The Marketer's Guide to Variables

Identify and categorise your marketing variables to better understand your data and make decisions

thedatamarketer.com
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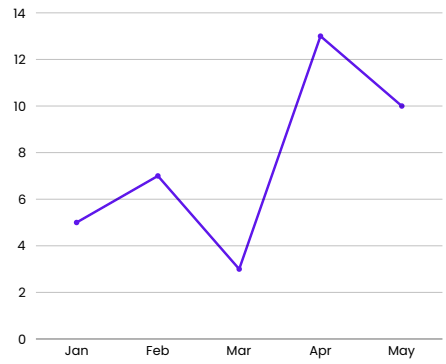
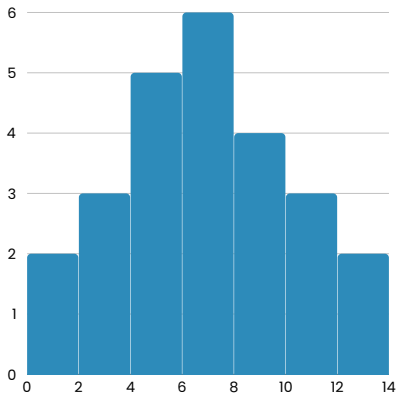
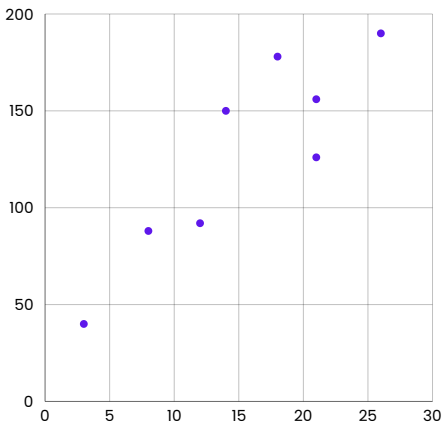
Types of Variables

Type	Subcategory	Description	Example
Quantitative	**Continuous**	Can take any value within a range (decimal)	Avg. session duration (3.45 mins)
	Discrete	Countable, usually whole numbers	Purchases per week (1, 2, 3)
Qualitative	**Nominal**	Categories without order	Customer segments
	Ordinal	Categories with a meaningful order	Customer satisfaction
Independent/ Dependent	**Independent**	Variable you control	Ad format
	Dependent	Variable you measure, often the outcome or result	Click-Through-Rate (CTR)

Visualisations for Variables

QUANTITATIVE CONTINUOUS

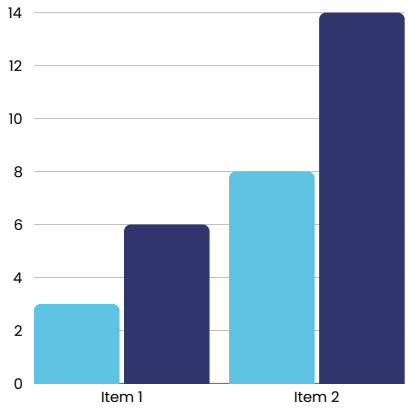
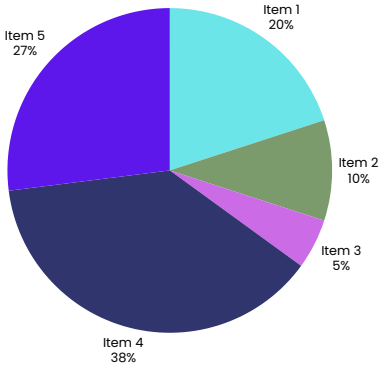
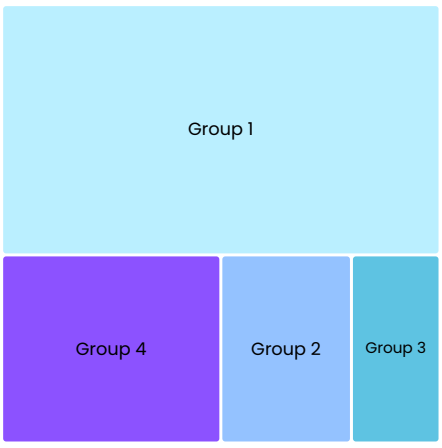
Variables that can take any value within a range.

Chart	Description	Image
Line Chart	Tracks trends over time (e.g., revenue growth over months).	
Histogram	Shows frequency (e.g., distribution of daily sales revenue).	
Scatter plot	Identifies relationships between two continuous variables (e.g., ad spend vs. conversions)	

Visualisations for Variables

QUANTITATIVE DISCRETE

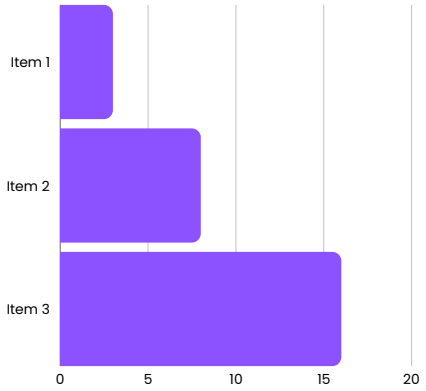
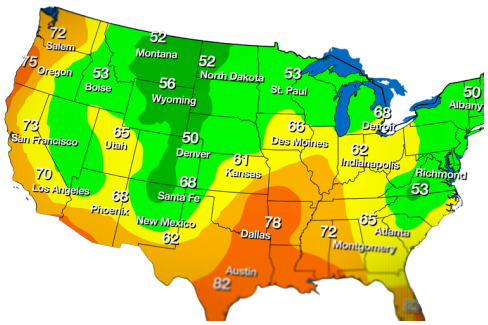
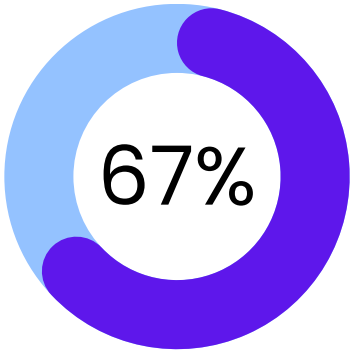
Variables that take specific, countable values

Chart	Description	Image
Double Column Chart	Comparing counts or totals across distinct groups (e.g., the number of customers acquired by different campaigns)	
Pie/ Doughnut Chart	Visualises proportions (e.g., distribution of clicks by ad type).	
Tree Chart	Shows hierarchical relationships or size comparisons e.g., sales counts grouped by region and product.	

Visualisations for Variables

QUALITATIVE NOMINAL

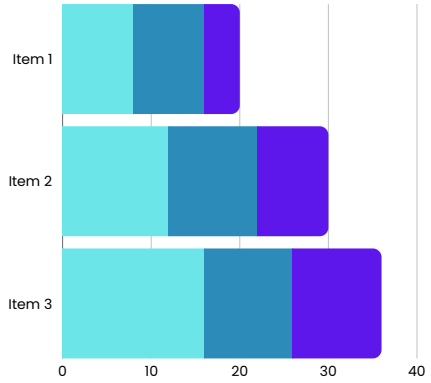
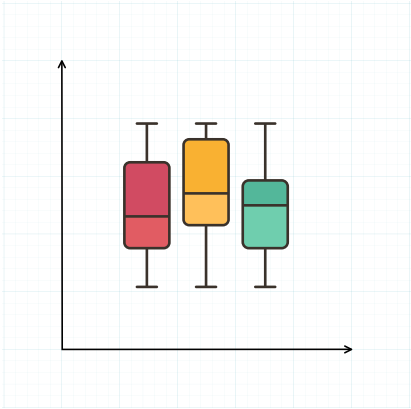
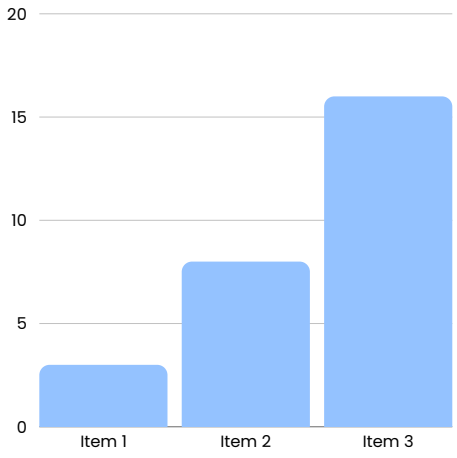
Categories without a natural order

Chart	Description	Image
Bar Chart	Displays counts for categories (e.g., number of purchases across different campaigns).	
Heat Map	Displays intensity (e.g., customer engagement across regions and devices).	
Pie/ Doughnut Chart	Visualises proportions of a whole (e.g., a campaign performance as a percentage of total revenue).	

Visualisations for Variables

QUALITATIVE ORDINAL

Qualitative categories with an order

Chart	Description	Image
Stacked Bar Chart	Highlights proportions across ordinal categories (e.g., satisfaction levels split by demographics).	
Box Plot	Summarises data distributions by ordinal categories (e.g., average revenue by customer priority ranking).	
Column Chart	Compares ordinal data categories (e.g., performance by priority level).	

How to Identify Variables

Here's a simple step-by-step guide to categorising variables in your data:

DEFINE YOUR GOAL

Ask yourself:

- [ ] What am I trying to achieve? Identify the purpose of your analysis.

  Example: *Are you trying to improve ad performance, understand audience behavior, or predict future sales?*

- [ ] What outcomes am I measuring? This will often help you spot the dependent variable.

LIST ALL POTENTIAL VARIABLES

Be exhaustive; sometimes less obvious variables (like weather or seasonality) can matter.

- [ ] Review your data or brainstorm factors that might affect your goal.

  Example for ad performance:

  - *Independent variables: Landing page, audience segment, budget, button.*
  - *Dependent variables: Clicks, click-through rate (CTR), conversions.*

CATEGORISE EACH VARIABLE

For each variable, ask the following questions:

- [ ] Is it a number or a label?
  - ***Number***: *It's quantitative*
  - ***Label***: *It's qualitative*

- [ ] Does it have an inherent order or ranking?
  - ***No order***: *It's nominal*
  - ***Order exists***: *It's ordinal*

- [ ] Can it take on any value, or is it countable?
  - ***Any value***: *It's continuous*
  - ***Countable***: *It's discrete*

UNDERSTAND THEIR ROLE

- [ ] Classify each variable as:
  - ***Independent Variable:*** *Something you control or manipulate.*
  - ***Dependent Variable***: *The outcome or effect you measure .*

Tip for clarity:
Use this simple sentence structure:

"I am measuring [dependent variable] based on changes in [independent variable]."

Example: "I am measuring conversions based on changes in ad format and budget."

MATCH VARIABLES TO THE RIGHT TOOLS

Now that you've categorised your variables, think about how you'll analyse or visualise them.

- [ ] Refer to the table of charts to find the appropriate visual to use

TEST AND ITERATE

Before diving deep, perform a quick test analysis to see if your variables behave as expected.

- [ ] Complete test analysis.
- [ ] Revise your variables according to new information or constraints.

Test Analysis for Variables

To make sure your classification and assumptions are correct, a test analysis is performing a initial review of your data and the relationships between variables.

REVIEW THE DATA FOR ERRORS OR GAPS:

Make sure your variables are clean and formatted correctly, so that your results will be accurate.

- [ ] Check for missing values (e.g., blank cells in a spreadsheet).
- [ ] Verify that categorical data (qualitative) is consistent (e.g., "Male" vs. "M" vs. "male").
- [ ] Confirm numeric data (quantitative) doesn't include outliers or impossible values (e.g., negative sales figures).

CALCULATE SUMMARY STATISTICS:

Common statistics can give you an overview of your data.

- [ ] For quantitative variables: Calculate mean, median, mode, minimum/maximum value, range to summarise data.
- [ ] For qualitative variables: Count the number of occurrences (frequency) in each category.

CREATE SIMPLE VISUALISATIONS

Charts can quickly reveal unexpected patterns or errors. Explore relationships between independent and dependent variables to check whether they are connected in ways you expect.

- [ ] For quantitative variables: Create a scatter plot or line chart to see trends or inconsistencies.

- [ ] For qualitative variables: Use bar or pie charts to confirm the distribution of categories.

CHECK FOR MISSING VARIABLES

Some important variables might be overlooked in your initial list.

- [ ] Review your visualisations.

  Example: If your goal is to analyse ad performance, but you notice your visuals don't include "time of day," you might be missing a variable that influences the outcome.

- [ ] Create new variables if necessary.

Red Kite's Ski Shop Campaign Analysis

Red Kite's Ski Shop, a seasonal business, is looking to improve its online advertising campaign for the coming winter season. They want to increase client conversions while staying within their budget.

1. Define goal

Increase online conversions for winter ski rentals and purchases by optimising ad spend and targeting.

2. List all potential variables

- **Ad Spend:** Amount spent per campaign.
- **Clicks:** Number of users clicking on ads.
- **Impressions:** Number of times ads are shown.
- **Conversion Rate:** Percentage of users completing purchases.
- **Customer Demographics:** Age, region, and skiing experience level.
- **Seasonal Timing**: Early season (November-December) vs. peak season (January-February).

3. Categorise each variable

Quantitative Continuous	Quantitative Discrete	Qualitative Nominal	Qualitative Ordinal
Ad Spend, Conversion Rate	Clicks, Impressions, Age	Region, Seasonal Time	Experience Level (Beginner, Intermediate, Advanced), Age (if grouped)

4. Understand Their Role

- **Independent Variables:** Ad Spend, Customer Demographics, Seasonal Timing.
- **Dependent Variables:** Clicks, Impressions, Conversion Rate.

5. Review Data for Errors

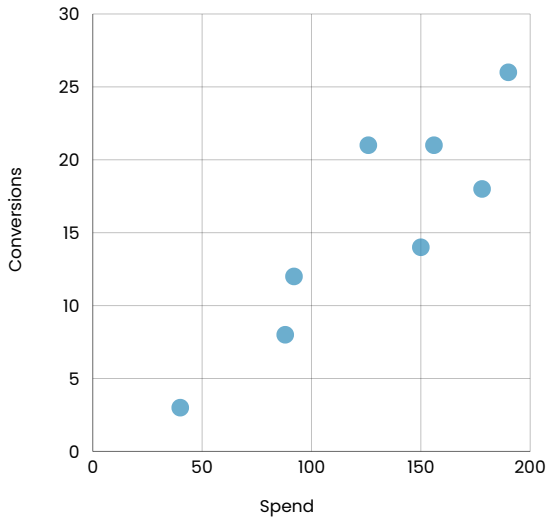
- Checking duplicate entries for the same customer.
- Data that doesn't match expected ranges (e.g., impossible values like negative clicks).
- Inconsistent demographic categories (e.g., "Beginner" vs. "beginner").

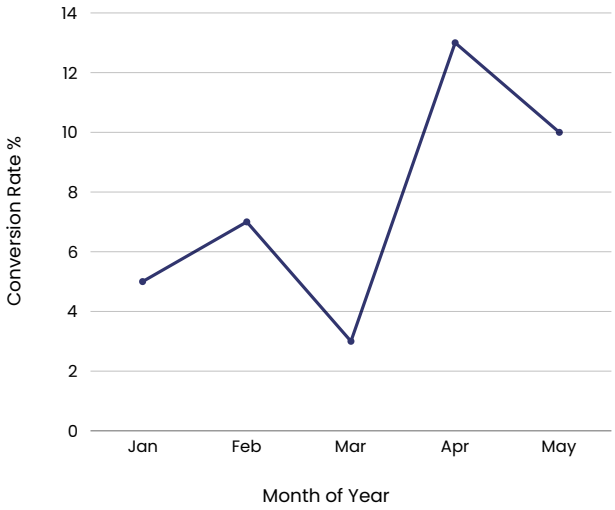
6. Calculate Simple Statistics

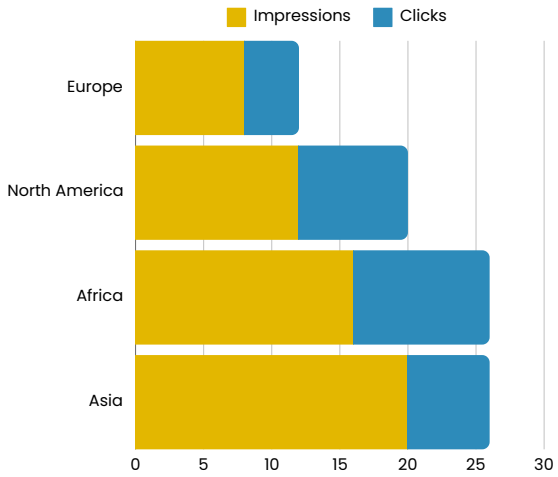
- Calculate average conversion rate to benchmark campaigns.
- Determine median spend per ad to identify typical costs.

7. Match Variables to the Right Tools and Create Simple Visualisations

- Scatter plots to compare spend and conversions.
- Line charts to track conversion rates over time (by season).
- Stacked bar charts to compare clicks and impressions by customer region.







8. Check for Missing Values or Variables to Add

- Missing age data could skew demographic insights.
- Adding variables like customer feedback could improve targeting.

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