2Market Report

Background & Context

2Market a global supermarket selling products both online and in store wants to analyse how customer demographics and advertising channels influence purchasing behaviour and product preference. This will help them to understand their customer purchase behaviour and will inform key decision making by presenting data such as average revenue from each marketing channel.

Analytical Approach

To clean the Excel data provided by 2market, I first spell checked the data. Next I use the find and replace function to get rid of any further spelling or punctuation mistakes. I also replace the necessary upper and lower case mistakes with the =PROPER() formula. I then remove line breaks, parentheses, blank spaces and blank cells and replace blank cells with #N/A. I changed the format of each column/row to its correct format. Finally I adjust decimal places accordingly, remove duplicate entries and highlight any remaining errors through the 'go to special' function.

To explore customer demographics, I created an 'Age' column by subtracting year of birth from 2025. The average customer is 55. 'Widow' shoppers were oldest; those marked 'absurd' were youngest. Most others clustered around mid-50s.

Next, I analysed income vs. age. High earners ($90,000–$100,000) averaged age 53, with ages ranging from 30s to 80s. There was no strong income-age correlation—only a slight decline with age, possibly due to mortality. Marital statuses among this group were mixed, with 'married' and 'together' most frequent. Most buyers fell between ages 28–85, with fewer earning over $100,000. One outlier reported $666,666 income, which seemed unrealistically specific and was removed to avoid skewing the results. Likewise, three customers over 120 years old were excluded due to implausibility and likely data errors.

I then created a 'total spend' column to identify high-value customers and used SQL to group spending by country. I formatted the SQL table (TEXT, VARCHAR, INTEGER), removed nulls with COALESCE, trimmed spaces to improve query efficiency.

Spain emerged as the top spending country. Alcoholic beverages were the most purchased product across all customer locations, marital statuses, and households with children or teens—suggesting a universal appeal.

```sql
SELECT Country,
SUM(Total_Spend)
FROM marketing_data
GROUP BY Country;
```

	country character (3)	sum bigint
1	SP	657704
2	CA	167403
3	IND	77741
4	AUS	85576
5	US	67546
6	ME	3122
7	SA	210987
8	GER	73198

```sql
SELECT Country,
SUM(AmtLiq)AS liq,
SUM(AmtVege)AS veg,
SUM(AmtNonVeg)AS nonveg,
SUM(AmtPes)AS pesc,
SUM(AmtChocolates)AS choco,
SUM(AmtComm)AS comm
FROM marketing_data
GROUP BY Country;
```

	country character (3)	liq bigint	veg bigint	nonveg bigint	pesc bigint	choco bigint	comm bigint
1	SP	335637	28144	177847	40049	30070	45957
2	CA	84066	7681	45925	9980	7607	12144
3	IND	36221	3782	23721	4811	3217	5989
4	AUS	42752	3689	22328	5546	4129	7132
5	US	32214	3034	20185	4411	2863	4839
6	ME	1729	8	817	226	122	220
7	SA	105901	8923	58375	13655	9018	15115
8	GER	36776	2980	20272	4601	2801	5768

To evaluate marketing effectiveness, I joined 'marketing data' and 'ad data' tables using a left join on customer ID. Results showed digital platforms (Email, Twitter, Instagram, Facebook) drove most conversions.
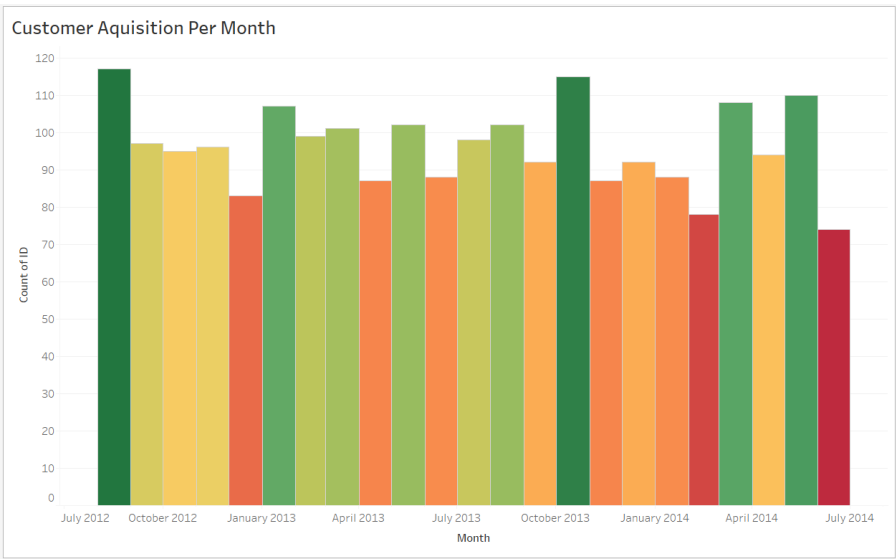
```sql
SELECT
    m.*,
    a.Bulkmail_ad,
    a.Twitter_ad,
    a.Instagram_ad,
    a.Facebook_ad,
    a.Brochure_ad
FROM
    marketing_data AS m
LEFT JOIN
    ad_data AS a
    ON m.ID = a.ID;
```

- Spain led with 350 conversions, mostly from Instagram.
- Canada followed with 87, Twitter being most effective.
- South Africa's 86 conversions came equally from Email and Instagram.
- Germany had 38, Twitter again leading.
- In India (38 conversions), Email dominated.
- In Australia, Instagram led;
- In the USA, Email was strongest.
- Montenegro had just one conversion—from Email.
- Brochures consistently underperformed across all countries.

Dashboard Design and Development

1. Customer Acquisition Per Month (Bar Chart):

This bar chart shows the volume of new customer registrations per month. It uses a colour gradient: deep green highlights months with high acquisition numbers, while lower intake is shown in yellow/orange/red. This makes it easy to spot shifts in customer growth across the timeframe.
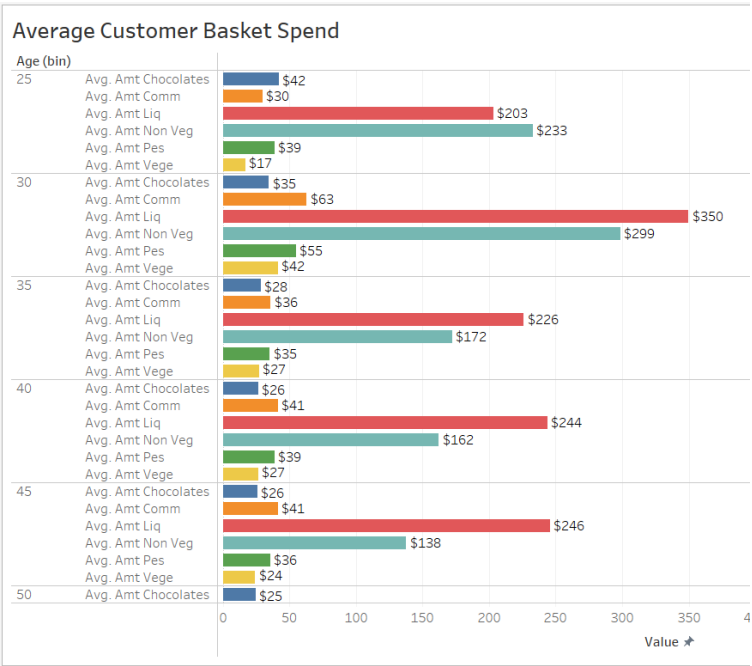

2. Marital Status vs Age Group (Heat Map Table):

To visualise demographic distribution, I created a hybrid of a text table and heat map. Age groups form the Y-axis, marital statuses the X-axis. Each cell displays a count, enhanced with a blue gradient circle. A darker circle indicates higher concentration, offering a quick visual cue of demographic clustering—e.g., high counts of 'married' customers in the 50–60 age range.

Customer Relationship Statuses

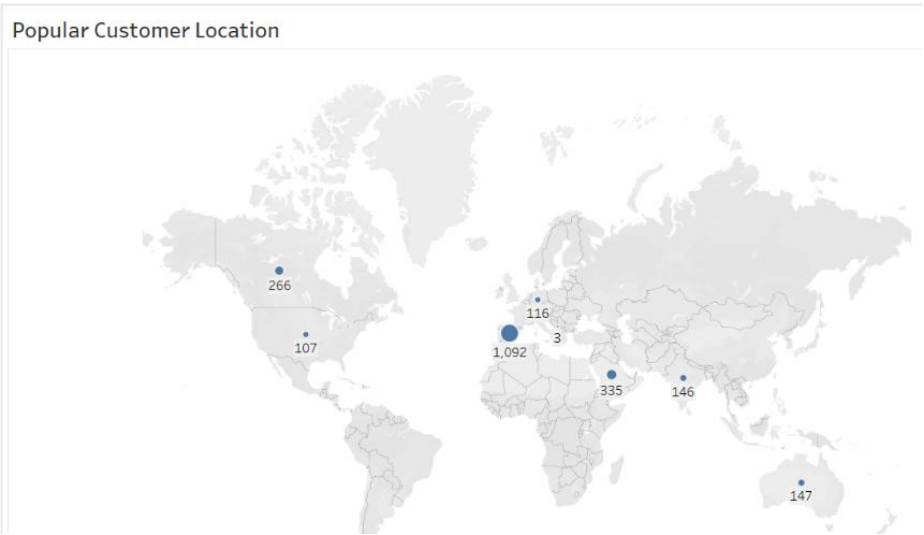| Age (bin)	Absurd	Alone	Divorced	Married	Single	Together	Widow	YOLO
25				2	5			
30	1			17	27	9		
35		1	8	63	57	29		
40			6	89	49	56		
45			41	140	70	97	4	
50		1	46	170	71	81	9	2
55			37	107	55	80	10	
60			32	73	45	53	10	
65	1	1	25	86	42	78	13	
70			29	70	36	58	14	
75			4	33	10	30	14	
80			3	7	3		2	

3. Product Spend by Age Group (Horizontal Bar Charts):

This set of horizontal bar charts shows average basket spend by product category for each age group. It reveals preferences: 25 and 75 year olds spend most on chocolates; 50 and 55 year olds the least. Each chart clearly labels the most popular product amongst each age group.

Average Customer Basket Spend

4. Customer Count by Country (Symbol Map):

This map uses blue circles to represent customer volume by country. The circle size indicates the number of customers per region. This visualisation makes it easy to identify dominant markets—like Spain.

Popular Customer Location

Interactivity:

Each visual includes filters. Viewers can click a country, age group, marital status or product to narrow down results across all charts. For example, if a user clicks "Spain" then "Married", selects age "50," and the month of "June 2014" the dashboard updates to show average customer basket spend for that cohort.

The dashboard prioritises accessibility and insight. It simplifies complex comparisons, identifies target groups, and enables stakeholders to answer specific questions without digging through raw data.

Patterns, Trends, and Insights

Customer acquisition counts varied across the timeline, peaking in August 2012 with 117 new customers and dropping to the lowest point in the most recent month, June 2014, with 74 new customers, indicating that current acquisition strategies are losing momentum. To fix the decline, the company should analyse the specific marketing channels used in August 2012 and compare them to the activities in early 2014. If the budget was cut or the channel mix changed, reverting to the 2012 strategy might recover the lost volume.

Demographically, most customers fall in the mid-50s age range, with no major income variation across age groups. Even high earners show only a slight decline in income with age, likely due to mortality rather than purchasing behaviour.

There's a strong correlation between conversion volume and total spend. Countries with the most ad conversions (Spain, Canada, South Africa) also led in sales. However, the choice of marketing platform didn't significantly influence product preference—alcoholic beverages remained the top product regardless of channel or region.

This raises a question about brochure effectiveness. Brochures performed poorly in recorded conversions, but their true impact may be underreported. Unlike digital platforms, brochures lack tracking unless customers self-report. It's possible brochures influence purchases more than data suggests. This is worth exploring further with better offline attribution methods.

Alcoholic beverages consistently top sales across all nationalities, marital statuses, and households. The only outlier is the age group 25-29 year olds who spend on average $30 more on meat items than they do on alcohol. Spain, especially among middle-aged married couples, appears to be 2Market's strongest demographic. A next step would be to assess whether alcohol dominates due to volume or pricing. Identifying the specific

alcoholic products driving this trend could help refine inventory and marketing strategies.