



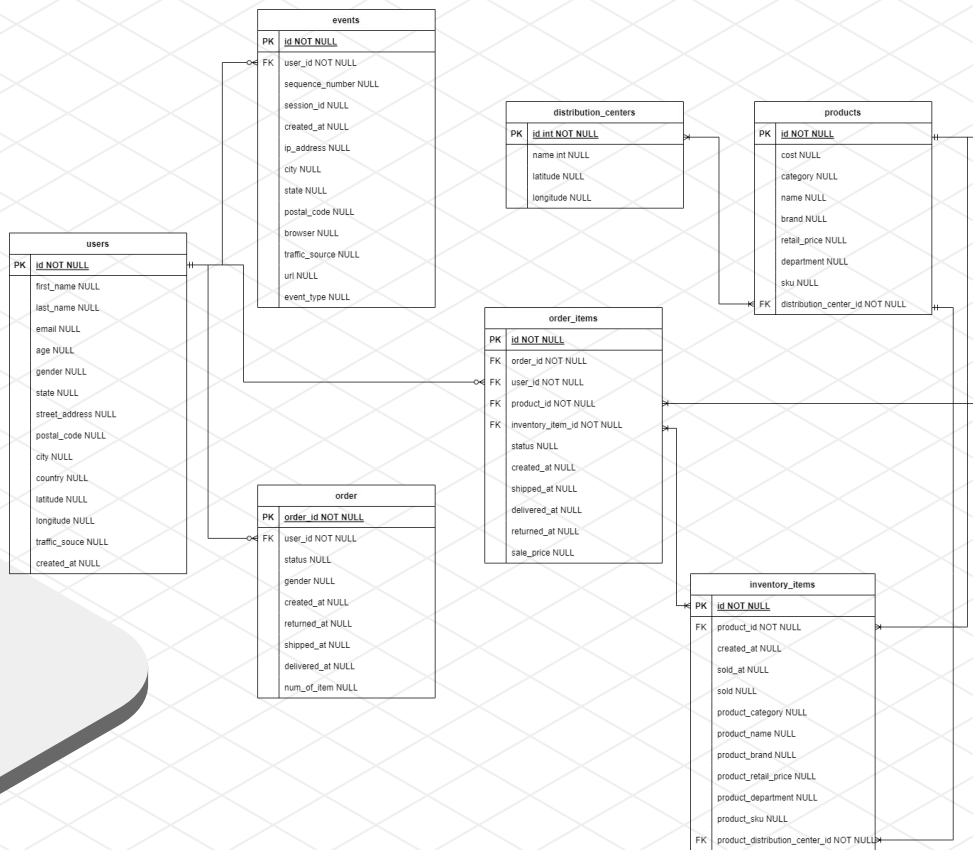
# THE LOOK OF E-COMMERCE

## Analysis

SQL Project

Viva Nuralifiya Ghofananda

# OVERVIEW

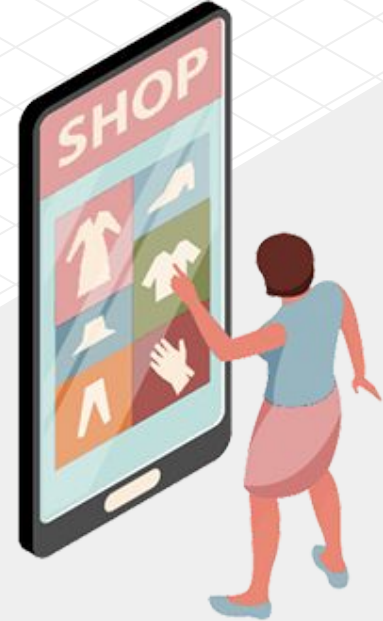


TheLook is fictitious eCommerce clothing site developed by the Looker team.

The dataset contains information about customers, products, orders, logistics, web events and digital marketing campaigns.

# Number of Unique Users, Orders, and Total Sale Price per Status and Month

Time frame : January 2019 - August 2022



# SCHEMA & RESULT

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode
<input type="checkbox"/>	<a href="#">Month_Date</a>	STRING	NULLABLE
<input type="checkbox"/>	<a href="#">Order_Status</a>	STRING	NULLABLE
<input type="checkbox"/>	<a href="#">Total_Unique_Users</a>	INTEGER	NULLABLE
<input type="checkbox"/>	<a href="#">Total_Order</a>	INTEGER	NULLABLE
<input type="checkbox"/>	<a href="#">Total_Sale_Price</a>	FLOAT	NULLABLE

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

EXECUTION GRAPH

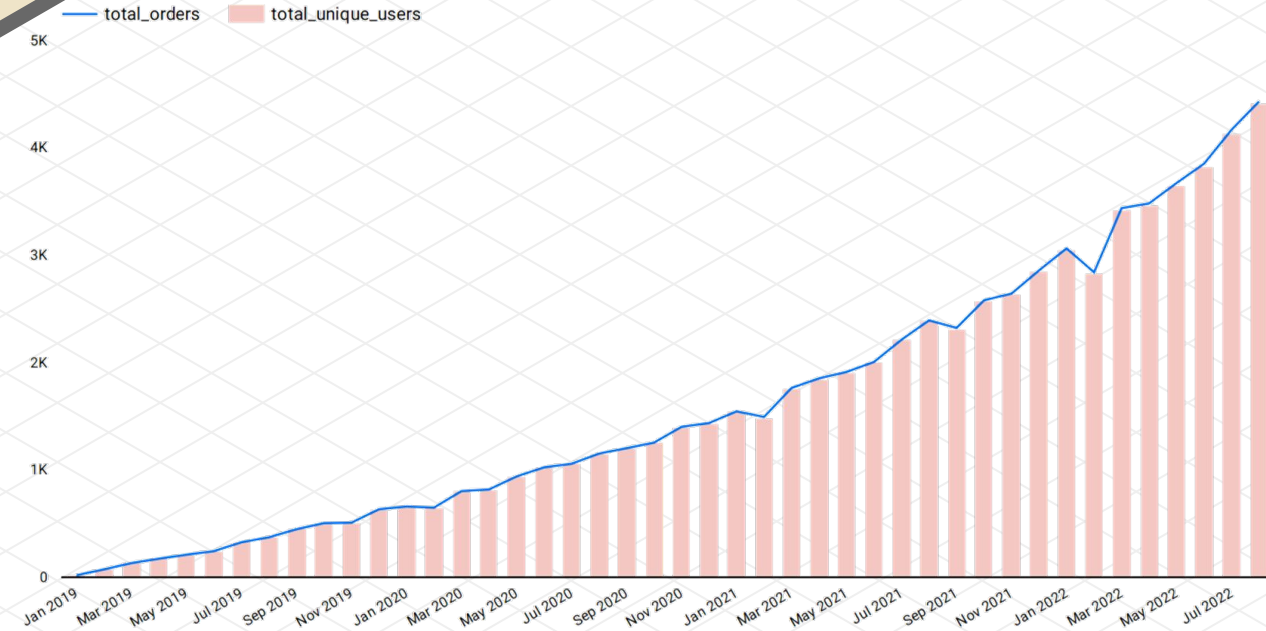
PREVIEW

Row	Month_Date	Order_Status	Total_Unique_Us	Total_Order	Total_Sale_Price
1	Jan 2019	Cancelled	4	4	68782999.8...
2	Feb 2019	Cancelled	10	10	52308999.8...
3	Mar 2019	Cancelled	20	20	158223000....
4	Apr 2019	Cancelled	16	16	111728999....
5	May 2019	Cancelled	30	30	279407000....
6	Jun 2019	Cancelled	32	32	261999001....
7	Jul 2019	Cancelled	41	41	348161002....
8	Aug 2019	Cancelled	66	66	596060000....
9	Sep 2019	Cancelled	76	77	631660000....
10	Oct 2019	Cancelled	79	79	713801000....
11	Nov 2019	Cancelled	70	70	631860000....
12	Dec 2019	Cancelled	90	91	685543001....

# QUERY

```
SELECT FORMAT_TIMESTAMP ("%b %Y",TIMESTAMP_TRUNC(order_items.created_at, MONTH)) as Month_Date,  
       order_items.status as Order_Status,  
       COUNT (DISTINCT order_items.user_id) as Total_Unique_Users,  
       COUNT (DISTINCT order_items.order_id) as Total_Order,  
       SUM (order_items.sale_price) as Total_Sale_Price  
FROM `bigquery-public-data.thelook_ecommerce.users` users INNER JOIN  
     `bigquery-public-data.thelook_ecommerce.order_items` order_items  
ON user_id = order_items.user_id  
WHERE order_items.created_at BETWEEN "2019-01-01" AND "2022-09-01"  
AND order_items.status IN ("Shipped","Complete","Returned","Processing","Cancelled")  
GROUP BY 1,2  
ORDER BY 2, PARSE_DATE ("%b %Y", Month_Date);
```

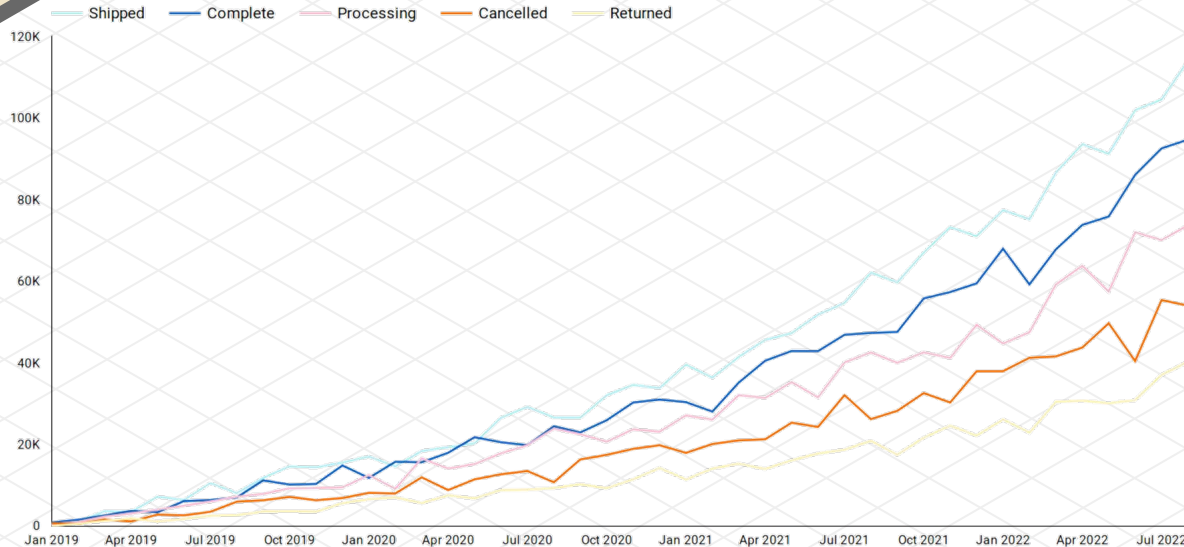
# INSIGHT



Overall, the **growth rate** of Total Orders is **directly proportional** to Total Users, where the two attributes **steadily** have the **same growth rate**, so it can be concluded that each user at least buys at least once per month.

## THE GROWTH OF TOTAL ORDERS & TOTAL USERS

# INSIGHT



Sales generated from each order status have an **increasing trend** from year to year showing **good performance**. This is also supported by the level of sales generated from orders with completed status exceed orders with canceled status.

## TOTAL SALE PER ORDER STATUS

# Unique Users, Average Order Value (AOV), Frequency From Monthly Completed Order

Time frame : January 2019 - August 2022





# SCHEMA & RESULT

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode
<input type="checkbox"/>	<a href="#">Month_Year</a>	STRING	NULLABLE
<input type="checkbox"/>	<a href="#">Frequencies_per_Month</a>	FLOAT	NULLABLE
<input type="checkbox"/>	<a href="#">Average_Order_Value</a>	FLOAT	NULLABLE
<input type="checkbox"/>	<a href="#">Total_Unique_Buyer</a>	INTEGER	NULLABLE

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

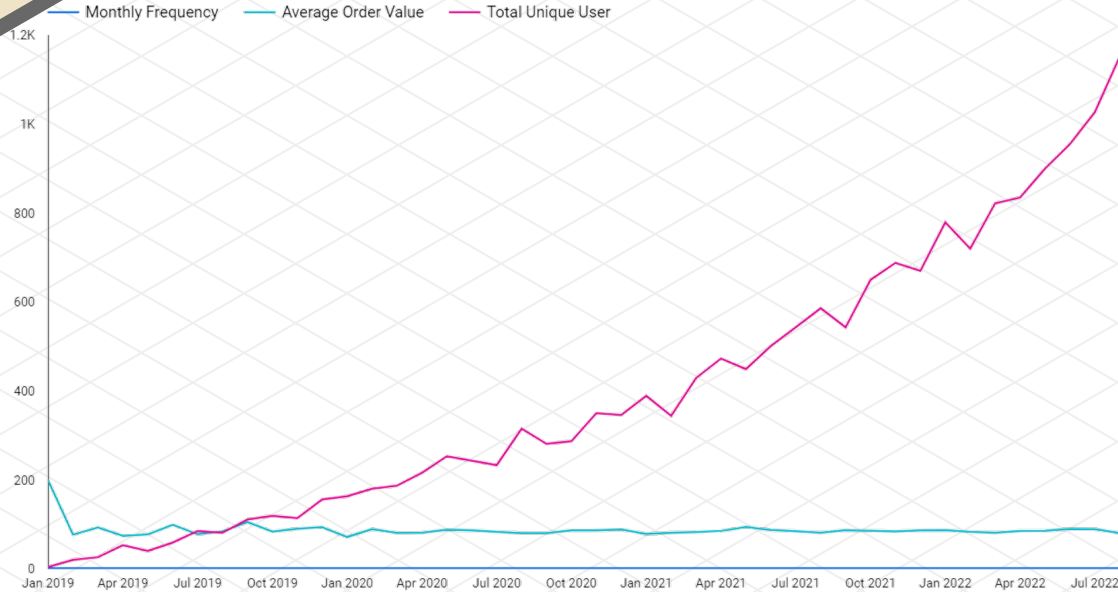
EXECUTION GRAPH

Row	Month_Year	Frequencies_per_Month	Average_Order_Value	Total_Unique_Buyer
1	Jan 2019	1.0	199.08	4
2	Feb 2019	1.0	76.73	20
3	Mar 2019	1.0	92.7	26
4	Apr 2019	1.0	74.09	53
5	May 2019	1.0	77.28	40
6	Jun 2019	1.02	99.1	59
7	Jul 2019	1.0	77.77	85
8	Aug 2019	1.0	84.13	81
9	Sep 2019	1.0	105.08	111
10	Oct 2019	1.0	83.6	119

# QUERY

```
SELECT FORMAT_TIMESTAMP ("%b %Y",TIMESTAMP_TRUNC(shipped_at, MONTH)) AS Month_Year,  
       ROUND(COUNT(DISTINCT order_id)/COUNT(DISTINCT user_id),2) AS Frequencies_per_Month,  
       ROUND(SUM(sale_price)/COUNT(DISTINCT order_id),2) AS Average_Order_Value,  
       COUNT(DISTINCT(user_id)) AS Total_Unique_Buyer  
FROM `bigquery-public-data.thelook_ecommerce.order_items`  
WHERE shipped_at BETWEEN '2019-01-01' AND '2022-09-01'  
      AND status = 'Complete'  
GROUP BY 1  
ORDER BY PARSE_DATE ("%b %Y", Month_Year);
```

# INSIGHT

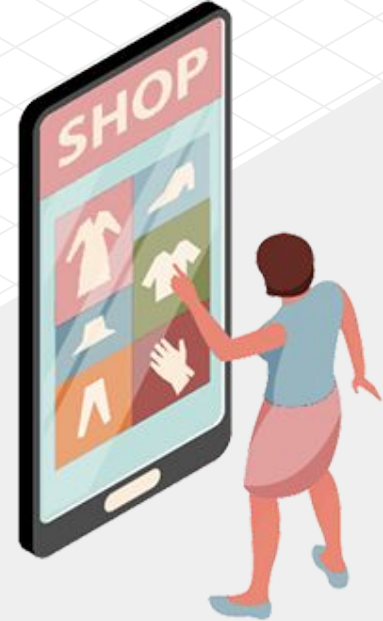


As the total unique users increase from month to month, the level of AOV (Average Order Value) is tend to stagnant. This may indicate that there are **many new users** but only **small-scale transactions**.

TOTAL MONTHLY FREQUENCY, AOV & UNIQUE USER

# Users' Information with Refund Status

Time frame : August 2022



# SCHEMA & RESULT

SCHEMA

DETAILS

PREVIEW

LIN

Filter Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode
<input type="checkbox"/>	<a href="#">User_ID</a>	INTEGER	NULLABLE
<input type="checkbox"/>	<a href="#">EMail</a>	STRING	NULLABLE
<input type="checkbox"/>	<a href="#">FirstName</a>	STRING	NULLABLE
<input type="checkbox"/>	<a href="#">LastName</a>	STRING	NULLABLE

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

Row	User_ID	EMail	FirstName	LastName
1	502	paulmartinez@example.com	Paul	Martinez
2	785	lindashelton@example.org	Linda	Shelton
3	818	seanestrada@example.com	Sean	Estrada
4	822	josephcollins@example.com	Joseph	Collins
5	1267	thomasjohnson@example.org	Thomas	Johnson
6	1331	andrewheath@example.com	Andrew	Heath
7	1531	robertmiller@example.net	Robert	Miller
8	1898	robertweaver@example.org	Robert	Weaver
9	2059	jasonwade@example.com	Jason	Wade
10	2580	anthonylewis@example.net	Anthony	Lewis

# QUERY

SELECT

users.id as User\_ID,  
users.email as EMail,  
users.first\_name as FirstName,  
users.last\_name as LastName,

FROM `bigquery-public-data.thelook\_ecommerce.users` users INNER JOIN  
`bigquery-public-data.thelook\_ecommerce.orders` orders

ON users.id = orders.user\_id

WHERE orders.returned\_at BETWEEN "2022-08-01" AND "2022-08-31"

AND orders.status = "Returned"

ORDER BY User\_ID;

# Top Five Least and Most Profitable Product

Time frame : All Time



# SCHEMA & RESULT

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode
<input type="checkbox"/>	<a href="#">Product_ID</a>	INTEGER	NULLABLE
<input type="checkbox"/>	<a href="#">Product_Name</a>	STRING	NULLABLE
<input type="checkbox"/>	<a href="#">Total_Sales</a>	FLOAT	NULLABLE
<input type="checkbox"/>	<a href="#">Total_Cost</a>	FLOAT	NULLABLE
<input type="checkbox"/>	<a href="#">Total_Gross_Profit</a>	FLOAT	NULLABLE
<input type="checkbox"/>	<a href="#">Rank_Gross_Profit</a>	STRING	NULLABLE

CTION

RESULTS

JSON

EXECUTION DETAILS

EXECUTION GRAPH

PREVIEW

	Product_ID	Product_Name	Total_Sales	Total_Cost	Total_Gross_Profit	Rank_Gross_Profit
1	24447	Darla	999.0	404.6	594.4	Highest 1
2	24341	Nobis Yatesy Parka	950.0	381.9	568.1	Highest 2
3	23654	The North Face Apex Bionic Soft Shell Jacket - Men's	903.0	363.01	539.99	Highest 3
4	23951	The North Face Nuptse 2 Jacket Deep Water Blue Mens	903.0	367.52	535.48	Highest 4
5	23989	The North Face Freedom Mens Ski Pants 2013	903.0	369.33	533.67	Highest 5
6	14202	GENUINE LEATHER SNAP ON STUDED WHITE PIANO BELT FITS ANY BUCKLE	1.5	0.62	0.88	Lowest 5
7	13629	Solid Color Leather Adjustable Skinny Belt with	1.51	0.64	0.87	Lowest 4
8	12536	Individual Bra Extenders	1.75	1.01	0.74	Lowest 3
9	14159	Set of 2 - Replacement Insert For Checkbook Wallets Card Or Picture Insert	0.49	0.18	0.31	Lowest 2
10	14235	Indestructable Aluminum Aluma Wallet - RED	0.02	0.01	0.01	Lowest 1



# QUERY



```
SELECT Product_ID, Product_Name, Total_Sales, Total_Cost, Total_Gross_Profit,  
       CONCAT("Highest ", RANK() OVER (ORDER BY Total_Gross_Profit DESC)) as Rank_Gross_Profit  
FROM  
(  
  SELECT id AS Product_ID,  
         name as Product_Name,  
         ROUND (SUM (retail_price),2) AS Total_Sales,  
         ROUND (SUM (cost),2) as Total_Cost,  
         ROUND (SUM (retail_price-cost),2) AS Total_Gross_Profit,  
  FROM `bigquery-public-data.thelook_ecommerce.products`  
  GROUP BY 1,2  
  ORDER BY 5 DESC  
  LIMIT 5  
) GPMax  
UNION ALL ..(1/2)
```



# QUERY



UNION ALL ..(2/2)

```
SELECT Product_ID, Product_Name, Total_Sales, Total_Cost, Total_Gross_Profit,  
       CONCAT("Lowest ", RANK() OVER (ORDER BY Total_Gross_Profit ASC)) as Rank_Gross_Profit
```

FROM

(

```
SELECT id AS Product_ID,  
       name as Product_Name,  
       ROUND (SUM (retail_price),2) AS Total_Sales,  
       ROUND (SUM (cost),2) as Total_Cost,  
       ROUND (SUM (retail_price-cost),2) AS Total_Gross_Profit,
```

```
FROM `bigquery-public-data.thelook_ecommerce.products`
```

```
GROUP BY 1,2
```

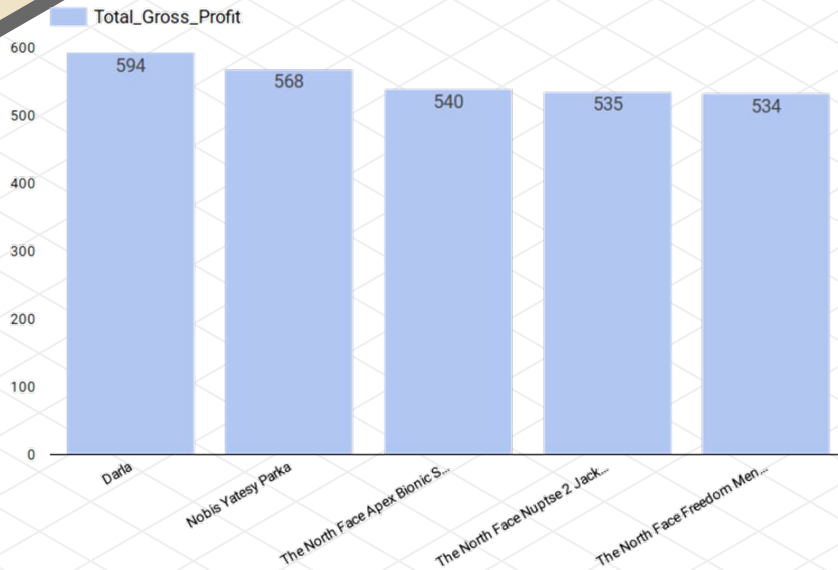
```
ORDER BY 5 ASC
```

```
LIMIT 5
```

```
) GPMIn
```

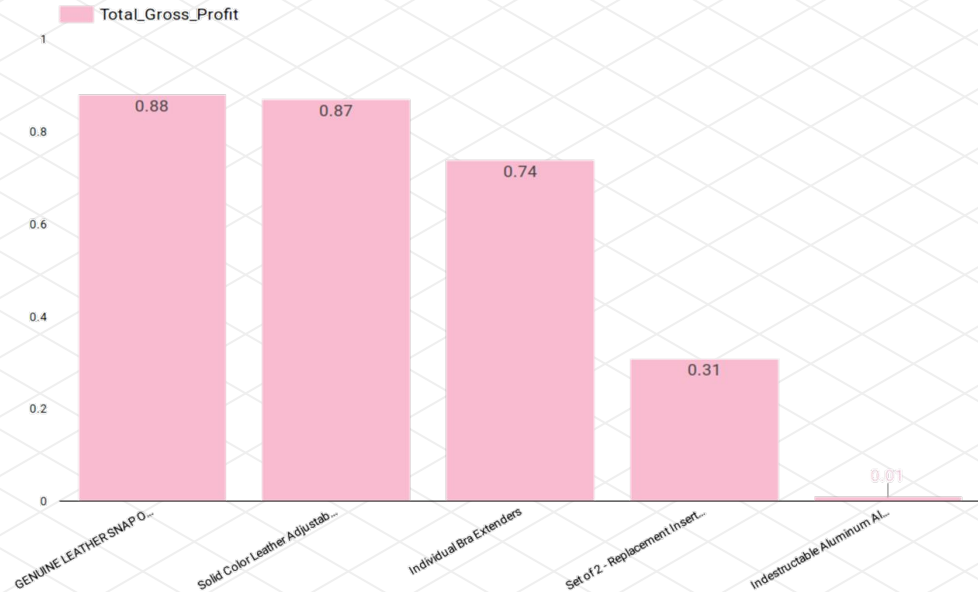
```
ORDER BY Total_Gross_Profit DESC;
```

# INSIGHT



## TOP 5 HIGHEST PROFITABLE PRODUCT

Dominated by **Outerwear & Coats**

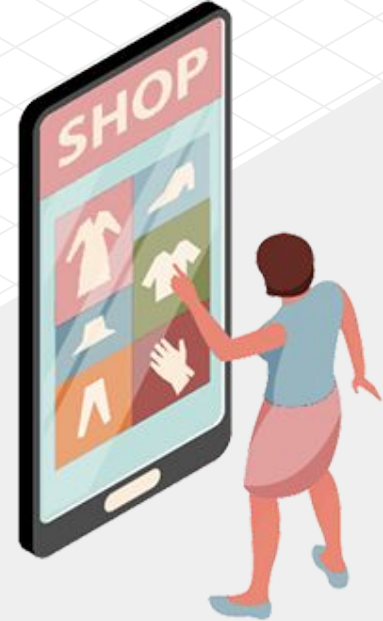


## TOP 5 LOWEST PROFITABLE PRODUCT

Dominated by **Accessories**

# Month-to-Date Breakdown of Total Profit by Product Categories

Time frame : 15 May 2022 - 15 August 2022



# SCHEMA & RESULT

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode
<input type="checkbox"/>	<a href="#">Order_Date</a>	DATE	NULLABLE
<input type="checkbox"/>	<a href="#">Product_Category</a>	STRING	NULLABLE
<input type="checkbox"/>	<a href="#">Total_Profit</a>	FLOAT	NULLABLE

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

Row	Order_Date	Product_Category	Total_Profit
1	2022-06-15	Accessories	984.63
2	2022-07-15	Accessories	1339.6
3	2022-08-15	Accessories	1034.15
4	2022-06-15	Active	1245.15
5	2022-07-15	Active	1191.04
6	2022-08-15	Active	1649.42
7	2022-06-15	Blazers & Jackets	660.92
8	2022-08-15	Blazers & Jackets	999.77
9	2022-06-15	Dresses	1665.72
10	2022-08-15	Dresses	1044.7

# QUERY

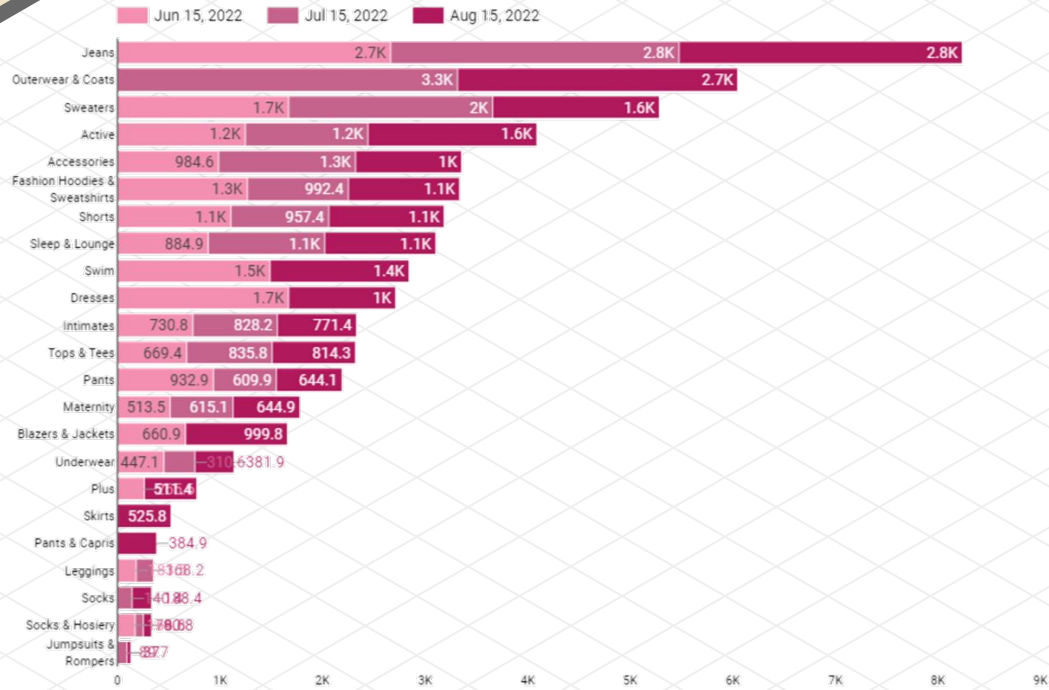
```
WITH profit AS
( SELECT DATE(order_item.shipped_at) AS Order_Date,
      product.category AS Product_Category,
      ROUND(SUM(order_item.sale_price - product.cost),2) AS category_profit
  FROM `bigquery-public-data.thelook_ecommerce.order_items` AS order_item
 INNER JOIN `bigquery-public-data.thelook_ecommerce.products` AS product
  ON order_item.product_id = product.id
 WHERE order_item.shipped_at BETWEEN "2022-01-01" AND "2022-08-16" AND status = "Complete"
 GROUP BY 1,2
 ORDER BY 2,1
),
```

# QUERY

```
tp AS
( SELECT Order_Date,
        Product_Category,
        category_profit,
        SUM(category_profit) OVER(PARTITION BY product_category, EXTRACT(MONTH FROM order_date)
ORDER BY product_category,order_date) AS Total_Profit
FROM profit
ORDER BY 2,1
)
```

```
SELECT Order_Date,Product_Category, Total_Profit
FROM tp
WHERE order_date BETWEEN "2022-06-01" AND "2022-08-16"
AND EXTRACT(DAY FROM order_date) = 15;
```

# INSIGHT



Jeans outperformed the total profit generated from the first month of the timeline. Although in the **July 2022** period, the total profit generated by the **Outerwear & Coats** category **exceeded** Jeans, in total **Jeans consistently outperformed** all categories

MONTH-TO-DATE TOTAL PROFIT BY PRODUCT CATEGORY





# Monthly Breakdown of Inventory Growth Percentage by Product Category

Time frame : January 2019 - April 2022



# SCHEMA & RESULT



SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode
<input type="checkbox"/>	<a href="#">Month_Year</a>	DATE	NULLABLE
<input type="checkbox"/>	<a href="#">Category</a>	STRING	NULLABLE
<input type="checkbox"/>	<a href="#">Growth_Percentage</a>	STRING	NULLABLE

JOB INFORMATION

RESULTS

JSON

EXECUTION DETAILS

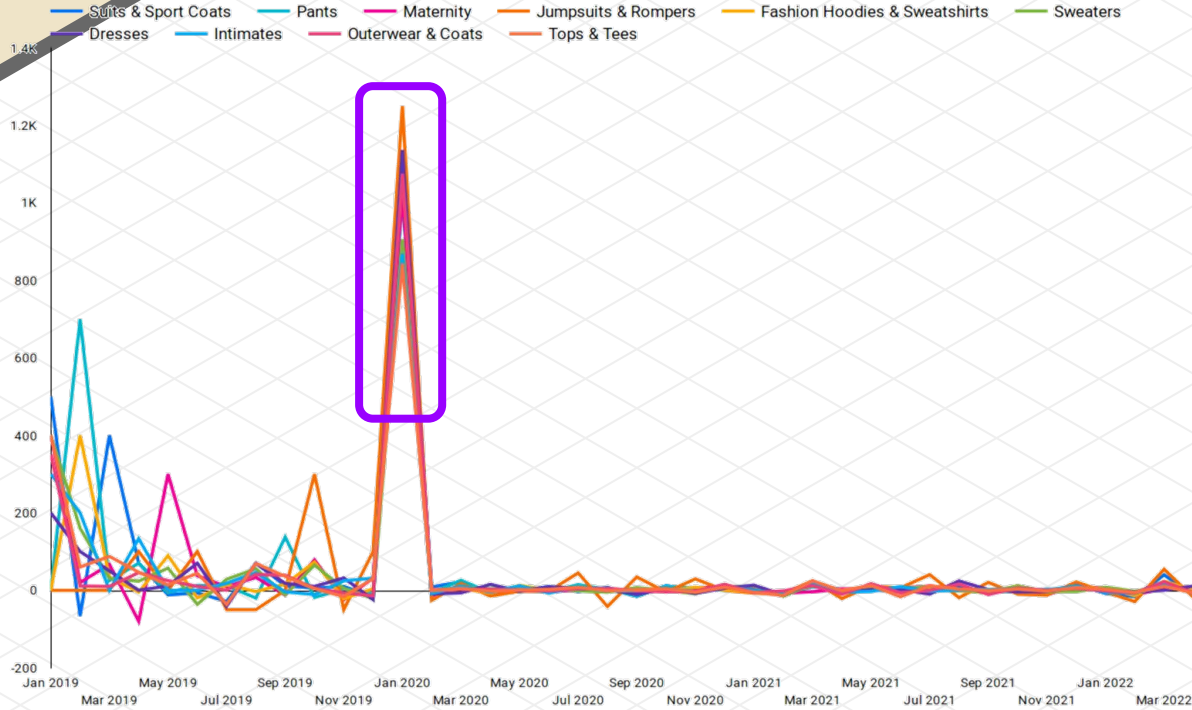
Row	Month_Year	Category	Growth_Percentage
1	2022-04-01	Accessories	0.6%
2	2022-03-01	Accessories	9.33%
3	2022-02-01	Accessories	-7.42%
4	2022-01-01	Accessories	7.84%
5	2021-12-01	Accessories	-1.77%
6	2021-11-01	Accessories	-2.81%
7	2021-10-01	Accessories	7.37%
8	2021-09-01	Accessories	1.36%
9	2021-08-01	Accessories	-4.38%
10	2021-07-01	Accessories	4.94%

# QUERY



```
WITH inventory AS
( SELECT DATE_TRUNC(DATE(created_at), MONTH) AS Month_Year,
  product_category AS Category,
  COUNT(DISTINCT(id)) AS Inventory_Stock
  FROM `bigquery-public-data.thelook_ecommerce.inventory_items`
  GROUP BY 2,1
),
inventory_previous AS
( SELECT Month_Year,
  Category,
  Inventory_Stock,
  LAG(Inventory_Stock) OVER (PARTITION BY Category ORDER BY Month_Year) AS Previous_Stock
  FROM inventory
)
SELECT Month_Year,
  Category,
  CONCAT(ROUND(((Inventory_Stock-Previous_Stock)/Previous_Stock)*100,2), "%") AS Growth_Percentage
FROM inventory_previous
WHERE Month_Year BETWEEN '2019-01-01' AND '2022-04-30'
ORDER BY 2 ASC, 1 DESC;
```

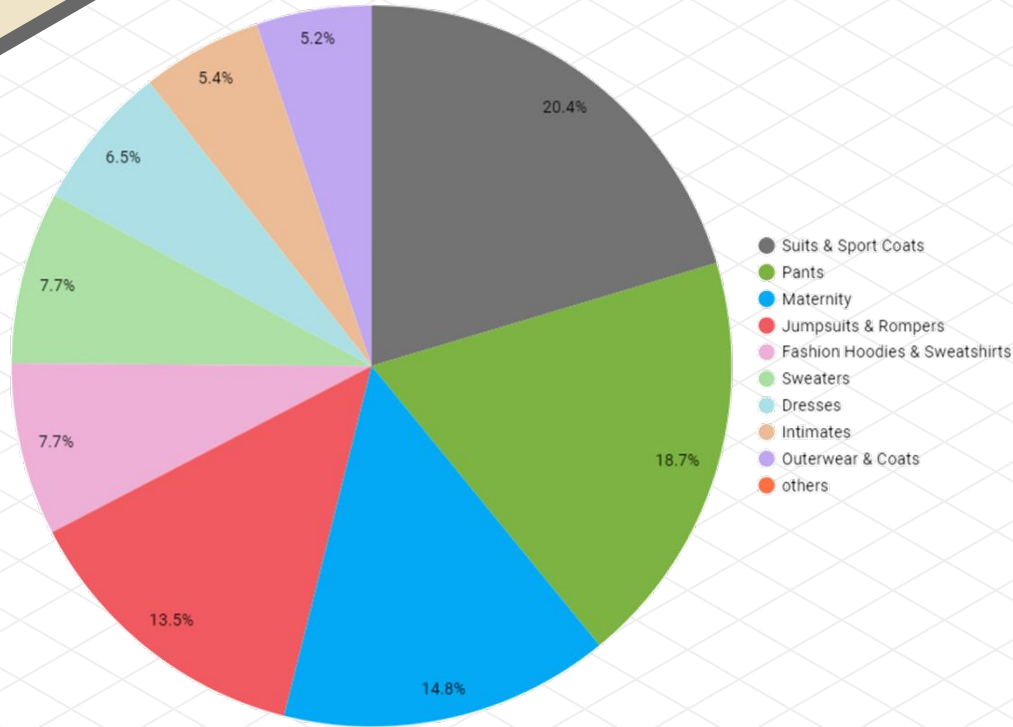
# INSIGHT



Inventory growth has **increased sharply** across all categories on January 2020. Meanwhile, before sharply increase, some categories had their peak inventory growth, following the momentum, the inventory growth tend to **stable**.

TOTAL INVENTORY GROWTH MoM

# INSIGHT



Over the specified time frame, **Suits & Sport Coats**, **Pants**, and **Maternity** were the categories with the **highest** total average inventory growth.

THE AVERAGE INVENTORY GROWTH BY CATEGORY



# Monthly Retention Cohorts of Completed Purchased

Time frame : 2022



# SCHEMA & RESULT

SCHEMA

DETAILS

PREVIEW

LINEAGE

Filter Enter property name or value

<input type="checkbox"/>	Field name	Type	Mode
<input type="checkbox"/>	<a href="#">cohort_month</a>	DATE	NULLABLE
<input type="checkbox"/>	<a href="#">cohort_size</a>	INTEGER	NULLABLE
<input type="checkbox"/>	<a href="#">month_number</a>	INTEGER	NULLABLE
<input type="checkbox"/>	<a href="#">total_user</a>	INTEGER	NULLABLE
<input type="checkbox"/>	<a href="#">percentage</a>	FLOAT	NULLABLE

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS		EXECUTION TIME
Row	cohort_month	cohort_size	month_number	total_user	percentage	
1	2022-01-01	730	0	730	1.0	
2	2022-01-01	730	1	27	0.03698630...	
3	2022-01-01	730	4	11	0.01506849...	
4	2022-01-01	730	2	7	0.00958904...	
5	2022-01-01	730	7	5	0.00684931...	
6	2022-01-01	730	10	4	0.00547945...	
7	2022-01-01	730	3	7	0.00958904...	
8	2022-01-01	730	8	7	0.00958904...	
9	2022-01-01	730	5	12	0.01643835...	
10	2022-01-01	730	11	7	0.00958904...	

# QUERY



```
WITH complete_order AS
(
  SELECT *
  FROM `bigquery-public-data.thelook_ecommerce.order_items`
  WHERE status = 'Complete' AND DATE_TRUNC(DATE(created_at), MONTH) BETWEEN '2022-01-01' AND '2022-12-31'
),
cohort_items AS
(
  SELECT DISTINCT (user_id) user_id,
    MIN(DATE(DATE_TRUNC(created_at, MONTH))) AS cohort_month
  FROM complete_order
  GROUP BY 1
),
user_activities AS
(
  SELECT DISTINCT (comp_ord.user_id) AS user_id,
    DATE_DIFF(DATE(DATE_TRUNC(created_at, MONTH)), cohort.cohort_month, MONTH) AS month_number
  FROM complete_order AS comp_ord
  LEFT JOIN cohort_items AS cohort
  ON comp_ord.user_id = cohort.user_id
  GROUP BY 1,2
),
```





# QUERY

```
cohort_size AS
(
  SELECT cohort_month, COUNT(cohort_month) as num_users
  FROM cohort_items
  GROUP BY 1
  ORDER BY 1),
retention_table AS
(
  SELECT items.cohort_month AS cohort_month,
         act.month_number AS month_num,
         COUNT(items.cohort_month) AS num_users
  FROM user_activities AS act
  LEFT JOIN cohort_items AS items
  ON act.user_id = items.user_id
  GROUP BY cohort_month, month_number
  ORDER BY cohort_month, month_number)
```

# QUERY

```
SELECT  ret.cohort_month AS cohort_month,  
        size.num_users AS cohort_size,  
        ret.month_num AS month_number,  
        ret.num_users AS total_user,  
        ret.num_users/size.num_users AS percentage  
FROM    retention_table AS ret  
LEFT JOIN cohort_size AS size  
ON      ret.cohort_month = size.cohort_month  
WHERE   ret.cohort_month IS NOT NULL  
ORDER BY 1,2;
```

# INSIGHT

Period	Total User	Retention Percentage on $n$ month											
		0	1	2	3	4	5	6	7	8	9	10	11
Jan-2022	730	100.00%	3.70%	0.96%	0.96%	1.51%	1.64%	0.41%	0.68%	0.96%	0.68%	0.55%	0.96%
Feb-2022	668	100.00%	4.19%	1.65%	2.10%	0.75%	1.35%	1.05%	0.75%	0.90%	1.05%	1.65%	
Mar-2022	808	100.00%	2.72%	0.99%	1.24%	1.36%	0.37%	1.61%	1.11%	0.62%	1.24%		
Apr-2022	755	100.00%	3.44%	0.66%	1.19%	0.93%	0.93%	1.59%	1.19%	1.32%			
May-2022	854	100.00%	1.87%	1.41%	0.70%	1.64%	1.64%	1.52%	1.99%				
Jun-2022	877	100.00%	2.74%	0.68%	1.25%	2.05%	1.37%	0.80%					
Jul-2022	965	100.00%	2.49%	1.35%	1.55%	1.14%	1.14%						
Aug-2022	1011	100.00%	3.86%	0.89%	2.37%	2.18%							
Sep-2022	1080	100.00%	3.33%	1.67%	1.57%								
Oct-2022	1095	100.00%	2.83%	1.28%									
Nov-2022	1207	100.00%	3.07%										
Dec-2022	1299	100.00%											

Following fluctuations in total users in the first 4 months, an **increasing trend** is seen in the **fifth month** until the end of 2022. However, the **very low retention rate (less than 5%)** during 2022 indicates that only a few number of users are re-purchase from The Look e-commerce.

# RECOMMENDATION

1

## EXISTING USER

The Look e-commerce should focus on retaining existing customers as well such as providing excellent customer service and offering benefits to loyal customers.

2

## AVERAGE ORDER VALUE

Encourage users to spend more by implementing strategists such as offering bundle deals, upselling, or cross-selling

3

## USER EXPERIENCE

Improving user experience by develop more appealing interface and provide multiple payment methods.



# THANKS

I'm eager to hear your feedback on this project,  
so please feel free to reach me out anytime!

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