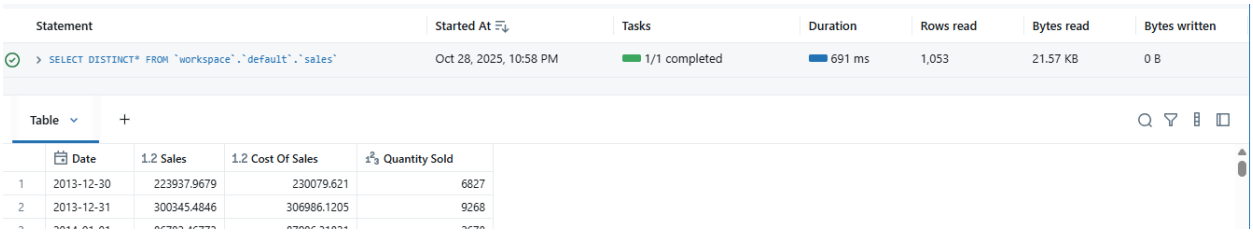
Sales analysis

EDA

```
--checking headers
SELECT * FROM `workspace`.`default`.`sales` limit 10;

--checking for duplicate rows
SELECT * FROM `workspace`.`default`.`sales`;
SELECT DISTINCT* FROM `workspace`.`default`.`sales`;



--checking for rows containing nulls
select* from `workspace`.`default`.`sales`
where date is null or Sales is null or `Cost Of Sales` is null or `Quantity Sold` is
null;

--Date

---Earliest and latest date are 2013-12-30 and 2016-11-16
Select max(Date) as latest, min(Date) as Earliest
from Sales;
```



Statement	Started At	Tasks	Duration	Rows read	Bytes read	Bytes written
SELECT DISTINCT* FROM `workspace`.`default`.`sales`	Oct 28, 2025, 10:58 PM	1/1 completed	691 ms	1,053	21.57 KB	0 B

Table +

	Date	1.2 Sales	1.2 Cost Of Sales	Quantity Sold
1	2013-12-30	223937.9679	230079.621	6827
2	2013-12-31	300345.4846	306986.1205	9268

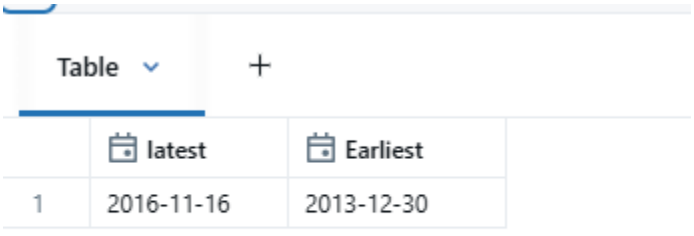


Table +

	latest	Earliest
1	2016-11-16	2013-12-30

1. What is the daily sales price per unit?

```sql
--price and cost per unit sold round to 2 dec
Select Sales,`Cost Of Sales`,`Quantity Sold`, Round(Sales/`Quantity Sold`, 2) as
PricePerUnit, Round(`cost of sales`/`Quantity Sold`, 2) As CostPerUnit
from Sales;
```

Table +

	1.2 Sales	1.2 Cost Of Sales	1²3 Quantity Sold	1.2 PricePerUnit	1.2 CostPerUnit
1	223937.9679	230079.621	6827	32.8	33.7
2	300345.4846	306986.1205	9268	32.41	33.12
3	86782.46773	87986.31821	2678	32.41	32.86
4	200173.1168	202881.1777	6175	32.42	32.86
5	326906.0742	333806.2919	10084	32.42	33.1
6	307043.9354	313652.3483	9470	32.42	33.12
7	179188.8845	183083.285	5524	32.44	33.14
8	306351.9509	313446.0681	9448	32.43	33.18
9	224020.41	229533.9737	6911	32.42	33.21

2. What is the average unit sales price of this product?

```sql
--avg unit sales price
Select avg(Round(Sales/`Quantity Sold`, 2)) as avgprice
from Sales;
```

Table +

	1.2 avgprice
1	37.0729249762582...

3. What is the daily % gross profit?

Table +

	date	1.2 gppercentage
1	2013-12-30	-0.03
2	2013-12-31	-0.02
3	2014-01-01	-0.01
4	2014-01-02	-0.01
5	2014-01-03	-0.02
6	2014-01-04	-0.02
7	2014-01-05	-0.02
8	2014-01-06	-0.02
9	2014-01-07	-0.02
10	2014-01-08	0.02
11	2014-01-09	0.03
12	2014-01-10	0.02
13	2014-01-11	0.02
14	2014-01-12	0.02

4. What is the daily % gross profit per unit?

```
--daily gp per unit
select date, round((sales-`Cost Of Sales`)/`Quantity Sold`, 2) as gpperunit
from Sales;
```

Table +

	date	1.2 gpperunit
1	2013-12-30	-0.9
2	2013-12-31	-0.72
3	2014-01-01	-0.45
4	2014-01-02	-0.44
5	2014-01-03	-0.68
6	2014-01-04	-0.7

5. Pick any 3 periods during which this product was on promotion/special:

   What was the Price Elasticity of Demand during each of these periods?

Price Elasticity of Demand

- This comparison was between 2015 first quarter and second quarter.
- The .9% price decrease had a 29% change in quantity sold.
- this resulted in PEoD of 31.95, which is significantly high

31.95

- This comparison was between 2015 third quarter and fourth quarter.
- The 2.5% price decrease had a 33.2% change in quantity sold.
- this resulted in PEoD of 12.9, which is also significantly high

12.9

- This comparison was between 2016 first quarter and second quarter.
- The 7% price decrease had a 33% change in quantity sold.
- this resulted in PEoD of 4.49, which is moderately high

4.49

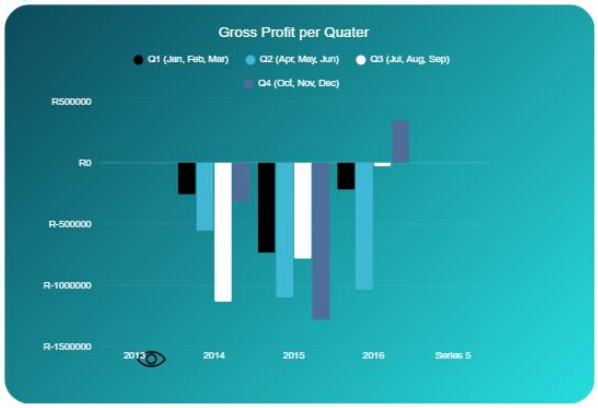
Formula: % change in quantity demanded / % change in price

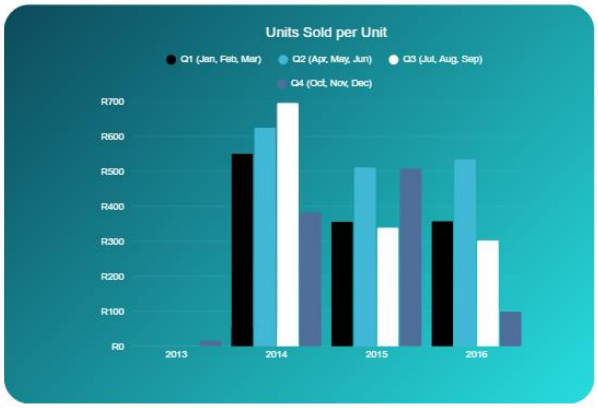
In your opinion, does this product perform better or worse when sold at a promotional price?

During the promotional periods, the quantity demanded seems to increase. However, this does not result in an increase in revenue.

6. Please derive any other interesting insight you can from the dataset provided. This can include: Interesting visuals o Reports o Dashboards o KPIs or metrics

Results by Quarters





- There is a discrepancy between our gross profit per quarter and the number of units sold each quarter.
- The problem could stem from our pricing strategy or the cost of the products.

Pricing Strategy

Average price per quarter

Quarter	2013	2014	2015	2016	Grand Total
Q1 (Jan, Feb, Mar)		R33	R40	R39	R37
Q2 (Apr, May, Jun)		R33	R39	R36	R36
Q3 (Jul, Aug, Sep)		R33	R38	R39	R37
Q4 (Oct, Nov, Dec)	R33	R38	R37	R42	R38
Grand Total	R33	R35	R38	R39	R37

In 2016, we recorded our highest average price at R39, while our lowest average price was in 2013 at R33.
This suggests that the product is relatively new, which may lead to losses as we implement a market penetration pricing strategy.
Consequently, initial losses should be anticipated.