

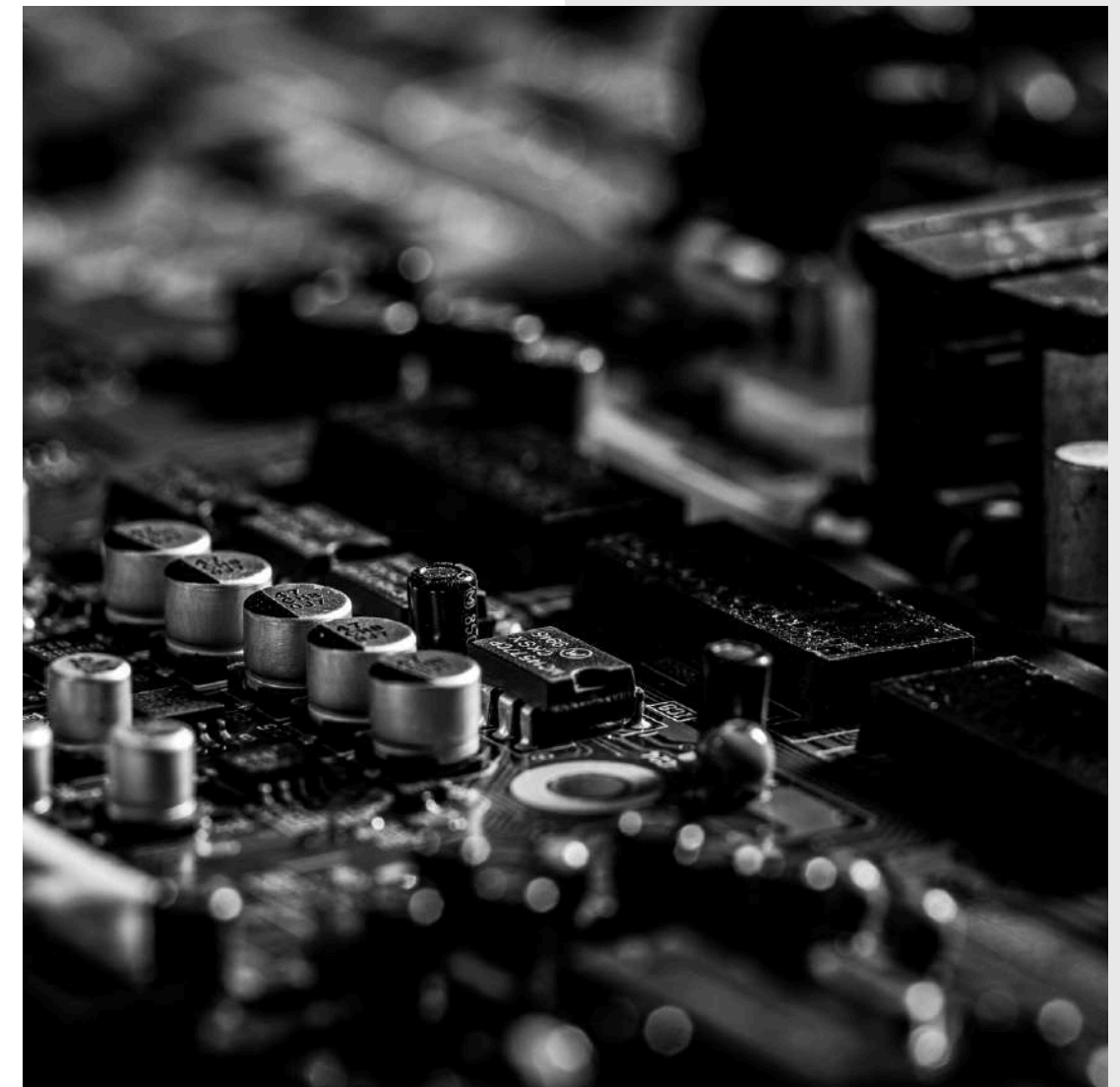
# UNDERSTANDING E-COMMERCE TRENDS:

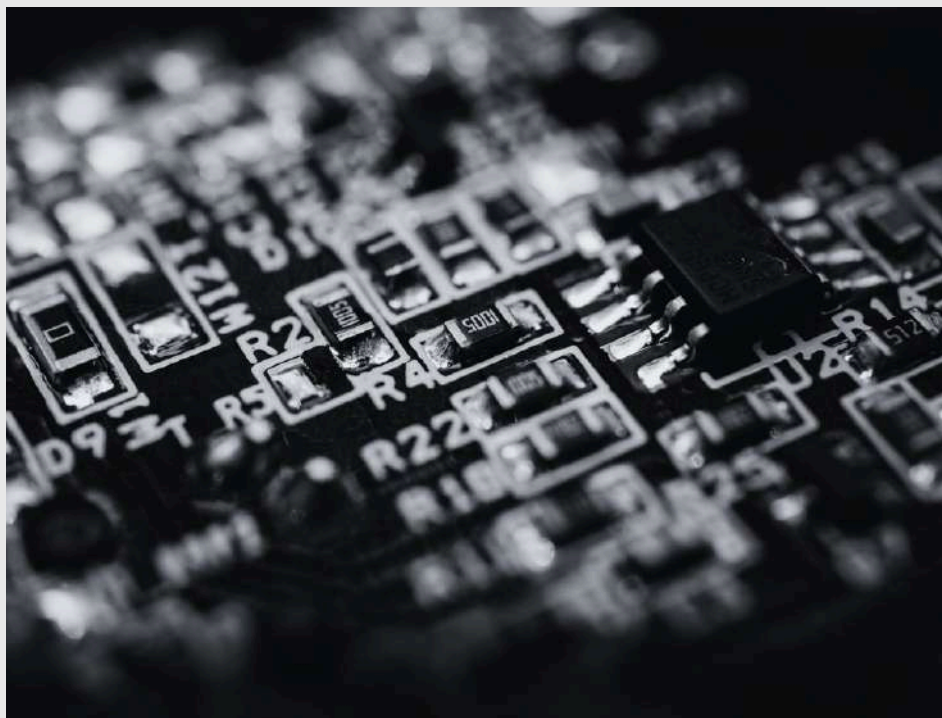
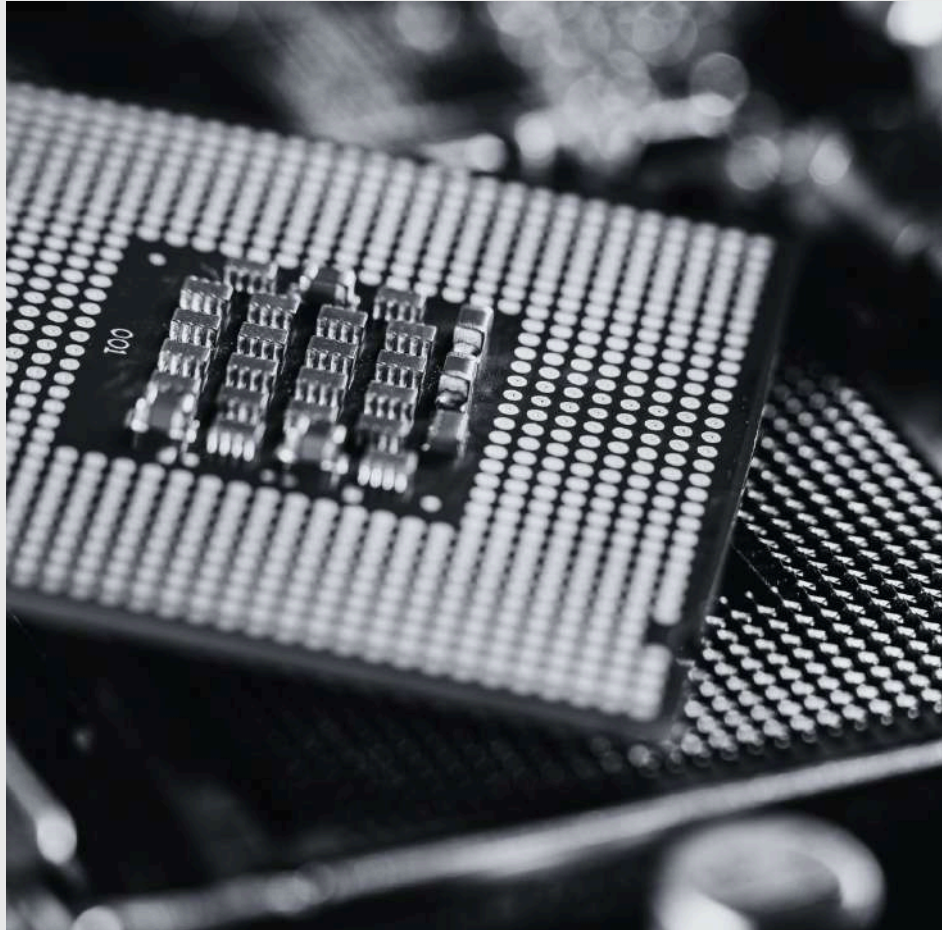
## BRAND, BEHAVIOR, AND CONVERSION

**DATA ANALYST**



**MUHAMMAD UMAR ABDURRAHMAN**  
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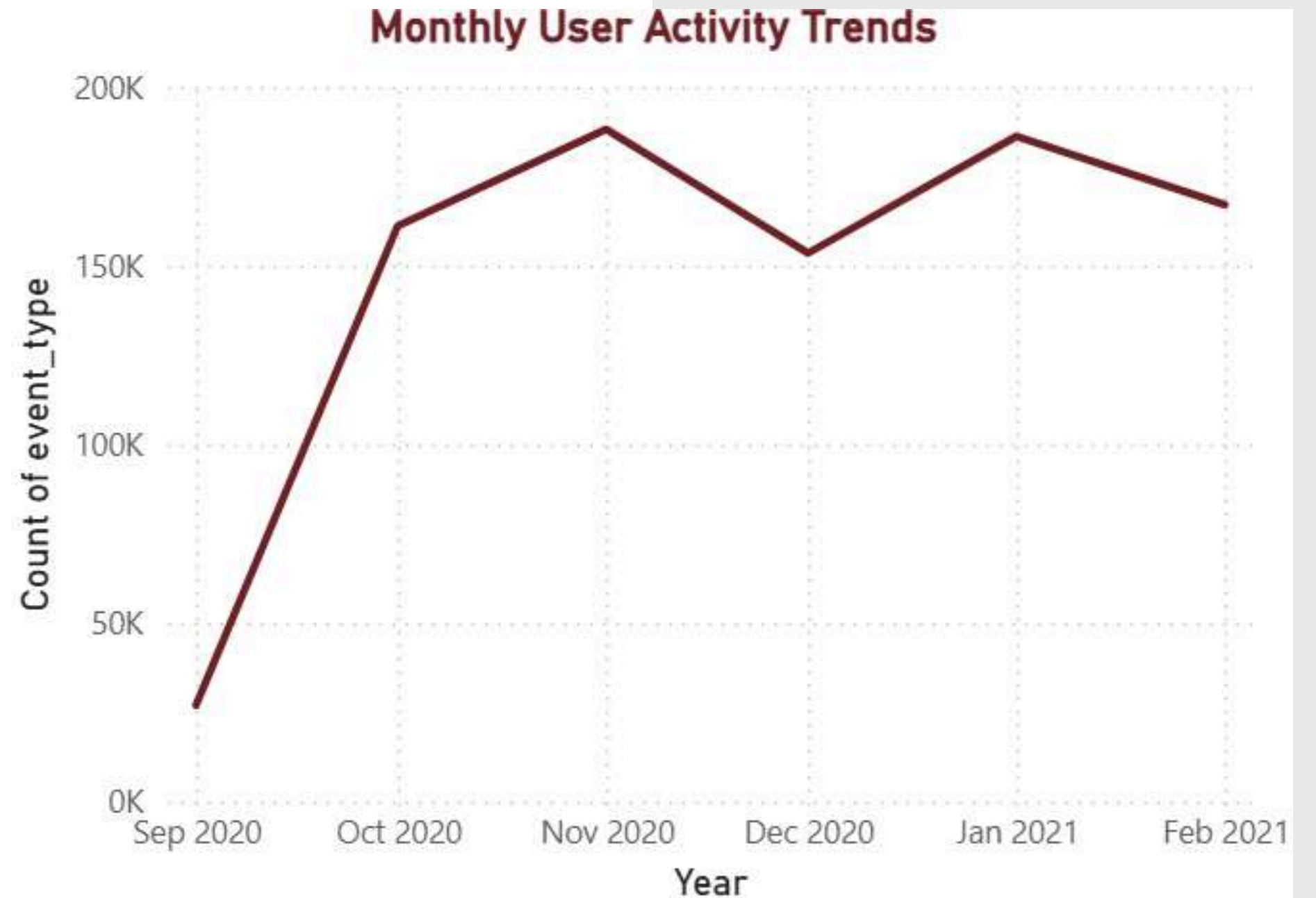


1. DESCRIPTION
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# DESCRIPTION

The e-commerce industry is growing rapidly, so companies need to understand consumer behavior in depth. User activity data (view, add to cart, purchase) is key to analyzing shopping patterns, promotion effectiveness, and sales trends. This analysis is important for:

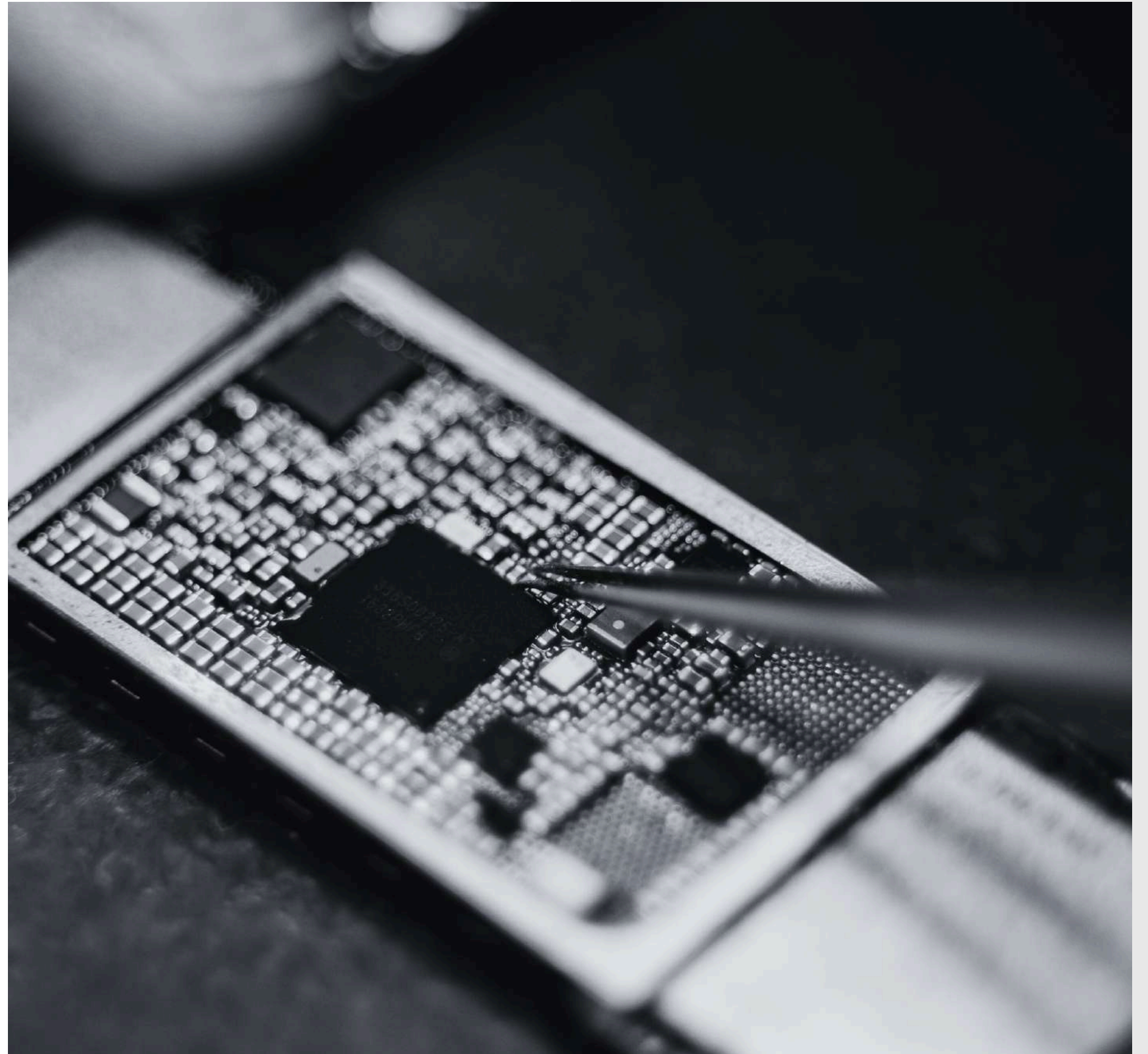
- Identifying consumer trends based on time, product, and category.
- Measuring conversion rates from view → cart → purchase.
- Assessing the contribution of categories/brands to sales.
- Evaluating the effectiveness of pricing and promotional strategies.





# PROBLEM STATEMENT

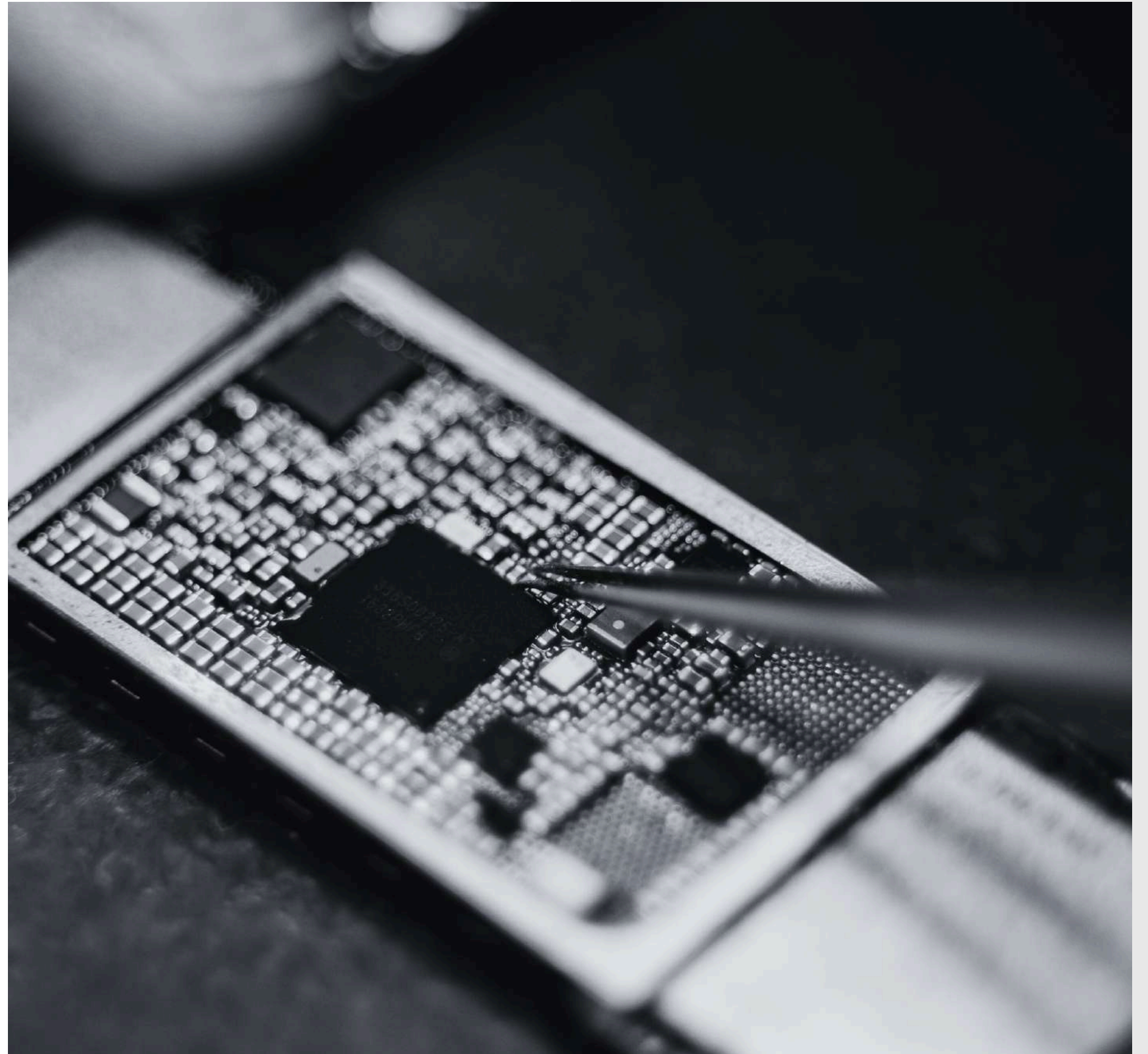
- What are consumer behavior patterns based on events (view, cart, purchase) and seasonal trends?
- Which brands are viewed most often and contribute significantly to profits?
- What are consumer activity trends over time (monthly)?
- What is the conversion rate from view → cart → purchase, and at which stage do the biggest obstacles occur?



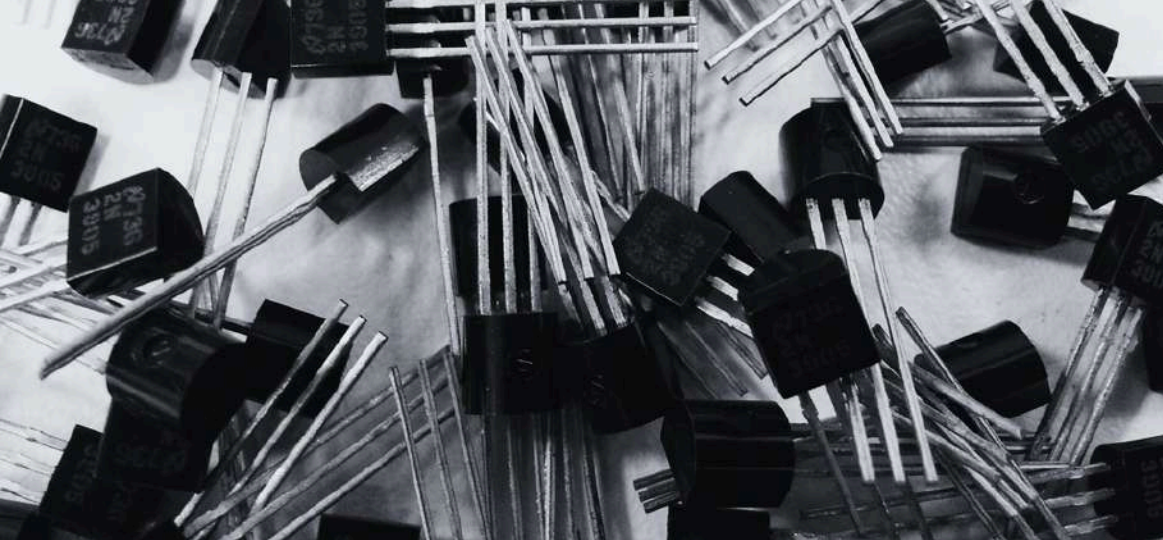


# PROJECT OBJECTIVES

- Understand consumer behavior patterns based on activities (view, cart, purchase).
- Measure conversion rates at each stage of the shopping funnel.
- Identify dominant brands and their contribution to profit.
- Provide strategic recommendations to increase e-commerce conversion & profit.







DATA UNDERSTANDING

# DATA UNDERSTANDING

## ROW & COLUMN

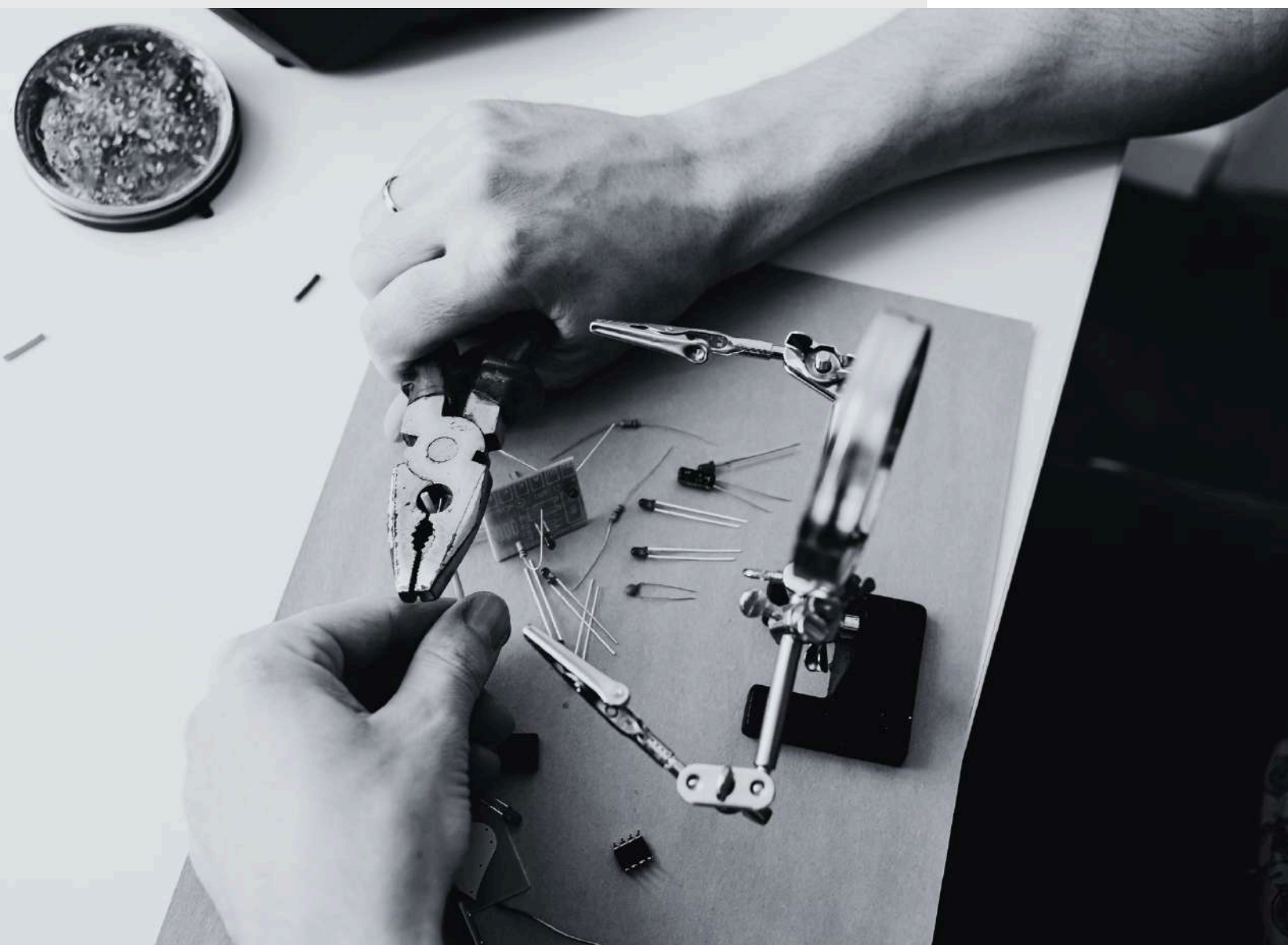
885129 Rows & 9 Column

## FEATURES

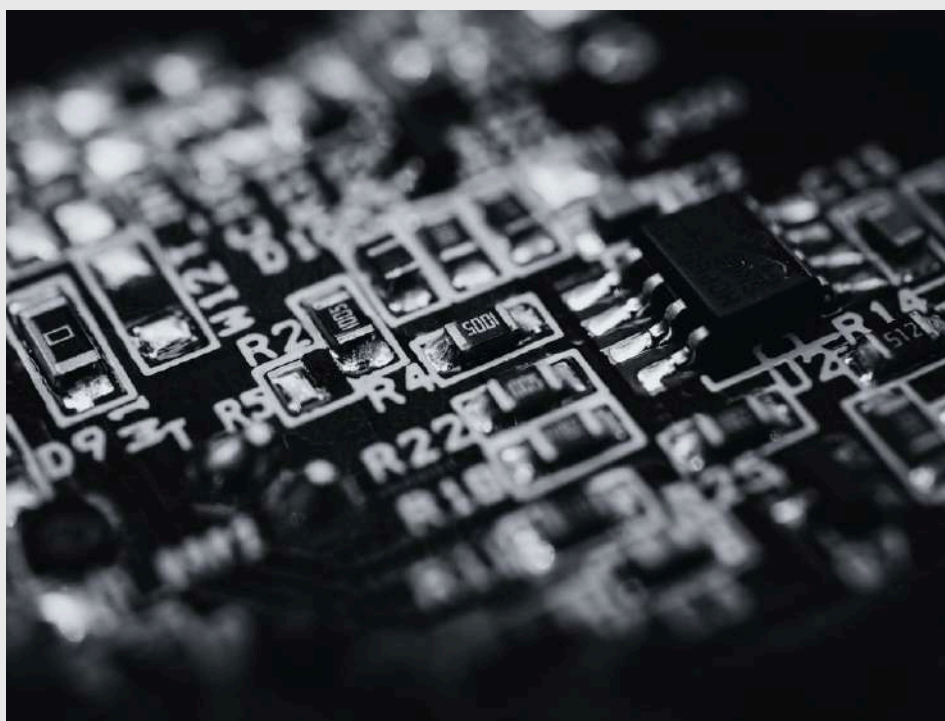
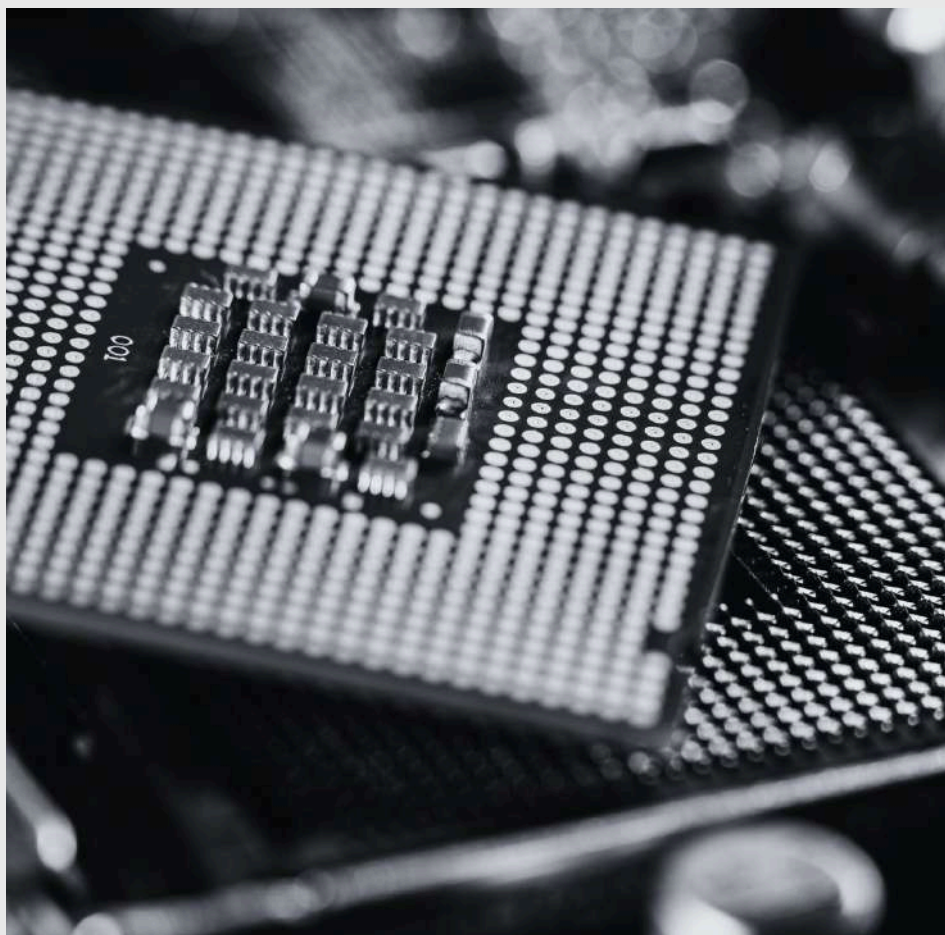
event\_time, event\_type, product\_id, category\_id,, category\_code, brand, price, user\_id, user\_session

## DATASET

E-Commerce Events History in Electronics Store







# DATA PRE-PROCESSING



## **HANDLING MISSING VALUES**

Checking for null values in the data frame

## **HANDLING DUPLICATED**

Checking for duplicate data

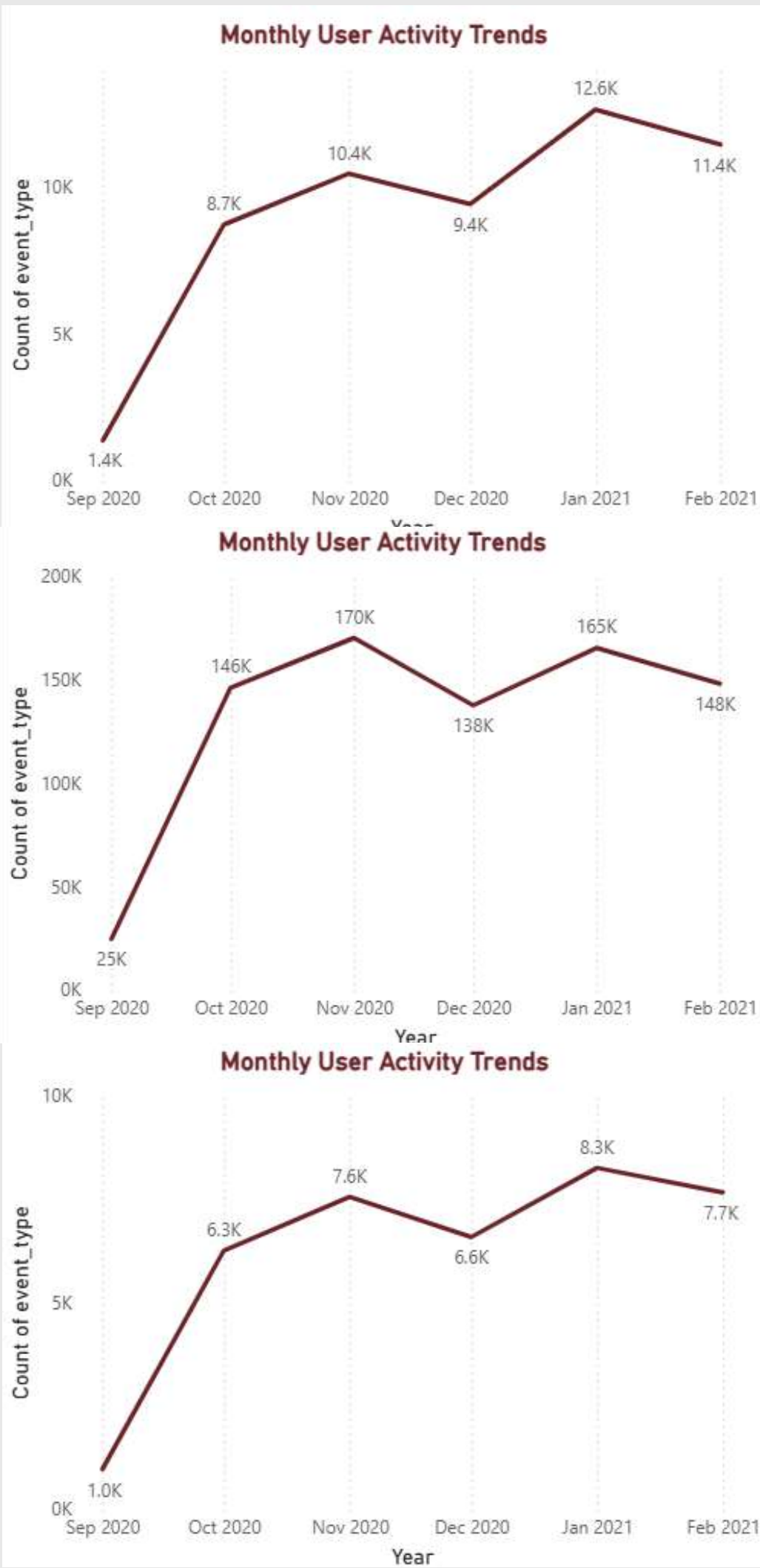
## **DATA MANIPULATING**

Change the format of event\_time from object to datetime



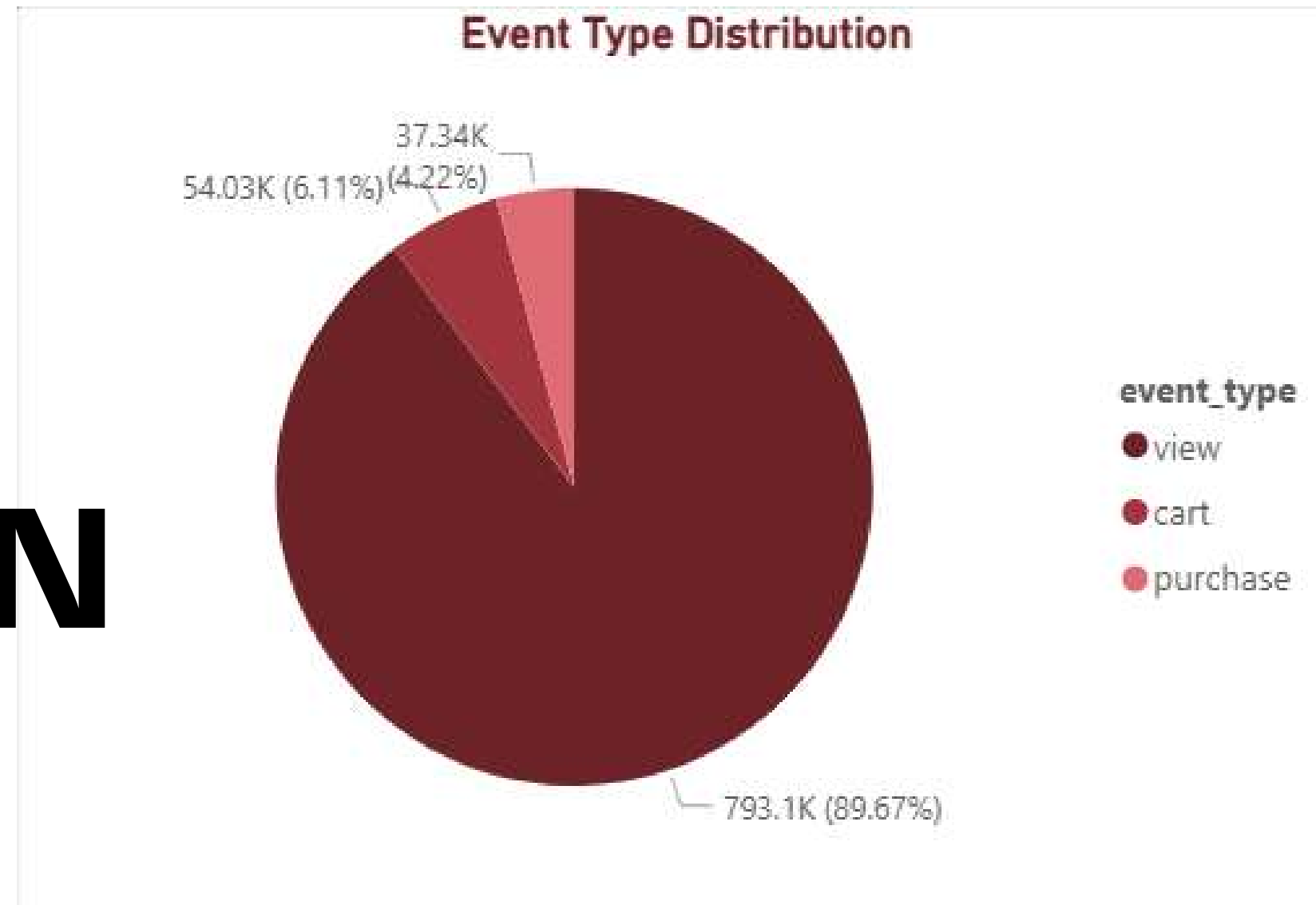
# MONTHLY USER ACTIVITY TRENDS

- User activity (views, carts, purchases) peaked at the end of the year (October–January), likely influenced by the holiday season and end-of-year promotions.
- After the peak, all activity declined in February 2021 → an opportunity to analyze whether this was due to seasonal factors or a decline in user interest.
- The cart-to-purchase ratio appears to be quite healthy, indicating that many users actually proceed to the purchase stage.





# EVENT DISTRIBUTION



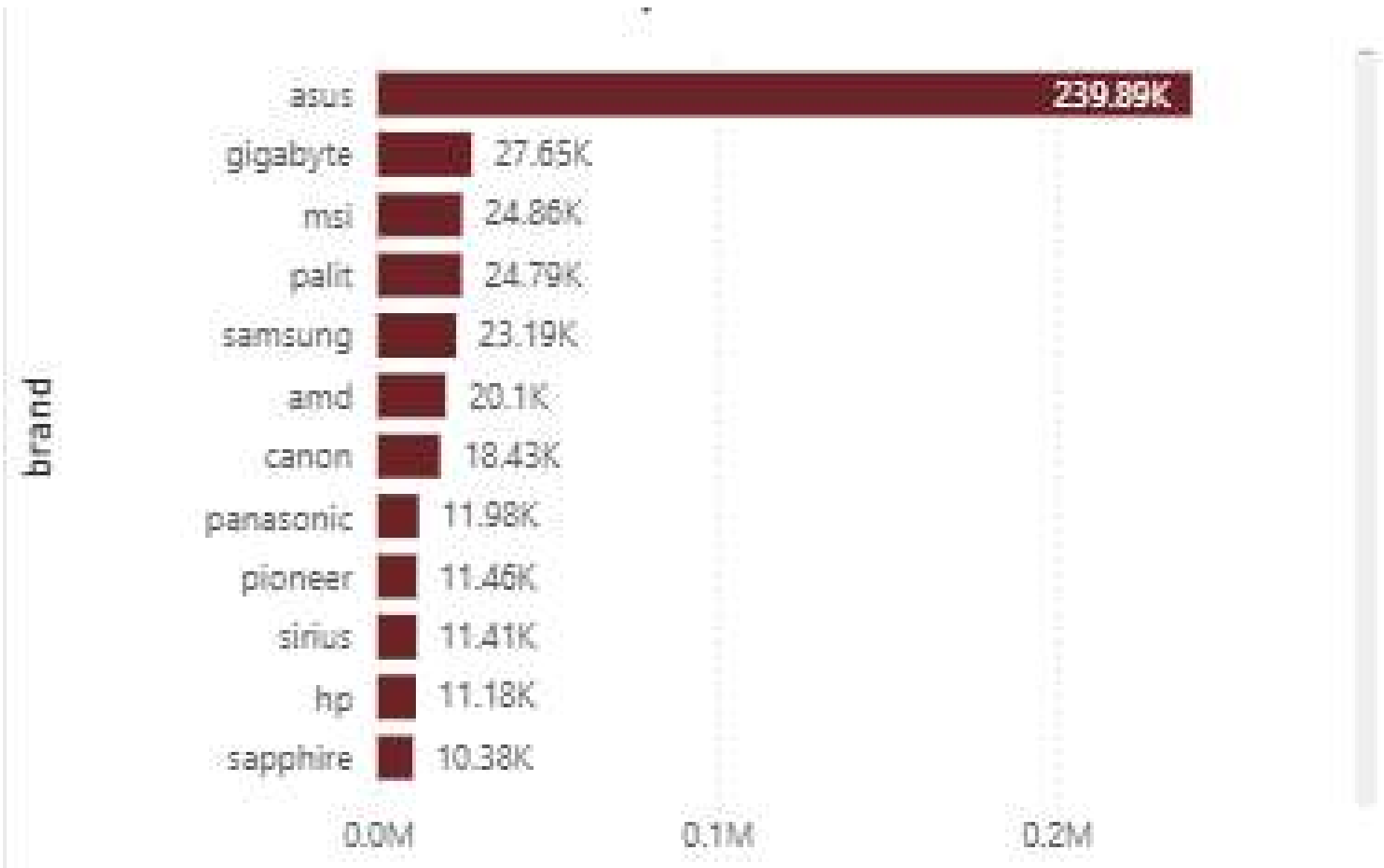
- The majority of user activity is viewing (793.1K / 89.67%), indicating high interest in the product but not necessarily followed by further action.
- Only 6.11% (54.03K) proceed to the cart stage, indicating a barrier in conversion from viewing the product to adding it to the cart.
- The purchase rate is very low (37.34K / 4.22%), indicating a significant gap between interest and actual purchases.
- The cart-to-purchase ratio is relatively low, necessitating further analysis regarding pricing, user experience, or promotions to improve conversion.
- Strategic insight: improvement efforts should focus on the view → cart and cart → purchase stages, for example through funnel optimization, discounts, or personalized product recommendations.





# TOP BRANDS

- **ASUS** has a very high number of activities (239K+ events), far ahead of its competitors (Gigabyte only has 27K).
- **ASUS** has strong brand awareness → often the first choice for users of electronic products.
- **ASUS** products cover a wider range of categories (laptops, PC components, accessories), so they appear more often in view events.
- **ASUS** also occupies a dominant position in terms of profit (83M), demonstrating consistency between interest and purchases.

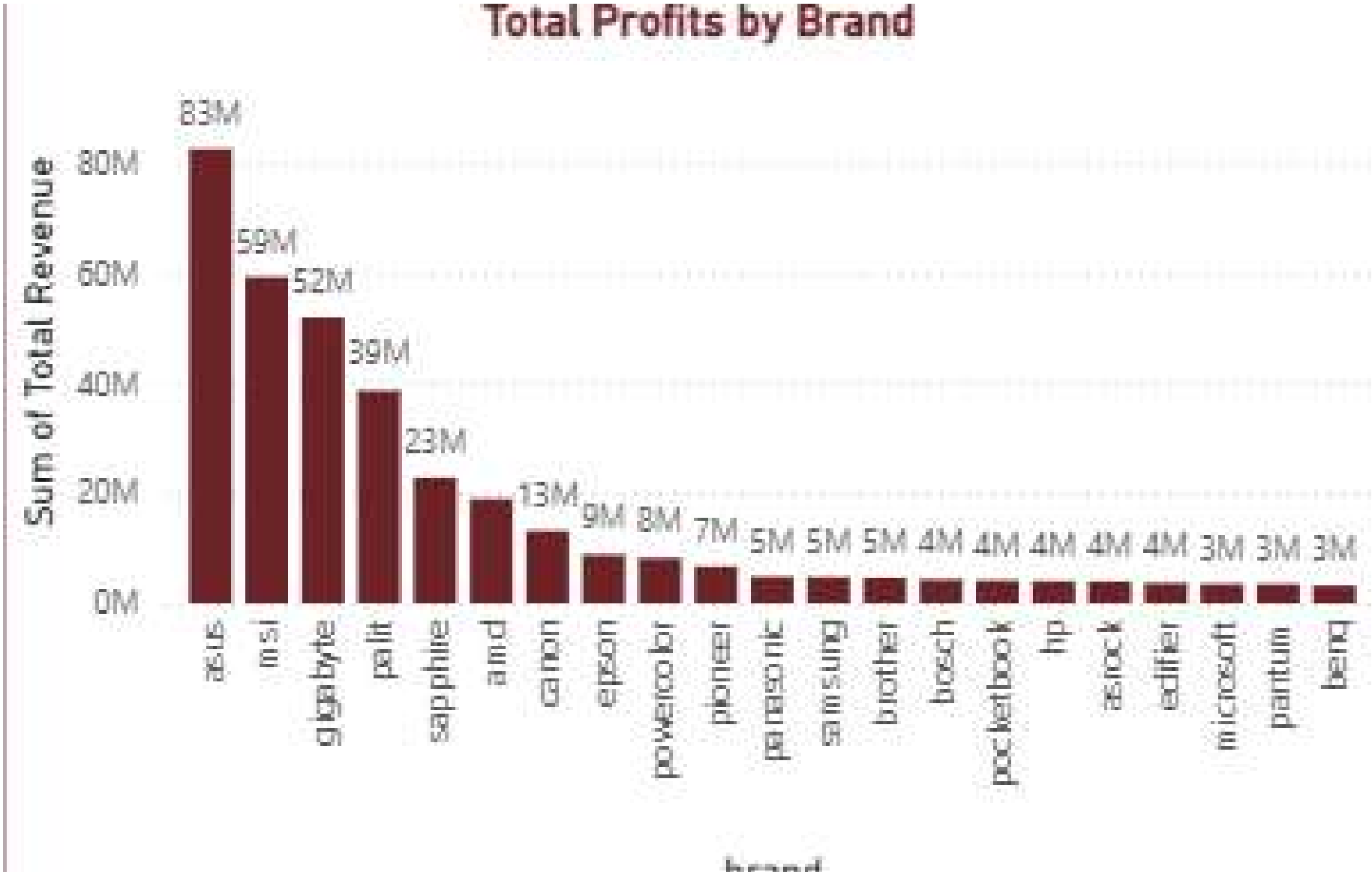






# TOP BRANDS BY PROFITS

- **ASUS, MSI, and Gigabyte dominate the market with the largest profit contributions (totaling more than 190 million).**
- **There is a significant gap with other brands, most of which contribute less than 40 million.**
- **Most small brands generate less than 10 million in profit, indicating an uneven market distribution.**
- **Focusing strategy on the top 3–5 brands will have the greatest impact on the company's total profit.**



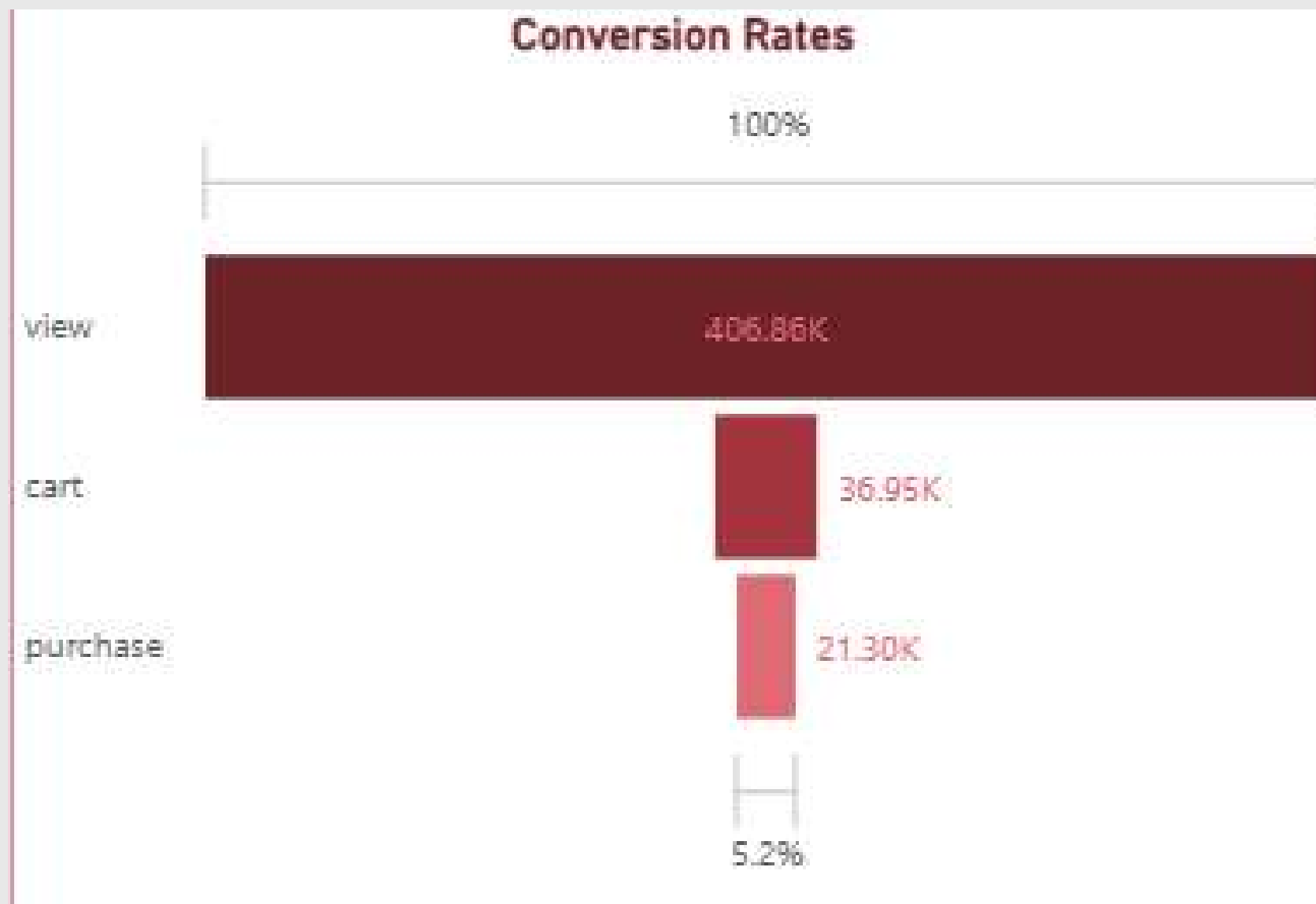
# CONVERSION RATES



EXPLORATORY DATA ANALYTICS

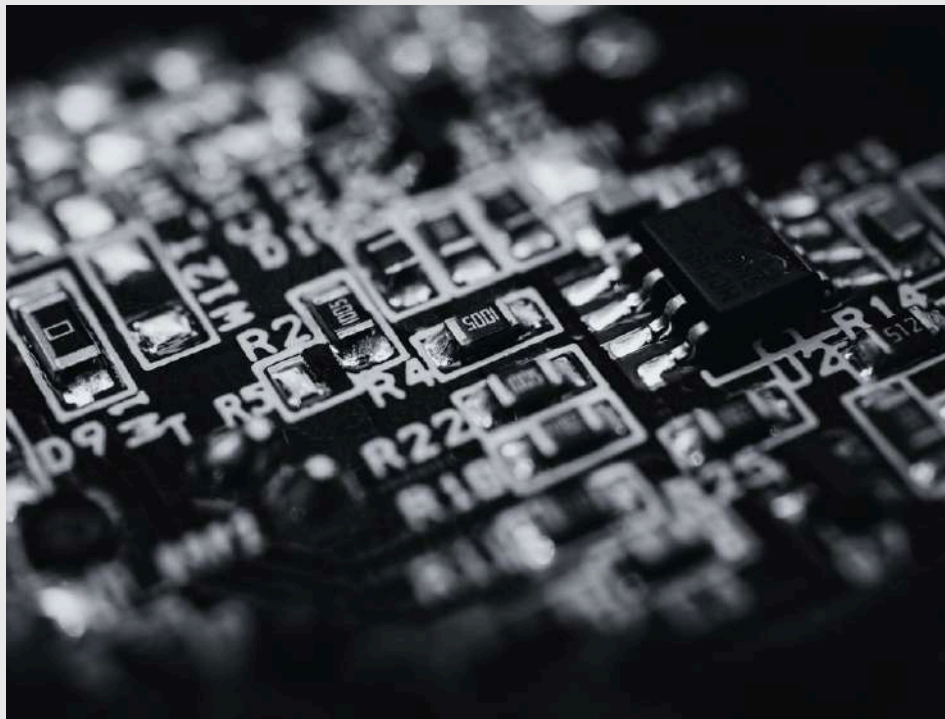
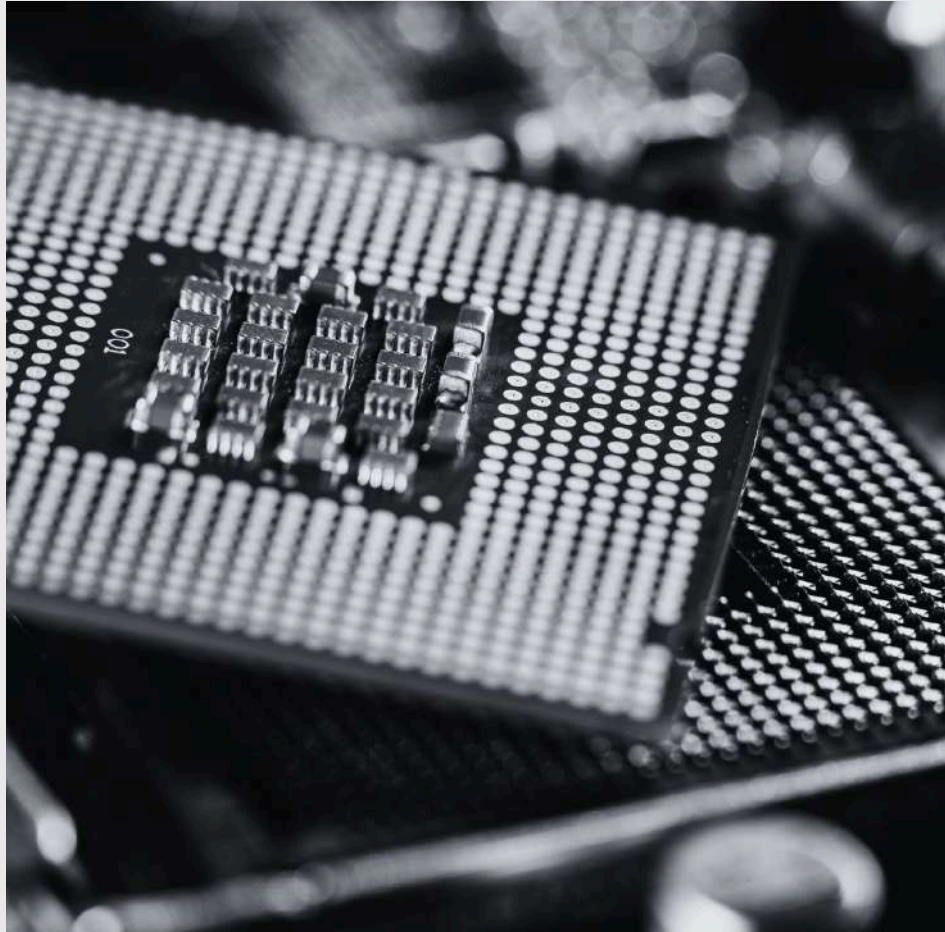
## CONVERSION RATES

- Conversion Step 1: View → Cart
  - Conversion rate: 9.08%
  - This means that only about 1 in 11 users who view a product actually add it to their cart.
  - This indicates that despite high awareness, many users are not interested enough to proceed to the next stage.
- Conversion Step 2: Cart → Purchase
  - The conversion rate is relatively high (21.3K out of 36.9K ≈ 57.6%).
  - This shows that more than half of the users who add products to their cart actually make a purchase.
  - This is an indication of strong purchase intent once users have reached the cart stage.
- Overall Conversion (View → Purchase)
  - Conversion rate: 5.24%
  - Of all users who viewed the product, only about 1 in 20 ended up making a purchase.
  - This rate is still quite reasonable in e-commerce, but there is room for improvement.



```
=== Conversion Funnel ===  
Total Unique Users (View): 406863  
Total Unique Users (Cart): 36952  
Total Unique Users (Purchase): 21304  
Conversion Rate View → Cart: 9.08%  
Conversion Rate View → Purchase: 5.24%
```





# BUSINESS RECOMMENDATIONS

BUSINESS  
RECOMMENDATIONS



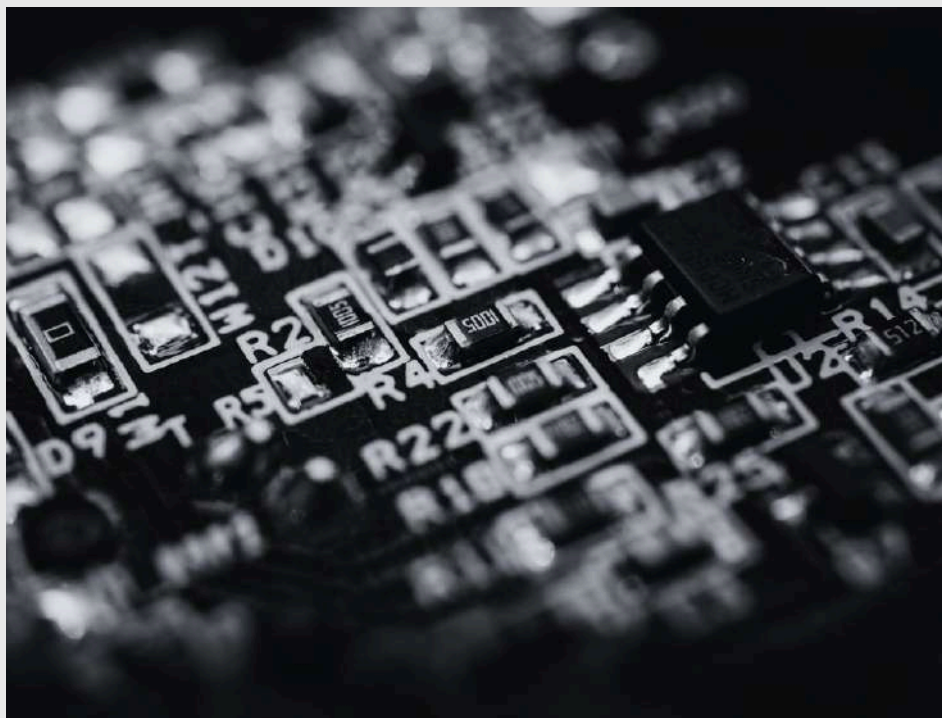
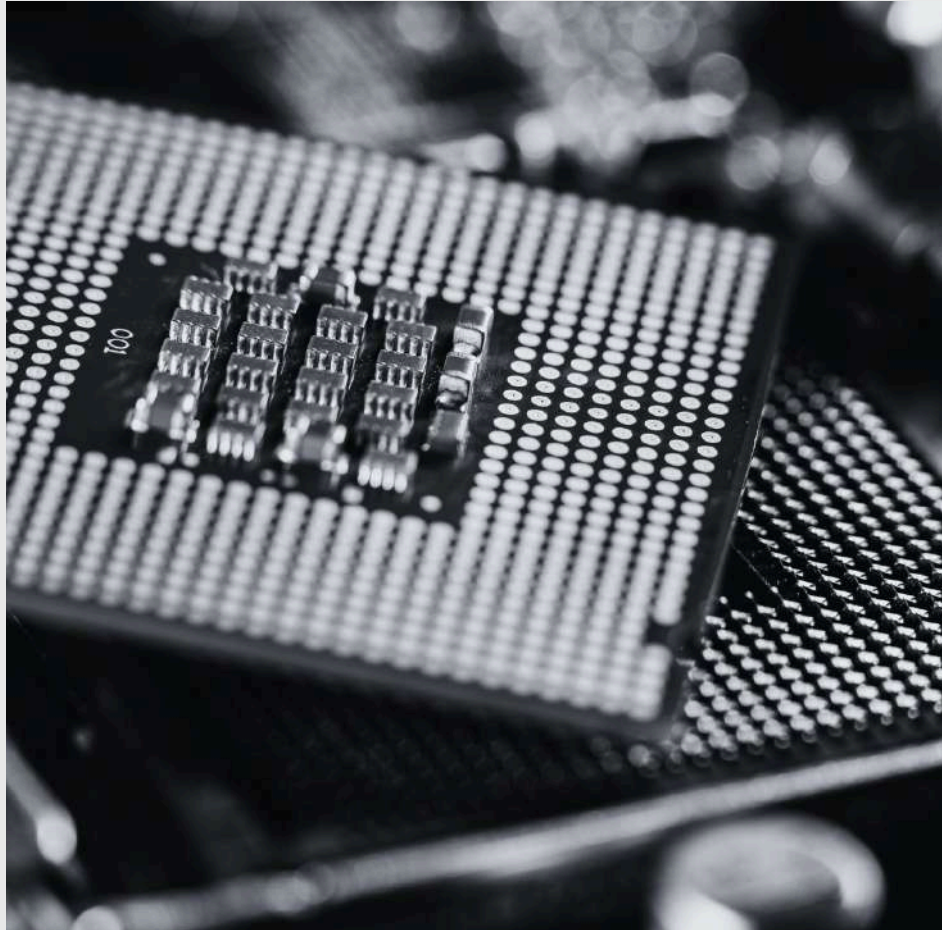
## CONVERSION FUNNEL OPTIMIZATION

- Increase conversions from view → cart through personalized product recommendations, bundling, and more competitive pricing strategies.
- Reduce barriers at the cart → purchase stage by providing flexible payment methods, limited promotions (flash sales, free shipping), and reminders (push notifications/emails).

## SEASONAL & PROMOTIONAL STRATEGIES

- Take advantage of the holiday season momentum (Oct–Jan) with major campaigns, as user activity peaks during this period.
- Create loyalty programs or follow-up promotions to maintain user interest so that it does not drop dramatically after the peak season.





# BUSINESS RECOMMENDATIONS

BUSINESS  
RECOMMENDATIONS



## FOCUS ON DOMINANT BRANDS

- Prioritize cooperation/partnerships with ASUS, MSI, and Gigabyte, which contribute the most profit.
- Explore the potential for increasing awareness of mid-tier brands (Palit, Sapphire, AMD) so as not to be too dependent on the three main brands.

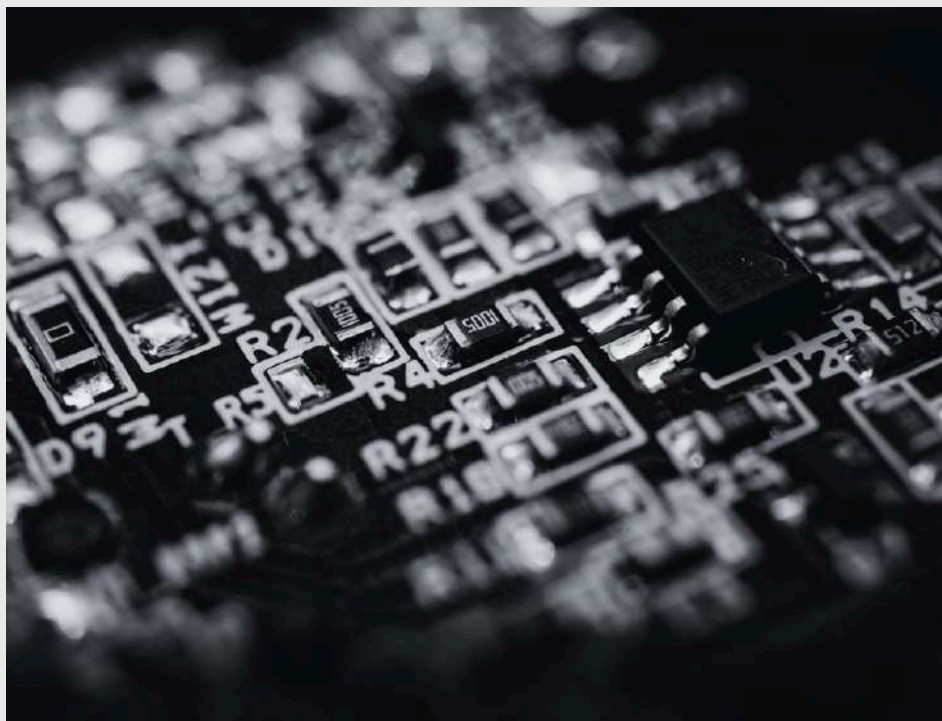
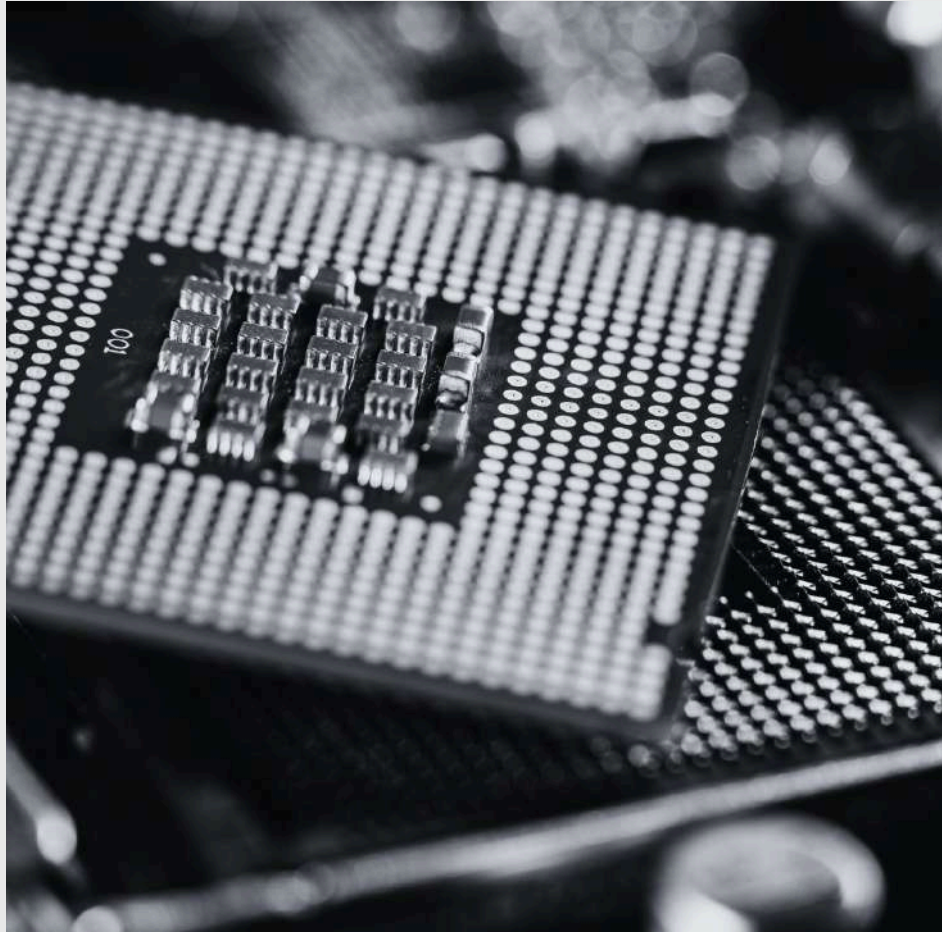
## IMPROVE UX & CUSTOMER JOURNEY

- Evaluate the user experience at the cart stage (e.g., additional costs, lengthy checkout flow).
- Provide a save cart/wishlist feature to reduce drop-offs before purchase.

## MONITORING & SEGMENTATION

- Conduct more detailed analysis on user segments (e.g., frequent buyers vs. one-time visitors) to create retention strategies.
- Consistently monitor monthly trends to quickly anticipate declines in activity outside of peak seasons.





# CONCLUSION OF PROJECT

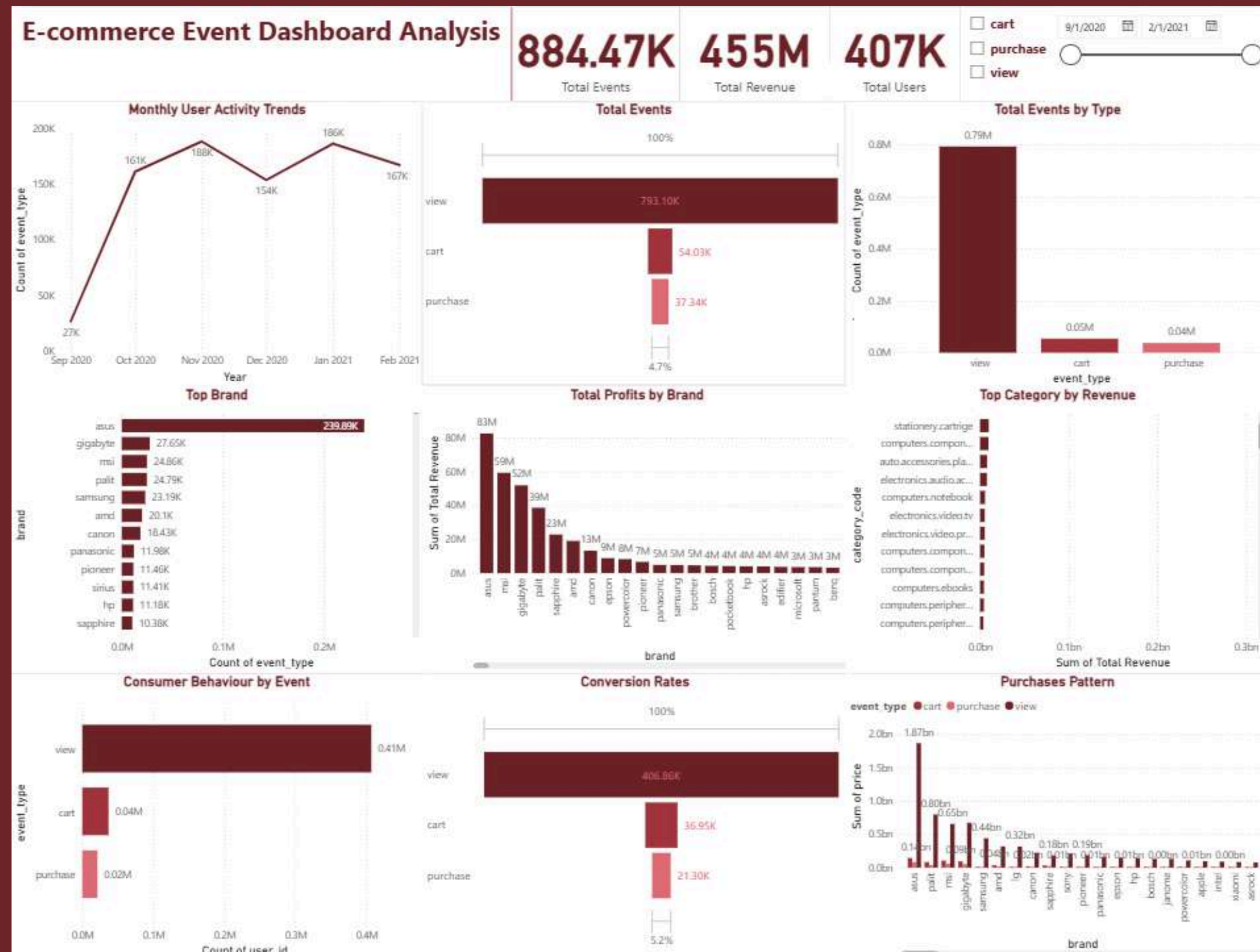
CONCLUSION OF PROJECT



## CONCLUSION

- User activity is dominated by views (90%), but conversion is low (overall 5.2%).
- ASUS, MSI, and Gigabyte contribute the most profit → focusing on dominant brands has a significant impact.
- Peak activity occurs in October–January (holiday season) → seasonal strategies are very important.
- The biggest obstacle is at the View → Cart stage → a strategy is needed to increase purchase interest from the start.
- These insights can serve as a basis for decision-making regarding funnel optimization, brand strategy, and seasonal promotions.

# DECK POWERBI







DATA ANALYST



# THANK YOU



[Github](#)



[www.linkedin.com/in/umarabdurrahman](http://www.linkedin.com/in/umarabdurrahman)



[muhammadumarabdurrahman10@gmail.com](mailto:muhammadumarabdurrahman10@gmail.com)

