

Amazon Laptop Market Analysis

Web Scraping & Data Analytics Project Report

Executive Summary

This project presents a comprehensive analysis of the Amazon laptop marketplace using data collected from over 100 laptop listings.

The study explores pricing trends, brand positioning, RAM and storage configurations, screen size distribution, operating systems, and customer ratings.

The objective is to simulate a real-world market intelligence task where data-driven insights support business decision-making.

The findings indicate that the Indian laptop market is highly competitive and price-sensitive, with mid-range laptops dominating overall listings.

1. Introduction

E-commerce platforms generate massive amounts of product data that can be analyzed to understand market dynamics.

Amazon, being one of the largest online marketplaces, offers a valuable dataset for studying laptop market trends.

Through structured scraping and data analysis, meaningful insights can be extracted regarding consumer behavior and brand strategies.

2. Dataset Overview

The dataset consists of structured information extracted from Amazon laptop listings.

Key fields include product title, brand, RAM, storage type, Windows version, color, price, rating, processor type, and screen size.

Data cleaning involved removing duplicate records, handling missing values, and standardizing numerical fields such as price and rating.

The cleaned dataset ensures accurate analytical outcomes and reliable business insights.

3. Market Segmentation Analysis

The laptop market can be segmented into three primary pricing categories: Budget (Below 50,000), Mid-Range (50,000–80,000), and Premium (Above 80,000).

The mid-range category contains the highest number of listings, indicating strong demand among students and working professionals.

Premium laptops represent a smaller segment but generate higher revenue per unit.

4. Brand Performance Analysis

Premium brands maintain the highest average price across the dataset.

However, brands offering balanced price-to-performance ratios tend to receive higher average ratings.

The market shows strong competition among mid-tier brands focusing on affordable performance laptops.

5. RAM Configuration Trends

8GB RAM is the most common configuration in the dataset, reflecting current industry standards.

16GB RAM configurations are increasing in availability, especially in gaming and professional laptops.

4GB RAM laptops are declining, indicating a shift toward higher performance requirements.

6. Storage Trends

Solid State Drives (SSD) dominate the market compared to traditional HDD storage.

512GB SSD is the most frequently observed storage configuration.

The shift toward SSD reflects consumer preference for faster boot times and improved performance.

7. Screen Size Distribution

15.6-inch laptops are the most common size in the dataset.

14-inch laptops are popular among users prioritizing portability.

Larger screen sizes are generally associated with gaming laptops.

8. Windows Version Trends

Windows 11 appears as the dominant operating system in recent listings.

Older versions such as Windows 10 are gradually being phased out.

The transition to Windows 11 reflects updated hardware compatibility standards.

9. Price vs Rating Relationship

Correlation analysis indicates a weak positive relationship between price and rating.

This suggests that higher price does not automatically guarantee better customer satisfaction.

Value-for-money products often achieve higher ratings than expensive premium devices.

10. Discount Strategy Analysis

Most laptops feature moderate discount percentages ranging between 10% and 25%.

Discounting plays a significant role during promotional events and festive sales.

Strategic discounting improves product visibility and conversion rates.

11. Business Implications

Manufacturers should prioritize mid-range configurations to maximize market reach.

Including 8GB or 16GB RAM with SSD storage aligns with consumer expectations.

Competitive pricing and promotional discounts significantly influence purchasing decisions.

12. Conclusion

The Amazon laptop marketplace demonstrates strong competition across pricing segments.

Mid-range laptops dominate both listing volume and consumer engagement.

Hardware trends clearly indicate a shift toward SSD storage and higher RAM configurations.

This project highlights how web scraping and data analytics can generate actionable business intelligence.

13. Future Scope

Future improvements may include sentiment analysis of customer reviews.

Time-series analysis can track price fluctuations over months.

Interactive dashboards can be developed for dynamic visualization of insights.

Expanding the dataset across multiple e-commerce platforms would provide comparative analysis.