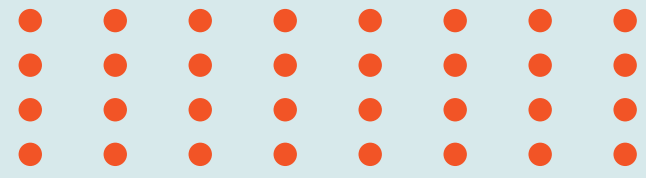




PROJECT DATA ANALYSIS FOR RETAIL SALES PERFORMANCE ANALYSIS

08 Oct, 2024





Introduction



The dataset utilized comprises transactions from 2009 to 2012, encompassing a total of 5,500 raw data points, which include order statuses categorized as completed orders, returned orders, and canceled orders.

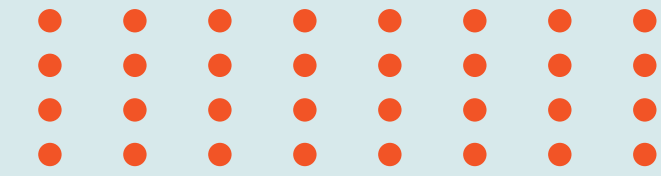
The dataset provided for this project encompasses the following data.

1. OrderID
2. Order Status
3. Customer
4. Order Date
5. Order Quantity
6. Sales
7. Discount Percentage
8. Discount
9. Product Category
10. Product Subcategory

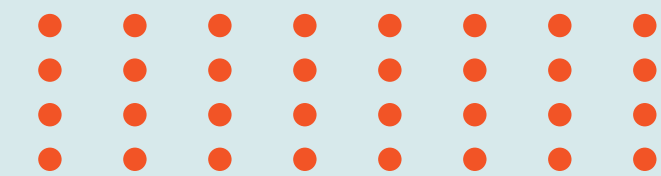
Question

1. Overall performance of DQLab Store from 2009 to 2012 regarding the number of orders and total sales completed.
2. Overall performance of DQLab by product subcategory, to be compared between 2011 and 2012.
3. The effectiveness and efficiency of promotions conducted to date can be assessed by calculating the overall burn rate of promotions executed each year.
4. The effectiveness and efficiency of promotions conducted to date will be assessed by calculating the overall burn rate of promotions across sub-categories.





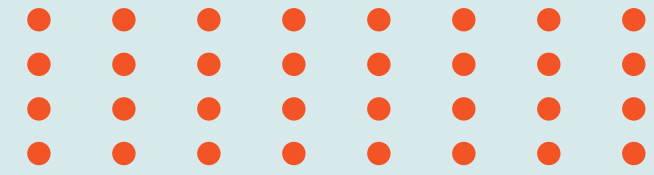
Overall Performance by Year



years	sales	number_of_order
2009	4613872681	1244
2010	4059100607	1248
2011	4112036186	1178
2012	4482983158	1254

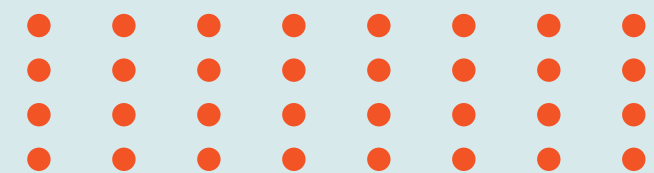
```
SELECT
    YEAR(order_date) AS years,
    SUM(sales) AS sales,
    COUNT(order_id) AS number_of_order
FROM
    dqlab_sales_store
WHERE
    order_status = 'order finished' AND
    YEAR(order_date) BETWEEN 2009 AND 2012
GROUP BY
    years
ORDER BY
    years;
```





Results

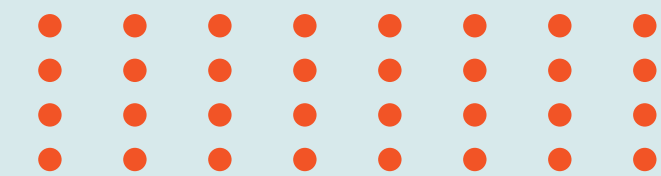
1. Sales experienced a decrease from 4,613,872,681 in 2009 to 4,059,100,607 in 2010, despite a modest increase in the number of orders from 1,244 to 1,248.
2. In 2011, sales increased once more to 4,112,036,186, despite a decline in the number of orders to 1,178.
3. Sales experienced substantial growth in 2012, totaling 4,482,983,158, accompanied by an increase in the number of orders to 1,254.



Conclusion

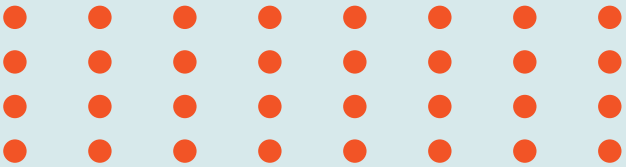
In 2011, there was a decline in the number of orders; however, sales still rose in comparison to 2010. In 2012, both the number of orders and sales saw a substantial positive increase following the downturn in 2010, culminating in the highest sales figures recorded in 2012, which indicated a marked improvement in business performance.





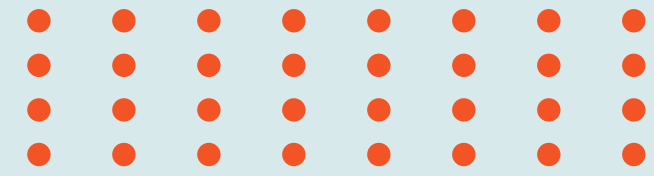
Overall Performance by Product Sub Category

```
SELECT
    YEAR(order_date) AS years,
    product_sub_category,
    SUM(sales) AS sales
FROM
    dqlab_sales_store
WHERE
    YEAR(order_date) IN (2011, 2012) AND
    order_status = 'order finished'
GROUP BY
    YEAR(order_date), product_sub_category
ORDER BY
    years, sales DESC;
```



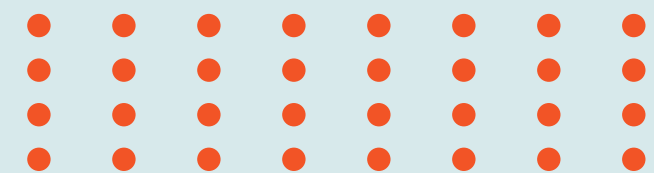
years	product_sub_category	sales
2011	Chairs & Chairmats	622962720
2011	Office Machines	545856280
2011	Tables	505875000
2011	Copiers and Fax	484074000
2011	Telephones and Communication	392194658
2011	Binders and Binder Accessories	298023200
2011	Storage & Organization	285991820
2011	Appliances	272630020
2011	Computer Peripherals	232677960
2011	Bookcases	169304620
2011	Office Furnishings	160471500
2011	Paper	111000300
2011	Pens & Art Supplies	43093000
2011	Envelopes	36463900
2011	Labels	15607700
2011	Scissors, Rulers and Trimmers	12638340
2011	Rubber Bands	3090120
2012	Office Machines	811427140
2012	Chairs & Chairmats	654168740
2012	Telephones and Communication	422287514
2012	Tables	388993784
2012	Binders and Binder Accessories	363879200
2012	Storage & Organization	356714140
2012	Computer Peripherals	300014340
2012	Copiers and Fax	292489000
2012	Appliances	266131100
2012	Office Furnishings	178927400
2012	Bookcases	159984600
2012	Paper	126096160
2012	Envelopes	50629200
2012	Pens & Art Supplies	43018400
2012	Scissors, Rulers and Trimmers	36776400
2012	Labels	10007040
2012	Rubber Bands	3037800





Results

1. Chairs and Chair Covers achieved the highest sales in 2011, totaling 622,962,720.
2. Rubber bands experienced their lowest sales in 2011, totaling 3,090,120 units.
3. Office Machines achieved its peak sales in 2012, with total sales amounting to 811,427,140.
4. Rubber bands experienced their lowest sales in 2011, totaling 3,837,880 units.



Conclusion

In 2011 and 2012, there was a robust demand for office supplies, with Chairs & Chair Covers emerging as the top seller in 2011. The following year, attention transitioned to technology, as Office machines recorded the highest sales, indicative of the growing necessity for contemporary office equipment. Conversely, Rubber Bands consistently ranked as the lowest seller in both years.



Promotion Effectiveness and Efficiency by Years

years	sales	promotion_value	burn_rate_percentage
2009	4613872681	214330327	4.65
2010	4059100607	197506939	4.87
2011	4112036186	214611556	5.22
2012	4482983158	225867642	5.04

WITH sales_and_promotions AS (

SELECT

EXTRACT(YEAR FROM order_date) AS year,

SUM(sales) AS total_sales,

SUM(discount_value) AS promotion_value

FROM

dqlab_sales_store

WHERE

order_status = 'Order Finished'

GROUP BY

EXTRACT(YEAR FROM order_date))

SELECT

year AS years,

total_sales AS sales,

promotion_value,

ROUND((promotion_value / NULLIF(total_sales, 0)) * 100, 2)

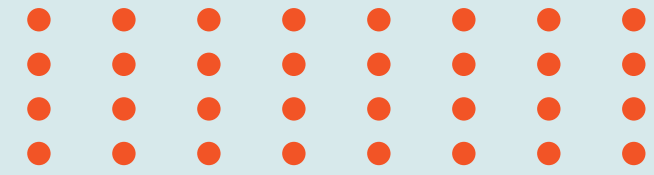
AS burn_rate_percentage

FROM

sales_and_promotions

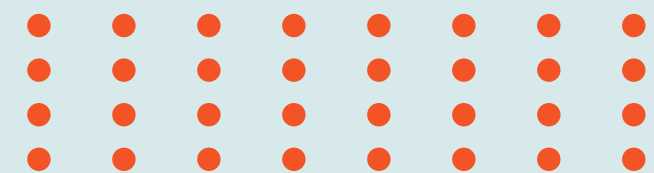
ORDER BY

year;



Results

1. The reduction in promotional value from 214,330,327 in 2009 to 197,506,939 in 2010 led to an increase in the burn rate percentage from 4.65 to 4.87.
2. In 2011, the promotional value rose to 214,611,556, while the burn rate percentage also increased to 5.22.
3. The rise in promotion value in 2012 to 225,867,642 positively influenced the burn rate percentage, which decreased to 5.04 from the prior year.



Conclusion

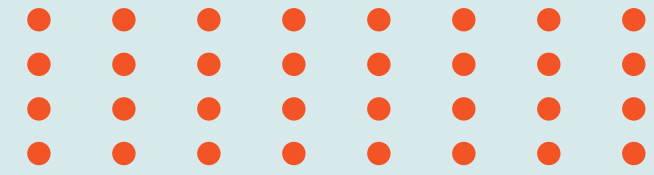
In 2011, there was a decline in the number of orders; however, sales still rose in comparison to 2010. In 2012, both the number of orders and sales saw a substantial positive increase following the downturn in 2010, culminating in the highest sales figures recorded in 2012, which indicated a marked improvement in business performance.



Promotion Effectiveness and Efficiency by Product Sub Category

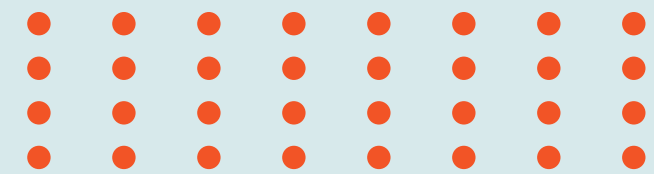
years	product_sub_category	product_category	sales	promotion_value	burn_rate_percentage
2012	Office Machines	Technology	811427140	46616695	5.75
2012	Chairs & Chairmats	Furniture	654168740	26623882	4.07
2012	Telephones and Communication	Technology	422287514	18800188	4.45
2012	Tables	Furniture	388993784	16348689	4.2
2012	Binders and Binder Accessories	Office Supplies	363879200	22338980	6.14
2012	Storage & Organization	Office Supplies	356714140	18802166	5.27
2012	Computer Peripherals	Technology	308014340	15333293	4.98
2012	Copiers and Fax	Technology	292489800	14530870	4.97
2012	Appliances	Office Supplies	266131100	14393300	5.41
2012	Office Furnishings	Furniture	178927480	8233849	4.6
2012	Bookcases	Furniture	159984680	10024365	6.27
2012	Paper	Office Supplies	126896160	6224694	4.91
2012	Envelopes	Office Supplies	58629280	2334321	3.98
2012	Pens & Art Supplies	Office Supplies	43818480	2343501	5.35
2012	Scissors, Rulers and Trimmers	Office Supplies	36776400	2349280	6.39
2012	Labels	Office Supplies	10007040	452245	4.52
2012	Rubber Bands	Office Supplies	3837880	117324	3.06

```
WITH sales_and_promotions AS (  
  SELECT  
    EXTRACT(YEAR FROM order_date) AS year,  
    product_sub_category,  
    product_category,  
    SUM(sales) AS sales,  
    SUM(discount_value) AS promotion_value  
  FROM  
    dqlab_sales_store  
  WHERE  
    order_status = 'Order Finished'  
    AND EXTRACT(YEAR FROM order_date) = 2012  
  GROUP BY  
    product_sub_category,  
    product_category,  
    EXTRACT(YEAR FROM order_date))  
  
SELECT  
  year AS years,  
  product_sub_category,  
  product_category,  
  sales,  
  promotion_value,  
  ROUND((promotion_value / NULLIF(sales, 0)) * 100, 2) AS  
  burn_rate_percentage  
FROM  
  sales_and_promotions  
ORDER BY  
  sales DESC;
```



Results

1. The highest sales in 2012 occurred within the office machine subcategory of the technology product category, totaling 811,427,140. The promotional value allocated was 466,166,995, resulting in a promotional expenditure to sales ratio of 5.75%.
2. The highest sales in 2012 were recorded in the subcategories of chairs and chair bases within the furniture category, totaling 654,168,740. The promotional value allocated was 26,623,882, resulting in a promotional expenditure to sales ratio of 4.07%.
3. The binders and binder accessories subcategory within the Office Supplies category achieved the highest sales in 2012, totaling 363,879,200. The promotional value allocated was 22,338,980, resulting in a promotional expenditure to sales ratio of 6.14%.



Conclusion

The furniture category demonstrated robust performance with a relatively low burn rate, indicating that promotional expenditures were efficient without excessive budget allocation.





Thank You

08 Oct, 2024

