



Ad_hoc-Requests

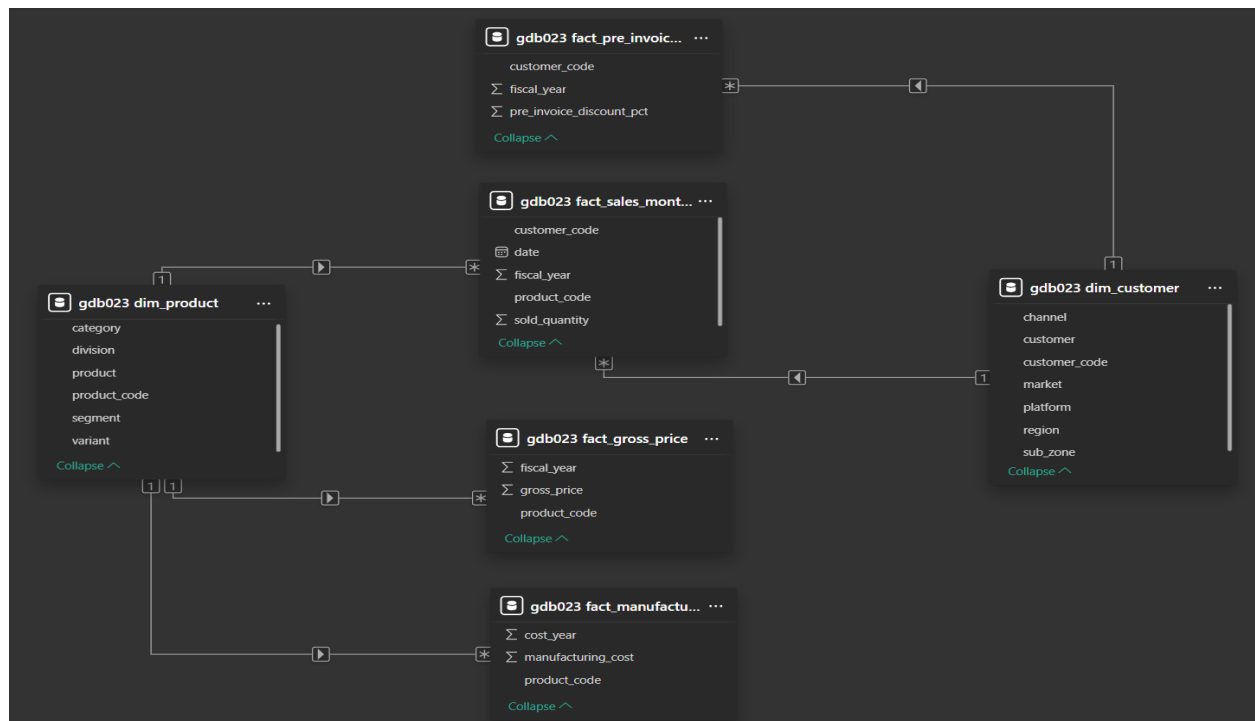
Domain: Consumer-Goods Insights

Objectives:-

- **Atliq Hardware** (a fictitious corporation) is one of the leading computer hardware and accessory manufacturers in India, with a strong international presence.
- However, the management has observed a lack of sufficient insights to support prompt, well-informed, and data-driven decision-making.
- To address this, the company plans to expand its data analytics team by hiring junior data analysts.
- As part of the recruitment process, the Data Analytics Director, **Tony Sharma**, intends to conduct an **SQL challenge** designed to evaluate both technical expertise and soft skills.
- Additionally, the company requires actionable insights for **10 ad hoc business requests**.

Note: The company's **fiscal year** begins in **September**.

Data Model for the Given dataset:-



1. Provide the list of markets in which customer "Atliq Exclusive" operates **its business in the APAC region**.

Ans.

| market |
|-------------|
| Australia |
| Bangladesh |
| India |
| Indonesia |
| Japan |
| Newzealand |
| Philiphines |
| South Korea |

Insight:

"Atliq Exclusive" has a strong geographical presence, operating in **8** out of 10 APAC regions. This wide coverage highlights its broad market reach, though there are still 2 regions with potential for expansion.

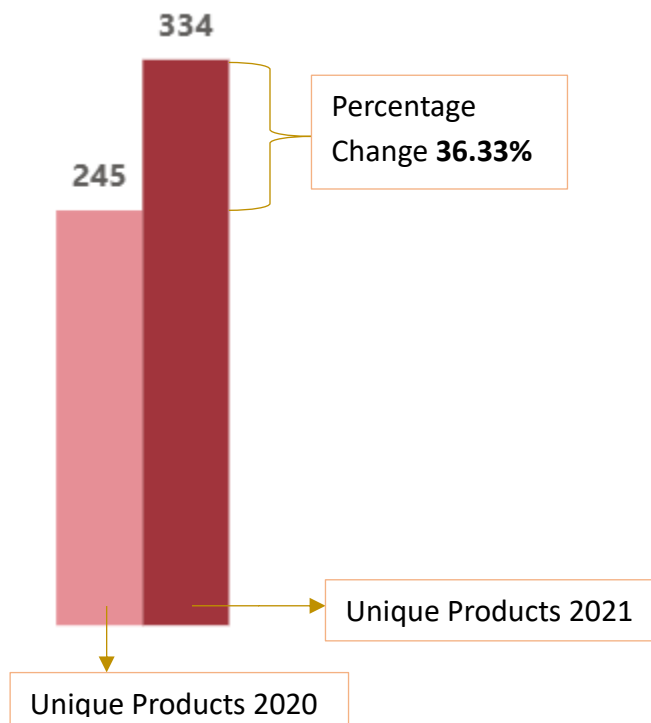
Atliq Exclusive's marketing countries in APAC region



2. What is the **percentage of unique product increase in 2021 vs. 2020**? The final output contains these fields: unique_products_2020, unique_products_2021, percentage_chg

Ans.

| unique_products_2020 | unique_products_2021 | percentage_change |
|----------------------|----------------------|-------------------|
| 245 | 334 | 36.33 |

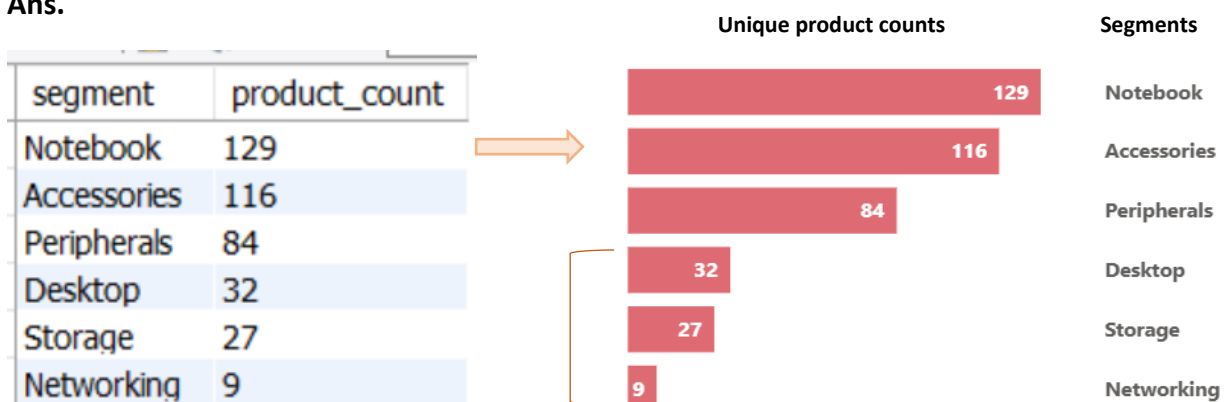


Insight:

This shows **greater product variety and diversification in 2021**, which could be driven by higher demand or increased production.

3. Provide a report with **all the unique product counts for each segment** and sort them in descending order of product counts. The final output contains 2 fields: segment product_count.

Ans.



Insights:

- Segments like *Notebooks, Accessories, and Peripherals* have a higher product variety compared to *Desktops, Storage, and Networking*.
- Together, Notebooks, Accessories, and Peripherals constitute about **83% of the total unique product portfolio**, indicating stronger focus and diversification in these segments.

Suggestions:

- **Package Deal:** Works well in segments like Notebooks + Accessories, since customers often buy them together.
- **Customer Services:** Especially important for Desktops and Networking, where post-sales support matters.
- **Free Vouchers / Cash Back / Gift Cards:** Can help boost Storage & Peripherals where competition is high.
- **Student Discount / Memberships:** Targeted at Notebook buyers, since students and professionals are the main segment.

4. Follow-up: Which **segment** had the **most increase in unique products in 2021 vs 2020**? The final output contains these fields: segment, product_count_2020, product_count_2021 difference.

Ans.

| segment | product_count_2020 | product_count_2021 | Difference |
|-------------|--------------------|--------------------|------------|
| Accessories | 69 | 103 | 34 |
| Notebook | 92 | 108 | 16 |
| Peripherals | 59 | 75 | 16 |
| Desktop | 7 | 22 | 15 |
| Storage | 12 | 17 | 5 |
| Networking | 6 | 9 | 3 |

| segment | product_count_2020 | product_count_2021 | difference |
|-------------|--------------------|--------------------|------------|
| Accessories | 69 | 103 | 34 ↑ |
| Notebook | 92 | 108 | 16 ↑ |
| Peripherals | 59 | 75 | 16 ↑ |
| Desktop | 7 | 22 | 15 ↑ |
| Storage | 12 | 17 | 5 ↑ |
| Networking | 6 | 9 | 3 ↑ |

Insights:

- **Accessories** showed the largest increase in unique products (+34), indicating strong expansion in that segment.
- Notebook and Peripherals also had notable increases (+16 each).
- **Storage** (+5) and **Networking** (+3) are experiencing comparatively slower growth, suggesting limited product diversification in those areas.

5. Get the **products** that have the **highest** and **lowest manufacturing costs**. The final output should contain these fields: product_code, product, manufacturing_cost.

Ans.

| product_code | product | manufacturing_cost |
|--------------|-----------------------|--------------------|
| A2118150101 | AQ Master wired x1 Ms | 0.8920 |
| A6120110206 | AQ HOME Allin1 Gen 2 | 240.5364 |

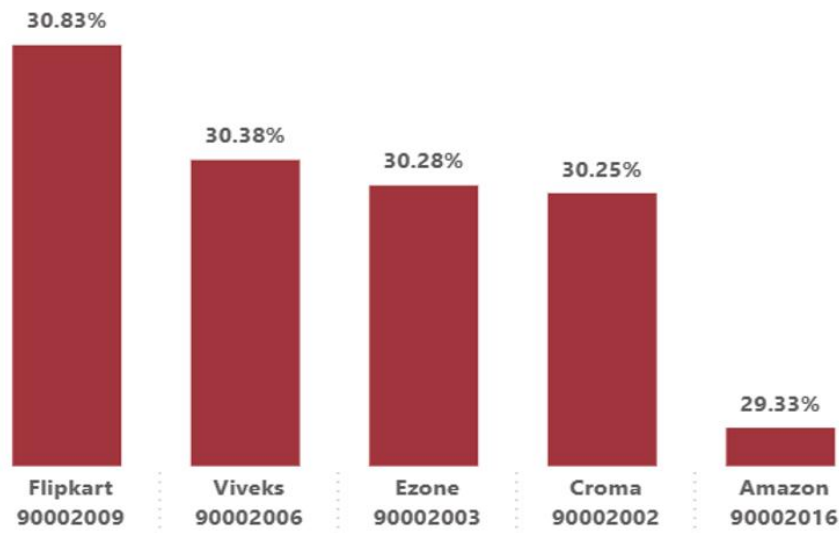
Insights:

- The **Mouse: AQ Master wired x1 Ms (Variant: Standard1)** has the **lowest manufacturing cost** at **0.8920**.
- The **Personal Desktop: AQ Home Allin1 Gen2 (Variant: Plus3)** has the **highest manufacturing cost** at **240.5364**.

6. Generate a report which contains the top 5 customers who received an average high pre_invoice_discount_pct for the fiscal year 2021 and in the Indian market. The final output contains these fields: customer_code customer average_discount_percentage.

Ans.

| customer_code | customer | avg_discount_pct |
|---------------|----------|------------------|
| 90002009 | Flipkart | 0.3083 |
| 90002006 | Viveks | 0.3038 |
| 90002003 | Ezone | 0.3028 |
| 90002002 | Croma | 0.3025 |
| 90002016 | Amazon | 0.2933 |



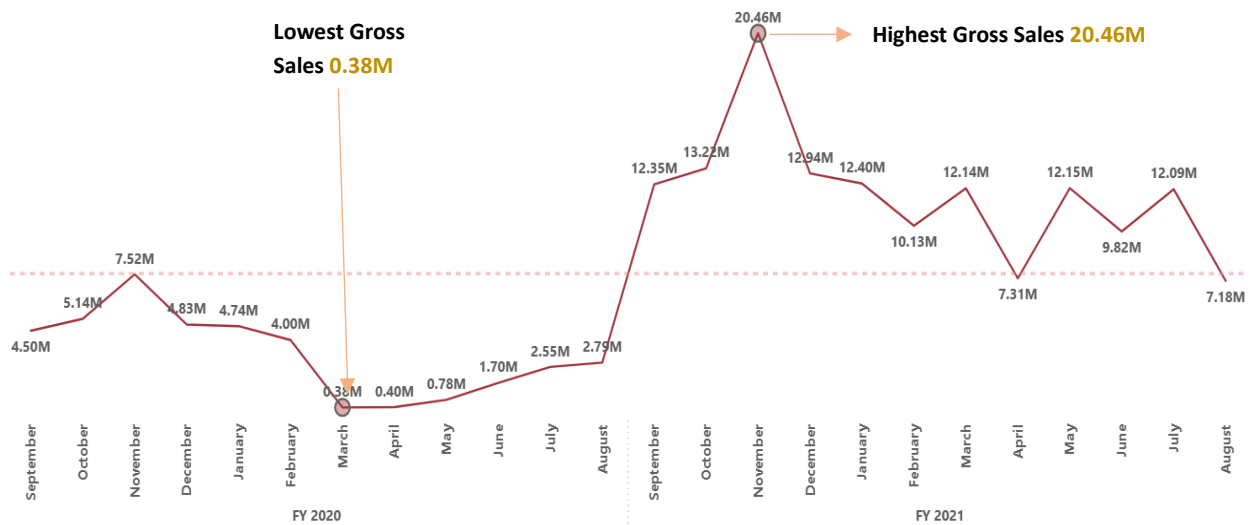
Insights:

- **Flipkart** received the **highest** average pre-invoice discount (30.83%) in FY 2021 in the Indian market.
- **Amazon** received the **lowest** among the top 5 customers (29.33%).
- The range of discount percentages among the top 5 is narrow (29.33%–30.83%), indicating that large Indian retailers were given **similar discount structures**.
- Although Flipkart had the highest average discount % among the top 5 customers, the variation between customers was very minor, making little difference in the overall discounting strategy.

7. Get the complete report of the **Gross sales amount** for the customer “**Atliq Exclusive**” for each month. This analysis helps to get an idea of low and high-performing months and take strategic decisions. The final report contains these columns: Month, Year, Gross sales Amount.

Ans.

| Month | fiscal_year | gross_sales_amount |
|------------------|-------------|--------------------|
| September (2019) | 2020 | 4496259.67 |
| October (2019) | 2020 | 5135902.35 |
| November (2019) | 2020 | 7522892.56 |
| December (2019) | 2020 | 4830404.73 |
| January (2020) | 2020 | 4740600.16 |
| February (2020) | 2020 | 3996227.77 |
| March (2020) | 2020 | 378770.97 |
| April (2020) | 2020 | 395035.35 |
| May (2020) | 2020 | 783813.42 |
| June (2020) | 2020 | 1695216.60 |
| July (2020) | 2020 | 2551159.16 |
| August (2020) | 2020 | 2786648.26 |
| September (2020) | 2021 | 12353509.79 |
| October (2020) | 2021 | 13218636.20 |
| November (2020) | 2021 | 20464999.10 |
| December (2020) | 2021 | 12944659.65 |
| January (2021) | 2021 | 12399392.98 |
| February (2021) | 2021 | 10129735.57 |
| March (2021) | 2021 | 12144061.25 |
| April (2021) | 2021 | 7311999.95 |
| May (2021) | 2021 | 12150225.01 |
| June (2021) | 2021 | 9824521.01 |
| July (2021) | 2021 | 12092346.32 |
| August (2021) | 2021 | 7178707.59 |



Insights:

- The lowest gross sales occurred in **March FY2020** (\$0.38M), likely reflecting a weak performance period.

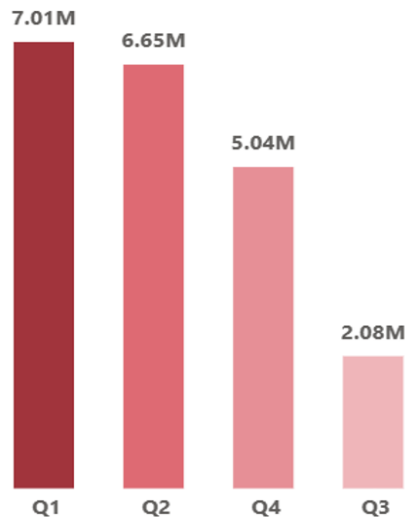
Reasons:

- * **COVID-19 impact (FY2020):** The low sales in March 2020 can be linked to lockdowns and reduced consumer demand.
- * **Global Chip Shortage (FY2021):** The early signs of the semiconductor shortage may have constrained production and impacted availability in some months.
- The highest gross sales were in **November FY2021** (\$20.46M), showing strong **festive-season demand**.
- A significant **78.34%** of total gross sales came from FY2021, highlighting much stronger performance compared to FY2020.

8. In which **quarter of 2020**, got the **maximum total_sold_quantity**? The final output contains these fields sorted by the total_sold_quantity: Quarter, total_sold_quantity.

Ans.

| Quarter | total_sold_quantity |
|---------|---------------------|
| Q1 | 7005619 |
| Q2 | 6649642 |
| Q4 | 5042541 |
| Q3 | 2075087 |



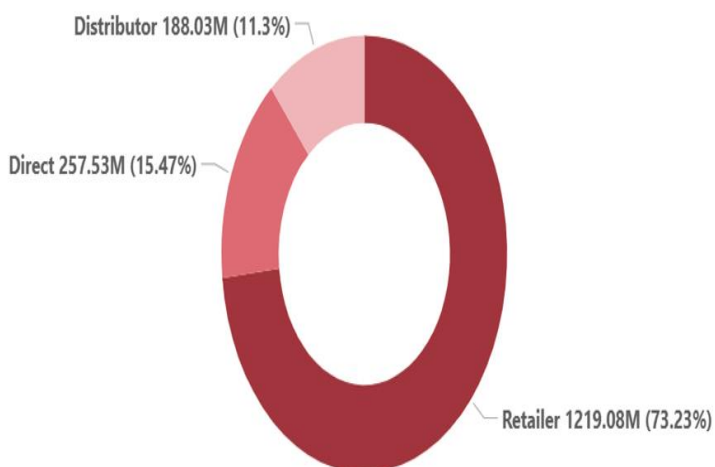
Insights:

- **Quarter 1** of FY2020 recorded the **highest sales**, with **7.01M** units sold.
- **Quarter 3** had the **lowest sales**, with only **2.08M** units sold.
- **Quarter 1** contributed about **34%** of the total sold quantity in FY2020.

9. Which **channel** helped to bring **more gross sales** in the fiscal year **2021** and the **percentage of contribution**? The final output contains these fields: channel, gross_sales_mln, percentage.

Ans.

| channel | gross_sales_mln | percentage_contribution |
|-------------|-----------------|-------------------------|
| Retailer | 1219.08M | 73.23% |
| Direct | 257.53M | 15.47% |
| Distributor | 188.03M | 11.30% |



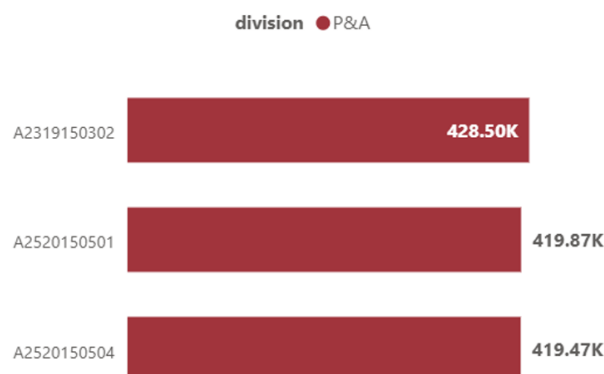
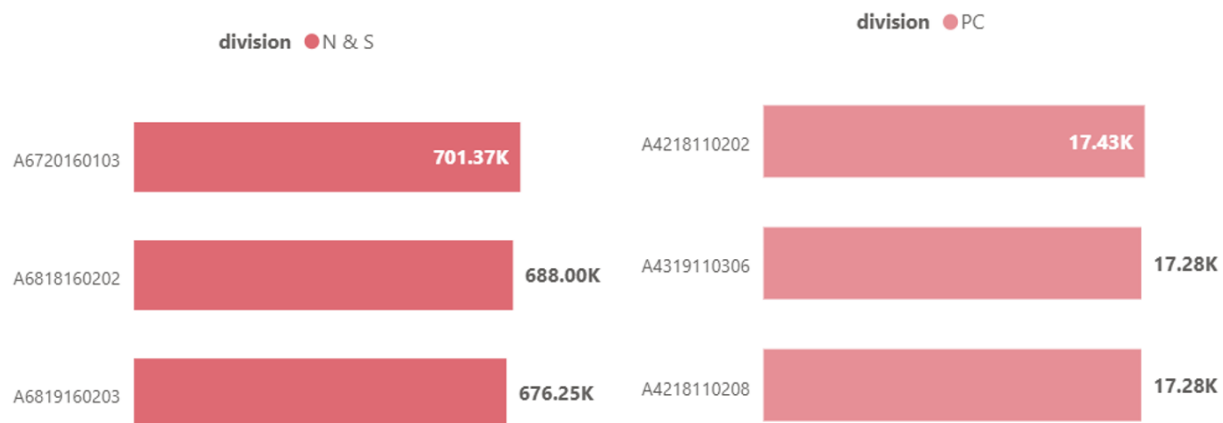
Insights:

- The **Retailer channel** contributed the **maximum gross sales** in FY2021, accounting for **73.23%** of total sales.
- The **Distributor channel** had the **lowest contribution**, making up only **11.30%** of total sales.
- The **Retailer channel** had **clear dominance** compared to both Direct and Distributor channels, highlighting its importance as the company's primary sales driver.

10. Get the **Top 3 products in each division** that have a **high total_sold_quantity** in the **fiscal_year 2021**? The final output contains these fields: division, product_code, product, total_sold_quantity, rank_order.

Ans.

| division | product_code | product | total_sold_quantity | rank_order |
|----------|--------------|---------------------|---------------------|------------|
| N & S | A6720160103 | AQ Pen Drive 2 IN 1 | 701373 | 1 |
| N & S | A6818160202 | AQ Pen Drive DRC | 688003 | 2 |
| N & S | A6819160203 | AQ Pen Drive DRC | 676245 | 3 |
| P & A | A2319150302 | AQ Gamers Ms | 428498 | 1 |
| P & A | A2520150501 | AQ Maxima Ms | 419865 | 2 |
| P & A | A2520150504 | AQ Maxima Ms | 419471 | 3 |
| PC | A4218110202 | AQ Digit | 17434 | 1 |
| PC | A4319110306 | AQ Velocity | 17280 | 2 |
| PC | A4218110208 | AQ Digit | 17275 | 3 |



Insights:

- In each division, **at least one product line with different variants appears more than once** in the top 3 products list.
- For example, in the N & S division, the “AQ Pen Drive DRC” has two variants in the top 3, while in the P & A division, the “AQ Maxima Ms” appears twice.
- This indicates that product variants play a major role in driving high sales within divisions.