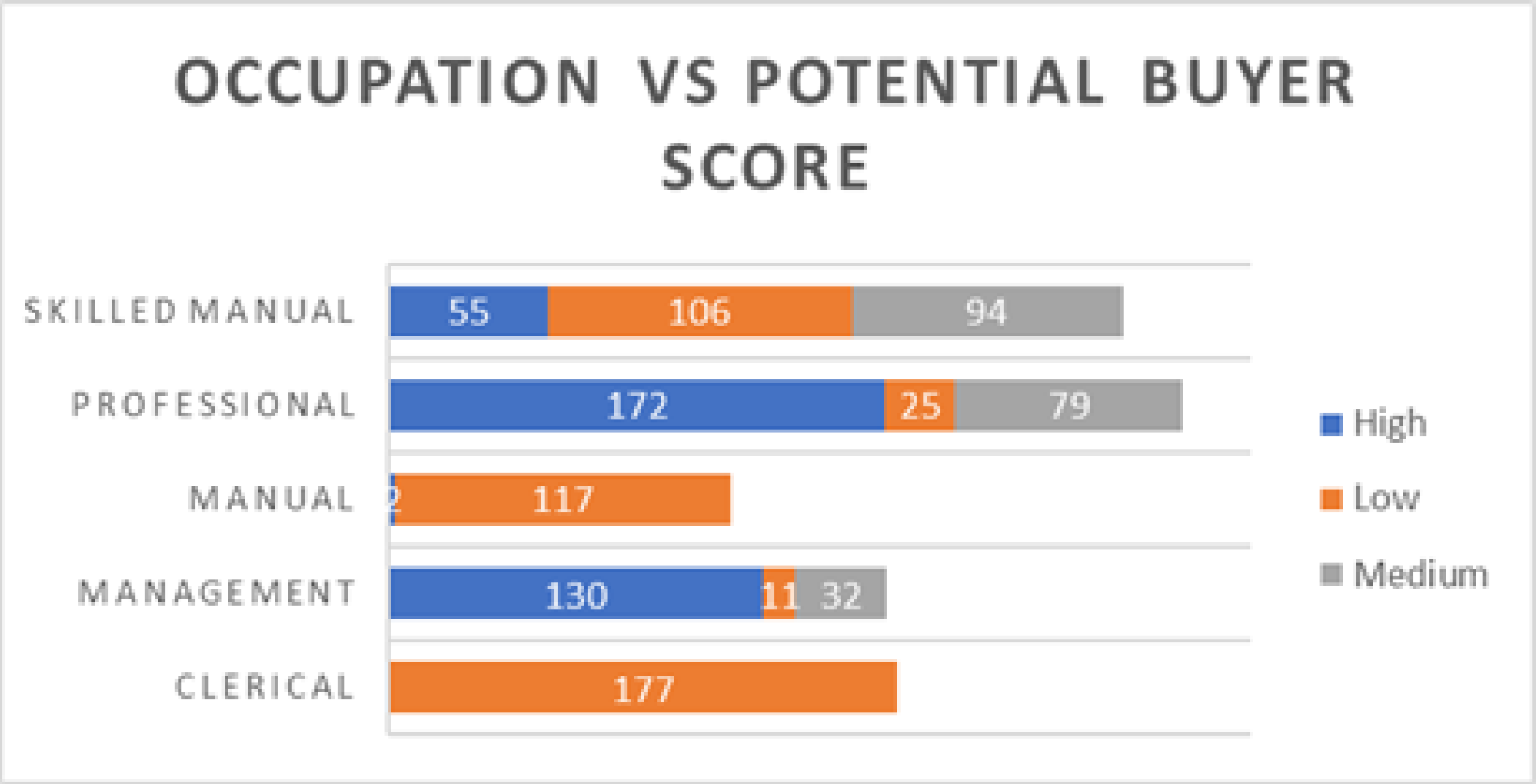


fig. 4

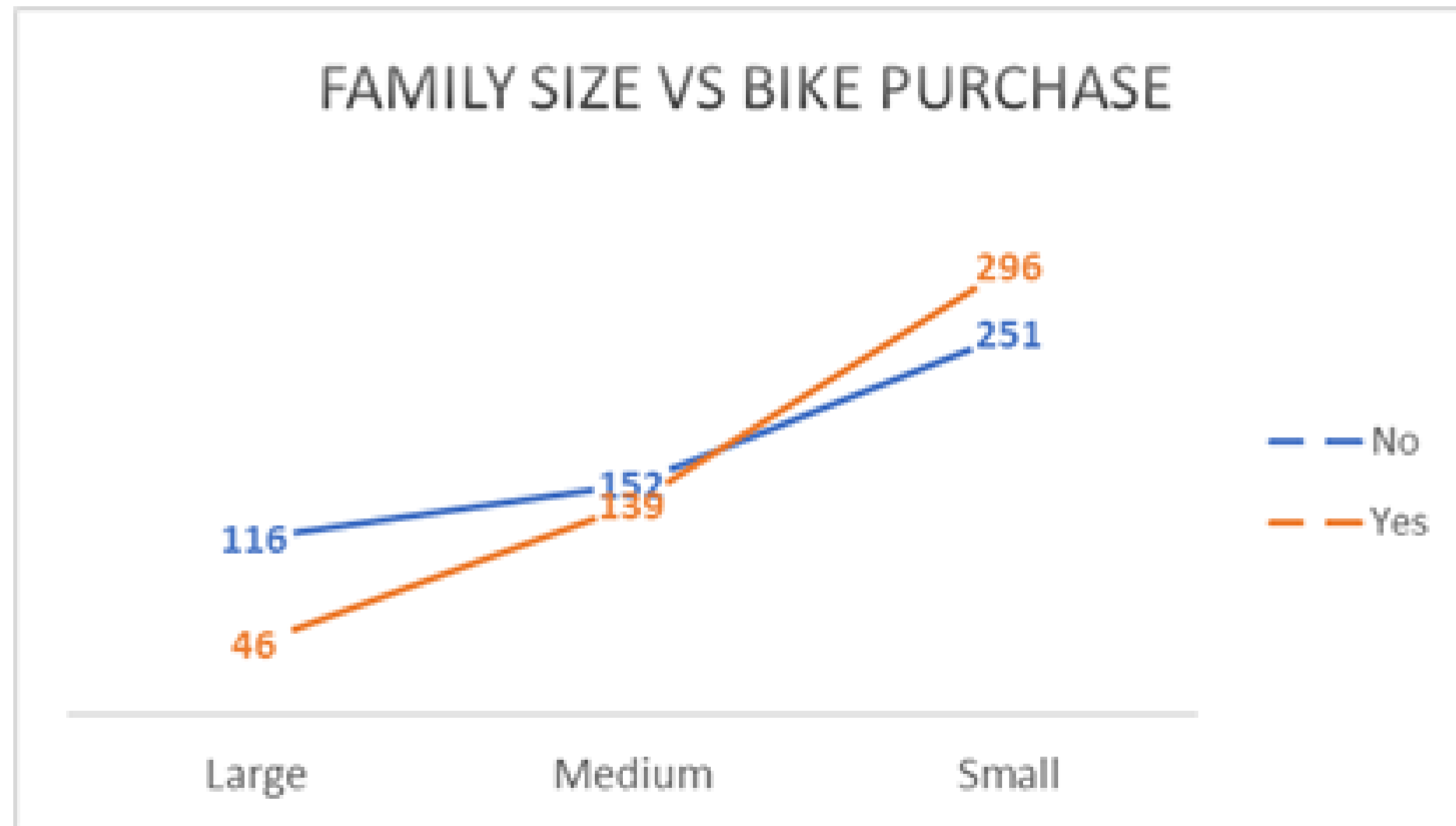


fig. 5

## Key Insights

1. Individuals from small families are the most frequent bike buyers, indicating higher purchasing potential or personal mobility needs.
2. Medium-sized families show a moderate bike purchase trend, reflecting balanced mobility requirements.
3. Large families have the lowest bike purchase rate, possibly due to financial constraints or shared transportation options.

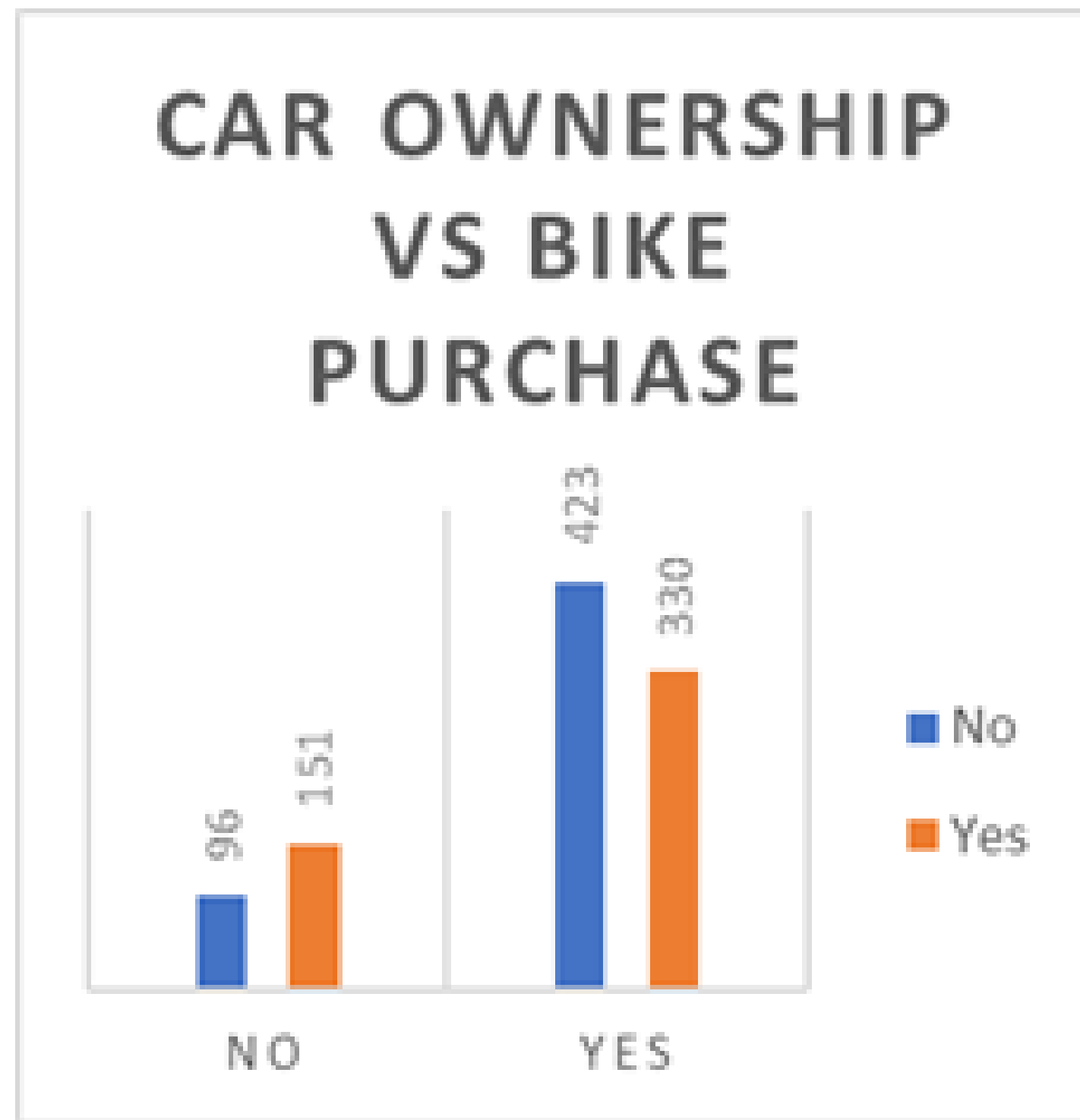


fig. 6

## Key Insights

1. People who already own a car are less likely to purchase a bike, possibly due to reduced need for alternative transport.
2. Individuals without a car show a higher tendency to buy a bike, indicating that bikes are being used as a primary mode of transport.
3. Bike ownership is a practical mobility solution for non-car owners, reflecting a potential market segment for affordable transportation.

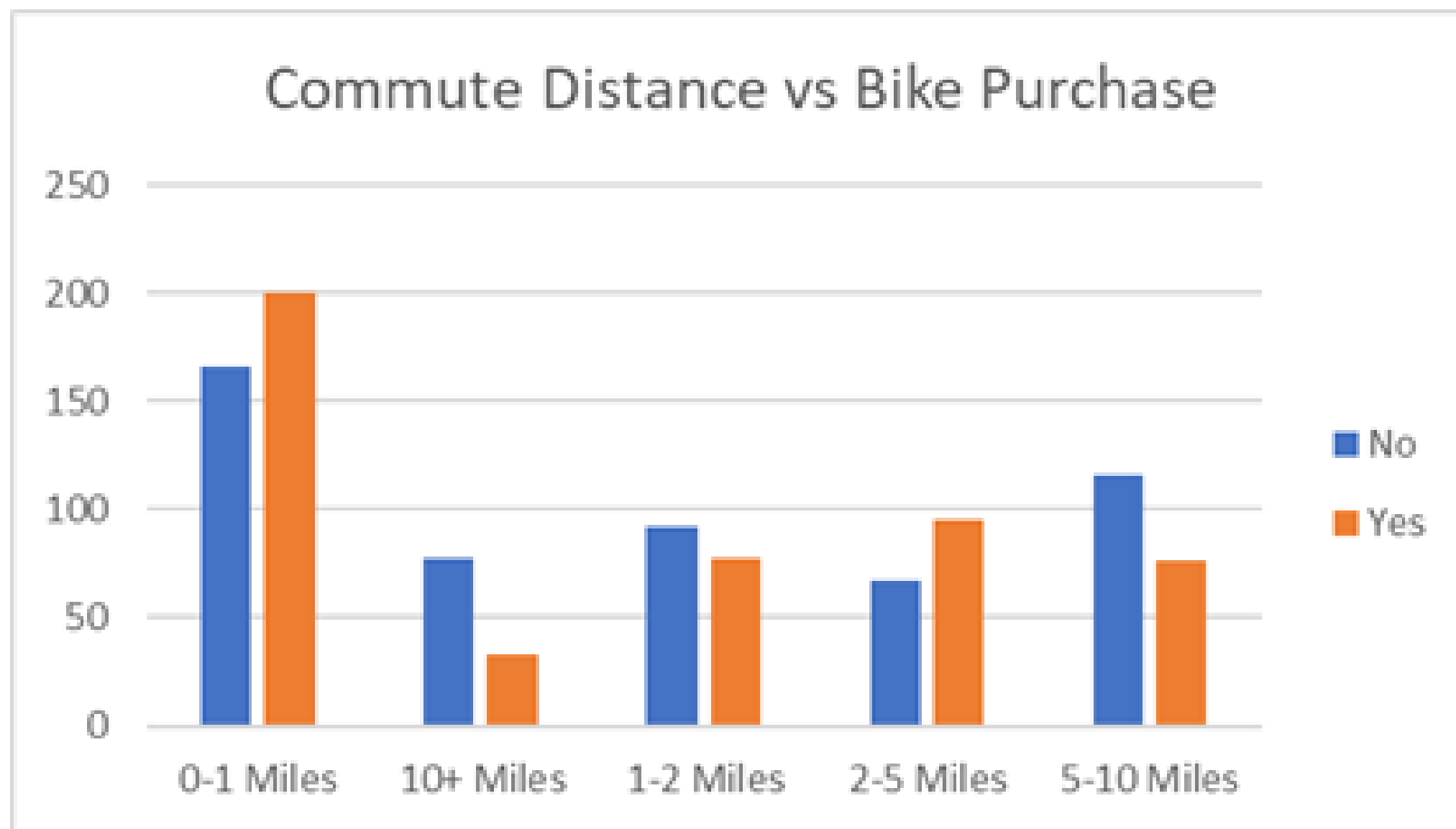
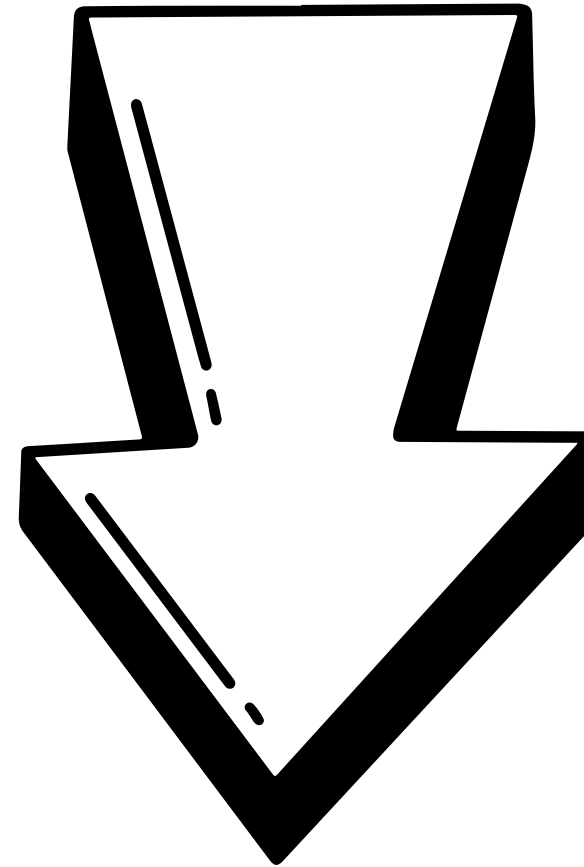


fig. 7

## Key Insights

1. Short-distance commuters (0–1 miles) are the most likely to purchase bikes, suggesting convenience is a key driver.
2. 2–5 miles range also shows strong bike interest, indicating it's an ideal cycling distance.
3. Interest drops for 10+ miles, likely due to longer travel times and effort.
4. 1–2 miles and 5–10 miles segments show mixed behavior, possibly influenced by personal or external factors.
5. Overall, bike purchases are more common among those commuting under 5 miles, highlighting distance as a major factor.

# KPI(Key Performance Indicator) with Insights



## KPI Insights

1. The dataset captures responses from 1,000 individuals, offering a solid foundation for behavioral and demographic analysis.
2. 48.1% of the surveyed individuals purchased a bike, showing a moderate adoption rate.
3. Over half of the respondents (51.9%) did not purchase a bike, highlighting a significant opportunity for targeted marketing and promotional strategies.

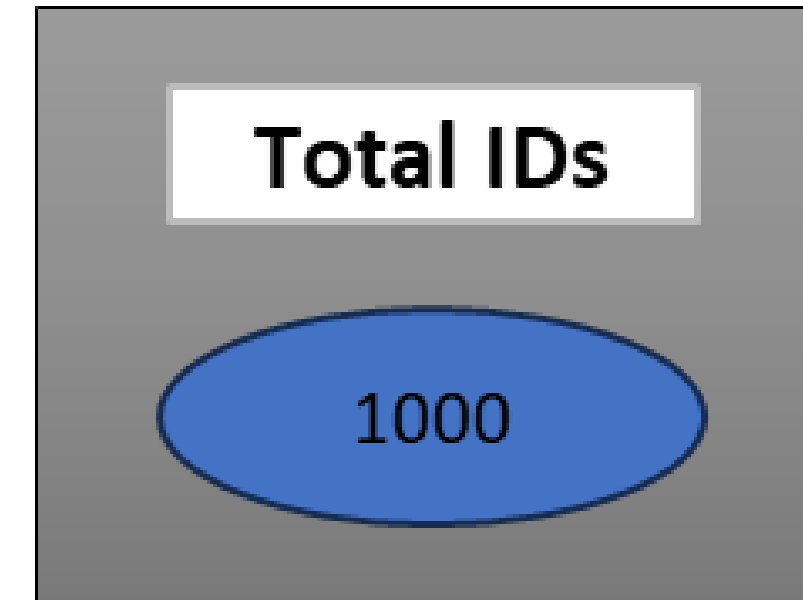


fig. 8

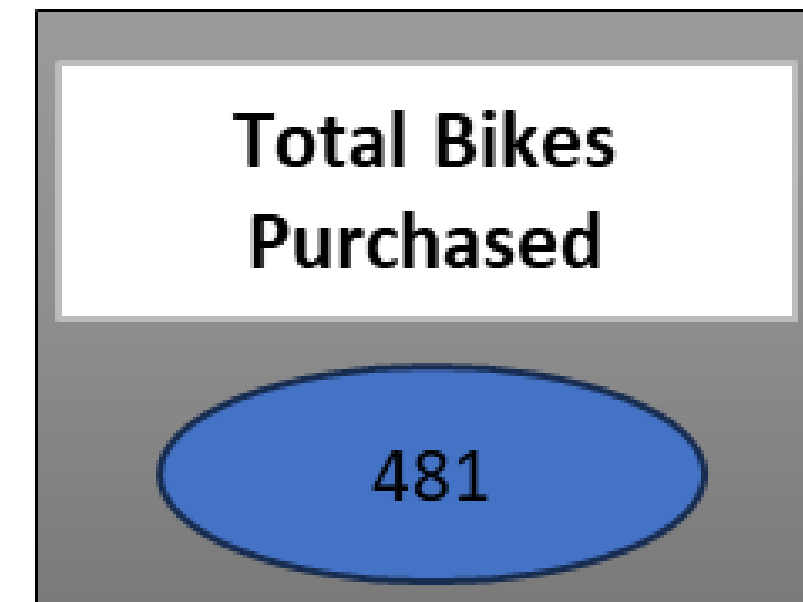


fig. 9

## KPI Insights

1. Bike purchases are nearly evenly split between males (242) and females (239), indicating no major gender disparity in buying behavior.
2. The close numbers suggest that bikes appeal equally to both genders, showcasing a balanced consumer interest.
3. With both segments responding similarly, marketing strategies can remain gender-neutral or be fine-tuned based on preferences rather than purchase likelihood.

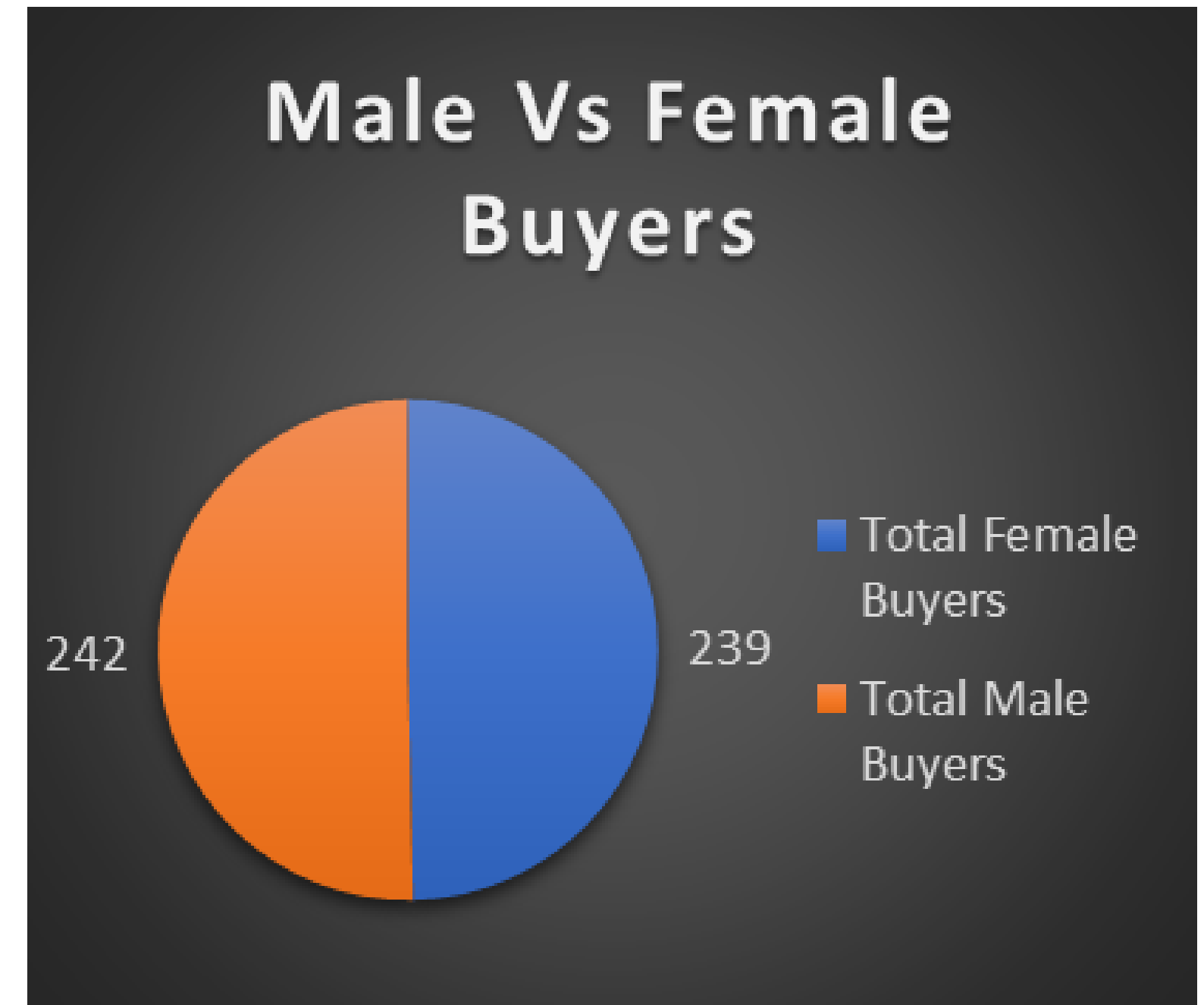


fig. 10



## KPI Insights

1. Single buyers slightly outnumber married buyers, suggesting individuals may prioritize personal mobility more frequently.
2. The distribution indicates both married and single customers actively purchase bikes, with no dominant segment.
3. Marketing can tap into different motivators—freedom and flexibility for singles, convenience and family utility for married buyers.

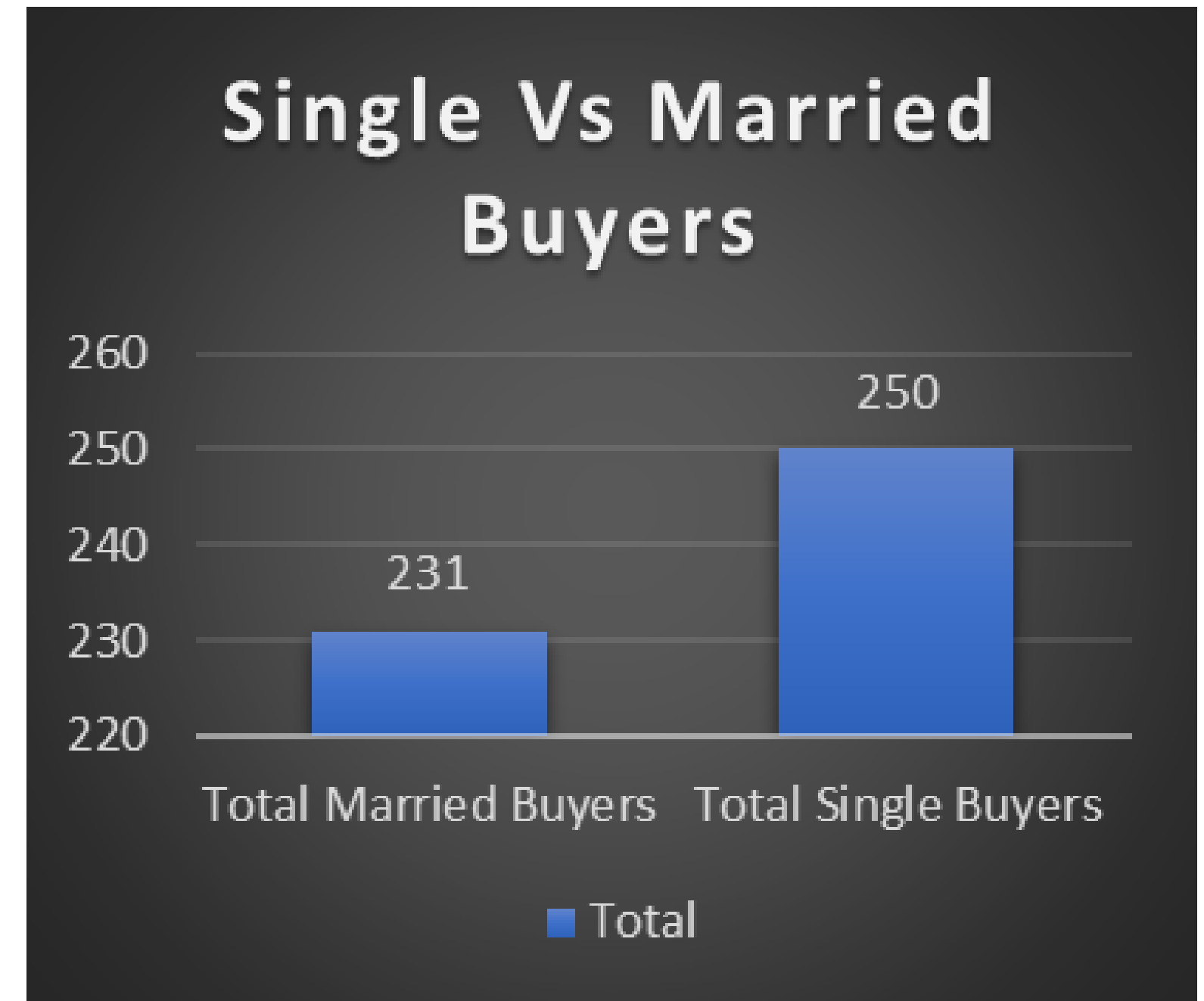


fig. 11

## KPI Insights

1. Medium income individuals are the top buyers, showing strong purchasing intent despite not being in the highest bracket.
2. High income buyers are significant, but slightly trail medium earners, suggesting other factors influence purchase decisions.
3. A noteworthy portion of buyers comes from the low income group, highlighting interest in bikes as essential transportation.

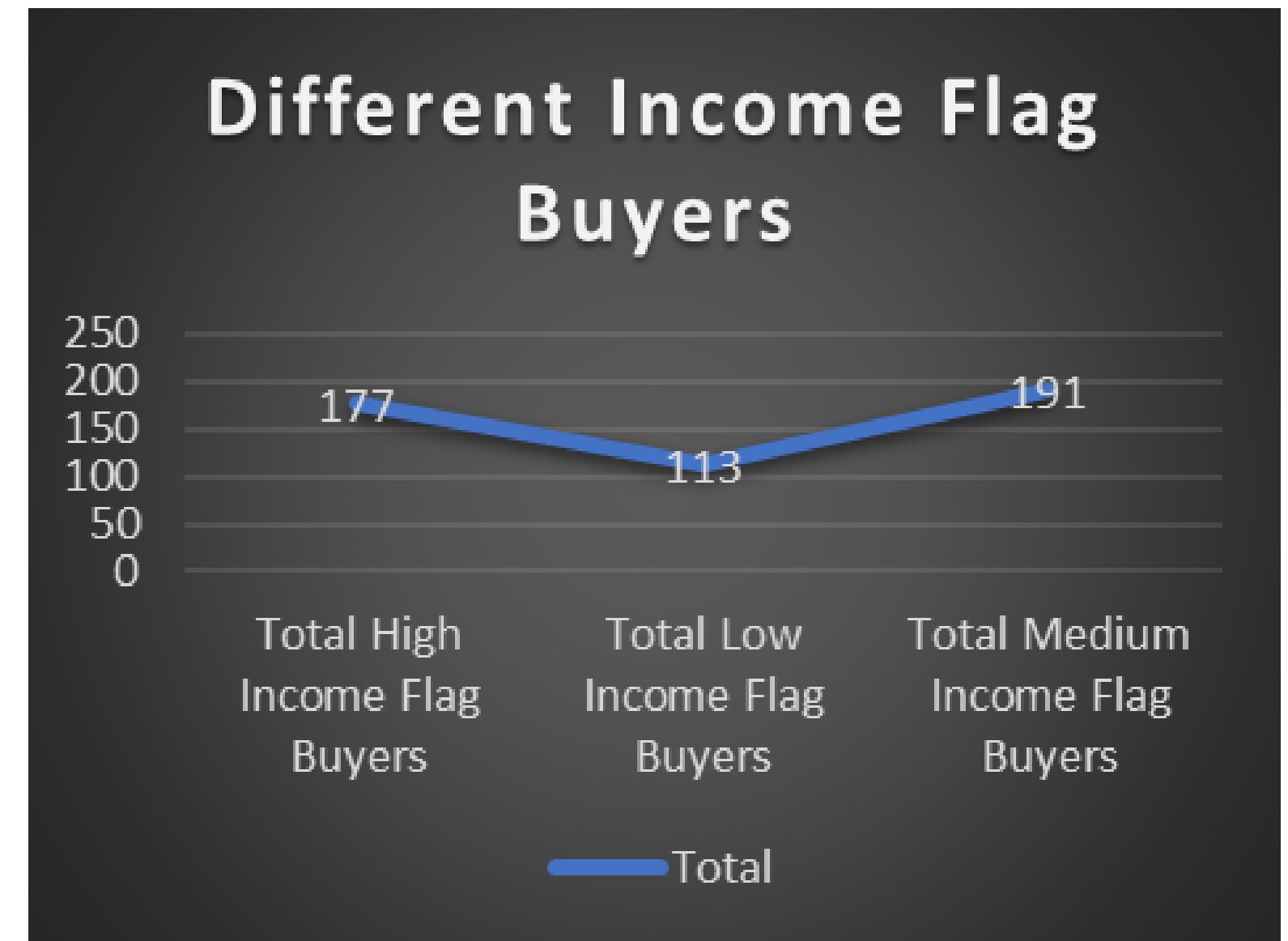


fig. 12

## KPI Insights

1. North America contributes the highest number of bike buyers, indicating strong demand or better access/affordability.
2. Europe ranks second, reflecting steady buyer interest, possibly influenced by lifestyle or urban commuting preferences.
3. The Pacific region has the lowest number of bike buyers, suggesting lower demand or different commuting trends.

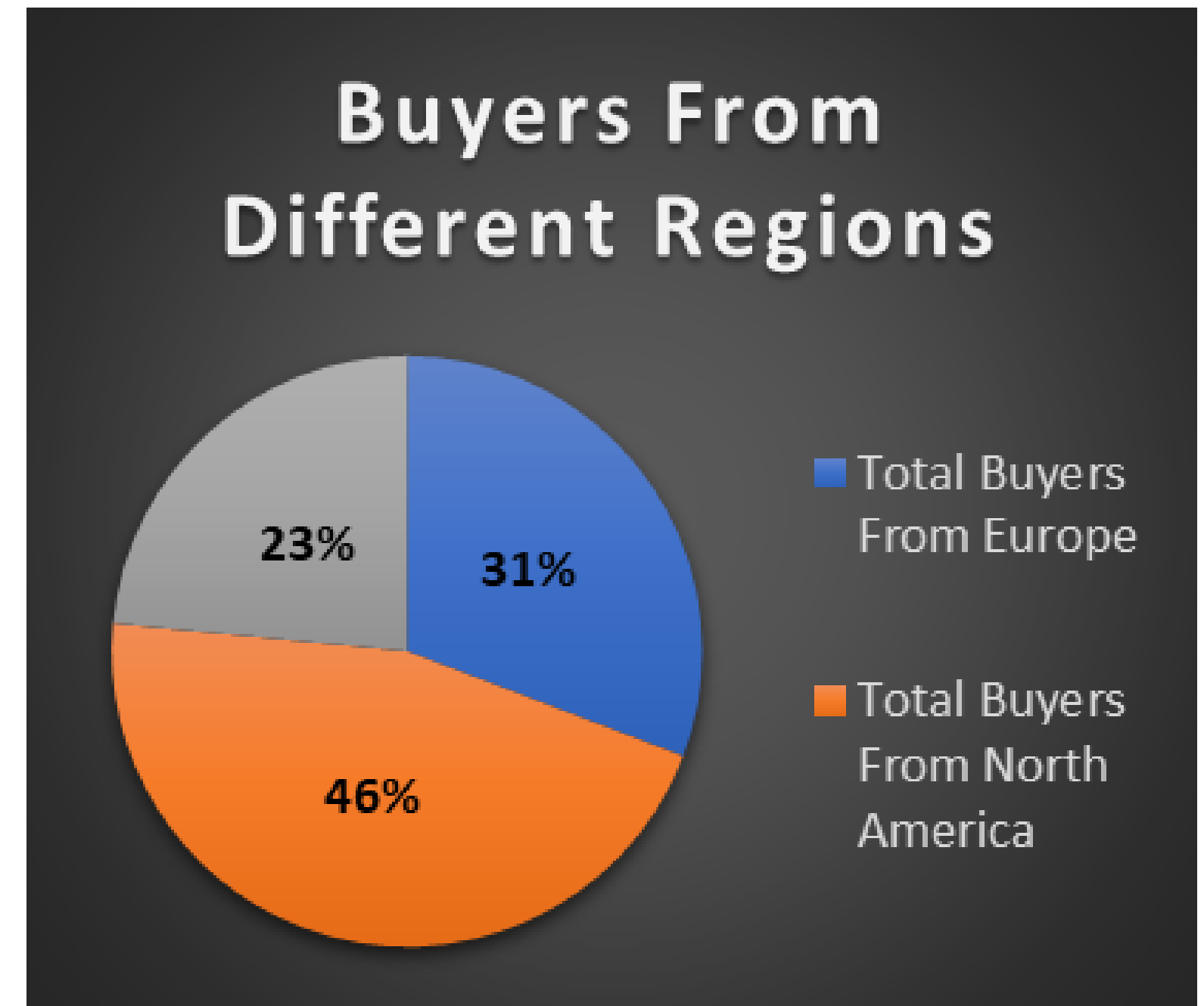


fig. 13

## KPI Insights

1. Mid-aged individuals show the highest engagement in bike purchases, possibly due to stable income and commuting needs.
2. The old-aged segment has decent participation, though lower than mid-aged—likely for convenience or health-related mobility.
3. Younger individuals show minimal buying behavior, possibly due to limited financial independence or different transportation preferences.

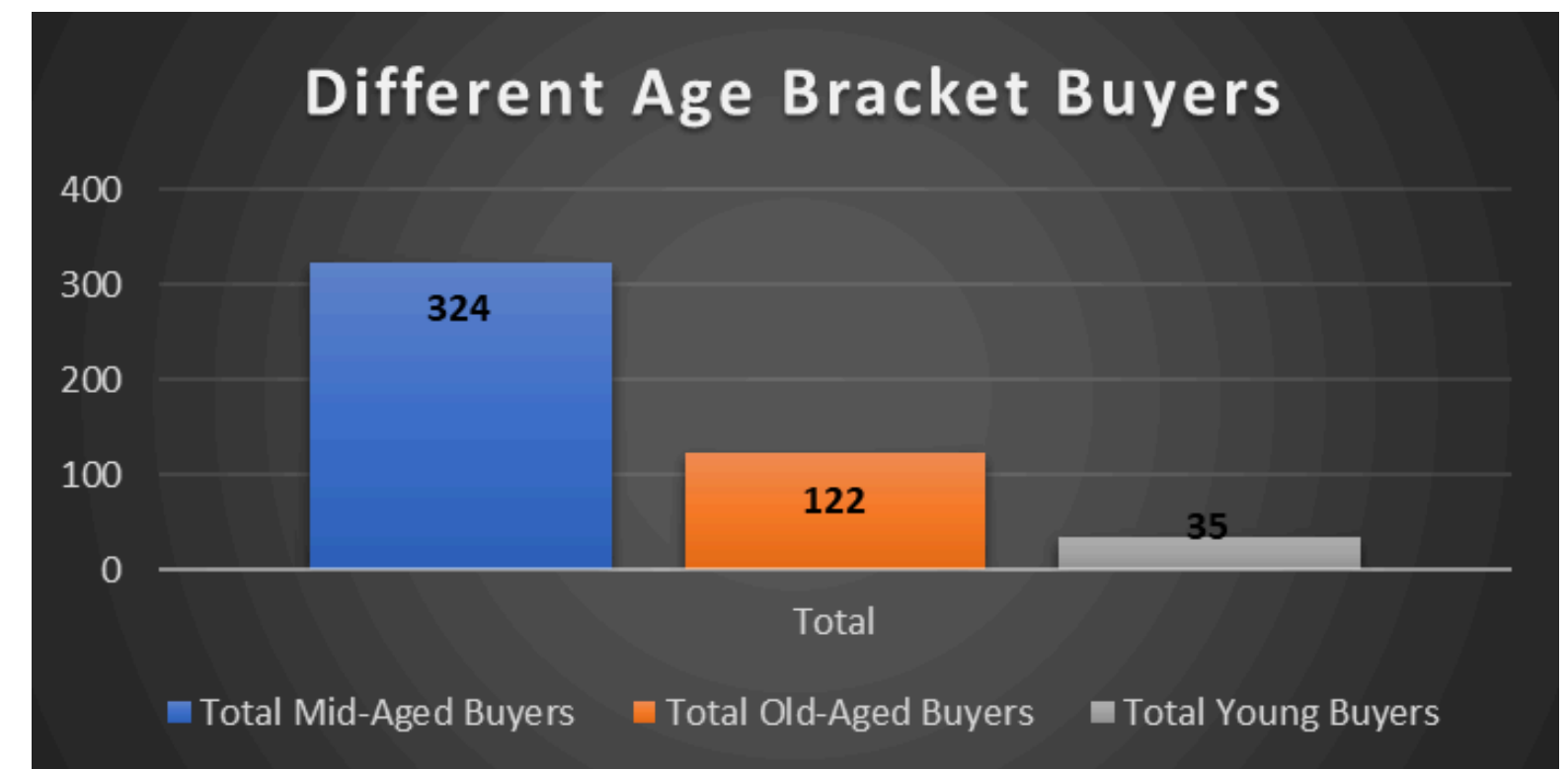


fig. 14

## KPI Insights

1. A significant number of buyers already own a car, suggesting that bikes are preferred for short commutes or convenience.
2. Buyers without car ownership also show strong bike adoption, indicating that bikes serve as their main mode of transport.
3. The data shows that bike purchasing isn't limited by car ownership, but rather driven by personal or practical commuting needs.

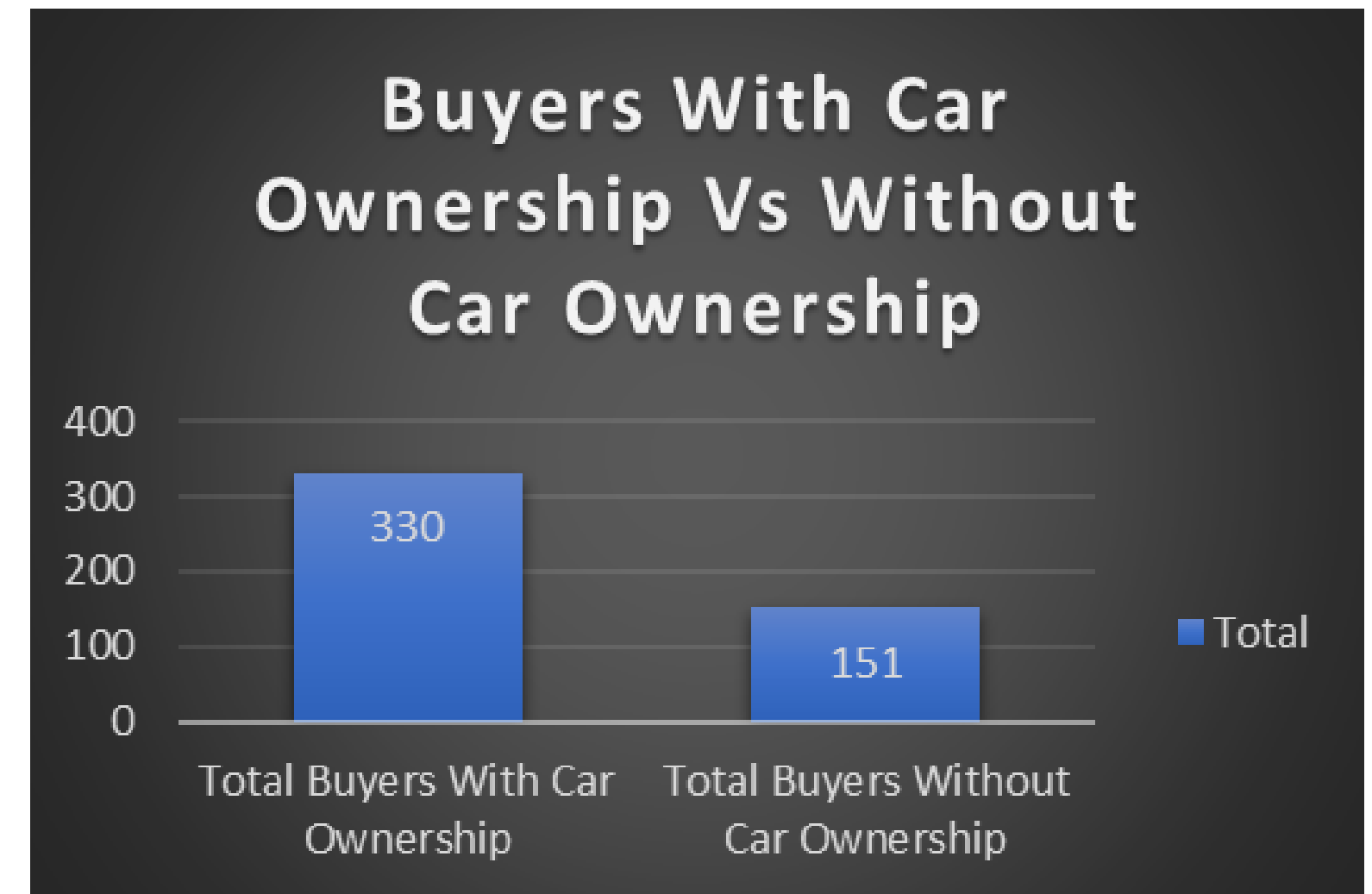


fig. 15

## KPI Insights

1. A larger share of buyers who own a house have also purchased bikes, suggesting that financial stability may influence purchase decisions.
2. Buyers without house ownership also make up a notable portion, indicating that bike affordability appeals to both owners and renters alike.
3. Whether or not someone owns a home, bike purchases remain a popular choice, reflecting broader lifestyle or commuting preferences.

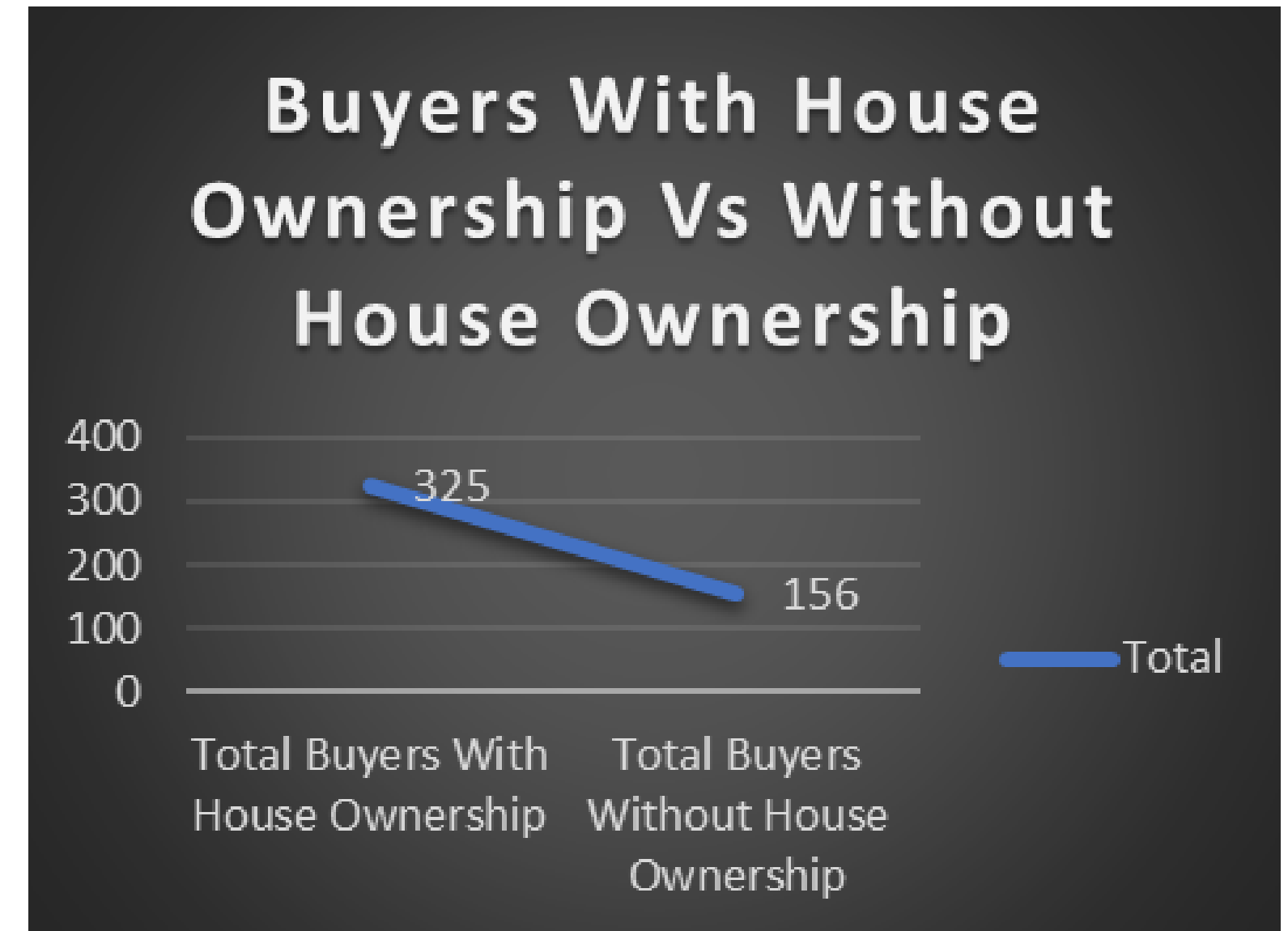


fig. 16

## KPI Insights

1. Buyers with Bachelor's Degrees lead all other groups, showing a strong connection between higher education and purchasing power.
2. Partial College and Graduate buyers form a solid middle tier, highlighting that mid-level educated individuals are also active consumers.
3. High School and Partial High School educated buyers are the least represented, which may reflect lower income levels or different priorities in this segment.

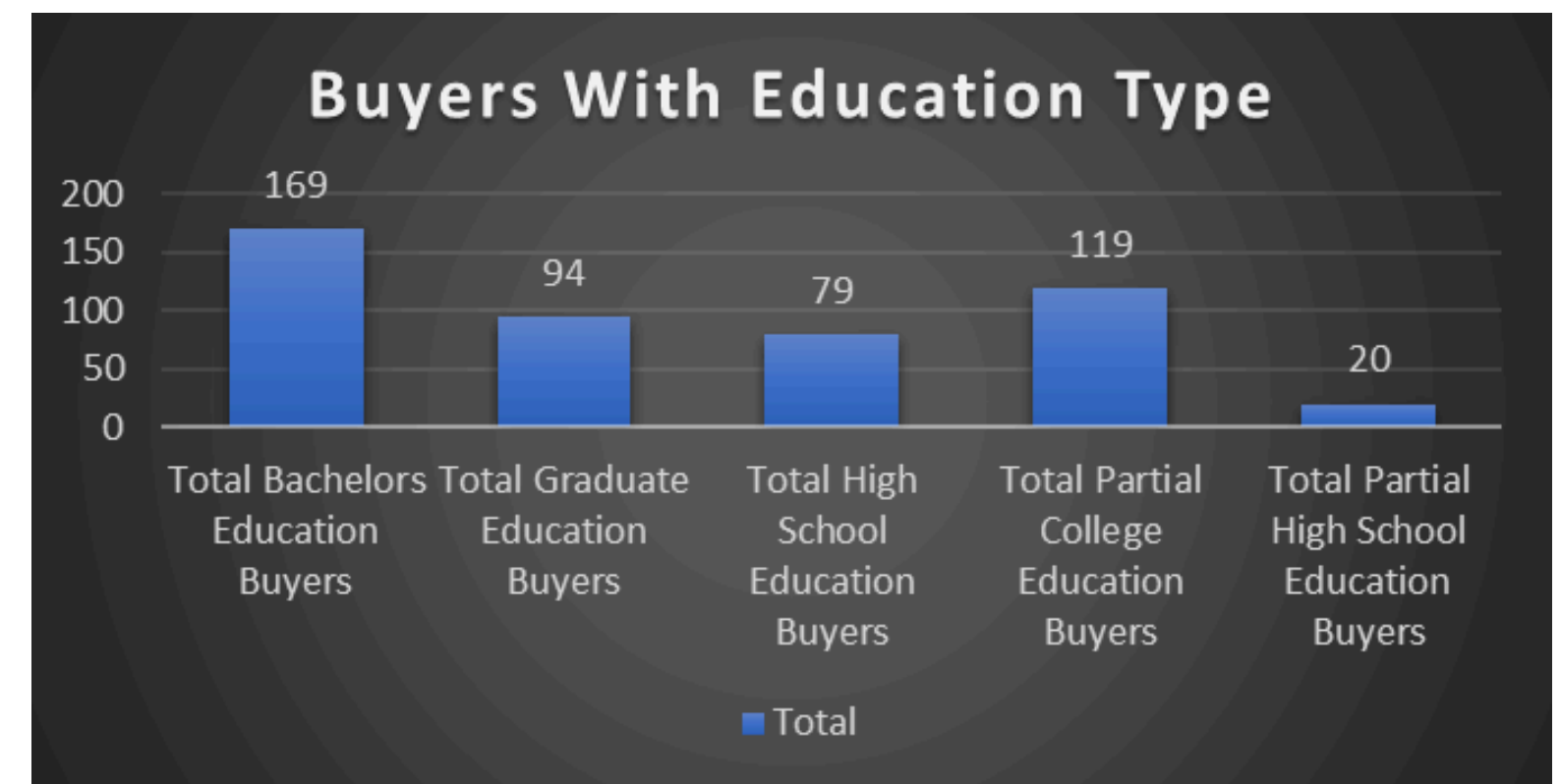


fig. 17



## KPI Insights

1. Professionals lead bike purchases, indicating a higher intent or capability to buy, possibly due to better income stability or lifestyle preferences.
2. Skilled Manual and Clerical workers follow, reflecting moderate purchasing patterns within the working class.
3. Manual and Management occupations show comparatively lower numbers, which might suggest either lower income flexibility or alternate commuting preferences.

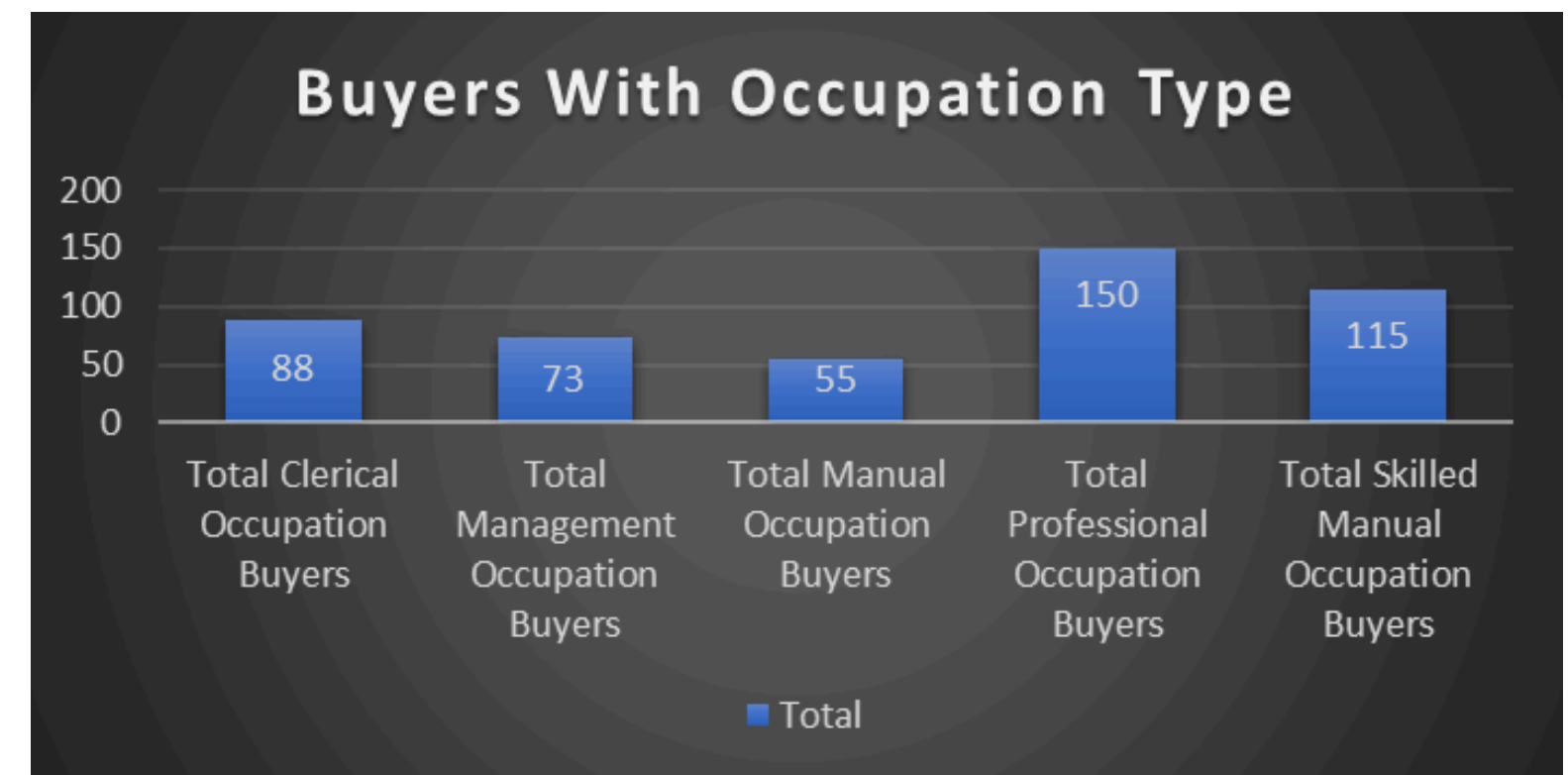


fig. 18

## KPI Insights

1. Buyers with shorter commutes (0–1 miles) show the highest bike purchase rate, possibly for convenience and time efficiency in local travel.
2. Moderate-distance commuters (2–5 miles) also show significant interest, indicating practicality of bike use for medium commutes.
3. Long-distance commuters (10+ miles) show the least bike purchases, likely due to preference for more comfortable or faster transportation options over longer distances.

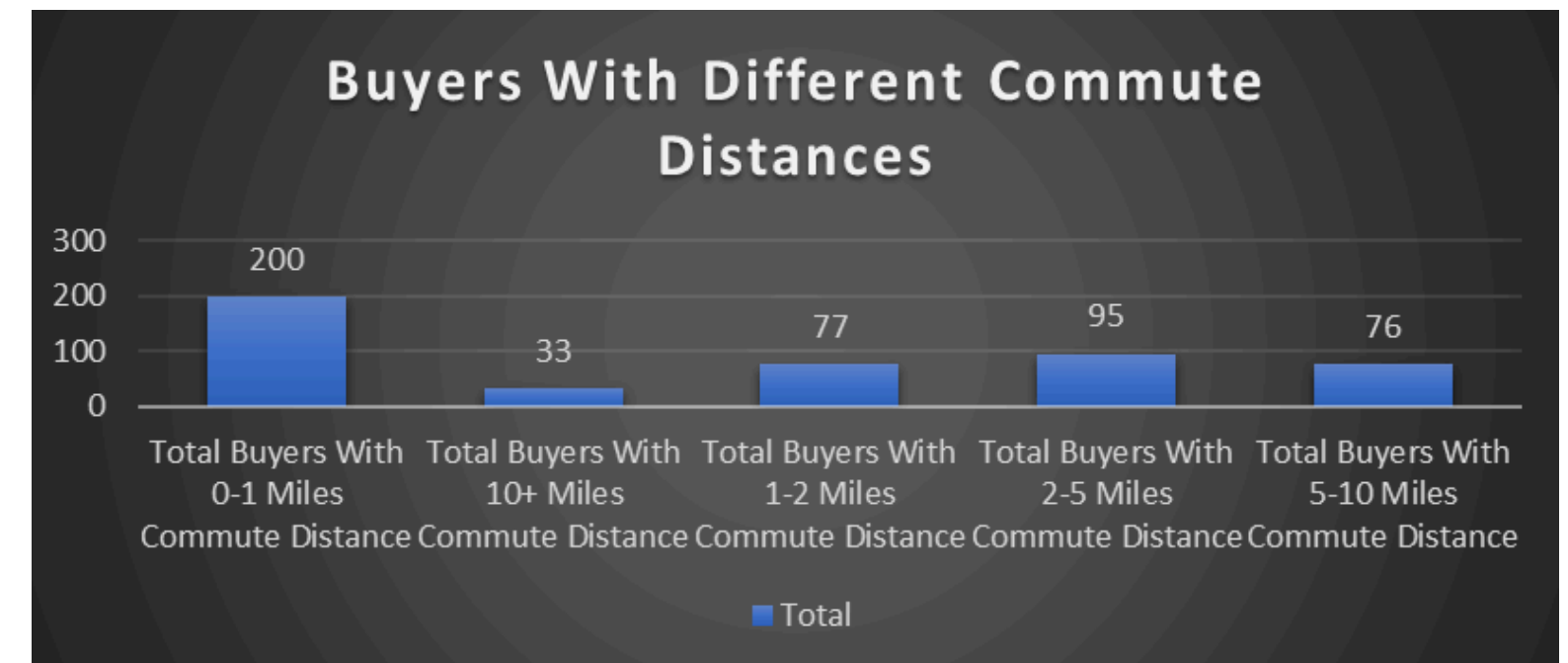


fig. 19

## KPI Insights

1. Small family households are the most likely to purchase bikes, suggesting higher individual mobility needs or disposable income.
2. Medium-sized families show moderate interest, possibly balancing shared transport choices with individual needs.
3. Large families have the lowest bike purchase rate, likely due to higher reliance on shared or family-sized transport solutions.

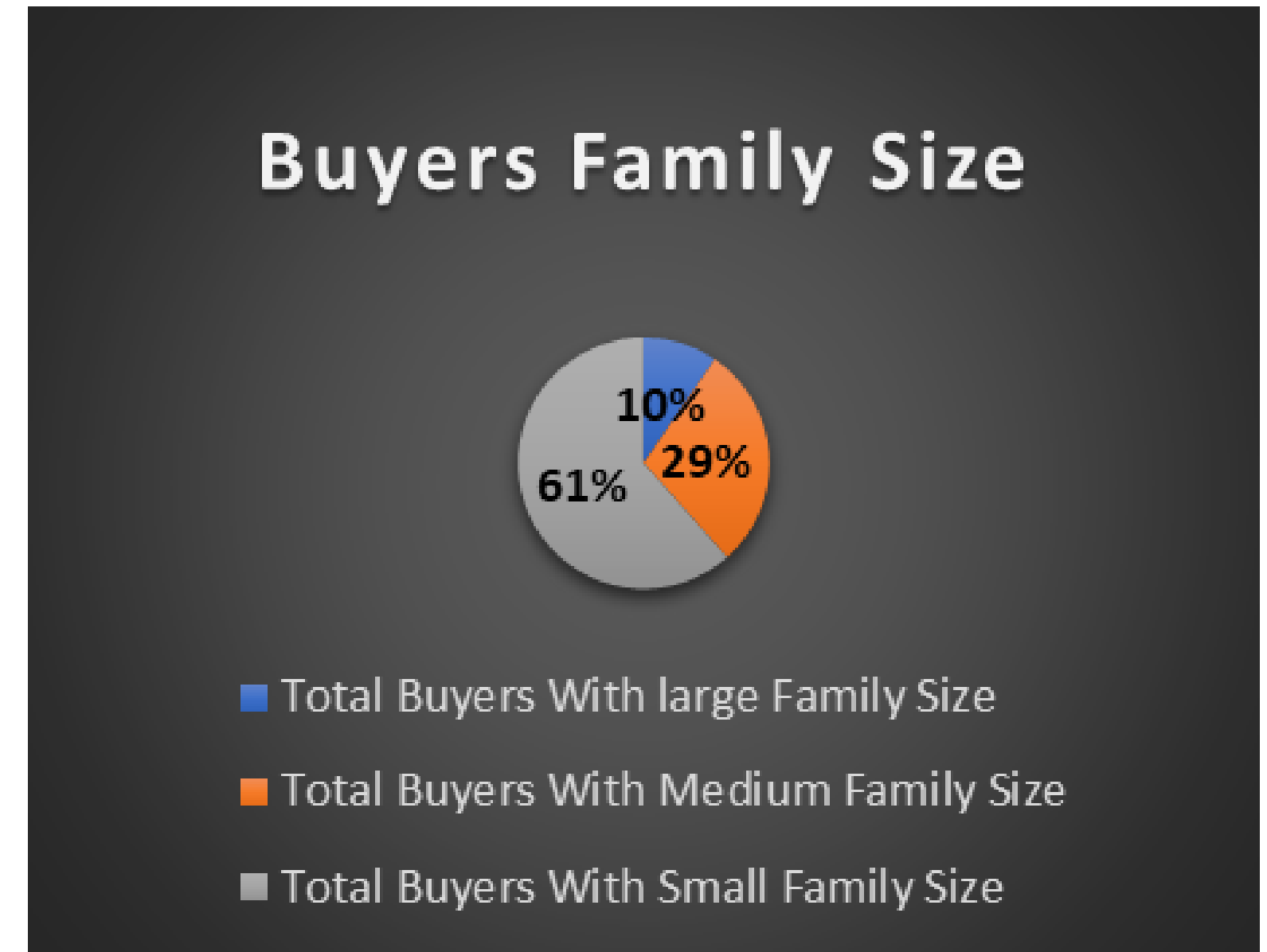


fig. 20

## KPI Insights

1. Buyers with a Low Score surprisingly form the largest group among actual purchasers, indicating unanticipated buying behavior or potential misclassification.
2. High Score buyers also show strong purchase activity, aligning well with predictive expectations.
3. Medium Score buyers contribute the least, suggesting this segment may be less certain or influenced by other unmeasured factors.



fig. 21

Thank  
you