Reporting & Visualization Project Report

Course: Reporting & Visualization

Cohort: S24

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Data Analysis and Insights

1. **What are the total sales and total number of orders over time?**

The data shows minimal sales and orders in 2016 compared to 2017 and 2018. 2016 had sales of $57,183.21 compared to $7,140,717.83 in 2017 and $8,643,697.60 in 2018. This was a total of $15,841,598.6 in sales and total orders of 99,281 in the three-year period. 2016 had 323 orders compared to 45,029 in 2017 and 53,929 in 2018. Sales and orders peak in Q1 of 2018 with $2,856,842.53 in sales and 18,488 orders. Sales and orders start decreasing significantly after July of 2018. The 24th of November 2017 sees an extremely high spike in sales and the number of orders, which appears to be a one-off event. There was $178,377.63 in sales on November 24 2017 and 1,176 orders.

2. **Which products are the top sellers in terms of revenue?**

- The top 3 product id in terms of sells are:

  - bb50f2e236e5eea0100680137654686c (health and beauty product) sold for a total value of **67,606.10** with 195 units sold
  - d1c427060a0f73f6b889a5c7c61f2ac4 (computer accessory product) sold for a total value of **60,976.03** with 343 units sold
  - 6cdd53843498f92890544667809f1595 (health and beauty product) sold for a total value of **59,093.99** with 156 units sold

3. **How do sales vary across different product categories?**

- Sales are highest in Health & Beauty and lowest in Musical Instruments (€0.03M).

- The top-selling categories are Health & Beauty (€1.45M), Watches & Gifts (€1.31M), and Bed & Bath Table (€1.30M).

4. **Who are the top customers in terms of sales volume?**

- In terms of the number of items bought the id of the top 3 customers are:

  - fc3d1daec319d62d49bfb5e1f83123e9 with **21** items ordered

  - bd5d39761aa56689a265d95d8d32b8be with **20** items ordered

  - be1b70680b9f9694d8c70f41fa3dc92b with **20** items ordered

- In terms of money spent the id of the top 3 customers are:
    - 1617b1357756262bfa56ab541c47bc16 (spent **13664.08**)
    - ec5b2ba62e574342386871631fafd3fc (spent **7274.88**)
    - c6e2731c5b391845f6800c97401a43a9 (spent **6929.31**)

5. **What is the geographical distribution of sales?**

- All of our sales are made within the Brazilian domestic market. Eight customers appear outside of Brazil but it is certainly an error coming from the database because their state and city are in Brazil.

- In terms of volume, the region of **Sao Paulo** is by far the most important market for the company. It has the strongest growth and Sao Paolo now represents almost 40 percent of total sales in 2018. If we look at the distribution of sales per region it is not surprising because it follows the territorial distribution of wealth of Brazil.

6. **Are there any seasonal trends in sales?**

The sales data from 2016 to 2018 reveals distinct seasonal patterns, although the absence of data for 2019 to 2021 leaves the trends' progression uncertain.

- **2016**: Sales were low overall, with a peak in Quarter 2 (30,283). Quarters 1 and 4 saw sharp declines, reflecting inconsistent activity and no clear seasonal influences.
- **2017**: Sales rose significantly, peaking in Quarter 4 (2,442,092), likely due to holiday shopping and Christmas demand. Sales steadily decreased from Quarter 3 to Quarter 1 (1,219,929).
- **2018**: The highest sales occurred in Quarters 1 (2,856,842) and 2 (2,787,529), possibly due to New Year campaigns and annual purchasing cycles. Declines in Quarters 3 and 4 suggest reduced activity later in the year.

The trends highlight the influence of holidays like Christmas in 2017 and early-year campaigns in 2018, reflecting shifts in consumer behavior and marketing strategies.