

Background

A new start-up company is seeking initial investment from angel investors to support the development of a portable battery prototype tailored for the Electric Vehicle (EV) market. To gauge potential demand and refine their go-to-market strategy, the company conducted a series of market surveys and shared the resulting data with me for analysis.

Purpose

To interpret and explain the market demand based on survey results.

To identify and suggest appropriate market segmentation.

To propose a pricing strategy grounded in data insights.

How I Approached the Analysis

1) Data Integrity Assessment

Before diving into analysis, I conducted a thorough review of the dataset to ensure its integrity. This included:

- 1.1) Checking for missing values, duplicates, and inconsistencies, sometimes outliers
- 1.2) Verifying that survey responses aligned with expected formats and logic
- 1.3) Ensuring that categorical variables were consistently labelled

2) Relevance & Completeness Check

I evaluated whether the dataset was fit for purpose:

- 2.1) The survey captured key variables such as consumer interest, price sensitivity, reasons for possible purchase, and preferred purchase method
- 2.2) However, it lacks some key opinions about preference on product features.
- 2.3) If time permits, I would recommend collecting additional data on:
 - EV ownership brand preferences
 - Charging habits
 - Willingness to pay under different use-case scenarios (e.g., emergency backup vs. daily use)

Skills I used

- Data Preparation
 - a. Utilized Power Query to clean and transform the dataset
 - b. Corrected data types, handled null values, and standardized categorical entries
 - c. Created calculated columns using DAX to derive insights (e.g., price elasticity, usage frequency categories)
- Data Validation
 - a. Ensured logical consistency across responses (e.g., respondents who selected “no EV” were excluded from pricing questions)
 - b. Cross-checked totals and averages to confirm data accuracy

The Outcome

- EV Market Demand Insights

- a. Overall EV ownership is over 14%, and a further 42% participants "would like to" have EV, indicating the massive market potential.
- b. Overall half (50%) of participants has EV range anxiety (Extremely anxious 35% and moderately anxious 15%).
- c. High product demand (regardless of EV ownership and range anxiety levels, nearly a quarter participants, 23%, made a pre-order, while those with high range anxiety over 2 thirds, 66.9% pre-ordered)

- Market Segmentation Proposal Based on current / potential EV ownership and range anxiety sensitivity, I recommend three primary segments for the portable battery prototype: (Location + gender + age group):

- a. Yorkshire rural commuters (female aged 18-24 & 25-29) – high current (combined 11%) and high potential (combined 43%) EV ownership, very high range anxiety
- b. London city commuters (Male aged 18-24 & 25-29) – high current (combined 4.5%) and high potential (combined 12%) EV ownership, very high range anxiety
- c. Lancashire rural commuters (female aged 30-39) - high current EV ownership (6.4%) and potential (15.6%) ownership, moderate anxiety

- Pricing Strategy Recommendation

Parallel pricing model is advisable, based on nearly equal preferences exist (42% vs 41%):

- a. One-off purchase: Target price 512, which could be rounded up or down to 510 or 515 or so accordingly.
- b. Monthly subscription: Target price 52, which could be rounded up or down to 50 or 55 or so if needed.

Suggestions on further survey

For Prototype product, further data collection on:

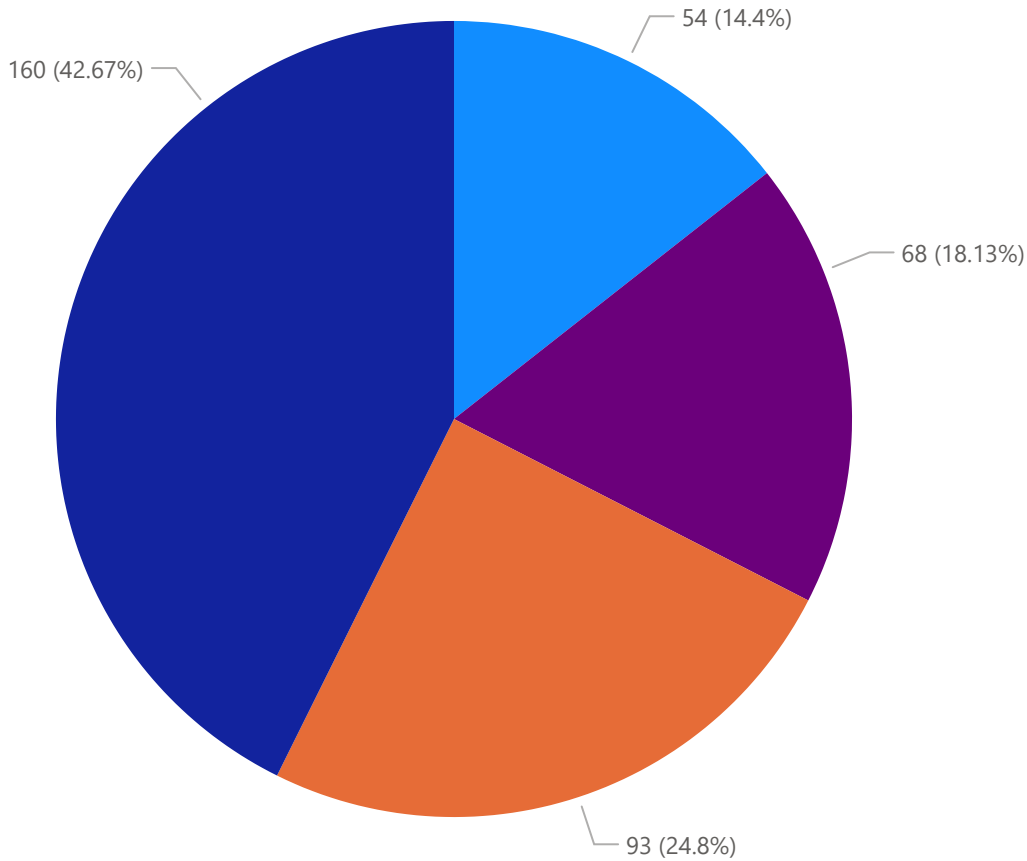
- a. Product features (e.g. Charging speed, Weight preference, etc.)
- b. Customer behaviours (storage habit, charging habit, etc.)

EV Ownership Overview

Slicers

1. Do you own an Electric Vehicle (EV)?

- Yes
- No, and I have no interest
- No, but I'd be open to it
- No, but I'd like to



Interpretation:

- Answer "Yes" = Current EV ownership = current market.
- Answer "No, but I'd like to" indicates potential market / market growth opportunity.

Region

☐ Select all

☐ Lancashire

☐ London

☐ Midlands

☐ Tyneside

☐ Yorkshire

Age

☐ Select all

☐ 18-24

☐ 25-29

☐ 30-39

☐ 40-59

☐ 60+

Gender

☐ Select all

☐ Female

☐ Male

☐ Non-Binary

☐ Prefer not to answer

Urban

☐ Select all

☐ City

☐ Rural

Education Level

☐ Select all

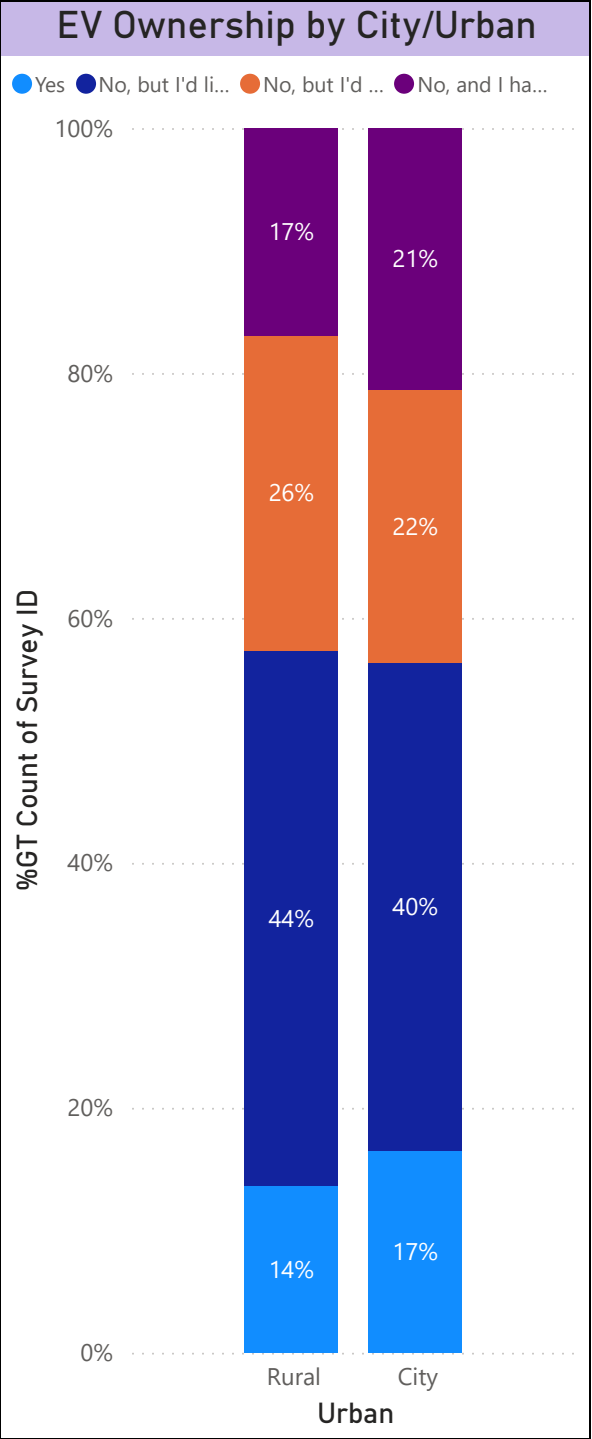
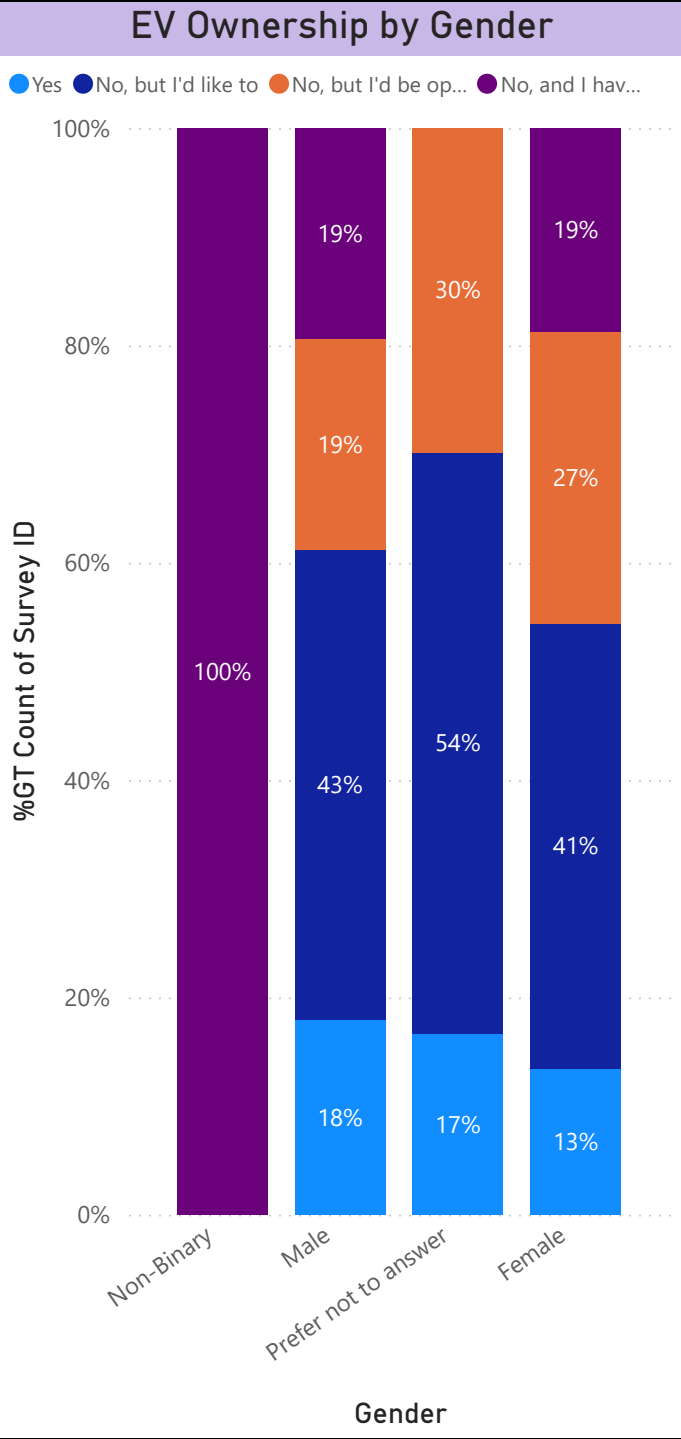
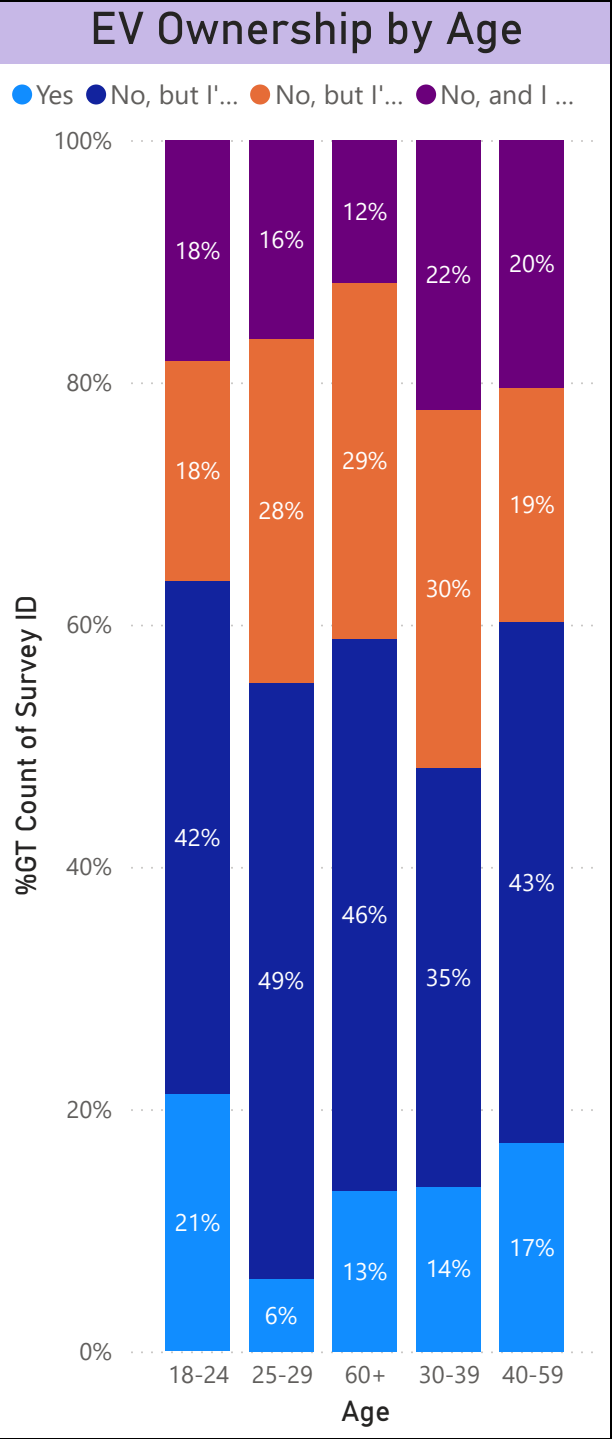
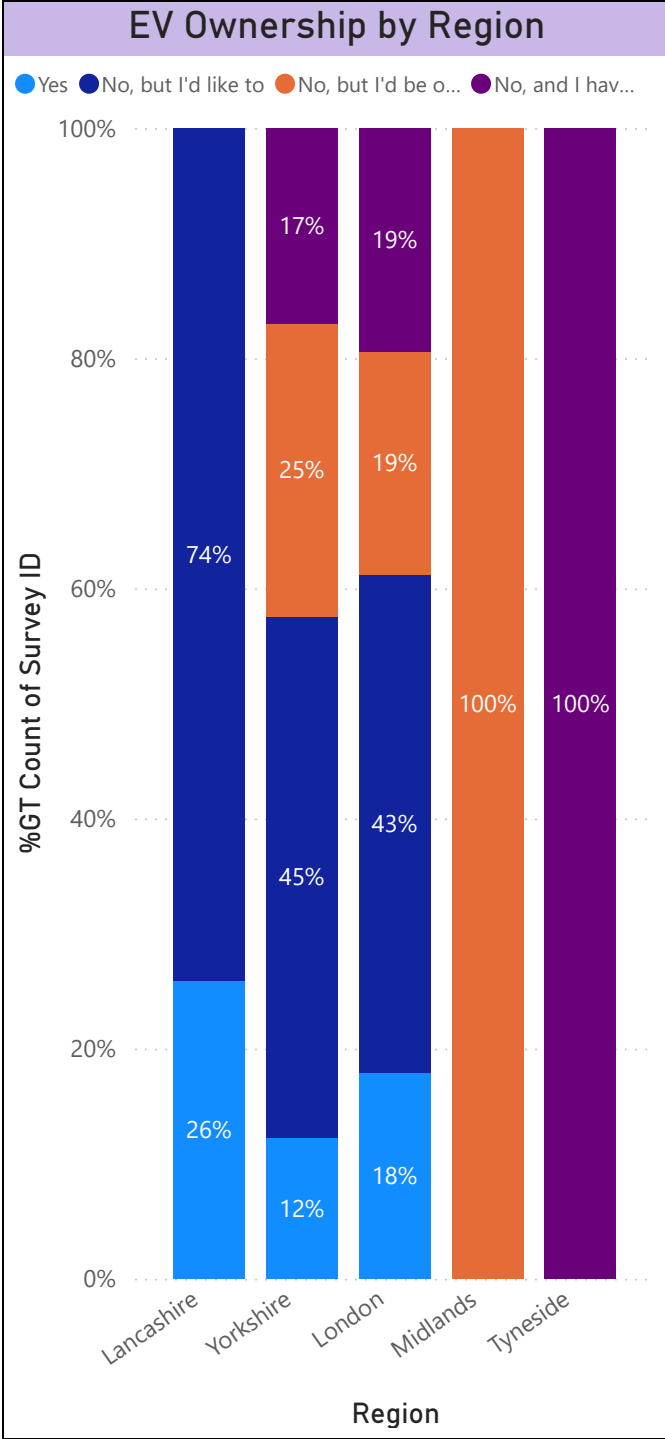
☐ A-Level

☐ GCSE

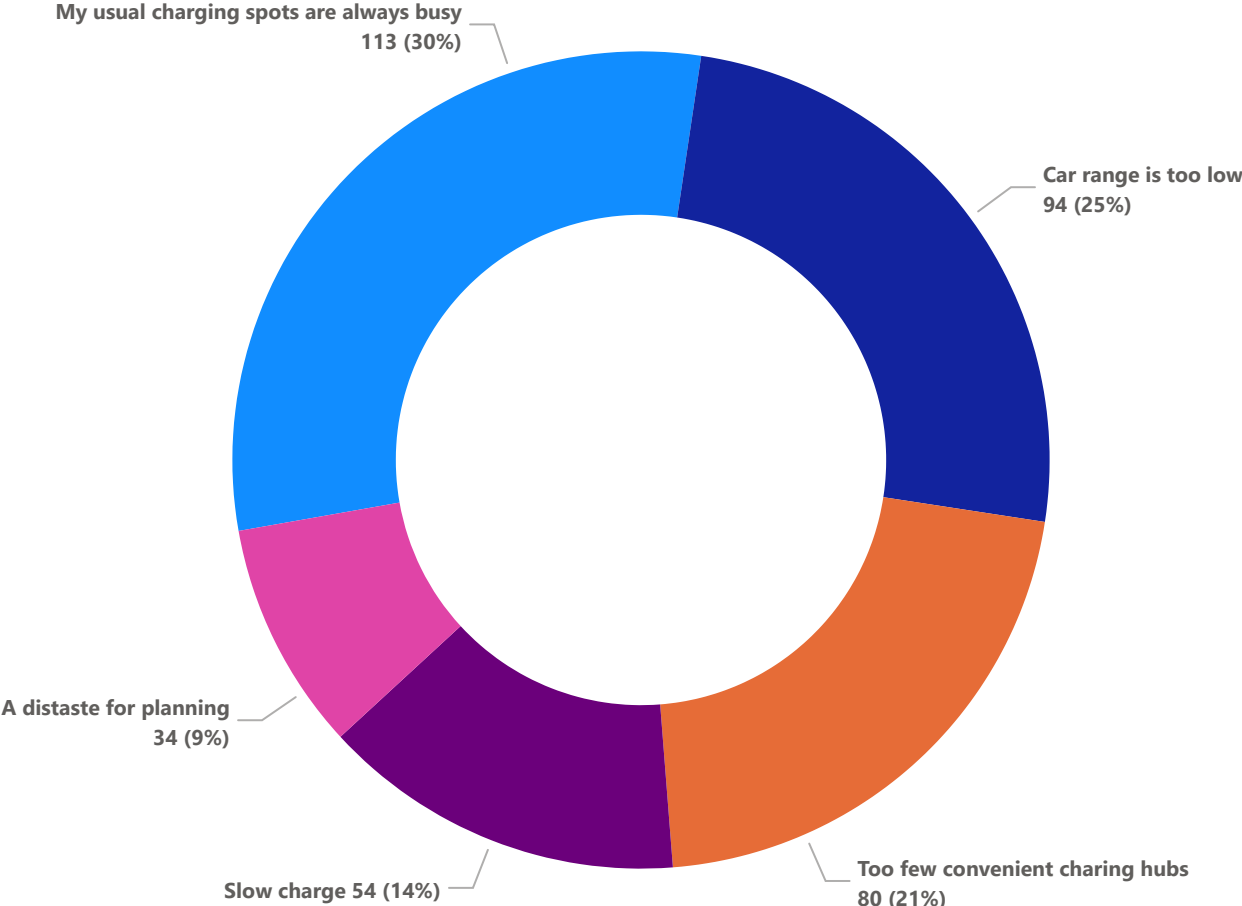
☐ Masters

☐ No formal qualification

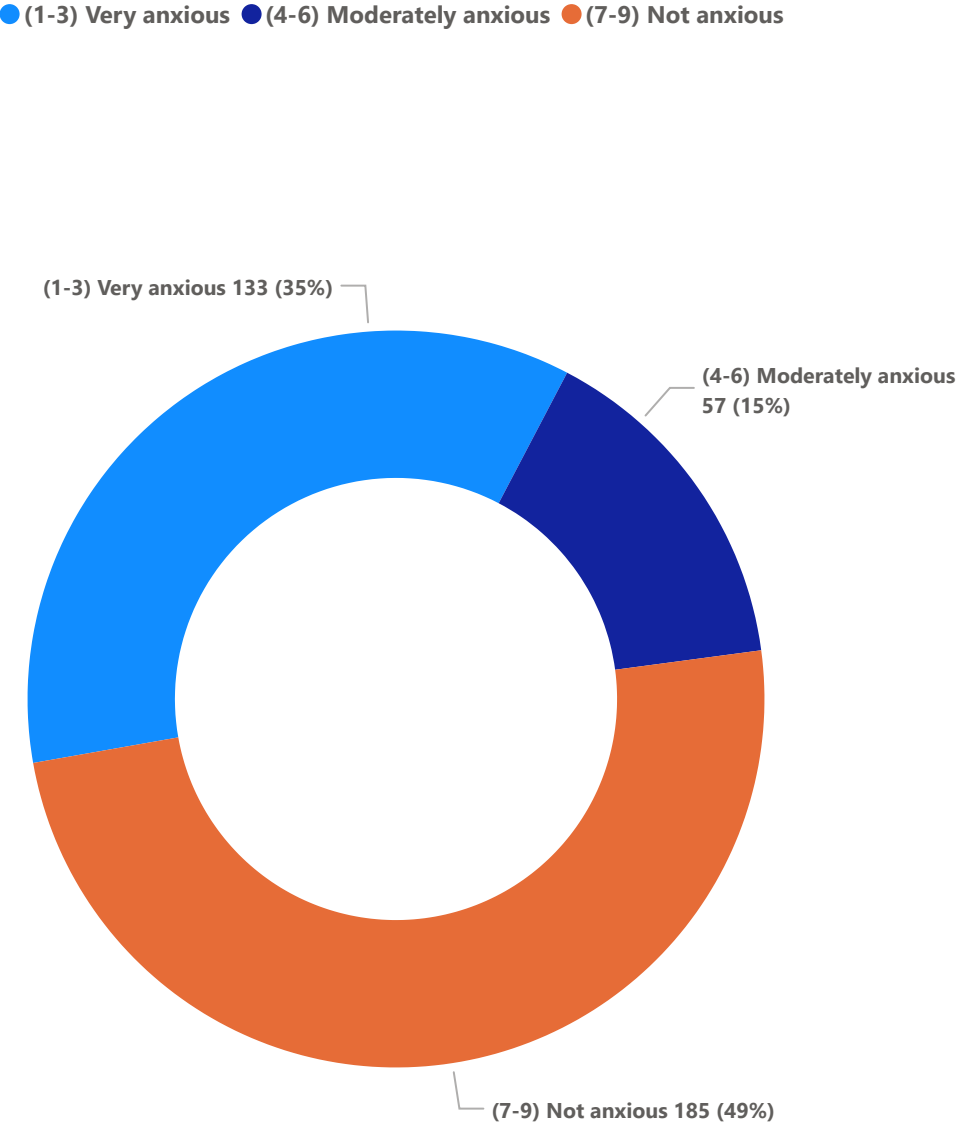
☐ University



Challenges for EV Owners

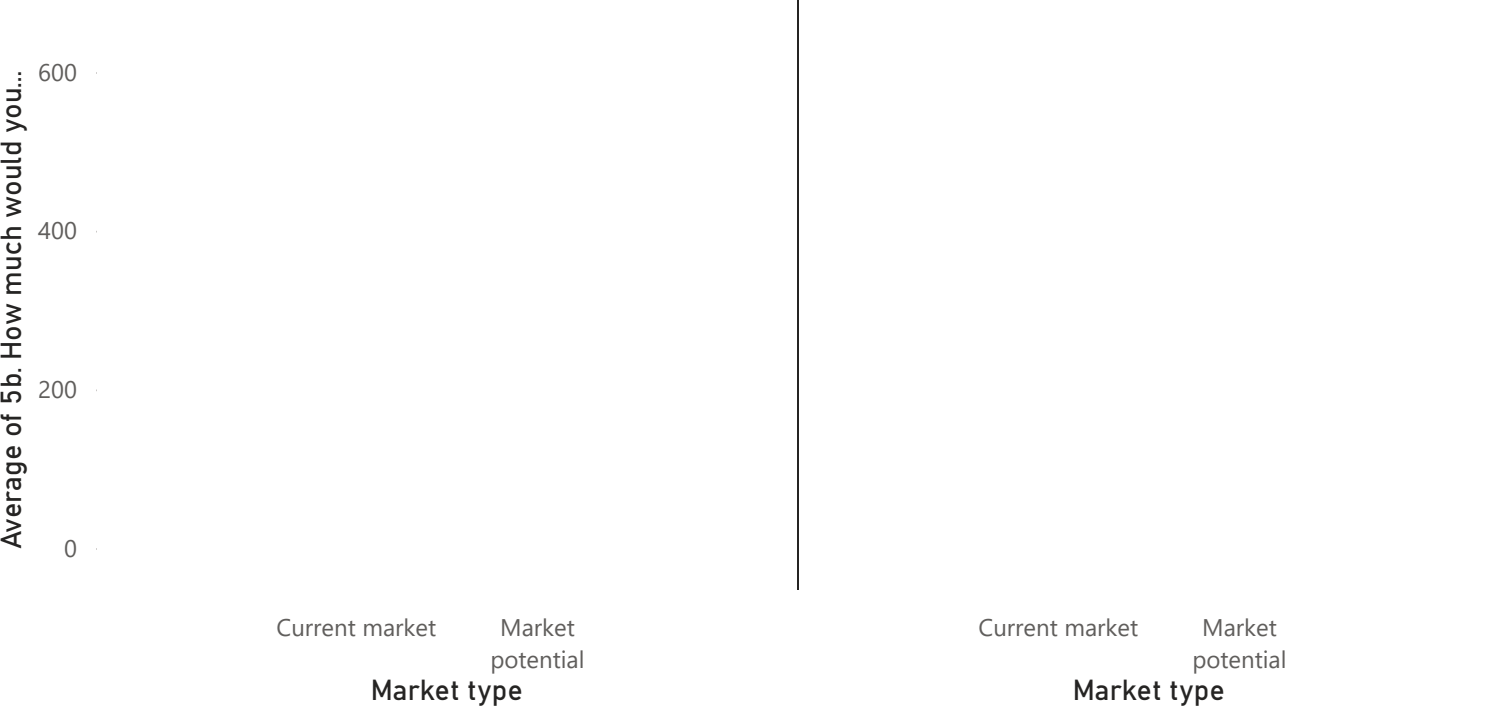
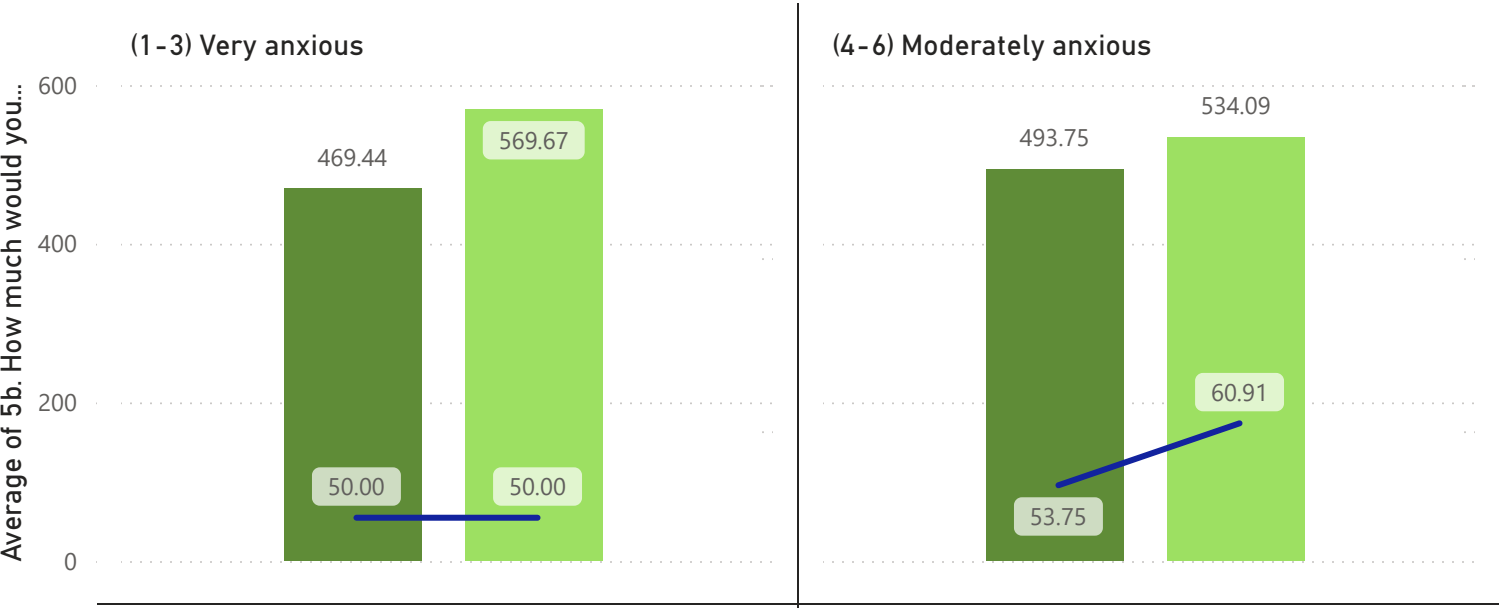


Range Anxiety Analysis



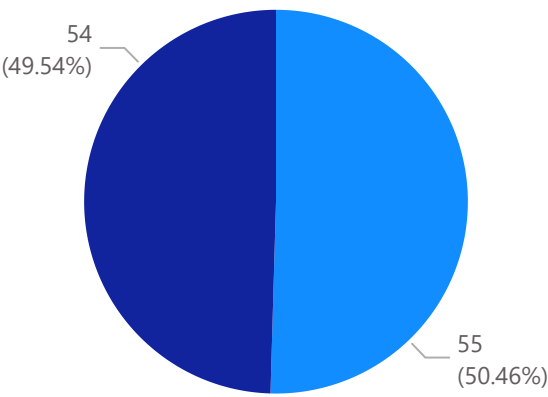
Price sensitivity by Market type & Anxiety category

● Average of 5b. How much would you be willing to pay to buy one? ● Average of 5a. What would be a reasonable monthly fee ...



Ordered VS Not ordered

discounted ... ● Ordered ● Not Ordered



Market type

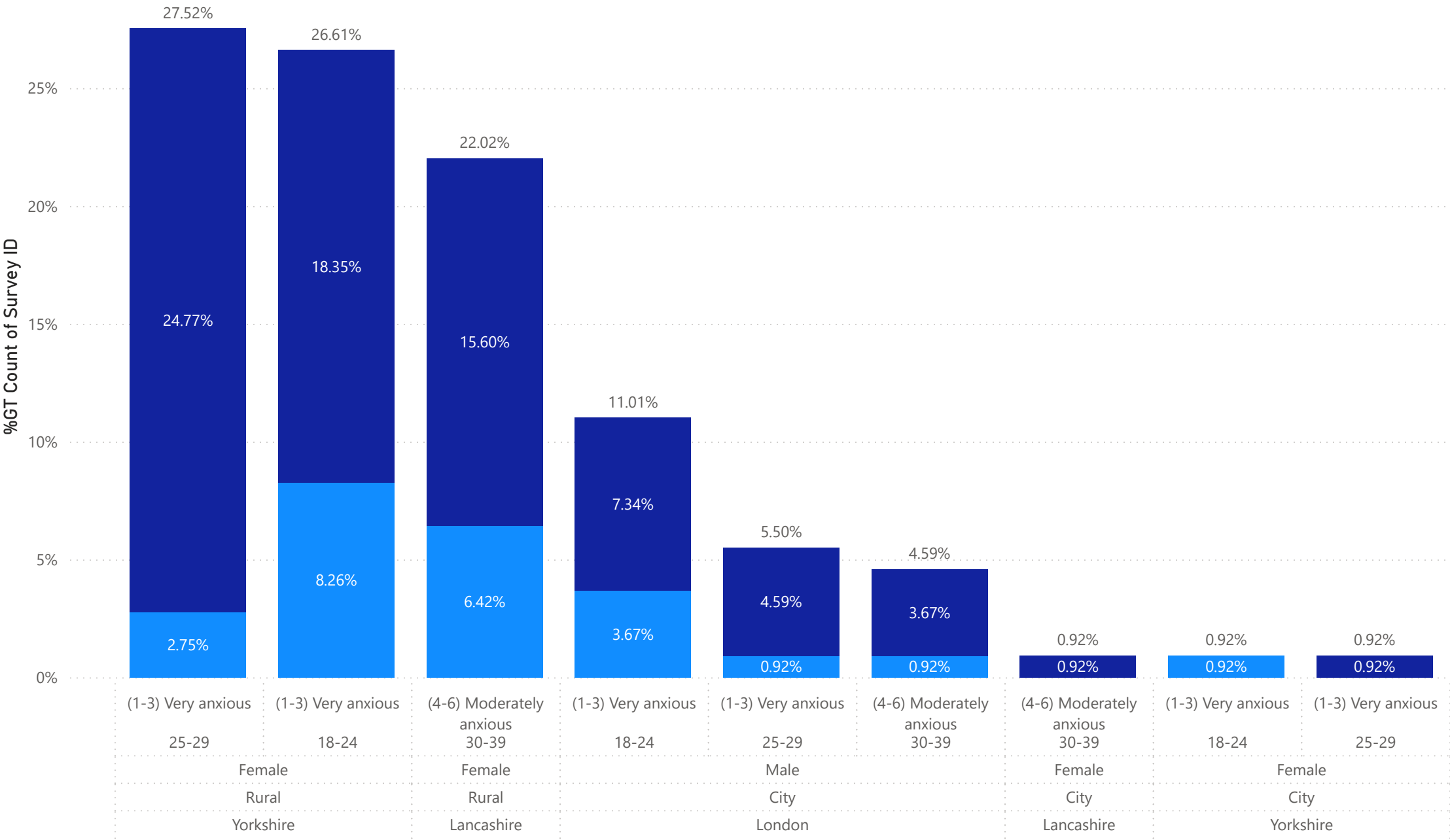
- Select all
- Current market
- Inactive market
- Market potential

Anxiety Cate...

- Select all
- (1-3) Very anxious
- (4-6) Moderat... anxious
- (7-9) Not anxious

Market segmentation by Market type & Anxiety category

1. Do you own an Electric Vehicle (EV)? Yes No, but I'd like to



Market type

Select all

Current market

Inactive market

Market potential

Anxiety Cate...

Select all

(1-3) Very anxious

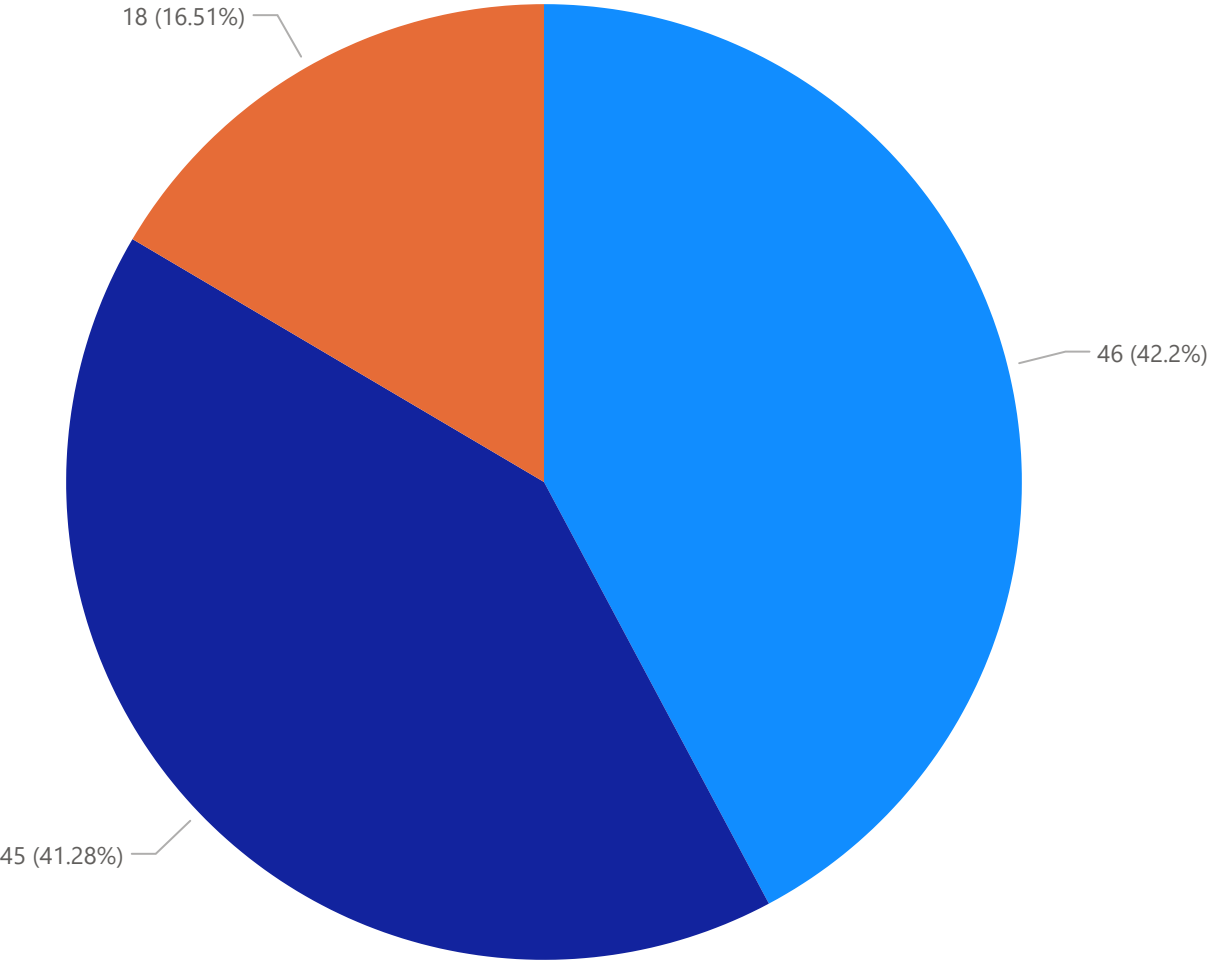
(4-6) Moderat... anxious

(7-9) Not anxious

Preferred purchase method

If you were to get yourself one, would you rather...

- Buy it at a one-off fee
- Get it by subscription
- I wouldn't get one



Market type

Select all

Current market

Inactive market

Market potential

Anxiety Cate...

Select all

(1-3) Very anxious

(4-6) Moderat... anxious

(7-9) Not anxious

Region

Multiple selections

Urban

All

Gender

All

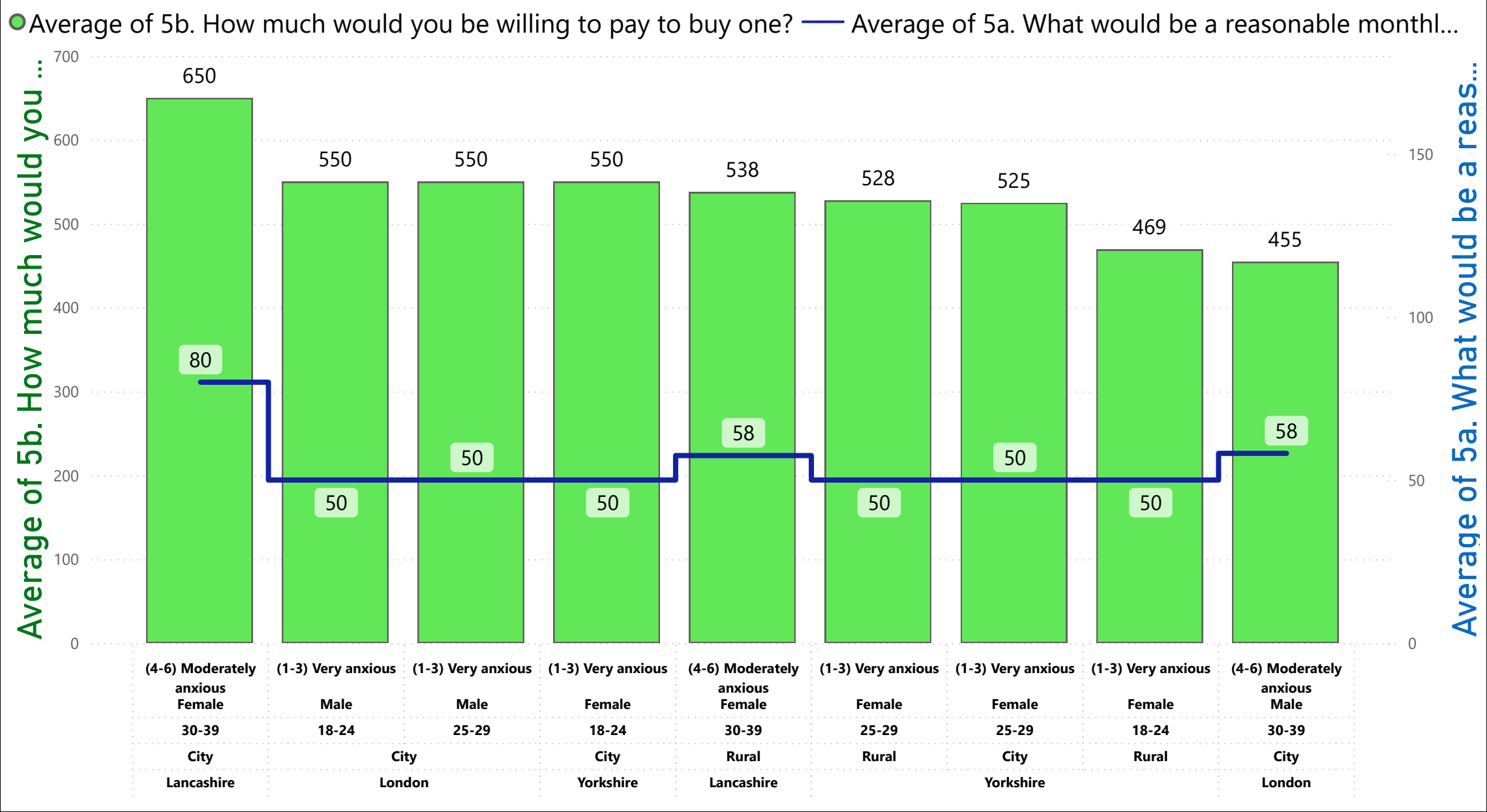
Age

All

Anxiety Category

Multiple selections

Price Sensitivity by Anxiety, Region, City, Gender and Age



Preferred Avg Monthly Fee

52

Average of 5a. What would be a reasonable monthly fee you...

Preferred Avg One-Off Purchase Fee

512

Average of 5b. How much would you be willing to pay to...