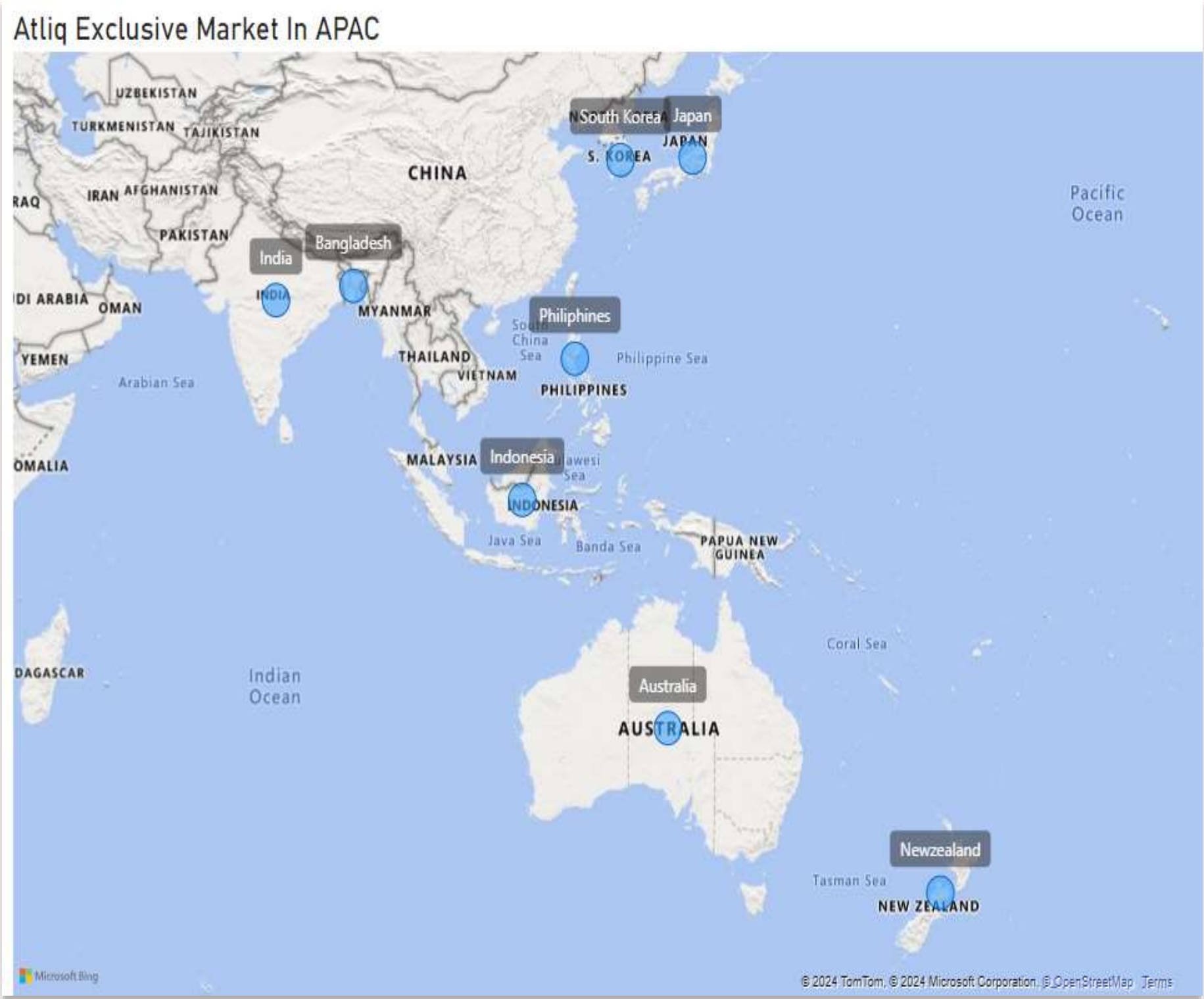## 1. Provide the list of markets in which customer "Atliq Exclusive" operates its business in the APAC region.


```sql
SELECT market, customer, region
FROM dim_customer
where customer = "Atliq Exclusive" AND region = "APAC"
```


Atliq Exclusive Market In APAC

Insights :

1. "Atliq Exclusive" operates in 8 distinct markets within the APAC region.

2. India is confirmed as the top market for "Atliq Exclusive" in the APAC region based on sales volume .

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_change

```sql
3 ⊖ WITH unique_products AS (
        SELECT
            COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN product_code END) AS unique_products_2020,
            COUNT(DISTINCT CASE WHEN fiscal_year = 2021 THEN product_code END) AS unique_products_2021
        FROM
            fact_sales_monthly
    )
    SELECT *,
        round((unique_products_2021 - unique_products_2020) * 100.0/ unique_products_2020,2) as pct_chg
    FROM
        unique_products;
```

unique product increase in 2021 vs. 2020

36.33 %

334

245

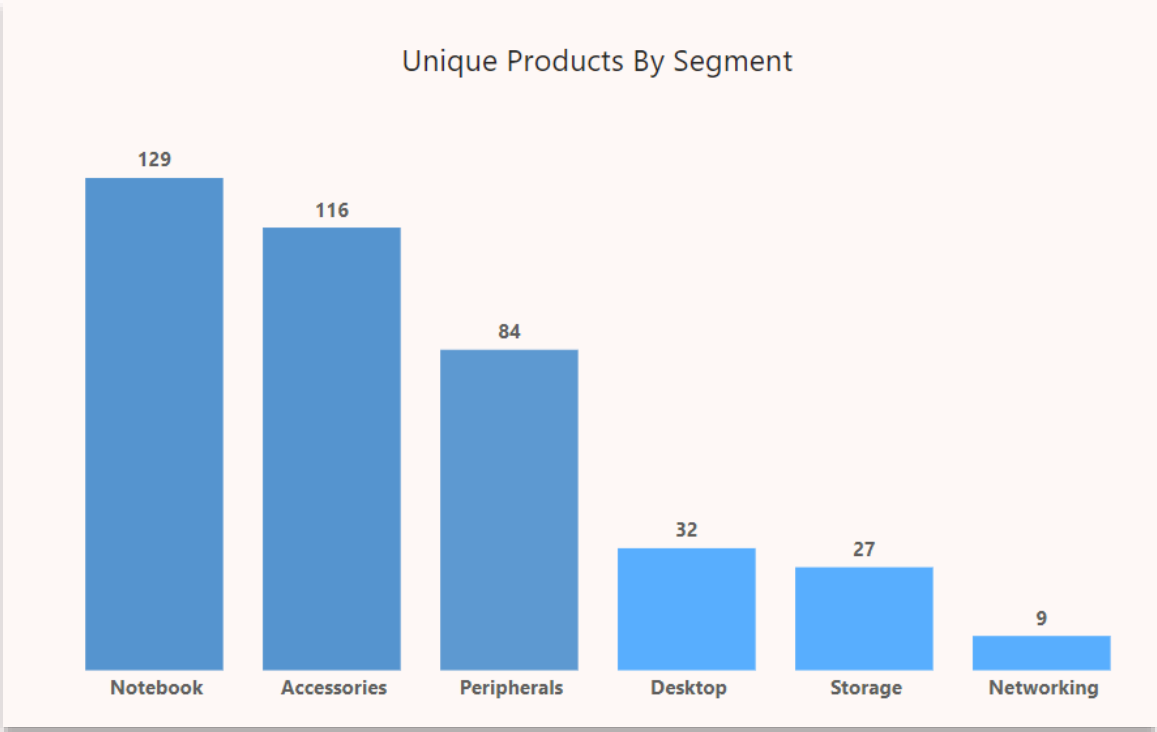unique_products_2020   unique_products_2021
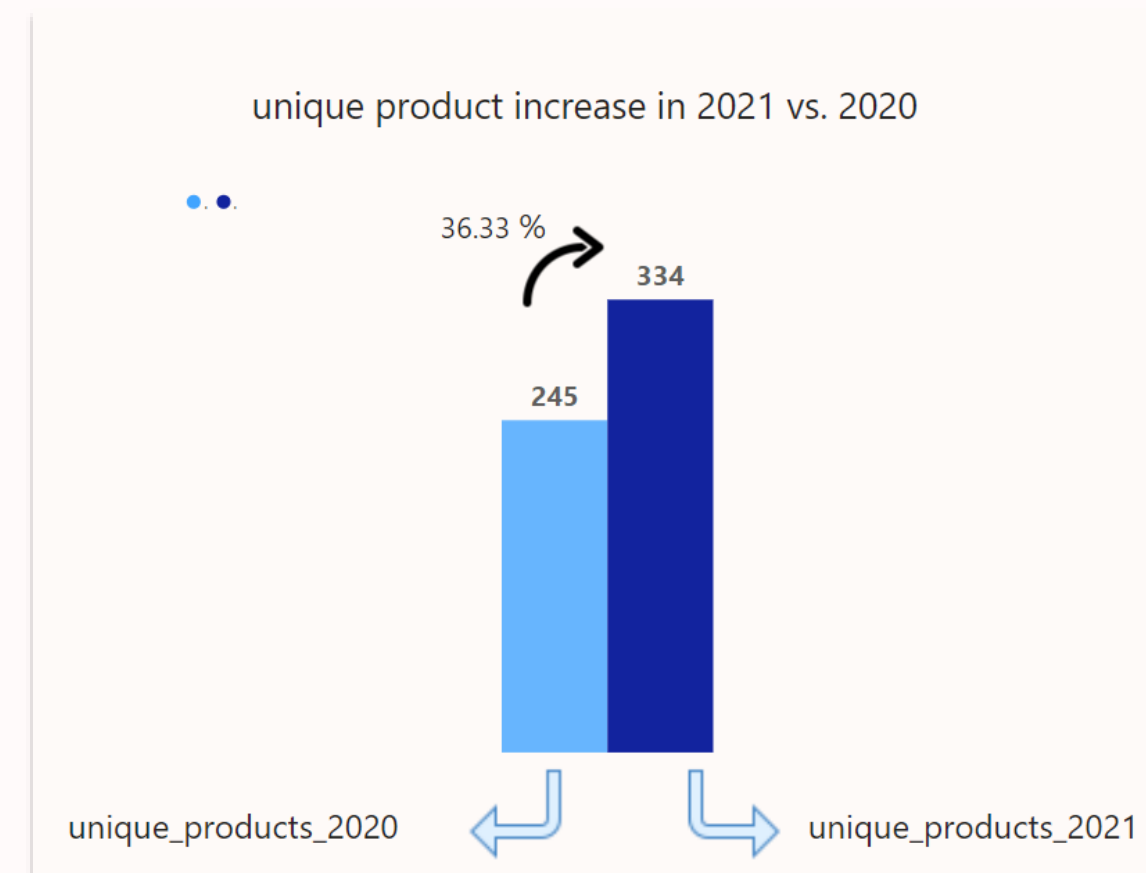
Insight :

1.The data shows that the number of unique products from 245 in 2020 to 334 unique products in 2021.

2. This Represents 33.36% increased in unique product offerings by Atliq Mart.

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

```sql
SELECT
    segment,
    count(distinct product_code) as unique_products
FROM
    dim_product
GROUP BY
    segment
ORDER BY
    unique_products desc
```


Unique Products By Segment

Notebook	Accessories	Peripherals	Desktop	Storage	Networking
129	116	84	32	27	9

Insight :

1. The data shows that Notebook, Accessories, Peripherals are the key strength for 'Atliq Mart' indicating a strong market presence and wide variety of products for customers.

2. The data shows that the Segment Desktop, Storage, Networking have relatively fewer unique products and present significant opportunities for expansion .

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

```
WITH unique_products as (
SELECT
    segment,
    COUNT(DISTINCT CASE WHEN fiscal_year = 2020 THEN p.product_code END) AS unique_products_2020,
    COUNT(DISTINCT CASE WHEN fiscal_year = 2021 THEN p.product_code END) AS unique_products_2021
FROM
    fact_sales_monthly f
JOIN
    dim_product p
ON
    f.product_code = p.product_code
GROUP BY
    segment
)
SELECT
    *,
    (unique_products_2021 - unique_products_2020) as difference
from unique_products
order by difference desc
```

Unique Product Difference Between 2020 Vs 2021

segment	Unique_Products_2020	Unique_Products_2021	Difference
Notebook	92	108	16
Accessories	69	103	34
Peripherals	59	75	16
Storage	12	17	5
Desktop	7	22	15
Networking	6	9	3

Insight :

 1. **Accessories** had the most significant increase in unique products, with an addition of 34 new products in 2021 compared to 2020

 2. Both **Notebook** and **Peripherals** saw a substantial increase, each with 16 new unique products

 3. **Storage** and **Networking** saw a steady increase of products with 5 and 3 respectively.

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

```sql
SELECT
    p.segment as segment,
    p.product_code as product_code,
    p.product as product,
    m.manufacturing_cost as manufacturing_cost,
    p.category as category
FROM
    fact_manufacturing_cost m
INNER JOIN
    dim_product p
ON  m.product_code = p.product_code
WHERE
    m.manufacturing_cost =( select max(manufacturing_cost) as highest_manufacturing_cost from fact_manufacturing_cost)
    OR
    m.manufacturing_cost =( select min(manufacturing_cost) as lowest_manufacturing_cost from fact_manufacturing_cost)
```

Lowest Manufacturing Cost	Highest Manufacturing Cost
0.89	240.54
Accessories A2118150101 AQ Master wired x1 Ms Mouse	Desktop A6120110206 AQ HOME Allin1 Gen 2 Personal Desktop

Insight :

1. **AQ HOME Allin 1 Gen 2** is the product with highest manufacturing cost under the personal desktop segment.

2. **AQ Mastered Wired X1 Ms** is the product with lowest manufacturing cost under the mouse segment.

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 .

```sql
SELECT
    c.customer_code as customer_code,
    c.customer as customer,
    concat(round(avg(pre_invoice_discount_pct)*100,2),'%') as avg_discount_pct
FROM
    fact_pre_invoice_deductions f
INNER JOIN
    dim_customer c
ON f.customer_code = c.customer_code
WHERE
    market = "India" AND fiscal_year = 2021
GROUP BY
    customer_code,
    customer
ORDER BY avg(pre_invoice_discount_pct) desc
limit 5;
```


Average Discount Percentage By Customer

30.83%	30.38%	30.28%	30.25%	29.33%
Flipkart	Viveks	Ezone	Croma	Amazon
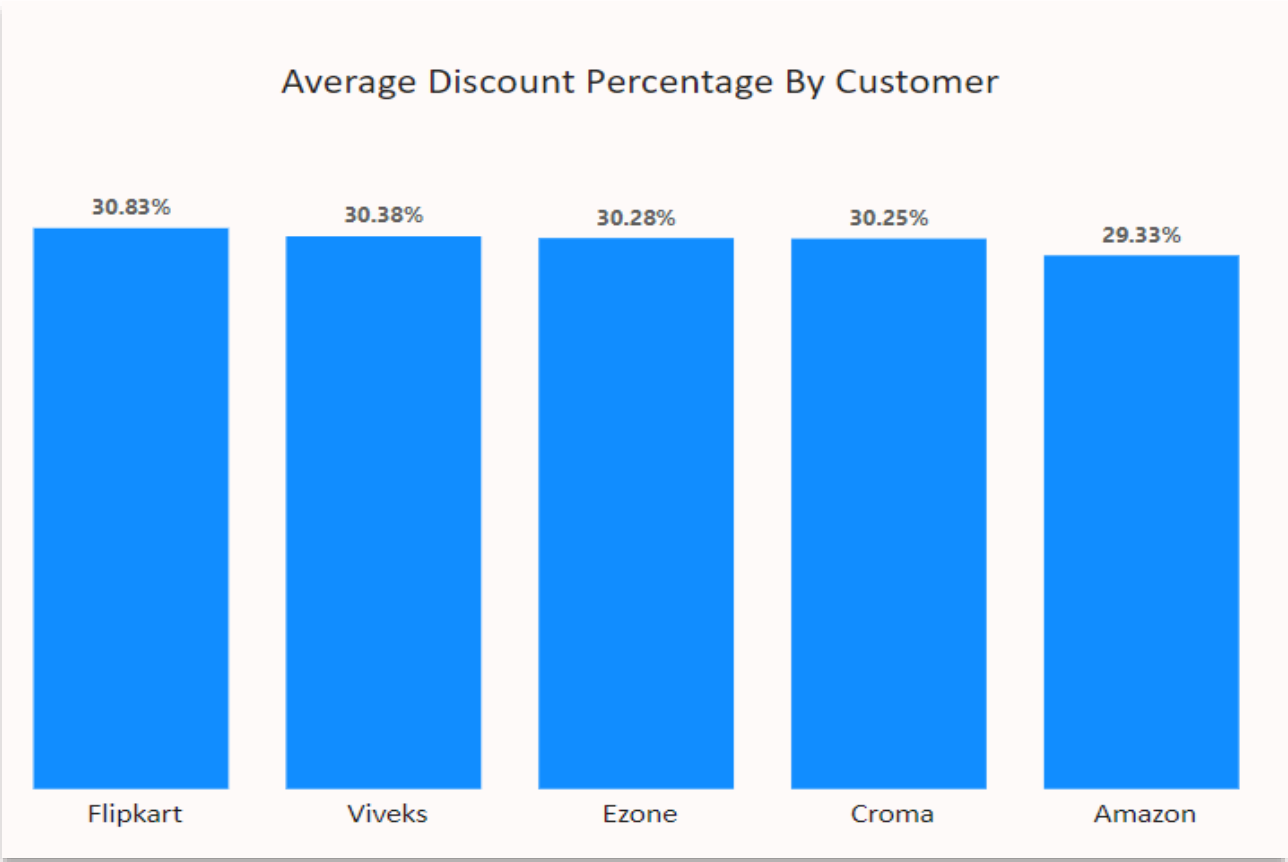
Insight :

1. **Flipkart** tops the list with an average discount of **30.83%**.

2. The average discount percentages for the top four customers are very close to each other, all above **30%**. This suggests that major players in the Indian market are operating with similar discount strategies to attract customers.

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

```sql
SELECT
    MONTHNAME(S.date) as Month,
    EXTRACT(YEAR FROM S.date) as Year,
    CONCAT(ROUND(SUM(S.sold_quantity * G.gross_price)/1000000, 2),'M') as Gross_Sales_Amount
FROM
    fact_sales_monthly S
INNER JOIN
    fact_gross_price G ON S.product_code = G.product_code
INNER JOIN
    dim_customer C ON C.customer_code = S.customer_code
WHERE
    C.customer = 'Atliq Exclusive'
GROUP BY
    Month, Year
ORDER BY
    YEAR;
```

Sales Trend of Atliq Exclusive
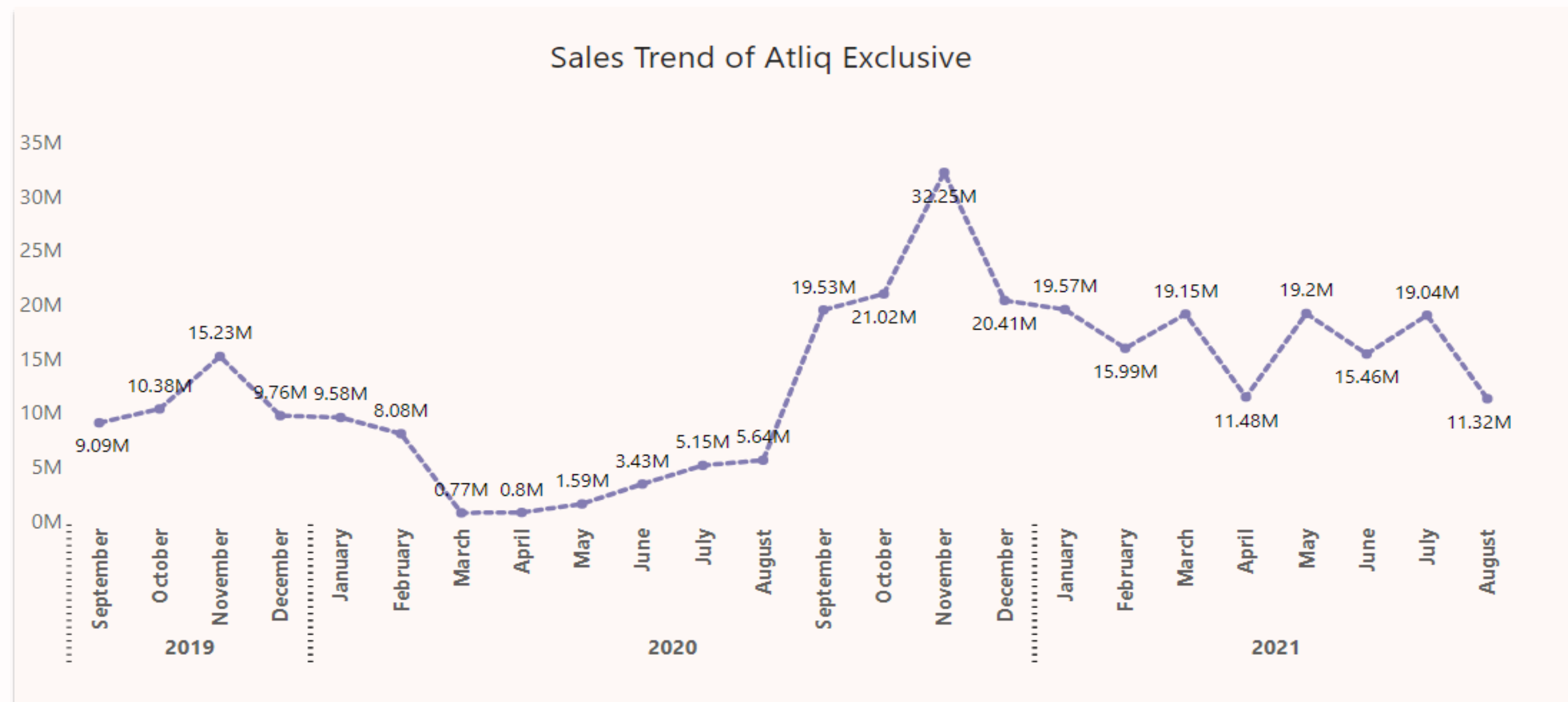
Insight :

1. Gross sales for "Atliq Exclusive" hit their lowest in March and April due to the **COVID-19** pandemic and associated lockdowns.

2. From May onwards, there was a steady increase in gross sales, indicating a recovery as **market conditions** improved.

3. November saw the highest gross sales due to the festive season in India, particularly driven by **Diwali celebrations.**

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

```sql
SELECT
    CASE
        WHEN MONTH(date) IN (9,10,11 )THEN 'Q1'
        WHEN MONTH(date) IN (12,1,2) THEN 'Q2'
        WHEN MONTH(date) IN (3,4,5 )THEN 'Q3'
        ELSE
        'Q4'
        END AS Quarters,
    SUM(sold_quantity) as total_sold_quantity
FROM
    fact_sales_monthly s
WHERE
    fiscal_year = 2020
GROUP BY
    Quarters
ORDER BY
    total_sold_quantity DESC;
```
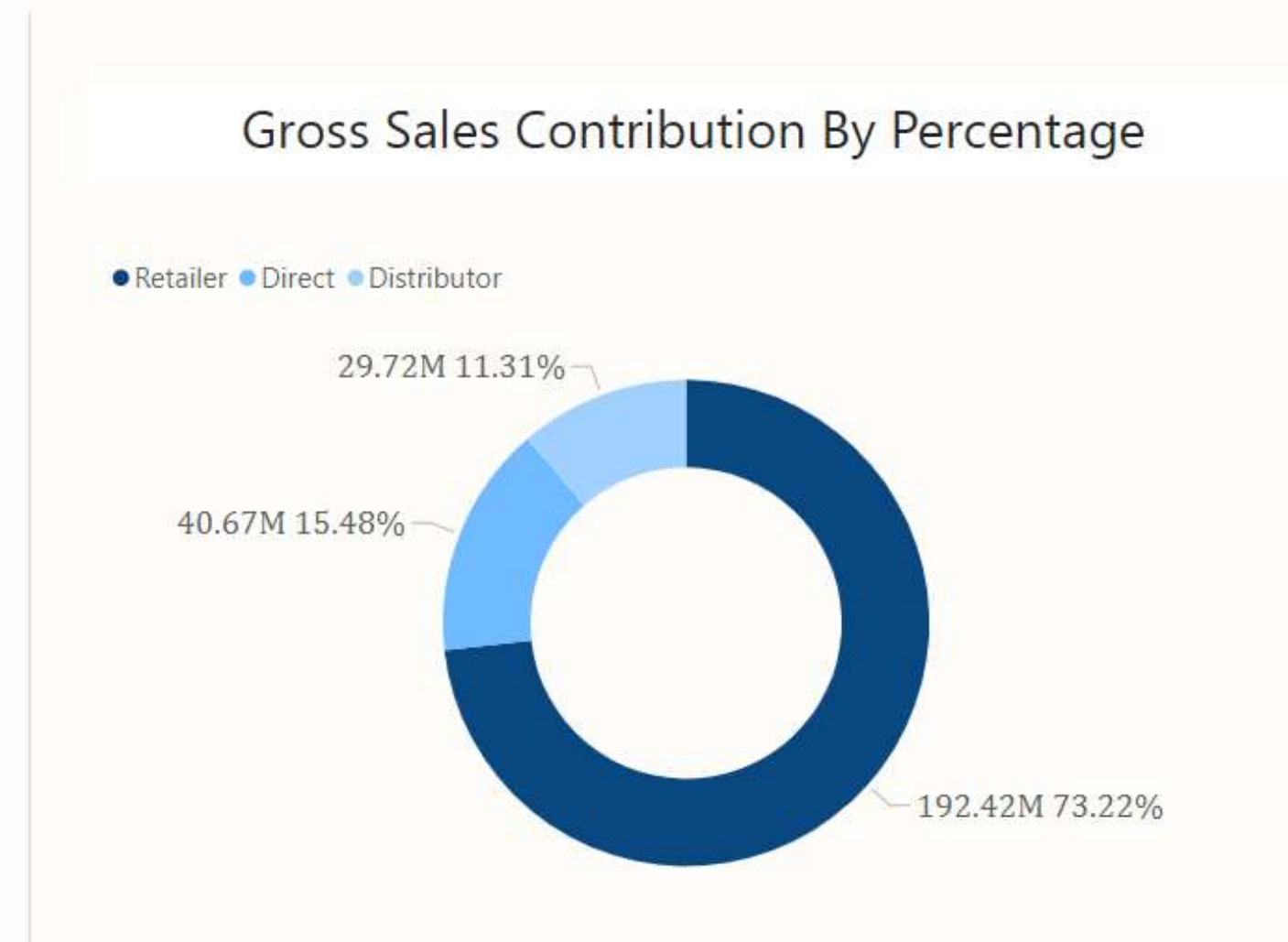
Total Sold Quantity By Quarters For 2020

Quarter	Total Sold Quantity
Q1	7.0M
Q2	6.6M
Q3	2.1M
Q4	5.0M
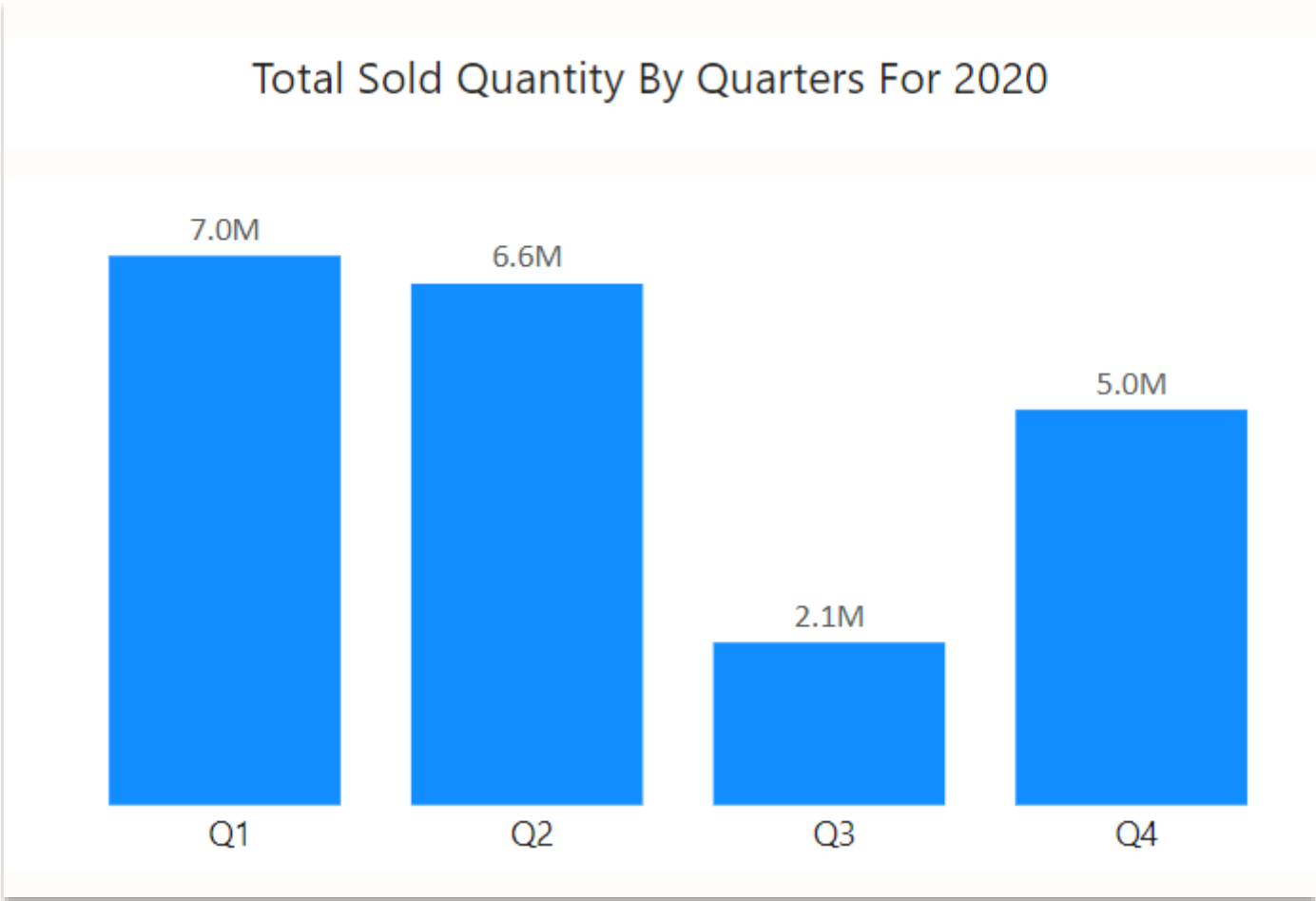
Insight :

1.The fiscal year of the "**Atliq Hardwares**" start in the month of September so the first quarter consist of **September, October , November**.

2. The quarter 3 saw the decline in the sold quantity due to the effects of **covid_19** and associated lockdowns.

3. In the quarter 4 there was a steady increase in sold quantity indicating a strong market recovery

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

```sql
WITH Gross_sales AS
(   SELECT
        c.channel,
        CONCAT(ROUND(SUM(gross_price * sold_quantity) / 10000000, 2), 'M') AS gross_sales_mln
    FROM
        fact_sales_monthly s
    INNER JOIN
        fact_gross_price p
    ON s.product_code = p.product_code
    INNER JOIN
        dim_customer c
    ON c.customer_code = s.customer_code
    WHERE
        s.fiscal_year = 2021
    GROUP BY
        channel )

SELECT
    channel,
    gross_sales_mln,
    CONCAT(ROUND(gross_sales_mln / sum(gross_sales_mln) OVER() * 100,2),'%') as percentage
FROM Gross_Sales
GROUP BY channel
ORDER BY percentage desc
```


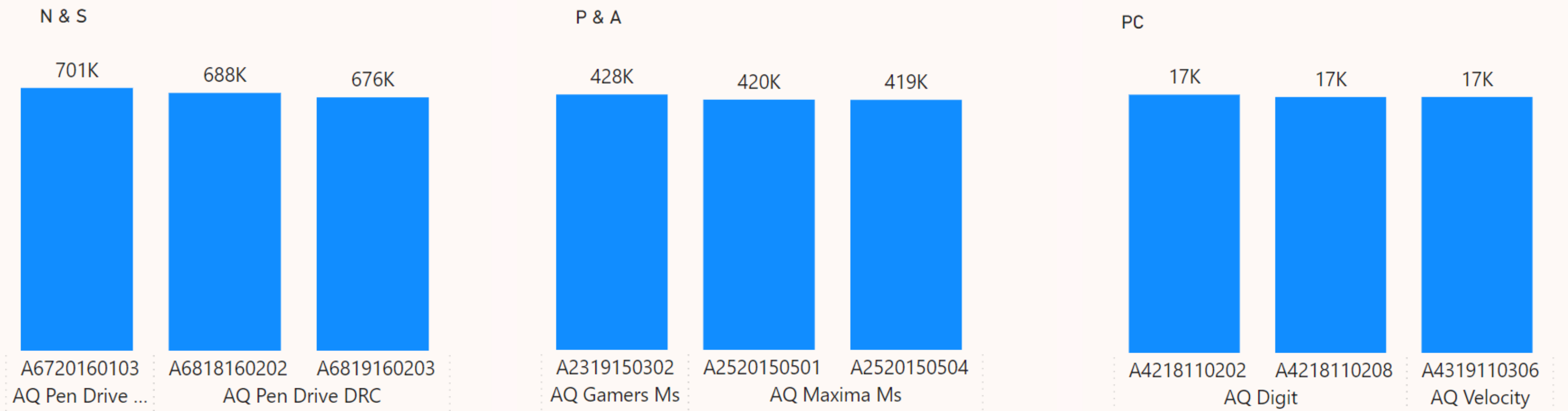
Gross Sales Contribution By Percentage

● Retailer ● Direct ● Distributor

29.72M 11.31%

40.67M 15.48%

192.42M 73.22%

Insight :

1. The retailer channel made the most sales, with **73.22%** of the total percentage

2. The distributor and direct channels together made nearly 30% of the total gross sales, with **11.31%** and **15.48%** respectively.

3. This shows that the **retailer channel** helped to bring in more sales

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, Product_code

```sql
WITH Ranked_Product AS (
    SELECT
        p.division,
        p.product,
        p.product_code,
        SUM(s.sold_quantity) AS total_sold_quantity,
        ROW_NUMBER() OVER (PARTITION BY p.division ORDER BY SUM(s.sold_quantity) DESC) AS Row_Numbers
    FROM
        dim_product p
    INNER JOIN
        fact_sales_monthly s ON p.product_code = s.product_code
    WHERE
        fiscal_year = 2021
    GROUP BY
        p.division,
        p.product,
        p.product_code
)
SELECT
    division,
    product,
    product_code,
    total_sold_quantity
FROM
    Ranked_Product
WHERE
    Row_Numbers <= 3;
```

N & S

701K	688K	676K
A6720160103	A6818160202	A6819160203
AQ Pen Drive ...	AQ Pen Drive DRC	

P & A

428K	420K	419K
A2319150302	A2520150501	A2520150504
AQ Gamers Ms	AQ Maxima Ms	

PC

17K	17K	17K
A4218110202	A4218110208	A4319110306
AQ Digit		AQ Velocity

Insight:

1.In the **N & S division**, the top three products are AQ Pen Drive 2 in 1 and AQ Pen Drive DRC, with AQ Pen Drive DRC appearing twice.

2.In the **PC division**, the top three products are AQ Velocity and AQ Digit, with AQ Digit appearing twice.

3. In the **P & A division**, the top three products are AQ Gamers Ms and AQ Maxima Ms, with AQ Maxima Ms appearing twice.