Data Analysis for Retailer App Case Study

Introduction

Plantix Partner app allows Retailers to order supplies online. Plantix are continuously working on optimizing the app. There are 3 tables provided. The login_logs table contains information about users logging in. The sales_orders table contains information about orders made and the sales_orders_items contains the specifics of each order. Data provided is of July 2021 and July 2022.

Objective

To draw insights for given datasets and finding answers of following questions.

Questions

1. Which KPIs would you use to measure the performance of our app?

   ✓ App visit(login) per day of July increased by 37.18 % in year 2022.

Overall_app_visit_per_day	app_visit_per_day_year_2021	app_visit_per_day_year_2022	Percentage_increase_in_login_per_day_yr2022
11105.9500	9041.3333	13170.5667	37.18037088

   ✓ Sales orders per day of July increased by 17.5% by year 2022.

sales_orders_per_day_overall	sales_orders_per_day_yr_2021	sales_orders_per_day_yr_2022	increased_%_by_year_2022
227.1667	207.2000	247.1333	17.57885289

   ✓ Daily, weekly, and monthly active users

Total_unique_users	users_of_year_2021	users_of_year_2022	%_increase_in_unique_users
20282	10867	13022	10.6252

   ✓ Unique users of July increased by 10.62 % in year 2022.

2. Prepare a report regarding our growth between the 2 years. Please try to answer the following questions:

a. Did our business grow?

   ✓ Sales orders of July increased by 8.8% in year 2022

sales_orders_overall	sales_orders_yr_2021	sales_orders_yr_2022	increased_%_by_year_2022
13630	6216	7414	8.7894

   ✓ Sales of July increased by 63.82% by year 2022

overall_Sale_per_day	Sale_per_day_year_2021	Sale_per_day_year_2022	increased_sales_%_by_year_2022
2952902.489167	2010532.363667	3895272.614667	63.8267012851

   ✓ Sales per day of July increased by 31.9% by year 2022

Total_sales	Total_sales_of_year_2021	Total_sales_of_year_2022	Percentage_%_in_sales_in_year_2022
177174149.35	60315970.91	116858178.44	31.913351

   ✓ Hence it shows our business of July month is increased than previous year.

b. Does our app perform better now?
   ✓ App login/visit of July increased 18.59% in year 2022

	Total_logins	Total_login_in_year_2021	Total_login_in_year_2022	increase_%_login_in_year_2022
▶	666357	271240	395117	18.5902

   ✓ Also App visit(login) per day of July increased by 37.18 % in year 2022.
   ✓ Hence it shows our app performing better.

c. Did our user base grow?
   ✓ App login/visit of July increased by 18.59% by year 2022

	Total_logins	Total_login_in_year_2021	Total_login_in_year_2022	increase_%_login_in_year_2022
▶	666357	271240	395117	18.5902

   ✓ Number of User of July increased by 10.62% in year 2022

	Total_unique_users	users_of_year_2021	users_of_year_2022	%_increase_in_unique_users
▶	20282	10867	13022	10.6252

   ✓ Number of Buyers of July increased by 11 % in year 2022

	Total_unique_buyers	Total_unique_buyers_year2021	Total_unique_buyers_year2022	Percentage_increase_in_buyers_in_year2022
▶	4832	2452	2980	10.9272

   ✓ Hence it shows our user base of July has grown.

3. **What are our top-selling products in each of the two years? Can you draw some insight**
from this?
   ✓ Top Selling products of July of both year

	fk_product_id	total_quantity_ordered	Accepted_quantity	%_of_quantity_Rejected
▶	8219	3287	1478	55.0350
	10235	2911	1617	44.4521
	8444	2673	1410	47.2503
	8428	2248	1149	48.8879
	12547	2018	1572	22.1011

   ✓ Top 2 selling products of July in year 2021

	year	fk_product_id	total_quantity_ordered	Accepted_quantity	%_of_quantity_Rejected
▶	2021	8219	2433	850	65.0637
	2021	10235	1840	1045	43.2065

   ✓ Top 2 selling products of July in year 2022

	year	fk_product_id	total_quantity_ordered	Accepted_quantity	%_of_quantity_Rejected
▶	2022	12547	2018	1572	22.1011
	2022	8444	1945	1139	41.4396

   ✓ As 56.22 % of products order got rejected in July of both years ,If we insure the availability of product we can reduced product orders getting rejected and can achieve maximum sells.

4. **Looking at July 2021 data, what do you think is our biggest problem and how would you recommend fixing it?**
   ✓ Overall orders of July got rejected are 56.22%

	Overall_percentage_of_order_rejected	Overall_percentage_of_order_shipped
▶	56.2216	43.4556

   ✓ 52 % of orders of July was rejected in year 2022

year	rejected_quantity	Shipped_quantity
2021	60.5534	39.1570
2022	52.5897	47.0596

✓ There are total 300 products out of 787 products which rejected all orders

year	Products_with_100%_order_Rejected	Total_products_by_year	Percentage_of_Products_with_100%_order_Rejected
2021	192	554	34.6570
2022	108	483	22.3602

✓ I will insure the availability of products then only include in product list.

5. Does the login frequency affect the number of orders made?
   ✓ Yes, as App login/visit of July increased by 18.59% in year 2022
   ✓ Number of User of July increased by 10.62% in year 2022
   ✓ Number of Buyers of July increased by 11 % in year 2022
   ✓ Hence Sales orders of July increased by 8.8% in year 2022

Other insights got from studies

1. **Login_logs**
   ✓ There are total 666357 login attempts and increased 18.59% of login in year 2022

Total_logins	Total_login_in_year_2021	Total_login_in_year_2022	increase_%_login_in_year_2022
666357	271240	395117	18.5902

   ✓ User with most login attempts

user_id	login_attempts
63652	3868

   ✓ Total unique users of app are 20282
   ✓ User increased by 10.62% in year 2022
   ✓ Date on which users was most active

Total_unique_users	users_of_year_2021	users_of_year_2022	%_increase_in_unique_users
20282	10867	13022	10.6252

Date	login_attempts
2022-07-13	17570

   ✓ Friday found to be most active day with maximum login attempt

Day	login_attempts
Friday	117249

   ✓ 6am – 7am are the time slot users prefer most to login attempts

Day	login_attempts
Friday	117249

2. Sales_Orders

- ✓ Total sales orders placed-13630
- ✓ Sales orders increased by 8.8% in year 2022

sales_orders_overall	sales_orders_yr_2021	sales_orders_yr_2022	increased_%_by_year_2022
13630	6216	7414	8.7894

- ✓ Total no of unique buyers-4832

  Total no of unique buyers by year. Buyers increased by 11 % in year2022.

Total_unique_buyers	Total_unique_buyers_year2021	Total_unique_buyers_year2022	Percentage_increase_in_buyers_in_year2022
4832	2452	2980	10.9272

- ✓ Total sales order by status

sales_order_status	Orders
Rejected	7663
Shipped	5923
Pending	43
Review	1

- ✓ Overall percentage of order Rejected/Shipped

Overall_percentage_of_order_rejected	Overall_percentage_of_order_shipped
56.2216	43.4556

- ✓ Order status percentage of total orders by years

year	rejected_quantity	Shipped_quantity
2021	60.5534	39.1570
2022	52.5897	47.0596

- ✓ Rejected sales order decreased by 8%
- ✓ Shipped sales order increased by 8%
- ✓ Maximum sales order placed on Fridays

day	Total_order_placed	Shipped_Orders_Qty	Rejected_Orders_Qty
Friday	2379	1106	1264

- ✓ Percentage shipped and rejected by week days

day	Rejected_quantity%	Shipped_quantity%
Thursday	53.4144	46.0711
Friday	53.1316	46.4901
Saturday	56.3059	43.2969
Sunday	80.4533	19.5467
Monday	55.1326	44.6536
Tuesday	57.1498	42.6079

- ✓ Depot 1 has most number of buyers 1294 and also have maximum order shipped 1866.

fk_depot_id	Total_no_of_unique_buyers
1	1294

fk_depot_id	Total_order_placed	Total_order_shipped	Total_order_Rejected
1	3847	1866	1969

- ✓ Most order placed at time slot of 9am-10am

Time_slot	order_placed	Total_order_shipped	Total_order_Rejected
9-10	1445	738	703

3. Sales_Orders_Items
- ✓ There are total 787 products.
- ✓ Total products ordered by year

year	Total_products
2021	554
2022	483

- ✓ Product with id 8219 is most ordered by 3287 time

fk_product_id	total_quantity_ordered
8219	3287

fk_product_id	total_quantity_ordered	Accepted_quantity	%_of_quantity_Rejected
8219	3287	1478	55.0350
10235	2911	1617	44.4521
8444	2673	1410	47.2503
8428	2248	1149	48.8879
12547	2018	1572	22.1011

- ✓ There are total 62 products which accepted all orders
- ✓ There are total 300 products which rejected all orders

year	Products_with_100%_order_Rejected
2021	192
2022	108

- ✓ There total 38 % of product which rejects all orders i.e. 0 quantity accepted
- ✓ Products with no quantity accepted i.e. Rejected all orders by year

year	Products_with_100%_order_Rejected	Total_products_by_year	Percentage_of_Products_with_100%_order_Rejected
2021	192	554	34.6570
2022	108	483	22.3602

- ✓ Here we can say percentage of products with 100% rejected order reduced by 12 % in year 2022.