

I analysed the sales data and did some very basic EDA. Here are a few important insights that might help refine business strategies:

1. Sales Patterns Over the Year: Sales aren't uniform during the year, and one sees peak values in December and July. This points towards a strong seasonality due to holiday shopping and mid-year sales events. December may be more likely to occur as a result of holiday and year-end buys, and July might have some summer sales or mid-year closeout events. Businesses must plan for such highs and make provisions in advance with appropriate advertisements, offers, and more inventory. Even analysis of the demand during such high months would allow the understanding of which product category is selling more, which in turn can help to better prepare the business for future cycles.

2. Regional Sales Variations: South America is presently the best-performing region. It far exceeds North America and Asia. What drives these regional differences? Is it possibly because demand for certain products in specific industries is stronger in particular regions? Is it a function of better marketing in regions, or differences in purchasing power? Revenue could be optimized across regions with region-specific promotions, localized advertising, or alliances with local influencers. For example, if a product is selling well in South America but not in Asia, it might be worth digging into cultural or economic factors to adjust product offerings accordingly. Running region-focused discounts or personalized campaigns could help bridge this sales gap.

3. Top-Selling Categories: Books and Electronics are the top-performing categories, generating the most revenue, while Home Decor lags. This could be because there is a difference in the purchasing behaviour of consumers. In that case, books and electronics may have been something people needed or more in demand, whereas home decor perhaps to customers falls into discretionary spending. Businesses can balance this by also offering promotional offers, such as bundling several home decor items with best-selling merchandise or seasonal discounts to pique customers' interest. Another strategy may include launching special editions or collaborations with designers for unique, one-time home decor pieces that attract a higher number of buyers. Finally, evaluating reviews and comments by customers can shed light on what is missing about Home Decor and how its appeal could be enhanced.

4. The Repeat Customer: Having a good percentage of repeat customers is a major determinant of sustainable business performance over time. Highly engaged customers have made between 9 and 11 purchases in the past; this is an important customer segment that can be relied upon. Loyalty programmes, exclusive discounts, and personalized product recommendations based on purchasing history should help nurture such a customer base. Some retention drivers could be VIP membership, early access to sales, and referral incentives. But businesses may also leverage targeted email marketing campaigns with special promotions for valued customers to ensure they continue to feel valued. If these high-value customers are satisfied, they are very likely to bring new customers through word of mouth to the customer base.

5. Best-Selling Products to Work With: Some products like SoundWave Jeans and the SoundWave Cookbook are significantly beating the others. These best-selling products should be stocked in inventory so that they are always available. Shortages of these

high-demand items may lead to lost revenue. In addition, the popularity of these products can be used to their advantage by creating product bundles, where best-selling items are sold with complementary products to maximize sales. For example, offering a package deal that includes SoundWave Jeans with a related fashion accessory or a kitchen bundle with the SoundWave Cookbook could encourage higher purchase values. Furthermore, analyzing why these products are so successful (pricing, quality, or brand loyalty) could help replicate this success across other product categories.