

# MOBILE ANALYSIS

This document provides an in-depth analysis of business performance through three interactive and dynamic Power BI dashboards: Overview, E-commerce, and Sales.

## **Table of Contents**

1. Project Overview
2. Dashboard Insights
  - Overview Dashboard
  - E-commerce Dashboard
  - Sales Dashboard
3. Performance optimization
4. Data Sources
5. Data Preparation and Transformation
6. Methodologies and Calculations
7. Visualizations and Metrics
8. I walk well.
9. Maintenance and Updates
10. Appendix

# 1. Project Overview

## Objective

The primary objective of this project is to provide comprehensive insights into business performance through interactive and dynamic Power BI dashboards. By visualizing key metrics and data trends, the dashboards enable stakeholders to monitor, analyze, and make informed decisions to drive business growth and efficiency. The dashboards cover key areas including overall business metrics, e-commerce performance, and sales analysis. This project aims to enhance data-driven decision-making, optimize operational efficiency, and improve overall business strategies.

## Scope

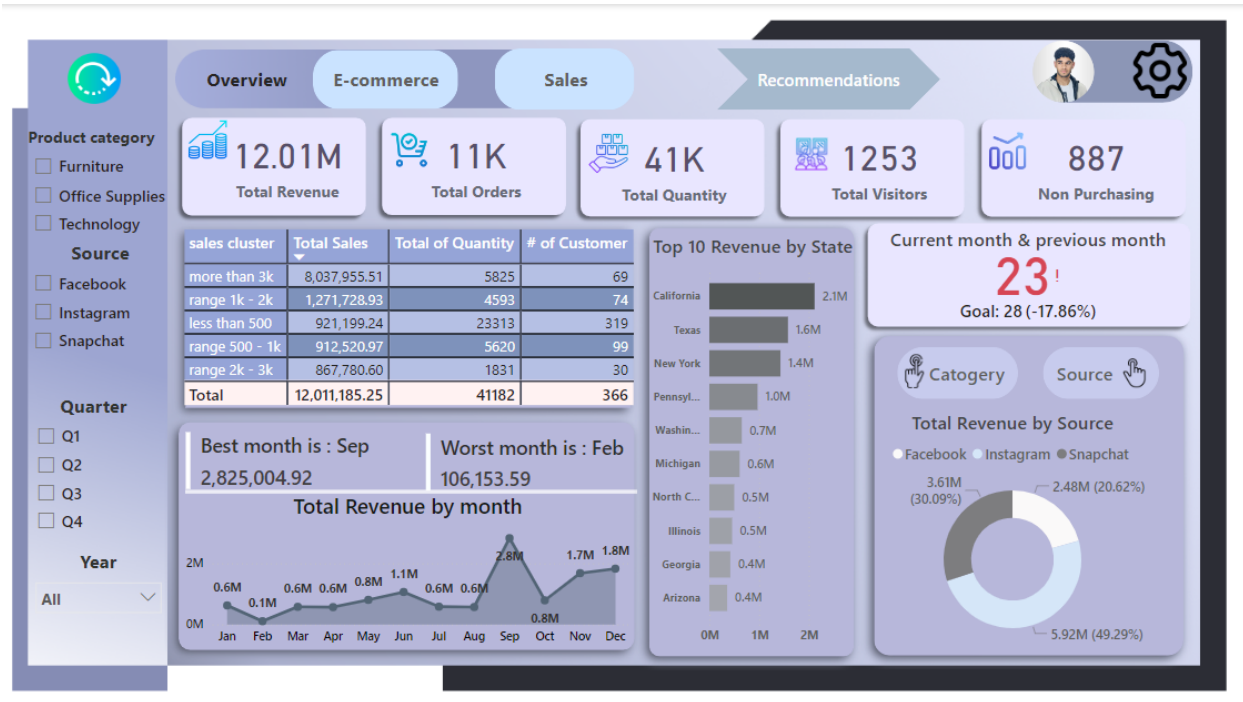
This project includes three main dashboards:

- 1) **Overview Dashboard :** To provide a high-level summary of the overall business performance.
- 2) **E-commerce Dashboard:** To analyze the performance of the e-commerce segment of the business.
- 3) **Sales Dashboard :** To provide a detailed analysis of sales performance, including customer behavior and sales trends.

Each dashboard provides detailed insights into specific aspects of the business, allowing stakeholders to make informed decisions.

## 2. Dashboard Insights

### Overview Dashboard



### Key Metrics:

- Total Revenue: \$12.01M
- Total Orders: 11K
- Total Quantity: 41K
- Total Visitors: 1,253
- Non-Purchasing Visitors: 887
- Current month & previous month: 23

### Insights:

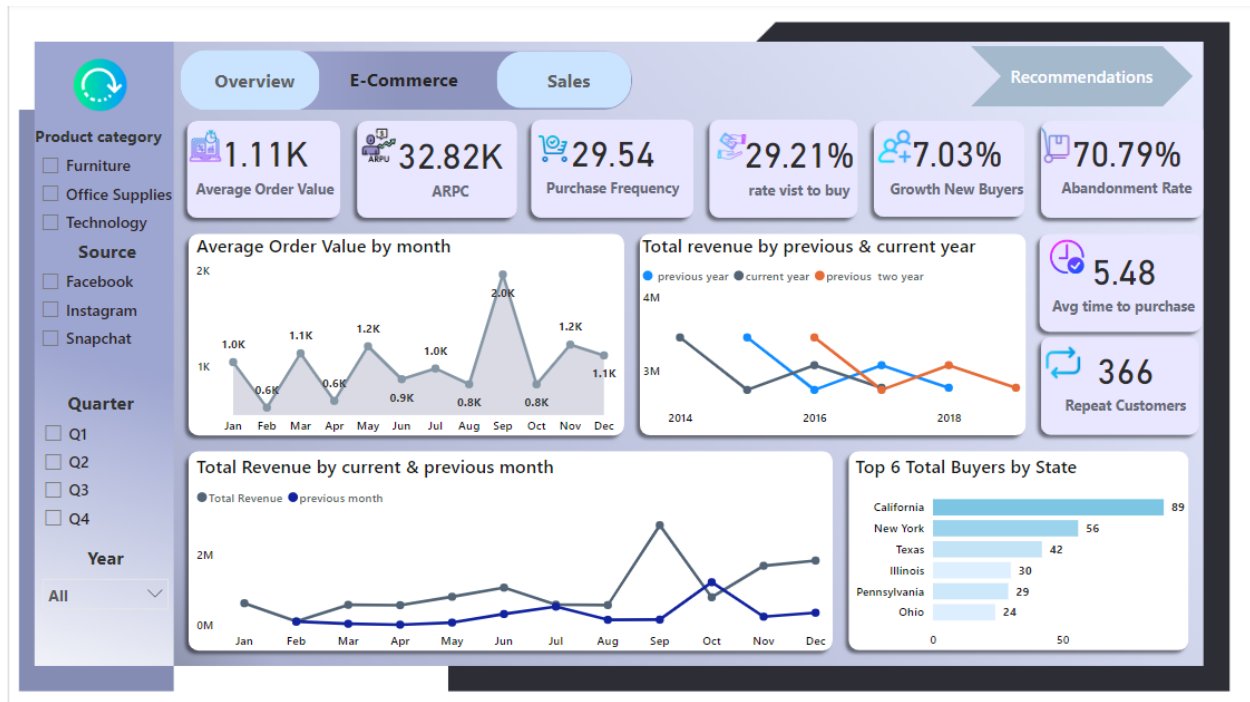
- Sales Cluster Analysis: Shows total sales, quantity, and number of customers in different sales value ranges.
- Revenue Trends: Monthly revenue trends with best and worst month indicators.
- Geographic Insights: Top 10 revenue by state.
- Revenue by Source and category: Distribution of revenue across Facebook, Instagram, and Snapchat.

### Filters:

- Product Category
- Source

- Quarter
- Year

## E-commerce Dashboard



### Key Metrics:

- Average Order Value (AOV): \$1.11K
- Average Revenue Per Customer (ARPC): \$32.82K
- Purchase Frequency: 29.54
- Rate of Visit to Buy: 29.21%
- Growth of New Buyers: 7.03%
- Abandonment Rate: 70.79%
- Average Time to Purchase: 5.48 units
- Repeat Customers: 366

### Insights:

- Monthly and Yearly Revenue Trends: Comparison of total revenue by month and year.
- Top Buyers by State: Highlighting the top 6 states by the number of buyers.

## Filters:

- Product Category
- Source
- Quarter
- Year

## Sales Dashboard



## Key Metrics:

- Total Buyers (Last Year): 128
- Total Buyers (Current Year): 137
- Retention Rate: 93.43%
- Customer Lifetime Value (CLVT): \$98.45K
- Active Customers: 23
- Churned Customers: 5
- Customer Retention Rate: 82.14%

## Insights:

- Customer Lifetime Value: Analysis by customer and by state.
- Average Revenue Per Customer by Month: Monthly trends in revenue per customer.

- Customer Source Distribution: Number of customers by Instagram, Snapchat, and Facebook.

#### **Filters:**

- Product Category
- Source
- Quarter
- Year

### **3. Performance optimization**

✳️ Using numeric IDs instead of text IDs in a data model can significantly improve performance and efficiency. Here are some reasons why numeric IDs are preferred:

#### **Database and Model Optimization**

- **Optimized Algorithms:** Many database engines and BI tools are optimized for numeric operations, meaning they can perform more efficiently on numeric data types.

#### **Processing Speed**

- **Join Operations:** When performing joins between tables, using numeric keys can significantly speed up the process as numeric comparisons are faster than string comparisons.
- **Aggregations and Calculations:** Operations such as aggregations and calculations are faster on numeric fields compared to text fields.

#### **Performance and Storage Efficiency**

- **Storage Size:** Numeric fields generally require less storage space compared to text fields. For instance, an integer field takes up 4 bytes of storage, whereas a text field can take up much more depending on the length of the text.
- **Indexing Speed:** Numeric fields are faster to index. Indexes created on numeric fields consume less storage and are quicker to read and write compared to text indexes.

#### **Query Execution:**

- Queries involving numeric fields are executed faster than those involving text fields. This is because numerical comparisons and operations are computationally less intensive than string comparisons.

## Memory Efficiency:

- Numeric fields use less memory than text fields, which can lead to more efficient memory usage, especially when dealing with large datasets.

## Data Integrity and Consistency

- **Uniqueness and Simplicity:** Numeric IDs ensure uniqueness and are simple to generate. They avoid issues like case sensitivity and leading/trailing spaces that can occur with text fields.
- **Consistent Formatting:** Numeric fields maintain a consistent format, whereas text fields might have variations (e.g., "123" vs. "00123") that can lead to inconsistencies.

## Optimized DAX Measures

- Developed and optimized DAX (Data Analysis Expressions) measures and calculations.
- Ensured efficient use of resources.

# 4. Data Sources

## Data Source Overview

- **Sales Data:** Contains detailed information on sales transactions including order value, quantity, customer details, and dates.
- **Customer Data:** Includes customer demographics, purchase history, and engagement metrics.
- **Marketing Data:** Data from social media platforms (Facebook, Instagram, Snapchat) on marketing efforts and performance.



## **5. Data Preparation and Transformation**

### **Data Extraction**

- Describe the process of extracting data from csv.

### **Data Cleaning**

- Outline the steps taken to clean the data, including handling missing values, data normalization, and deduplication.

### **Data Transformation**

- Detail the transformations applied to the data to make it suitable for analysis (e.g., calculations of metrics, aggregations).

## 6. Figma design

### Overview of Design

- **Figma Design Integration:** To ensure a seamless design and user experience, Figma was used to prototype the dashboards before implementation in Power BI. The Figma designs provide a visual reference and design consistency across all dashboards.



### Figma Design Process

1. **Wireframing:**
  - **Purpose:** Establish the basic layout and structure of each dashboard.
  - **Process:** Created wireframes to map out the placement of key elements such as KPIs, charts, and filters.
2. **Prototyping:**

- **Purpose:** Create interactive prototypes to demonstrate user flow and dashboard interactivity.
- **Process:** Developed interactive prototypes in Figma to visualize user interactions and navigation between different dashboard sections.
- 3. **Design Refinement:**
  - **Purpose:** Refine visual elements to ensure clarity, usability, and aesthetic appeal.
  - **Process:** Collaborated with stakeholders to refine colors, fonts, and visual hierarchy. Ensured design consistency and alignment with branding guidelines.
- 4. **Feedback and Iteration:**
  - **Purpose:** Incorporate feedback to improve design and functionality.
  - **Process:** Conducted user testing sessions and gathered feedback from stakeholders. Made iterative improvements to the designs based on feedback.
- 5. **Handoff to Development:**
  - **Purpose:** Provide clear design specifications for implementation in Power BI.
  - **Process:** Generated design specs and assets in Figma for seamless handoff to the development team. Ensured that all design elements were accurately translated into Power BI.

## 7. Visualizations and KPIs

### Overview of Visualizations

- Describe the types of visualizations used (e.g., bar charts, line charts, pie charts).

#### Dashboard Components

##### 1. Slicer

**Description:** A slicer is a visual filter that allows users to segment data in reports and dashboards. It enables users to select specific values from a field to filter other visuals on the dashboard.

**Usage:**

- Click on the desired value(s) to filter the data.
- Supports single or multiple selections.

##### 2. Card

**Description:** A card displays a single value or metric prominently. It is often used to highlight key performance indicators (KPIs).

**Usage:**

- Ideal for displaying totals, averages, or other important metrics.
- Can be customized with colors and icons for emphasis.

### 3. Table

**Description:** A table presents data in a grid format, allowing for easy comparison across multiple dimensions.

**Usage:**

- Use for detailed data analysis.
- Supports sorting and filtering of columns.

### 4. Multi-Row Card

**Description:** A multi-row card displays multiple metrics or values in a compact format, often used to show related KPIs side-by-side.

**Usage:**

- Great for summarizing multiple metrics at a glance.
- Each row can represent a different metric or category.

### 5. Line Chart

**Description:** A line chart visualizes data points over time, showing trends and changes.

**Usage:**

- Best for displaying continuous data.
- Can show multiple lines for comparison.

### 6. Clustered Bar Chart

**Description:** A clustered bar chart displays bars grouped by categories, allowing for easy comparison of values across different groups.

**Usage:**

- Useful for comparing multiple series of data.
- Each cluster represents a category, with bars representing different values.

### 7. KPI (Key Performance Indicator)

**Description:** A KPI visual presents a key metric and its performance against a target. It often includes indicators like arrows or colors to denote performance.

**Usage:**

- Helps in quickly assessing the health of business metrics.
- Can be linked to goals or benchmarks.

### 8. Donut Chart

**Description:** A donut chart is a circular statistical graphic divided into slices to illustrate numerical proportions, similar to a pie chart but with a hole in the center.

**Usage:**

- Effective for showing parts of a whole.
- Allows for easy comparison between different categories.

## Results

- Total Revenue in 2017 less than Total Revenue in 2016
- Total orders in 2017 higher than Total orders in 2016
- Total quantity in 2017 higher than Total quantity in 2016
- Total visitors in 2017 equal Total visitors in 2016
- Total purchases in 2017 higher than Total purchases in 2016

- Total purchases in current month less than previous month
- Lowest Revenue in 2015 was 2.73M
- The highest Revenue in 2014 was 3.45M
- Those who bought more than 3k about 69 customers
- Those who bought less than 500 pounds about 319 customers
- Best month in terms of revenue is -----
- Worst month in terms of revenue is -----
- California highest revenue about 2.1M
- Top source is Instagram in terms of revenue about 5.92M
- Average to time purchases is 5.48 Min
- Growth New Buyers about 7.03%
- Average order value about 1.11k
- Conversion rate visitors to Buyers about 29.21%
- Customers who purchased more than twice about 366
- Quarter Fourth in 2017 in terms of Total Revenue, Orders, quantity, visitors and Nonpurchases higher than quarter fourth in 2016
- Total Customer lifetime Value about 98.45K

**Overview of KPIs** : Provide an overview of KPIs in the dashboard, detailing their meaning, advantages, disadvantages, significance for businesses, and calculation methods.

## 1. Total Revenue

- **Meaning:** The total income generated from sales of goods or services.
- **Advantages:** Indicates the overall financial performance and market demand.
- **Disadvantages:** Does not account for costs, thus not reflecting profitability.
- **Significance for Businesses:** Essential for tracking business growth and setting sales targets.
- **Calculation:** Sum of all sales transactions over a specified period.

## 2. Total Orders

- **Meaning:** The total number of orders placed by customers.
- **Advantages:** Measures customer engagement and sales volume.
- **Disadvantages:** Does not distinguish between high-value and low-value orders.
- **Significance for Businesses:** Helps in assessing market penetration and operational efficiency.

- **Calculation:** Count of all orders placed within a specific period.

### 3. Total Quantity Sold

- **Meaning:** The total number of units sold.
- **Advantages:** Tracks product popularity and inventory turnover.
- **Disadvantages:** High quantity sold doesn't always mean high revenue if the unit price is low.
- **Significance for Businesses:** Useful for inventory management and supply chain optimization.
- **Calculation:** Sum of quantities of all products sold over a specified period.

### 4. Total Visitors

- **Meaning:** The total number of unique visitors to the e-commerce site.
- **Advantages:** Gauges the reach and effectiveness of marketing campaigns.
- **Disadvantages:** High traffic does not guarantee high sales or conversion rates.
- **Significance for Businesses:** Important for evaluating the attractiveness of the website and marketing efforts.
- **Calculation:** Count of unique visitors during a specific period.

### 5. Non-Purchasing Visitors

- **Meaning:** The number of visitors who did not make a purchase.
- **Advantages:** Helps in understanding the gap between traffic and sales.
- **Disadvantages:** Does not provide reasons for non-purchase behavior.
- **Significance for Businesses:** Highlights the need for improving conversion rates.
- **Calculation:** Total visitors minus total customers who made a purchase.

### 6. Current Month & Previous Month

- **Meaning:** The comparison of key metrics (such as total revenue, total orders, etc.) between the current month and the previous month.
- **Advantages:** Helps in identifying trends and changes in business performance over time.
- **Disadvantages:** Short-term fluctuations might not provide a full picture of long-term performance.
- **Significance for Businesses:** Useful for tracking monthly progress, identifying seasonal patterns, and making short-term adjustments.

## E-commerce KPIs

## Average Order Value

### What is Average Order Value?

The ecommerce metric Average Order Value (AOV) is the average dollar amount customers spend when they make a purchase from your website. This metric helps online retailers understand customer purchasing behavior.

### **Advice from Ecommerce Experts:** Why Average Order Value is critical

“An increase in the average order value for an online retailer has a strong correlation to an increase in profit. When an ecommerce retailer can sell more on each order, that retailer tends to make more profit overall. Thus, online retailers that are able to increase average order value — AOV — should also become more profitable.”

“Ultimately, average order value boils down to increased profits and continued success for your brand.” Loyalty Marketing Specialist and Ecommerce Enthusiast at Sweet Tooth Rewards

### How to calculate Average Order Value:

**$(\$) \text{ total revenue} / (\#) \text{ orders placed} = (\$) \text{ Average Order Value}$**

The Average Order Value is calculated by dividing the total revenue by the number of orders placed. Often, this metric will be calculated monthly (i.e. total revenue from the month divided by total orders placed that month), but it can also be calculated weekly or even daily.

# Calculating Average Order Value

**Avg. Order  
Value**

=

**Total Revenue**  

---

**Orders placed**

geckoboard

For example, if your total revenue this week is \$4000 from 160 orders, your AOV would be \$25.

$$\$4000 / 160 = \$25$$

## **Pros:**

Tracking the Average Order Value is critical for ecommerce businesses to understand and monitor customer purchasing patterns. Increasing AOV is one of the most effective (and usually cheapest) ways to increase revenue since no additional costs are incurred via transactions.

This metric is helpful for calculating your customer lifetime value (LTV) as well as determining the best marketing and pricing strategy.

## **Cons:**

The Average Order Value can be misleading if skewed by a couple of extremely high or extremely low value orders. This is most often encountered when the range of products spans a wide price range.

It's important to remember that AOV doesn't show profit unless you use total net profit in place of total revenue.

## **Industry Benchmarks**



Given the broad range of products available online, the Average Order Value will vary based on the company and product(s). In the United States, most online retailers average about [\\$78 per order](#).

In order to get a baseline for your company, track your AOV this month compared to a year ago - or even just last month - or find a specific benchmark for your industry / product type.

### **Additional Notes**

AOV can be improved through a variety of tactics including cross-selling (offering complementary products), up-selling (offering a higher-end version of the same product), free shipping with minimum purchase, volume discounts, or coupons.

## **ARPU**

### **The definition of ARPU**

**ARPU is a metric that stands for average revenue per user.** In short, it's the average amount of revenue generated by each active user of your app over a given period of time.

While average revenue per user was originally primarily used in the telecom industry, it has become useful for all types of digital businesses, from SaaS providers to social media networks and mobile apps.

In a mobile marketing context, ARPU is similar to lifetime value (LTV). It's a way to calculate or determine the value of your users, or of groups of users you've organized into segments and cohorts. ARPU is a very important metric for app marketers and developers, because it reveals the amount of money being generated by a user within a specific, business relevant time frame.

### **How to calculate ARPU**

ARPU is calculated by dividing your total revenue by your total number of users during the time period you want to measure. This could be a week, month, year, season, or any time frame relevant to a specific campaign or strategy where you want to measure revenue per user or revenue per customer.

App ad revenue per user is most commonly measured on a monthly level, using monthly recurring revenue (MRR) as an input. This means the ARPU equation would look like this:

**Average revenue per user (ARPU) = MRR / number of active users**

Another metric closely related to ARPU is average revenue per paying user (ARPPU). This is calculated the same way as ARPU, but only includes paying users. For apps using a freemium monetization model, for example, distinguishing between and comparing these two metrics is critical. For a freemium model, an app's ARPPU should be significantly higher than its ARPU. For app verticals that focus more on ad revenue, like hyper casual, ARPU and ARPPU should be similar.

### **Why is ARPU important?**

Average revenue per user is an important user acquisition metric for mobile marketers, as well as an important business metric for product managers and executives. For marketers, comparing the average revenue per user across different campaigns, networks, and channels, can provide insight into the quality of users coming from those sources. From here, clear insights into return on ad spend (ROAS) and return on investment (ROI) can be determined. In conjunction with LTV, ARPU enables calculation of the user acquisition costs needed to maintain a positive ROAS. Marketers can also use ARPU to calculate how many new users need to be acquired to hit specific revenue targets.

Average revenue per user also helps app developers better understand their customer base and pricing strategy. If an app's ARPU is too low, there may be too much focus on low-revenue customers, or products and services may be underpriced. Running pricing experiments, A/B tests, and focusing marketing efforts on high-revenue users is the key to increasing ARPU.

### **What is a good ARPU?**

When measuring any mobile marketing KPI or metric, including what makes a good ARPU, defining *good* is highly subjective. Depending on campaign spend, scale, total number of users, app vertical, and business model, the benchmarking figures can differ drastically. For

example, shopping apps should have a high ARPU due to comparatively large baskets and [in-app purchases](#), RPG games will likely see frequent, small IAPs from item purchases, and hyper casuals will have lower ARPU due to ad revenue reliance. Hybrid casuals will likely drive revenue from both ads and IAP. Subscription or freemium models will have highly specific and less frequent purchase patterns, such as an annual sign-up or renewal. In this sense, adopting/including additional metrics that fit under the ARPU umbrella is advised for more specific insights.

### **How to improve ARPU for mobile apps**

Average revenue per user can be improved by implementing any kind of strategy that aims to reduce acquisition costs and increase revenue. Similar to how determining what makes a good ARPU is heavily vertical and business model dependent, optimizing to improve ARPU will also need to be addressed on a case-by-case basis. There is no one size fits all. There are, however, several key areas of focus that will apply to almost any mobile marketing strategy, including those aimed at improving ARPU.

1. **User acquisition and retention optimization:** Finding the ideal balance between spend on user acquisition for volume and investing in the features and user experiences required to retain a long term and high LTV user base is always a complicated tightrope to walk. Ultimately, the strategy should be highly integrated.
2. **Reactivation and re-engagement:** Users who have previously churned or are inactive are often highly valuable. By identifying the [churn](#) point or reason for canceling a subscription, you can retarget with personalized advertising that addresses user issues directly. Conversion rates from [re-engagement](#) campaigns should be higher than a regular UA campaign.
3. **Get pricing right:** If the cost of items or subscriptions is too high, your [conversion rate](#) will be low and users will turn to the competition. On the other hand, if it's too low, you will likely generate a higher number of total purchases, but total revenue will still be low. It's also probable that cohorts will respond to different pricing packages, making segmentation an essential element in pricing. Calculating cohort ARPU is also a great way to gain insight into the revenue generated by new users. The calculation looks like this:

**Total revenue in time frame A from users acquired in time frame B / Total numbers of users acquired in time frame B = Cohort ARPU.**

4. **Up-sell and find opportunities:** As with pricing, different segments will react differently to up-selling. Some users will be happy to make a large purchase immediately, others will likely want to stagger their purchases. For example, in a gaming app, one user might like to buy a small coin bundle to purchase the exact item they're after, others users might want to buy bigger bundles if it results in a lower cost per coin. In a subscription app, some users might buy a 12-month subscription directly, while others might like to go month-by-month. Understanding the different user patterns and habits, and how to find the opportunities to consistently engage them will prove fruitful.

## **ARPU vs. lifetime value (LTV)**

Average revenue per user and LTV are closely related but are different from one another. The main difference is the time frame—ARPU looks at revenue per user from a defined time period, while LTV measures value (revenue) from an entire user journey (lifetime). If the time period measured happens to be the same, this is the one scenario where the results can be identical. This generally happens if a user churns early, or within the time frame that your ARPU calculation is capturing.

Imagine, for example, that your ARPU is set to measure revenue from users from a specific month where you ran a high-spend UA campaign, like an e-commerce app in November. If your ARPU calculation is capturing the month of November as its time frame, and the user makes an in-app purchase and then uninstalls your app within that month, their individual LTV will be the same as their individual ARPU. Generally speaking, LTV is a broader and more all-encapsulating metric for the true value of a user, while ARPU is granular and specific.

## **Measuring ARPU with Adjust**

Adjust's robust suite of attribution and analytics tools make measuring ARPU easy. All marketing efforts can be [measured](#) in one place, for lightning-fast decision making and smart budget allocation. ARPU is available in [Datascap](#) as a cohort metric, along with a large range of other cohort related KPIs, including lifetime value and revenue per paying user.

## **New Buyer Growth Rate**

### **What is New Buyer Growth Rate?**

This metrics calculates how fast you are adding new buyers to your marketplace. Demand is at the core of any two-sided marketplace, so tracking buyer growth rate is an indicator of success.

### **How to calculate New Buyer Growth Rate?**

**(#) of new buyers this month - (#) of new buyers last month / (#) of new buyers last month = (%) New Buyer Growth Rate**

You could also look into calculating total buyer growth rate for the a period of time. Use the following formula to calculate it:

**# of buyers this month - # of buyers last month / # of buyers last month = (%) Buyer Growth Rate**

**Pros:**

An increasing New Buyer Growth Rate is an indication of a profitable business. Not to mention that attracting attract new buyers to the marketplace is likely to stimulate interest from new sellers as well.

**Cons:**

Tracking New Buyer Growth Rate is useful, but you should also keep an eye on how engaged your buyers are. Ultimately, if the user base is active, it's safe to assume revenue should be increasing.

## **Purchase Frequency**

**What is Purchase Frequency?**

Purchase Frequency is the number of times an average customer purchases a good or service from your store in a specified time period.

**Why is Purchase Frequency important?**

For most ecommerce businesses one of the most powerful ways of growing revenue and profits is to focus on your customer retention. Purchase Frequency alongside Repeat Customer Rate is one of the most commonly used KPIs for tracking this.

Repeat shoppers are cheaper to acquire than new customers. Loyal customers who make frequent purchases are also more likely to advocate your brand and refer other customers.

Purchase Frequency helps you to understand your audience's purchasing behavior and better structure your marketing activities around your customers' habits.

**How to calculate Purchase Frequency**

No. orders / No. unique customers = Purchase Frequency

To calculate Purchase Frequency, divide your total number of orders by the number of unique customers for the same time frame. Purchase Frequency is effectively the average number of orders per customer.

What time period to use to calculate Purchase Frequency will depend on the specifics of your business but it's most commonly looked at over a 12 month period to take seasonality and promotions into account. You need to allow a time period long enough for a typical customer to make more than one order. For most stores looking at Purchase Frequency for less than a quarter won't make sense.

Your Purchase Frequency will always be one or greater if you're using the same period for the number of unique customers as the number of orders. The longer the time frame used, the higher your Purchase Frequency will be.

### **How's Purchase Frequency different from Repeat Customer Rate?**

Whereas Repeat Customer Rate is concerned with what proportion of your customers have bought from you before, Purchase Frequency indicates the average number of purchases made per customer for a set period of time.

Both are common measures of customer retention in ecommerce businesses but are useful for different things.

If you're looking for a measure of retention that can be tracked on a daily or weekly basis, Repeat Customer Rate is a better metric. Purchase Frequency by contrast is a laggy metric that can only be looked at for longer periods of time because each individual customer needs time to be able to make multiple purchases in that time period.

### **How to boost your Purchase Frequency**

Whatever industry your business is in, it's important to have a good Purchase Frequency that shows that your customers find value in your business.

Remember that some businesses won't typically have people buying from them regularly. Online stores that sell larger, high-value goods can expect to have a lower Purchase Frequency than businesses selling consumable products.

For instance, if you're a company like Cazoo who sell cars, it's likely that once a customer has purchased a car they won't return immediately to purchase another. That's because customers tend to purchase more expensive high-value goods less frequently.

Regardless of the type of goods your business sells, take a look at a few techniques for encouraging your customers to make more frequent purchases.

## 1. Start a loyalty program

Rewarding your loyal customers is a great way of boosting customer retention and Purchase Frequency. When customers take the time to sign up for your loyalty program, they may feel more motivated to continue shopping with you instead of going to a competitor. You could use a points system to help encourage customers to shop at your online store and increase their purchase frequency.

You can then encourage your customers to spend more on specific dates like holidays by rewarding them with extra points. Use targeted email campaigns to remind customers of how many points they have and what they could spend those points on.

When customers have points with a specific store, it becomes harder to forgo their hard-earned points and choose a competitor.

## 2. Focus your marketing efforts on retention

Use strategic marketing campaigns to focus on retaining your current customer base. Email campaigns can be an excellent way of boosting both your Purchase Frequency and Repeat Purchase Rate.

To increase Purchase Frequency, try making your email campaigns ultra-targeted to each customer. For instance, if your store releases a new collection including items that are similar to what they have purchased before, try promoting the newer items.

If you have readily available information on what a customer has bought, use this to promote other products. For example, if a customer just bought a laptop from your store,

you could send out an email encouraging them to purchase chargers, cases, and other relevant accessories.

You could also send out personalized emails that contain relevant discounts to each customer. If you know a customer has purchased from the same line of products several times, you could give them a discount code to use for a limited time.

### 3. Personalize your marketing campaigns

Keep your store at the forefront of your customers' minds by using retargeting ads. When a customer has made a purchase on your site, you can encourage them to return and make another purchase by personalizing your ads to feature items that complement their most recent purchase.

Consider segmenting your audience based on their unique preferences and purchase history so you can target them with relevant messages that make sense to them.

Make the shopping experience more personal for each customer by implementing a personalized product slideshow that they see when they enter your site.

## Limitations of Purchase Frequency

Purchase Frequency is just one of a few different customer retention metrics you should analyze to fully understand your customers' behavior and satisfaction with your site.

It's important to note Purchase Frequency is a laggy metric so isn't good for spotting trends in customer retention in the short term.

As always, take Purchase Frequency as part of the bigger picture along with other metrics.



# Repeat Customer Rate

## What is Repeat Customer Rate?

Repeat Customer Rate is the proportion of your customers who have made at least two purchases during a certain time period.

It is usually expressed as a percentage and is a KPI commonly tracked by ecommerce businesses. It's particularly relevant for evaluating your overall customer experience and understanding how much value your customers find in your store.

## What is a Repeat Customer?

A repeat customer is someone who has purchased twice or more from your site. Usually, there's no time limit on what counts as a repeat customer. If someone made their first purchase with your site one year ago and only made their second purchase last week, they still count as a repeat customer.

When you measure a Repeat Customer Rate, you may choose to focus on specific time frames. For instance, what proportion of customers who made a purchase this week, month or quarter had made a previous purchase within the same timeframe.

## How to calculate Repeat Customer Rate

$$[ \text{No. customers who've purchased before} / \text{Total no. customers} ] \times 100 = \text{Repeat Customer Rate (\%)}$$

To calculate the Repeat Customer Rate, simply divide the number of return customers by the total number of customers, and multiply by 100 to convert to a percentage. This can be calculated based on a variety of time frames such as daily, weekly, or monthly.

For example, if you have 2000 customers complete a purchase in the past week and 500 of them were returning customers, your Repeat Customer Rate is 25%.

Make sure to only include paying customers - that's to say customers that have made an active purchase and not those who have just created an account and may have items sitting in their basket.

## **What is a good Repeat Customer Rate?**

There's no one right answer to this question. Many different factors impact a business's Repeat Customer Rate.

It's important to strike the balance between encouraging customers to make repeat purchases and acquiring new customers.

Your Repeat Customer Rate will ultimately depend on your business's industry and customer satisfaction levels.

Although benchmarks vary from company to company, most ecommerce businesses have 25-30% percent returning customers. This is backed up by Alex Schultz, VP of Growth at Facebook who says, "If you can get 20-30% of customers coming back every month and making a purchase from your store, you should do pretty well".

If you have closer to 50% repeat customers, you'll want to invest more in marketing to expand your customer base. If you have less than 25% return customers, you're missing out on additional revenue and should actively retarget one-time customers to incentivize repeat purchases.

## **How does Repeat Customer Rate vary by industry?**

Ultimately your Repeat Customer Rate will depend a lot on your business's industry. The biggest factor for repeat customers depends on the type, and range of products you sell. An online store that sells cheaper expendable products should have a higher percentage of repeat customers than one selling expensive goods with a longer lifespan.

Regardless of the type of industry your business is in, it's important to encourage repeat customers.

Think about your business's industry and how you may be able to encourage customers to repeat purchase your products.

- **Online stores that change which products they sell throughout the year.** Clothing and accessory businesses often change the products they sell depending on the season. A repeat customer could buy multiple items from the same store. For example, if you run a jewelry store, you may release seasonal collections that you can encourage the same customers to buy from.

- **Businesses that sell more expensive high-value goods.** You may have a site that sells a few larger technology goods like laptops and mobile phones. Once customers have made an initial purchase they might then repeat purchase accessories like chargers and cases.
- **Online shops that sell consumable products.** If you sell food and beverages you should aim for customers to repeat purchase the same item multiple times. Other examples of businesses that sell expendable products include stores selling beauty products and cleaning chemicals.

### **Pros of Repeat Customer Rate**

- Tracking the Repeat Customer Rate is useful because returning customers are usually more likely to convert than a new customer.
- “It’s cheaper to get past customers to purchase again than it is to find new customers. This is true for most businesses, especially in the crowded online ecommerce arena where ad impressions, clicks, and conversions always seem to be increasing in cost, making new customers more and more expensive to acquire.” - Richard Lazazzera, Founder of A Better Lemonade Stand.
- Repeat customers generally spend more than new customers too - research done by Bain & Company found that apparel shoppers spend 67% more per order after shopping with a company for 30 months or more.
- Loyal customers also offer your business some of the most valuable marketing opportunities. A happy repeat customer gives your business increased word of mouth advertising by referring your store to a friend.
- The Repeat Customer Rate is a more actionable metric for ecommerce businesses than customer churn rate or customer retention rate. It’s also better for monitoring changes to retention than purchase frequency because it can be measured in a shorter time-frame.
- Overall, it’s a broad gauge of the overall customer experience and customer satisfaction with your products. Customers who find your products useful, helpful, and/or enjoyable will likely return again and again to make additional purchases.

### **Cons of Repeat Customer Rate**

- Measuring your repeat customers is just one snippet of the overall health of an ecommerce business. Depending on what products your store sells it may be less relevant. A decrease in your Repeat Customer Rate may not be a bad thing if it’s caused by strong overall growth in new customers.

### **How can you boost your Repeat Customer Rate?**

- If your Repeat Customer Rate is a little on the low side, implement a few strategies to try and encourage customers to make multiple purchases on your site.
- Identify which of your products produce repeat orders and promote them to your existing customers.
- Work out which campaigns pull in customers who later have high repurchase rates and do more of them.
- Segment your customer base into multiple categories based on their shopping behavior and personal preferences. For instance, those who buy the latest releases or those who prefer your classic products. Once you have customer segments, send each one targeted email campaigns that contain similar products to what they've previously purchased.
- If you sell seasonal products, send reminder emails alerting your customers to new items you have available at the start of the season.
- Provide incentives like vouchers so customers make further purchases.

## Shopping Cart Abandonment Rate

### **What is Shopping Cart Abandonment Rate?**

- The Shopping Cart Abandonment Rate is the percentage of online shoppers who add items to a virtual shopping cart but then abandon it before completing the purchase. It shows the rate of interested potential customers who leave without buying anything compared to the total number of shopping carts created.

### **Advice from Ecommerce Experts:** **Why Shopping Cart Abandonment Rate is critical**

"Poor usability is a known factor in cart abandonment. The top 23 sites all gross over \$1 billion per year but have a 44% worse checkout user experience. At the average abandonment rate of 68% each of these sites could be losing \$3 billion, if not more." - Hazel Bolton, Optimization Consultant at User Conversion

"Studies show that the average person gets 1 interruption every 8 minutes, while the average employee gets interrupted 56 times a day. This is where cart abandonment emails come into play. By sending out one or more emails, companies can typically recover between 5% and 11% of otherwise lost sales." - Carl Sednaoui, Director of Marketing at MailCharts

### **How to calculate Shopping Cart Abandonment Rate:**

$[1 - [(\#) \text{ completed purchases} / (\#) \text{ shopping carts created}]] * 100 = (\%) \text{ Shopping Cart Abandonment Rate}$

The Shopping Cart Abandonment Rate is calculated by dividing the total number of completed purchases by the number of shopping carts created. Subtract the result from one and then multiply by 100 for the abandonment rate.

For example, if you have 45 completed purchases and 200 shopping carts created, the shopping cart abandonment rate would be 77.5%.

$$1 - (45 / 200) \times 100 = 77.5\%$$

### **Pros:**

The Shopping Cart Abandonment Rate helps online retailers understand the shopping behavior of their website visitors and customers. This KPI is often an indicator of how intuitive and trustworthy your checkout process is. Tracking the Shopping Cart Abandonment Rate provides a more specific indication of why revenue may go up or down. Most importantly, it can show where there might be a hiccup in converting online visitors to customers.

Decreasing the abandonment rate is an effective way to immediately increase revenue.

### **Cons:**

While incredibly helpful within context, the Shopping Cart Abandonment Rate by itself can be misleading. For example, if you have very few website visitors or online sales, the Shopping Cart Abandonment Rate won't be all that helpful as the data set is too small to be reliable.

## **Average Time to Purchase**

- **Meaning:** Purchase decision time.
- **Advantages:** Customer decision insight.
- **Disadvantages:** External factors ignored.
- **Significance:** Sales funnel optimization.
- **Calculation:** Average Time to Purchase = Total Time for All Purchases / Number of Purchases.

## **Repeat Customers**

- **Meaning:** Multiple purchase customers.
- **Advantages:** Loyalty/satisfaction indicator.
- **Disadvantages:** Frequency not measured.
- **Significance:** Retention/loyalty program effectiveness.
- **Calculation:** Repeat Customers = Count of customers with more than one purchase within a specified period.

## Sales KPIs

### Total Buyers (Last Year)

- **Meaning:** The number of customers who made at least one purchase in the previous year.
- **Advantages:** Provides a baseline for evaluating growth and customer retention.
- **Disadvantages:** Does not reflect customer activity or value within the year.
- **Significance for Businesses:** Useful for year-over-year comparison and understanding customer base dynamics.
- **Calculation:** Count of unique customers who made a purchase in the previous year.

### Total Buyers (Current Year)

- **Meaning:** The number of customers who made at least one purchase in the current year.
- **Advantages:** Indicates current customer engagement and acquisition effectiveness.
- **Disadvantages:** Does not differentiate between new and returning customers.
- **Significance for Businesses:** Helps in assessing current year performance and customer acquisition strategies.
- **Calculation:** Count of unique customers who made a purchase in the current year.

### Retention Rate

- **Meaning:** The percentage of customers who remain active over a period.
- **Advantages:** Indicates customer loyalty and the effectiveness of retention strategies.
- **Disadvantages:** Does not account for the frequency or value of purchases.
- **Significance for Businesses:** Critical for understanding long-term customer relationships and improving retention efforts.
- **Calculation:** Retention Rate = (Number of Retained Customers / Total Customers at Start of Period) \* 100

### Customer Lifetime Value (CLV)

- **Meaning:** The total revenue expected from a customer over their lifetime.
- **Advantages:** Helps in understanding the long-term value of customers.

- **Disadvantages:** Requires accurate data on customer purchase behavior and retention.
- **Significance for Businesses:** Essential for making informed decisions on customer acquisition and retention investments.
- **Calculation:**  $CLV = (\text{Average Purchase Value}) * (\text{Purchase Frequency}) * (\text{Customer Lifespan})$

### Active Customers

- **Meaning:** The number of customers currently making purchases within a specified period.
- **Advantages:** Provides insight into current customer engagement and activity.
- **Disadvantages:** Does not account for potential inactive periods.
- **Significance for Businesses:** Important for understanding current customer base and tailoring engagement strategies.
- **Calculation:** Count of unique customers who have made at least one purchase in the specified period.

### Churned Customers

- **Meaning:** The number of customers who have stopped making purchases within a specified period.
- **Advantages:** Identifies customer loss and helps in understanding reasons for churn.
- **Disadvantages:** Does not specify why customers churned.
- **Significance for Businesses:** Important for improving customer retention strategies and identifying at-risk customers.
- **Calculation:** Count of customers who were active previously but have not made a purchase in the current period.

### Customer Retention Rate

- **Meaning:** The percentage of customers retained over a specified period.
- **Advantages:** Indicates the effectiveness of retention strategies and customer loyalty.
- **Disadvantages:** Does not reflect the value or frequency of retained customers.
- **Significance for Businesses:** Essential for evaluating customer satisfaction and loyalty programs.
- **Calculation:**  $\text{Retention Rate} = ((\text{Number of Retained Customers} / \text{Total Customers at Start of Period}) * 100)$

## **7. Walking Guide**

### **Accessing the Dashboards**

- Step-by-step instructions on how to access the Power BI dashboards.

### **Navigating the Dashboards**

- Instructions on how to navigate through different tabs (Overview, E-commerce, Sales).
- How to use filters and slicers.

### **Interpreting the Dashboards**

- Guide on how to read and interpret the key metrics and visualizations.

## **9. Appendix**

### **References**

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