Customer Demographic and Marketing Channel Analysis

TECHNICAL REPORT

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2M Supermarkets

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1.0 INTRODUCTION

2Market aims to optimize marketing strategies and product offerings by analysing customer demographics and purchasing behaviours. This initiative is driven by the desire to enhance customer satisfaction and profitability through data-driven insights into the effectiveness of various marketing channels and the popularity of products across different customer segments.
Questions for the team include: What recent trends have influenced customer engagement? Which metrics are prioritized for marketing success?

2.0 ANALYTICAL APPROACH

The basis of my data analysis was a series of questions designed to identify the complex nature of consumer behaviour, the impact of marketing efforts and popular products across diverse demographic segments.

Informed assumptions were made throughout the project.

2.1 Assumptions

- Maximum Age of humans considered as 100 years.
- Marital Status “YOLO” and “ALONE” considered as single, “'Together' and 'Absurd' to 'Married’.

2.2 Data Validation

Unique Identifiers: Used Excel's conditional formatting to detect duplicate IDs, to ensure each there are no duplicates. Used as the primary key in SQL.

Null Values: Checked for blanks using `CTRL+G`. None found.

Marital Status: Merged similar marital statuses for uniform categorization using `FIND&REPLACE`.

Incorrect Formatting: Change text-based income entries into numeric values using number formatting and date was in text format hence change to date format using `TEXT` and `TEXTSPLIT`.

Country Name Standardization: Ensured consistency in country names to maintain geographical integrity for the analysis, using `FIND&REPLACE`.

Age Column: A new column added to show the age of the customers using `(YEAR (NOW ())` formula.

Outliers – Age `IQR` was -18 where lower and upper bound was 73 and -45.5 respectively. However according to assumptions made ID 11004, 1150 & 7829 was disregarded from the analysis.

2.3 Customer Demographics Analysis with Excel

Pivot Tables: Created to compare average ages across marital status, revealing behavioural trends.

AVERAGEIFS Function: Calculated average ages within income bands to study the financial influence on consumer behaviour.

Avg. Age of Customer for each Marital Staus	
Row Labels	Average of Age
Divorced	56.44
Married	54.10
Single	51.25
Widow	64.24
(blank)	
Grand Total	54.08

Avg. Age of Customer for each Marital Staus	
Divorced	=AVERAGEIFS(C:C,E:E,Z8)
Married	=AVERAGEIFS(C:C,E:E,Z9)
Single	=AVERAGEIFS(C:C,E:E,Z10)
Widow	=AVERAGEIFS(C:C,E:E,Z11)
Total AVG	=AVERAGE(C:C)

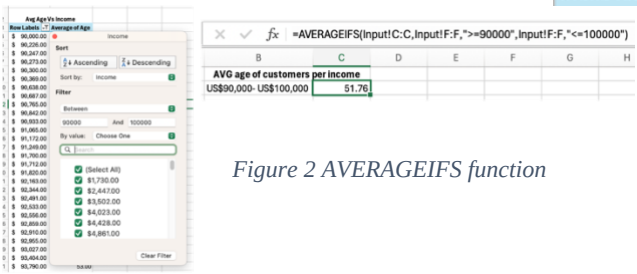
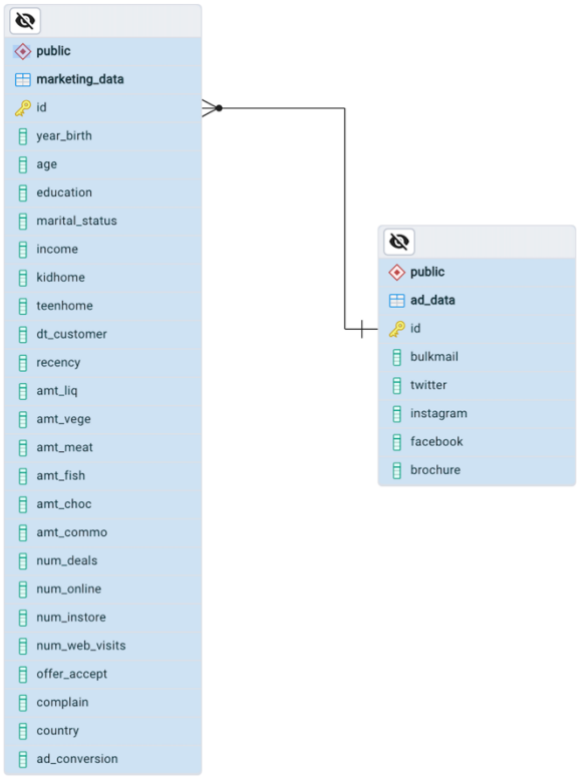


Figure 2 AVERAGEIFS function

2.4 Further analysis in SQL

I deepened my analysis of customer purchases and marketing efficacy through SQL, constructing a database as depicted in the ERD. Tables were formed using `CREATE TABLE` scripts, with carefully chosen column names and data constraints to maintain data quality.



2.4.1 Customer Purchase Behaviour

I utilized aggregation functions like `SUM()` and arithmetic operations to calculate total product spending, creating aliases for clarity. `GROUP BY` and `ORDER BY` helped isolate data.

By Country: Aggregated spending across products to identify target markets for focused strategies.

By Product and Country: Segmented by product to highlight how much each country spent on different products and inform supply chain decisions.

By Product and Marital Status: Analysed to tailor marketing strategies to marital segments.

With Kids and Teens at Home: Examined to understand how family dynamics' influence on spending.

2.4.2 Most Popular Products Analysis

Combined Aggregate functions (`SUM` & `GREATEST`) with `CASE` statement followed by `WHEN` and `THEN` clauses to rank product popularity by expenditure within demographic segments.

Marital Status: Identified 'Liquor' as universally popular, suggesting its strategic importance.

Country , Kids or Teenagers: Assessed to provide insights into regional and household-based purchasing trends.

2.4.3 Advertising Channel Effectiveness

`Inner Join` used to combine `marketing_data` and `ad_data` tables also used `SUM` to aggregate marketing channel conversions. Effectiveness also calculated as a percentage to total lead conversions to get a clearer picture.

By Country: Evaluated social media conversions against total conversions to determine effective platforms.

By Marital Status: Aggregated conversions by status to pinpoint resonant advertising channels.

By Age Group: Categorized customers via subqueries and ranked advertising effectiveness by age segment using `WHEN` clause. Subquery was simplified using a `WITH` clause.

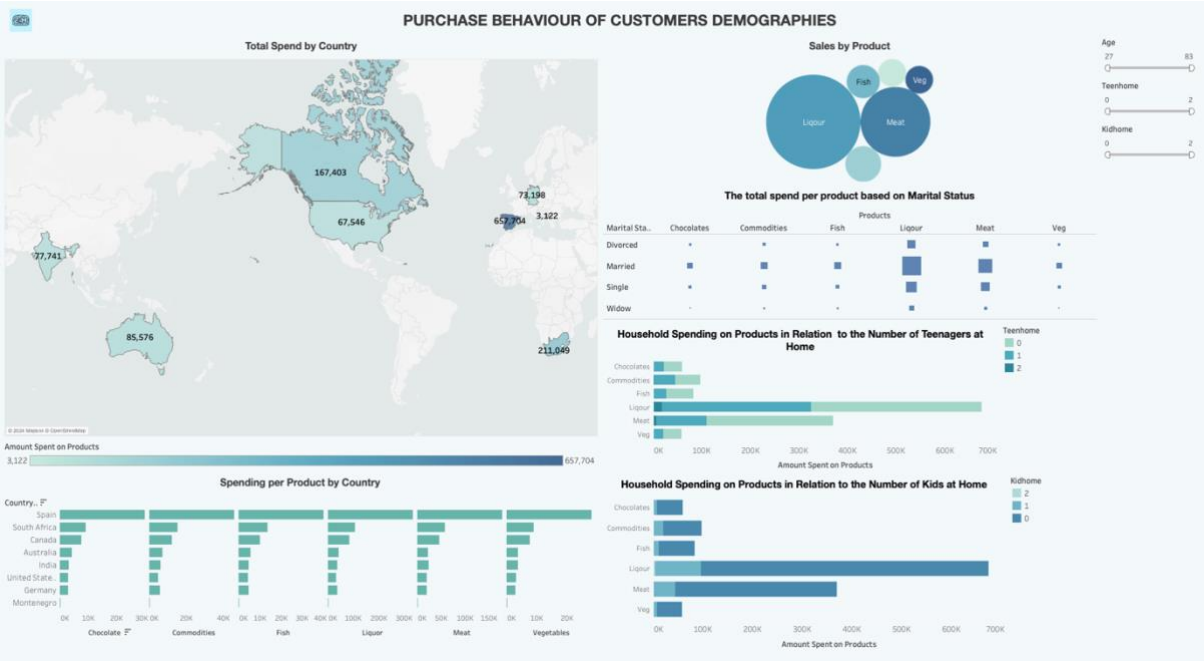
3.0 DASHBOARD DESIGN AND DEVELOPMENT

Before developing the dashboard, cleaned CSV files imported, and data connection changed to an extract. Joined `marketing_data` and `ad_data` using a left join. SQL query results were joined as `many to many` connections.

Pivoted columns created to segregate products and amounts spent on products.

3.1 Visualisation Type

Each visual element, such as **maps** for geographic data and **bar charts** for comparative analysis, was chosen for its ability to present data intuitively. For instance, **bubble charts** were used to show sales by product, for their ability to express volume through size making in very clear and understandable.



Horizontal Bar charts showing spending patterns by country and family composition which can depict detailed category labels and direct comparisons across demographics. The colour-coding was used to make it easy for the users to distinguish data segments quickly.

Histograms was used to show age distribution and marital status comparisons detailing the data's granularity while remaining user-friendly.

Scatter plots interpret the relationship between age and income; Point density and colour intensity signal data clusters, suggesting where marketing efforts should aim at for maximum impact.

3.2 Colour, Font & Size

A consistent colour palette used to have a uniqueness between data points without overwhelming the viewer. Colours used to distinguish segments quickly and easily for the viewer ensuring the dashboard remains accessible to those with colour vision deficiencies. Graph titles are visualized in same font size over the Dashboard while axis data and labels are in same size over the Dashboard.

3.3 Layout

Vertical and horizontal containers used to structure the flow of information. The automatic device sizing ensures that layout translates effectively across different screen sizes, ensuring the dashboard is equally usable on desktops and mobile devices.

3.4 Additional Design Choices

Dashboard fading and the removal of gridlines offer a minimalist aesthetic that focuses the user's attention on the data itself. Text elements and images are incorporated to provide context without detracting from the data visualizations.

4.0 PATTERNS, TRENDS, AND INSIGHTS

- Older customers tend to have higher incomes, suggesting a targeted approach for luxury or premium product marketing.
- Widowed customers have the highest average age at 64, while singles are the youngest on average. Marketing strategies could be customized to cater to the specific lifestyle needs of these groups.
- Most customers do not have kids or teens at home, which may influence the types of products they are interested in or the time they have available for shopping.
- Liquor stands out as the most popular product across most customer demographics, indicating its potential as a key product for promotions and special offers.
- Advertising channel effectiveness varies by country and demographic, with Instagram leading in conversions globally but other channels like Twitter and Bulk mail performing best in specific regions or demographics.

5.0 RECOMMENDATION

Data source improvement: For better data integrity, use dropdown menus for Year of Birth and Marital Status, and pre-set ranges for Income, to standardize inputs and streamline data inputs.

6.0 CONCLUSION

To optimize 2Market's strategies, further exploration is recommended in the areas of product-specific marketing, particularly for high-earning age groups, and in refining customer engagement techniques across varying advertising platforms. Analysing the underperformance in certain regions or demographic groups could also unlock potential growth opportunities.

7.0 APPENDIX

2.5 SQL Table creation

`marketing_data` and `ad_data` was created using the below SQL script and for data validation purposes a primary key assigned (id) and table constraints were created.

```
CREATE TABLE marketing_data(
    id BIGSERIAL PRIMARY KEY,
    year_birth numeric (5),
    age numeric (2),
    education varchar(50),
    marital_status char (10),
    income NUMERICC (10,2),
    kidhome numeric (2),
    teenhome numeric (2),
    dt_customer date,
    recency numeric (5),
    amt_liq numeric (10),
    amt_Vege numeric (10),
    amt_meat numeric (10),
    amt_fish numeric (10),
        amt_choc numeric (10),
    amt_commo numeric (10),
    num_deals numeric (10),
    num_online numeric (10),
    num_instore numeric (10),
    num_web_visits numeric (10),
    offer_accept numeric (2),
    complain numeric (2),
    country char (50),
    ad_conversion numeric (5));

SELECT * FROM public.marketing_data
```

```
CREATE TABLE ad_data(
    id bigserial PRIMARY KEY,
    bulkmail numeric (2),
    twitter numeric (2),
    instagram numeric (2),
    facebook numeric (2),
    brochure numeric (2));

SELECT * FROM public.ad_data
```

2.6 Customer Purchase Behaviour

2.6.1 The total spends per country.

```
SELECT
 country,
 SUM(amt_liq+amt_vege+amt_meat+amt_fish+amt_choc+amt_commo) AS Total_Spend
FROM public.marketing_data
GROUP by country
ORDER BY Total_Spend DESC;
```

	country character	total_spend numeric
1	Spain	657704
2	South Africa	211049
3	Canada	167403
4	Australia	85576
5	India	77741
6	Germany	73198
7	United States of America	67546
8	Montenegro	3122

2.6.2 The total spends per product by country.

```
SELECT
 country,
 SUM(amt_liq) AS Liquor,
 SUM(amt_vege) AS Vegetables,
 SUM(amt_meat) AS Meat,
 SUM(amt_fish) AS Fish,
 SUM(amt_choc) AS Chocolate,
 SUM(amt_commo)AS commodities
FROM public.marketing_data
GROUP by country;
```

	country character	liquor numeric	vegetables numeric	meat numeric	fish numeric	chocolate numeric	commodities numeric
1	United States of America	32214	3034	20185	4411	2863	4839
2	Spain	335637	28144	177847	40049	30070	45957
3	South Africa	105910	8937	58393	13663	9019	15127
4	Montenegro	1729	8	817	226	122	220
5	Australia	42752	3689	22328	5546	4129	7132
6	Germany	36776	2980	20272	4601	2801	5768
7	Canada	84066	7681	45925	9980	7607	12144
8	India	36221	3782	23721	4811	3217	5989

2.6.3 The total spends per product based on Marital Status.

```
SELECT
 marital_status,
 SUM(amt_liq) AS Liquor,
 SUM(amt_vege) AS Vegetables,
 SUM(amt_meat) AS Meat,
 SUM(amt_fish) AS Fish,
 SUM(amt_choc) AS Chocolate,
 SUM(amt_commo)AS commodities
FROM public.marketing_data
GROUP by marital_status;
```

	marital_status character	liquor numeric	vegetables numeric	meat numeric	fish numeric	chocolate numeric	commodities numeric
1	Married	433647	36618	233325	53085	37954	61657
2	Divorced	75349	6357	34840	8123	6218	10714
3	Widow	27902	2422	14085	3793	2878	4245
4	Single	138407	12858	87238	18286	12778	20560

2.6.4 Total Spend Per Product Based on The Number of Kids customer has.

```
SELECT
 kidhome,
 SUM(amt_liq) AS Liquor,
 SUM(amt_vege) AS Vegetables,
 SUM(amt_meat) AS Meat,
 SUM(amt_fish) AS Fish,
 SUM(amt_choc) AS Chocolate,
 SUM(amt_commo)AS commodities
FROM public.marketing_data
GROUP by kidhome;
```

	kidhome numeric (2)	liquor numeric	vegetables numeric	meat numeric	fish numeric	chocolate numeric	commodities numeric
1	1	92535	7570	43552	10887	7635	19588
2	2	3312	278	1384	316	179	776
3	0	579458	50407	324552	72084	52014	76812

2.6.5 Total Spend Per Product Based on The Number of Teenagers customer has

```
SELECT
 teenhome,
 SUM(amt_liq) AS Liquor,
 SUM(amt_vege) AS Vegetables,
 SUM(amt_meat) AS Meat,
 SUM(amt_fish) AS Fish,
 SUM(amt_choc) AS Chocolate,
 SUM(amt_commo)AS commodities
FROM public.marketing_data
GROUP by teenhome;
```

	teenhome numeric (2)	liquor numeric	vegetables numeric	meat numeric	fish numeric	chocolate numeric	commodities numeric
1	1	307052	19268	103806	26220	20628	43363
2	2	18083	891	6316	1191	786	2317
3	0	350170	38096	259366	55876	38414	51496

2.7 Most Popular Product

2.7.1 Most Popular Product Based on Marital Status

```
SELECT
    Marital_Status,
    CASE
        WHEN SUM(amt_liq) >= GREATEST(SUM(amt_vege), SUM(amt_meat), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Liquor'
        WHEN SUM(amt_vege) >= GREATEST(SUM(amt_liq), SUM(amt_meat), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Vegetables'
        WHEN SUM(amt_meat) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Meat'
        WHEN SUM(amt_fish) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_meat), SUM(amt_choc), SUM(amt_commo)) THEN 'Fish'
        WHEN SUM(amt_choc) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_meat), SUM(amt_fish), SUM(amt_commo)) THEN 'Chocolate'
        ELSE 'Commodities'
    END AS Most_Popular_Product
FROM public.marketing_data
GROUP BY Marital_Status;
```

	marital_status character	most_popular_product text
1	Married	Liquor
2	Divorced	Liquor
3	Widow	Liquor
4	Single	Liquor

2.7.2 Most popular Product based on country.

```
SELECT
    Country,
    CASE
        WHEN SUM(amt_liq) >= GREATEST(SUM(amt_vege), SUM(amt_meat), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Liquor'
        WHEN SUM(amt_vege) >= GREATEST(SUM(amt_liq), SUM(amt_meat), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Vegetables'
        WHEN SUM(amt_meat) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Meat'
        WHEN SUM(amt_fish) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_meat), SUM(amt_choc), SUM(amt_commo)) THEN 'Fish'
        WHEN SUM(amt_choc) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_meat), SUM(amt_fish), SUM(amt_commo)) THEN 'Chocolate'
        ELSE 'Commodities'
    END AS Most_Popular_Product
FROM public.marketing_data
GROUP BY Country;
```

country character	most_popular_product text
United States of America ...	Liquor
Spain ...	Liquor
South Africa ...	Liquor
Montenegro ...	Liquor
Australia ...	Liquor
Germany ...	Liquor
Canada ...	Liquor
India ...	Liquor

2.7.3 Most popular based Product on number of children in the household

```
SELECT
    Kidhome AS number_of_kids,
    CASE
        WHEN SUM(amt_liq) >= GREATEST(SUM(amt_vege), SUM(amt_meat), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Liquor'
        WHEN SUM(amt_vege) >= GREATEST(SUM(amt_liq), SUM(amt_meat), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Vegetables'
        WHEN SUM(amt_meat) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Meat'
        WHEN SUM(amt_fish) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_meat), SUM(amt_choc), SUM(amt_commo)) THEN 'Fish'
        WHEN SUM(amt_choc) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_meat), SUM(amt_fish), SUM(amt_commo)) THEN 'Chocolate'
        ELSE 'Commodities'
    END AS Most_Popular_Product
FROM public.marketing_data
GROUP BY number_of_kids;
```

number_of_kids numeric (2)	most_popular_product text
1	Liquor
2	Liquor
0	Liquor

2.7.4 Most popular based on number of teens in the household

```
SELECT
    teenhome AS number_of_teenage,
    CASE
        WHEN SUM(amt_liq) >= GREATEST(SUM(amt_vege), SUM(amt_meat), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Liquor'
        WHEN SUM(amt_vege) >= GREATEST(SUM(amt_liq), SUM(amt_meat), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Vegetables'
        WHEN SUM(amt_meat) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_fish), SUM(amt_choc), SUM(amt_commo)) THEN 'Meat'
        WHEN SUM(amt_fish) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_meat), SUM(amt_choc), SUM(amt_commo)) THEN 'Fish'
        WHEN SUM(amt_choc) >= GREATEST(SUM(amt_liq), SUM(amt_vege), SUM(amt_meat), SUM(amt_fish), SUM(amt_commo)) THEN 'Chocolate'
        ELSE 'Commodities'
    END AS Most_Popular_Product
FROM public.marketing_data
GROUP BY number_of_teenage;
```

number_of_teenage numeric (2)	most_popular_product text
1	Liquor
2	Liquor
0	Liquor

2.8 Marketing Channel Effectiveness

2.8.1 Most effective marketing platform method of advertising in each country

```
SELECT
    m.country,
    SUM(a.Twitter)Twitter,
    SUM(a.Instagram)Instagram,
    SUM(a.facebook)facebook,
    SUM(a.bulkmail)Bulk_mail,
    SUM(a.brochure)Brochures
FROM public.ad_data a
INNER JOIN public.Marketing_data m USING (id)
GROUP BY m.country
ORDER BY country DESC;
```

country character	twitter numeric	instagram numeric	facebook numeric	bulk_mail numeric	brochures numeric
United States of America ...	6	5	7	8	0
Spain	87	88	76	83	16
South Africa ...	20	21	20	21	4
Montenegro ...	0	0	0	1	0
India	10	6	7	13	2
Germany ...	11	8	7	10	2
Canada ...	24	21	18	18	6
Australia ...	6	12	7	9	0

2.8.2 Marketing channel effectiveness as a percentage by country

```
SELECT
    m.country,
    ROUND(SUM(a.Twitter)::numeric/ SUM(m.ad_conversion)::numeric * 100,2) AS Twitter_Percent,
    ROUND(SUM(a.Instagram)::numeric / SUM(m.ad_conversion)::numeric * 100,2) AS Instagram_Percent,
    ROUND(SUM(a.facebook)::numeric / SUM(m.ad_conversion)::numeric * 100,2) AS Facebook_Percent,
    ROUND(SUM(a.bulkmail)::numeric / SUM(m.ad_conversion)::numeric * 100,2) AS Bulk_mail_Percent,
    ROUND(SUM(a.brochure)::numeric / SUM(m.ad_conversion)::numeric * 100,2) AS Brochures_Percent
FROM public.ad_data a
INNER JOIN public.marketing_data m USING (id)
GROUP BY m.country;
```

country character	twitter_percent numeric	instagram_percent numeric	facebook_percent numeric	bulk_mail_percent numeric	brochures_percent numeric
United States of America ...	23.08	19.23	26.92	30.77	0.00
Spain ...	24.86	25.14	21.71	23.71	4.57
South Africa ...	23.26	24.42	23.26	24.42	4.65
Montenegro ...	0.00	0.00	0.00	100.00	0.00
Australia ...	17.65	35.29	20.59	26.47	0.00
Germany ...	28.95	21.05	18.42	26.32	5.26
Canada ...	27.59	24.14	20.69	20.69	6.90
India ...	26.32	15.79	18.42	34.21	5.26

2.8.3 Most effective social media platform method of advertising in each country

```
SELECT
    m.country,
    SUM(a.Twitter)Twitter,
    SUM(a.Instagram)Instagram,
    SUM(a.facebook)facebook,
    SUM(m.ad_conversion)as Total_leads
FROM public.ad_data a
INNER JOIN public.Marketing_data m USING (id)
GROUP BY m.country
ORDER BY Total_leads DESC;
```

	country character	twitter numeric	instagram numeric	facebook numeric	total_leads numeric
1	Spain	87	88	76	350
2	Canada	24	21	18	87
3	South Africa	20	21	20	86
4	Germany	11	8	7	38
5	India	10	6	7	38
6	Australia	6	12	7	34
7	United States of America ...	6	5	7	26
8	Montenegro ...	0	0	0	1

2.8.4 Most effective marketing platform method of advertising based marital Status.

```
SELECT
    m.marital_status,
    SUM(a.Twitter)Twitter,
    SUM(a.Instagram)Instagram,
    SUM(a.facebook)facebook,
    SUM(a.bulkmail)Bulk_mail,
    SUM(a.brochure)Brochures
FROM public.ad_data a
INNER JOIN public.Marketing_data m USING (id)
GROUP BY m.marital_status
```

	marital_status character	twitter numeric	instagram numeric	facebook numeric	bulk_mail numeric	brochures numeric
1	Married	104	110	95	100	19
2	Divorced	18	13	12	20	5
3	Widow	10	7	5	4	1
4	Single	32	31	30	39	5

2.8.5 Most effective social media by marital status as a percentage

```
SELECT
    m.marital_status,
    ROUND(SUM(a.Twitter)::numeric/ SUM(m.ad_conversion)::numeric * 100,2) AS Twitter_Percent,
    ROUND(SUM(a.Instagram)::numeric / SUM(m.ad_conversion)::numeric * 100,2) AS Instagram_Percent,
    ROUND(SUM(a.facebook)::numeric / SUM(m.ad_conversion)::numeric * 100,2) AS Facebook_Percent
FROM public.ad_data a
INNER JOIN public.marketing_data m USING (id)
GROUP BY m.marital_status;
```

	marital_status character	twitter_percent numeric	instagram_percent numeric	facebook_percent numeric
1	Married	24.30	25.70	22.20
2	Divorced	26.47	19.12	17.65
3	Widow	37.04	25.93	18.52
4	Single	23.36	22.63	21.90

2.8.6 Most effective method of advertising based on age groups.

```
WITH AgeGroupedMarketingData AS (
  SELECT
    id,
    CASE
      WHEN age <= 18 THEN 'Under 19'
      WHEN age BETWEEN 19 AND 30 THEN '19-30'
      WHEN age BETWEEN 31 AND 40 THEN '31-40'
      WHEN age BETWEEN 41 AND 50 THEN '41-50'
      WHEN age BETWEEN 51 AND 60 THEN '51-60'
      WHEN age BETWEEN 61 AND 70 THEN '61-70'
      WHEN age BETWEEN 71 AND 80 THEN '71-80'
      ELSE 'Above 80'
    END AS age_group
  FROM
    public.Marketing_data
)

SELECT
  agm.age_group,
  SUM(a.Twitter) AS Twitter,
  SUM(a.Instagram) AS Instagram,
  SUM(a.facebook) AS Facebook,
  SUM(a.bulkmail) AS Bulk_mail,
  SUM(a.brochure) AS Brochures
FROM
  public.ad_data a
INNER JOIN
  AgeGroupedMarketingData agm USING (id)
GROUP BY
  agm.age_group
ORDER BY
  CASE agm.age_group
    WHEN 'Under 19' THEN 1
    WHEN '19-30' THEN 2
    WHEN '31-40' THEN 3
    WHEN '41-50' THEN 4
    WHEN '51-60' THEN 5
    WHEN '61-70' THEN 6
    WHEN '71-80' THEN 7
    ELSE 8
  END ASC;
```

age_group text	twitter numeric	instagram numeric	facebook numeric	bulk_mail numeric	brochures numeric
19-30	1	4	2	2	1
31-40	12	31	25	30	3
41-50	32	40	33	54	4
51-60	51	32	26	39	10
61-70	47	33	37	26	11
71-80	21	20	19	12	1
Above 80	0	1	0	0	0

2.8.7 Most effective social media channel in terms of amount spent per product type per country.

```
SELECT
    md.country,
    SUM(md.Amt_Liq) AS Total_On_Liquor,
    SUM(md.Amt_Vege) AS Total_On_Vegetables,
    SUM(md.Amt_Meat) AS Total_On_Meat,
    SUM(md.Amt_Fish) AS Total_On_Fish,
    SUM(md.Amt_Choc) AS Total_On_Chocolates,
    SUM(md.Amt_Commo) AS Total_On_Commodities,
    SUM(md.Amt_Liq+md.Amt_Vege+md.Amt_Fish+md.Amt_Choc+md.Amt_Commo)Total_amount_Spent,
    SUM(ad.Twitter) AS Twitter_Conversions,
    SUM(ad.Instagram) AS Instagram_Conversions,
    SUM(ad.Facebook) AS Facebook_Conversions
FROM public.marketing_data md
INNER JOIN public.ad_data ad ON md.ID = ad.ID
GROUP BY md.country
ORDER BY Total_amount_Spent DESC;
```

country character	total_on_liquor numeric	total_on_vegetables numeric	total_on_meat numeric	total_on_fish numeric	total_on_choc numeric	total_on_com numeric	total_amount_spent numeric	twitter_conve numeric	instagram_co numeric	facebook_cor numeric
Spain …	335637	28144	177847	40049	30070	45957	479857	87	88	76
South Africa…	105910	8937	58393	13663	9019	15127	152656	20	21	20
Canada …	84066	7681	45925	9980	7607	12144	121478	24	21	18
Australia …	42752	3689	22328	5546	4129	7132	63248	6	12	7
India …	36221	3782	23721	4811	3217	5989	54020	10	6	7
Germany …	36776	2980	20272	4601	2801	5768	52926	11	8	7
United State…	32214	3034	20185	4411	2863	4839	47361	6	5	7
Montenegro…	1729	8	817	226	122	220	2305	0	0	0