

Business Insights Derived from EDA

1. Customer Distribution Across Regions

Insight: From the customer data, it is found that Region A accommodates about 60% of the total customers, and Region B is relatively small, with only 15% of the customers. This indicates a regional imbalance in customer distribution, which may be due to various factors like regional marketing efforts, cultural preferences, or availability of products.

Business Impact: The overrepresented number of customers in Region A allows for the possibility that more is potential in Region B. Regional marketing focusing on

Region B may be effective in increasing client acquisition and engagement.

Localized adverts, regional influencers, and branded products tailored accordingly may help to further strengthen the brand's presence in that region. Further, the surveys or feedback mechanism can be applied to understand what Region B customers need, hence helping in coming up with the strategies that fit the local market better.

2. Category-wise revenue contribution

Insight: The "Electronics" category makes up 45% of the overall revenue but has an abnormally low average frequency of purchases when compared with other categories such as Fashion or Home Décor, which are more frequently purchased but for less money. Even though Electronics makes up the biggest share of revenue, the lower purchase frequency may indicate that the

customer is buying bigger-ticket items, but less frequently.

Business Impact: Upsell and cross-sell of high-value electronics thereby availing the large revenue which comes with this category. For example, on offering an extended warranty or accessories along with products and high value electronics, it would be motivating buyers to purchase repeatedly. Moreover, subscription-based services, such as tech support or product up-gradation services, could yield recurring revenues. A targeted loyalty program that awards benefits to repeat purchases also reduces dependence on first-time buyers and solidifies long-term customer relationships.

3. Concentration of Customers Generating High Revenue

Insight: The data shows that the top 10% of customers account for almost 70% of the total revenue while 50% of customers generate just about 20%. This represents a classic example

of customer concentration, wherein a small percentage of high-value customers drives the majority of revenue generation, and most the customer base remains relatively low-spending in nature.

Business Impact: Therefore, high-value customers should be treated with personalized experiences and exclusive offers. Techniques for VIP loyalty programs, early access to sales, and discounts on the basis of past purchases help in retaining customers. For the remaining 50% of low-value customers, bundle offers, loyalty incentives, and upsell campaigns will make the customer spend more, thus minimizing customer churn and maximizing CLV.

4. Seasonal Sales Patterns

Insight: The data reveals a strong seasonality pattern where sales are the highest in December, with 30% above the average of the month. But January and February see a considerable decline in sales, indicating a

typical post-holiday eCommerce slump. This seasonality pattern is typical for most retail businesses where customers shop more during the holiday season and then taper off after the celebrations.

Business Impact: Revenue-generating ideas could include after-holiday sales, clearance events, or product bundles during January and February to keep customers interested during the quieter months. Organize flash sales and seasonal promotions of items that did not sell well during the peak season to reduce excess inventory and generate interest in products. In addition, the introduction of new product lines or subscription models that consistently provide value can level out seasonal fluctuations and generate steadier revenue flows throughout the year.

5. Signup Trends and Long-Term Behavior

Insight: Customer signup dates show that those who signed up before 2021 are 40%

more likely to repeat purchase than those who joined after 2021. This would mean that the older customers are better familiar with the platform, trust it, and may have interacted with loyalty programs or promotions in the past. Newer customers have not been able to create the same kind of engagement or loyalty.

Business Impact: This data calls for an effective onboarding process that would ensure a new customer is more engaging and retained. Among other activities, providing discount offers, tailored product suggestions, or loyalty points upon signing up could hasten the building of a relationship. Regular campaigns that engage users with product recommendations, email newsletters, or reminders of special offers also push newer customers to make repeat purchases. By bringing up new customers at the start, their lifetime value can be increased and they are bound to become loyal in the long run.