

Supply Chain Optimization

by Abhinav Barman

Problem Statement:

To scale up the supply chain of SwissClub, an Indian active wear brand for women, taking into account customer preferences and feedback.

Objectives:

1. **Tracking Weekly Performance:** Analyse week-on-week (WoW) performance in terms of net revenue. Look for any significant spikes or drops and identify possible reasons behind these changes.
2. **Understanding Product Trends:** Dive into the weekly performance of our products, including sizes and colors, across the top-selling cities. Share revenue-based insights to help us understand what customers are likely to buy.
3. **Optimizing Storage Locations:** Recommend the new locations in terms of pin codes where we should set up new open storage houses based on delivery trends in the shipping areas.

Assumptions:

1. The data provided is accurate and complete.
2. The data provided represents all sales channels, both online and offline platforms.
3. Market conditions, including demand, supply and competition remain constant.
4. No external factors, such as pandemic or political unrest disrupts the study period.
5. To represent Color preferences, all data without a color preference are considered as 'Unknown colors'.
6. To represent Order preferences, all data without an order preference are considered as 'Regular orders'.
7. External influences like promotions, festive seasons or new product launches are considered.

I. TRACKING WEEKLY PERFORMANCE

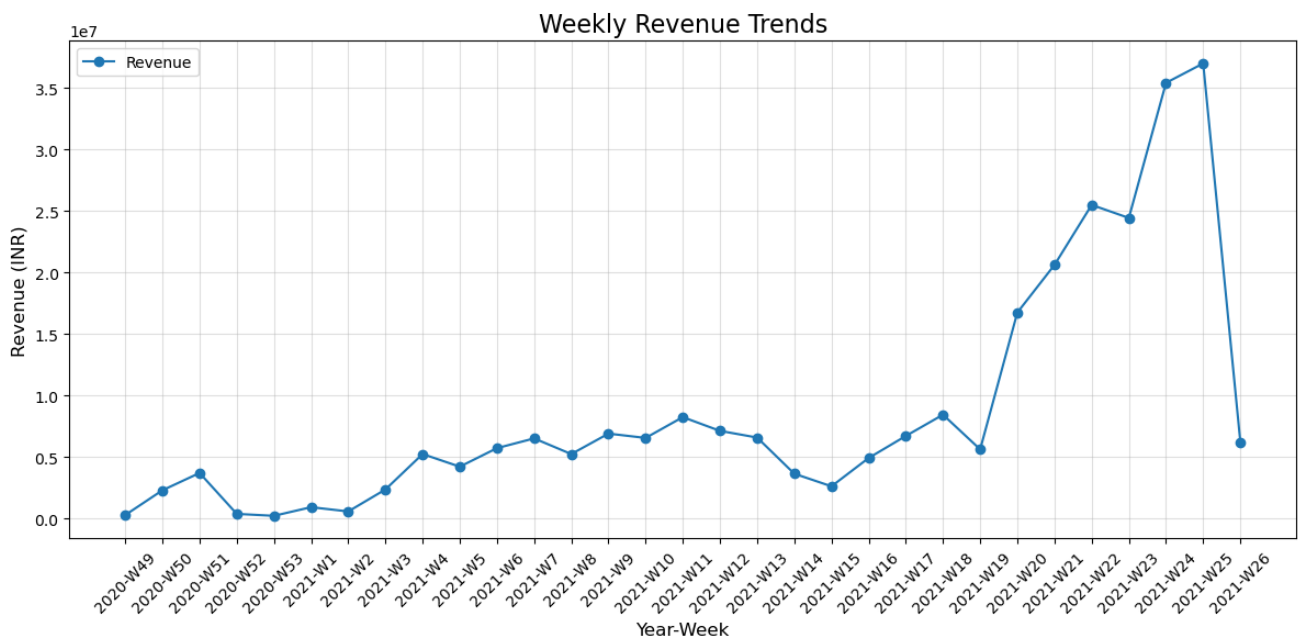


Fig 1: Weekly Revenue Trend

Observations:

1. Revenue starts at low level with minor fluctuations during the initial phase from week 49 in 2020 to week 2 in 2021, indicating minimal growth or activity.
2. The period from weeks 3-18 in 2021 indicate gradual but consistent growth in revenue, likely due to steady demand for existing products.
3. Marginal dips in revenue in certain weeks of initial period suggests underperformance or reduced consumer activity.
4. From weeks 19-25 in 2021, weekly revenue shows exponential growth, reaching its peak in week 25. This indicates the impact of significant campaigns, product launches, or market expansion - drawing heightened customer engagement.
5. The highest revenue is observed in week 25, followed a steep decline in week 26. The sudden drop could indicate the end of a promotional period, market saturation, or other temporary factors affecting revenue.

Insights & Recommendations:

1. The early weeks reflect a period of low activity or groundwork. Better initiatives or market strategies could ensure consistent revenue growth and avoid stagnation.

2. The sharp increase around weeks 19-25 in 2021 points to an effective strategy that successfully boosted revenue. Understanding what caused this growth could help replicate it.
3. The drastic decline post-peak in week 26 suggests a lack of sustainability or follow-through strategies. The reasons behind the steep decline should be investigated to prevent similar situations in the future.
4. The sudden spike in revenue indicates a short-term strategy that worked well but was not sustained. The steep drop suggests the need for long-term planning to maintain momentum and avoid dependency on short-term gains.
5. Strategies should be explored for maintaining consistent growth rather than relying on sporadic peaks. Focus on customer retention strategies and follow-up campaigns to extend the growth period.

II. UNDERSTANDING PRODUCT TRENDS

A. Top-Selling Cities by Revenue

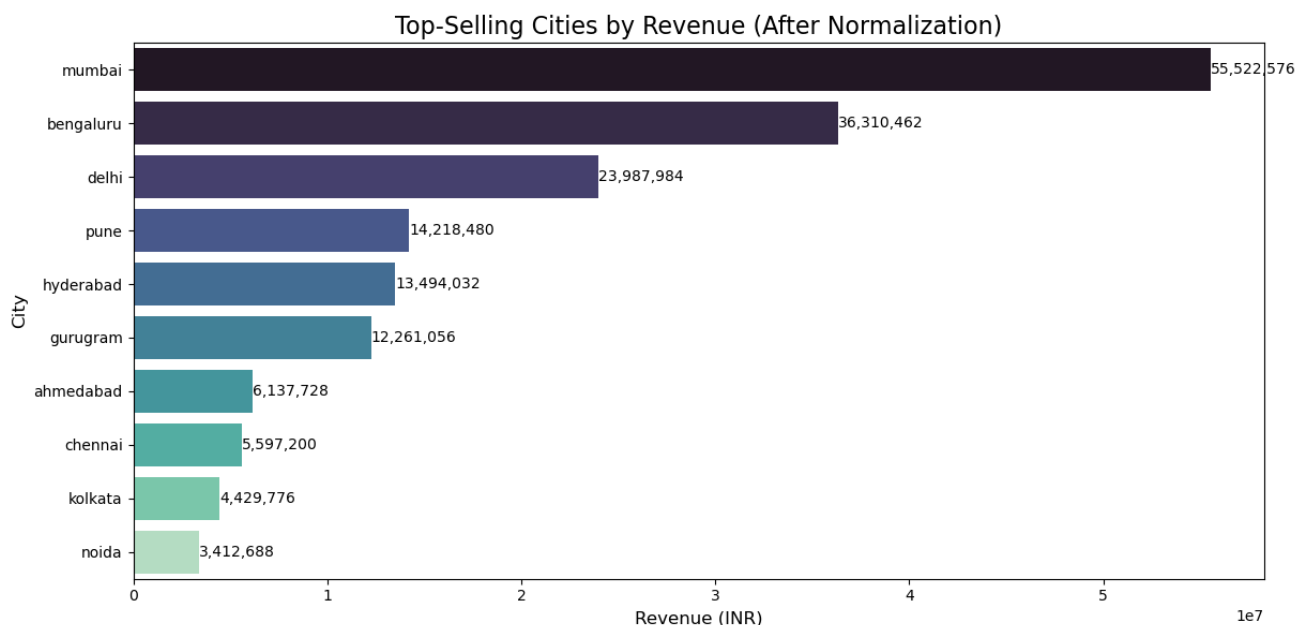


Fig 2: Top Selling Cities by Revenue

Observations:

1. Mumbai significantly outpaces other cities with the highest revenue of INR 55.52M, making it the top-performing market, followed by Bengaluru (INR 36.31M) and Delhi (INR 23.99M)

2. Pune (INR 14.22M) and Hyderabad (INR 13.49M) are mid-tier cities in terms of revenue, showing strong performance in their respective regions.
3. Gurugram (INR 12.26M) outperforms larger cities like Ahmedabad, Chennai, and Kolkata with a higher revenue, reflecting its strong market potential despite its smaller size.
4. The revenue of the top three Tier-1 cities Mumbai, Bengaluru and Delhi combined accounts for a significant majority of the total revenue around 66%, indicating they are established markets with a robust consumer base.
5. Cities like Ahmedabad, Chennai and Kolkata contributing less revenue, might either have untapped potential or smaller markets.

Insights & Recommendations:

1. Gurugram shows a potential market for targeted expansion in North India. By focusing on its strengths, businesses can achieve long-term success in this rapidly evolving hub.
2. Focused marketing efforts in Pune and Hyderabad could elevate their contribution closer to top-tier cities.
3. Lower revenue in cities like Chennai & Kolkata suggest the need for market-specific strategies to boost sales.
4. There is a revenue disparity between cities which needs to be addressed. Bridging this disparity could involve:
 - i. Addressing regional preferences.
 - ii. Enhancing infrastructure/logistics in lower-performing areas.
 - iii. Revisiting pricing or distribution strategies.

B. Revenue by Size Preferences

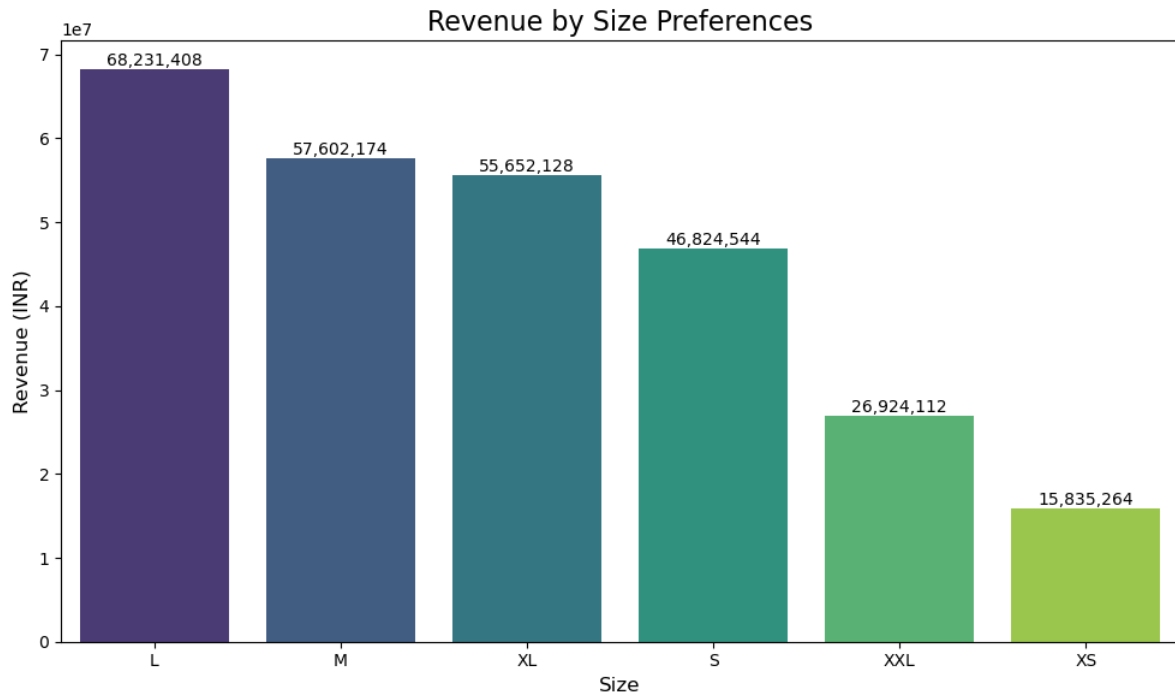


Fig 3: Revenue by Size Preferences

Observations:

1. The size L (Large) generates the highest revenue of INR 68.23M. This indicates that Large is the most preferred size by customers.
2. The sizes M (Medium) and XL (Extra Large) also contribute significantly, with revenues of INR 57.60M and INR 55.65M respectively. These sizes are close in revenue performance, showing consistent demand in this range.
3. A clear preference exists for mid-range sizes (L, M, XL), which collectively dominate the revenue with ~ 67% share. This also indicates a focus on a demography with average to slightly above-average body dimensions.
4. The size S (Small) also generate significant revenue of INR 46.82M, comparatively lesser than the above.
5. The sizes XS and XXL, which cater to extremes in body sizes, contribute significantly less, indicating a smaller target audience for these sizes.

Insights & Recommendations:

1. Size L contributes ~26% of the total revenue, making it the single largest driver. Catering to this size efficiently in terms of inventory, quality and availability is critical for sustained performance.

2. Sizes L, M, and XL will likely require higher inventory levels to meet demand. Focus should be on ensuring minimal stockouts for these sizes, especially during peak seasons or promotional campaigns.
3. Investigate ways to boost the sales of S, XXL and XS through promotions, targeted campaigns, or redesigning for appeal. Analyzing customer feedback or unmet demand can help identify gaps in this segment.
4. The low revenue from size XS could be due to either limited stock, low demand, or misalignment in marketing strategies targeting a niche audience.
5. For size XS, focus could be on younger or petite customers, possibly targeting school/college students, teenagers, or fashion-conscious audiences.
6. For size XXL, focus could be on creating body-positive campaigns emphasizing inclusivity to attract customers seeking larger sizes.
7. Customer feedback on all these sizes could further optimize the product design and quality, thereby increasing revenue.

C. Revenue by Color Preferences

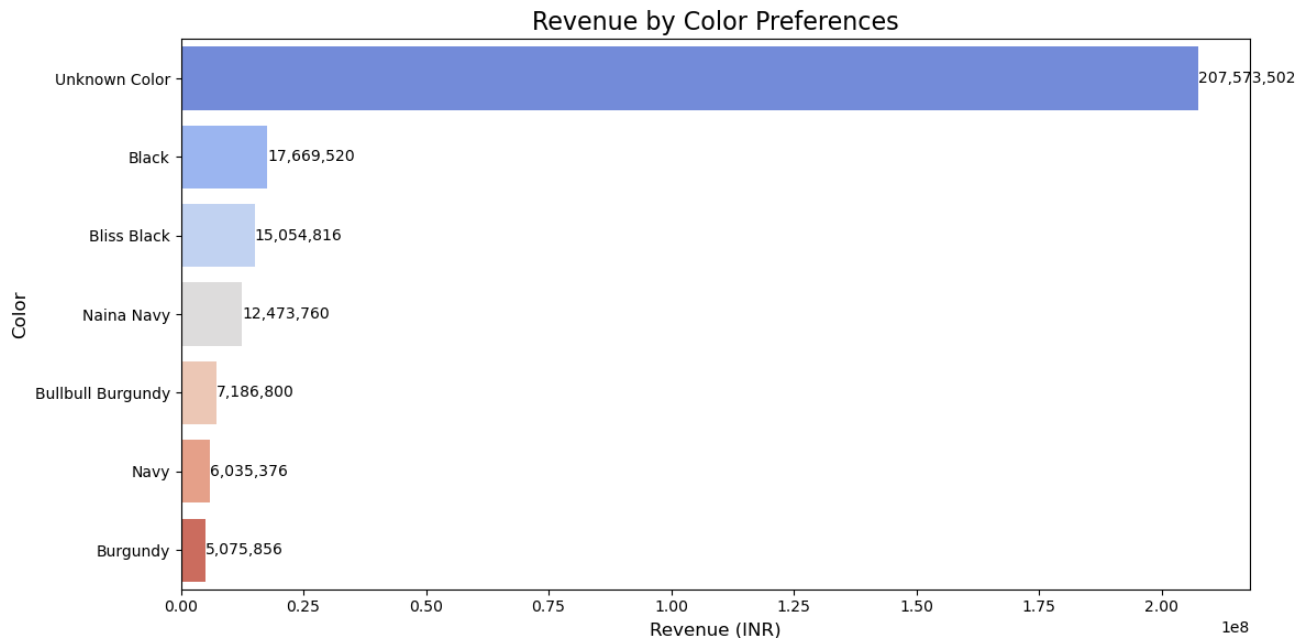


Fig 4: Revenue by Color Preferences

Observations:

1. The majority of the revenue (INR 207.57M) comes from the category labeled as 'Unknown Color'.
2. Black (INR 17.66M) and Bliss Black (INR 15.05M) dominate as the most preferred colors. Darker shades, especially black variants, appear to resonate most with customers.
3. Followed by Naina Navy with a revenue generation of INR 12.47M.
4. Lower preference colors like Bullbull Burgundy (INR 7.18M), Navy (INR 6.03M), and Burgundy (INR 5.07M) collectively brought in less revenue compared to the top colors.
5. The lower demand for Burgundy shades could indicate a mismatch between offerings and customer preferences.
6. Lesser-preferred colors like Navy and Burgundy contribute comparatively low revenue.

Insights & Recommendations:

1. Focus on marketing and inventory strategies on black and its variant color shades to cater to customer preferences. Introducing new shades within these ranges might also be profitable.
2. Optimization of stocks for these high-revenue colors and assess if low-performing ones could be phased out or revamped.
3. Customer surveys on low-revenue colors like Burgundy and Navy could bring in insights on why these colors are less popular, thereby repositioning these shades or offer discounts to increase their sales.
4. Promotional Campaigns could promote top-performing colors like Black and Bliss Black through targeted advertisements. Simultaneously, campaigns for lesser-performing colors could improve awareness and sales.

D. Revenue Contributions: Pre-Orders Vs Regular Orders

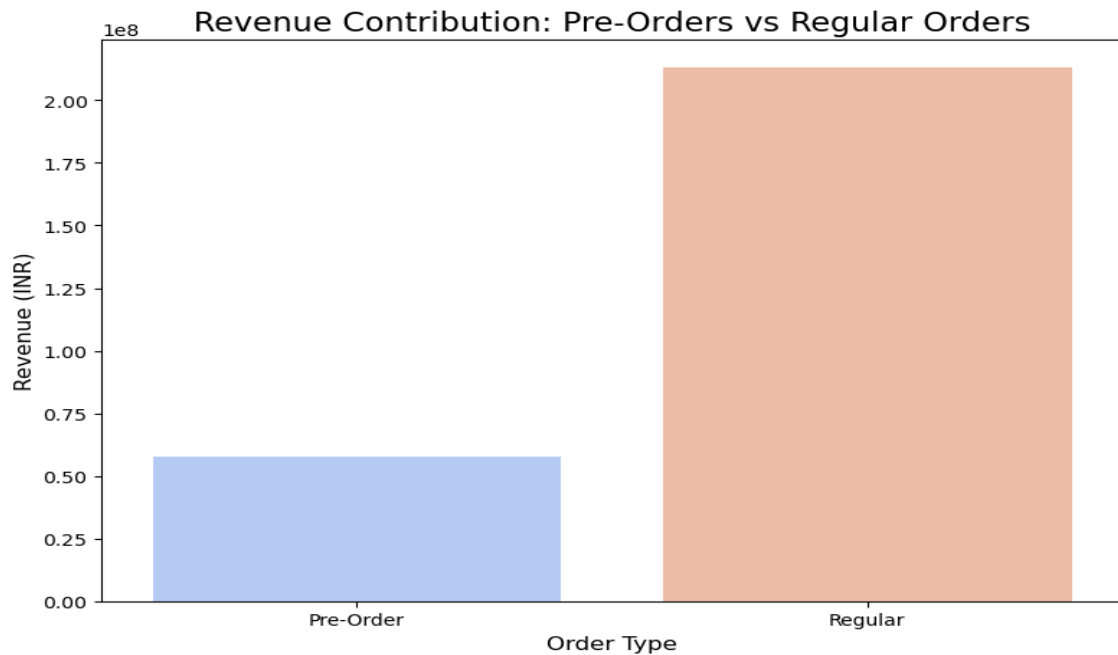


Fig 5: Revenue Contribution: Pre-Orders Vs Regular Orders

Observations:

1. Regular orders generate significantly higher revenue (over INR 200M) compared to pre-orders (around INR 50M).
2. A clear preference exists for Regular orders, which dominate with more than 80% share of the revenue.
3. Pre-orders account for less than 20% of the total revenue.
4. The significant gap in revenue between Regular orders and Pre-orders indicates that customers prioritize immediate availability, suggesting that convenience plays a major role in purchase decisions.

Insights & Recommendations:

1. The high revenue from Regular orders indicates a well-established base of on-demand customers, which could be leveraged further.
2. Pre-orders, despite their limited revenue contribution, might serve niche markets or act as a tool for demand forecasting.
3. Promotional Campaigns on newly launched products through targeted advertisements could improve the revenue percentage of Pre-orders.
4. Customer surveys and feedback on pre-ordered products could bring in insights on why it is less preferred.
5. Exclusive incentives for pre-orders, such as discounts or early access to new collections, can boost participation.

III. OPTIMIZING STORAGE LOCATIONS

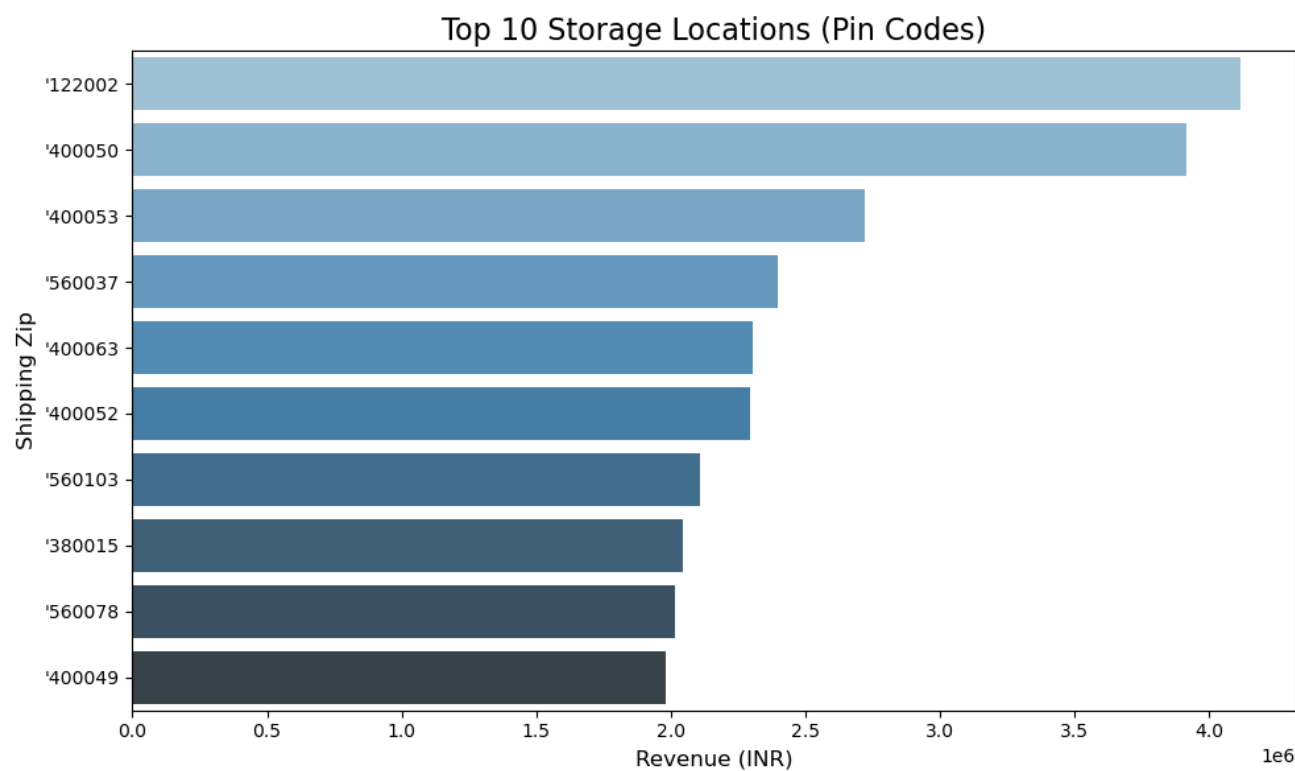


Fig 6: Top 10 Storage locations

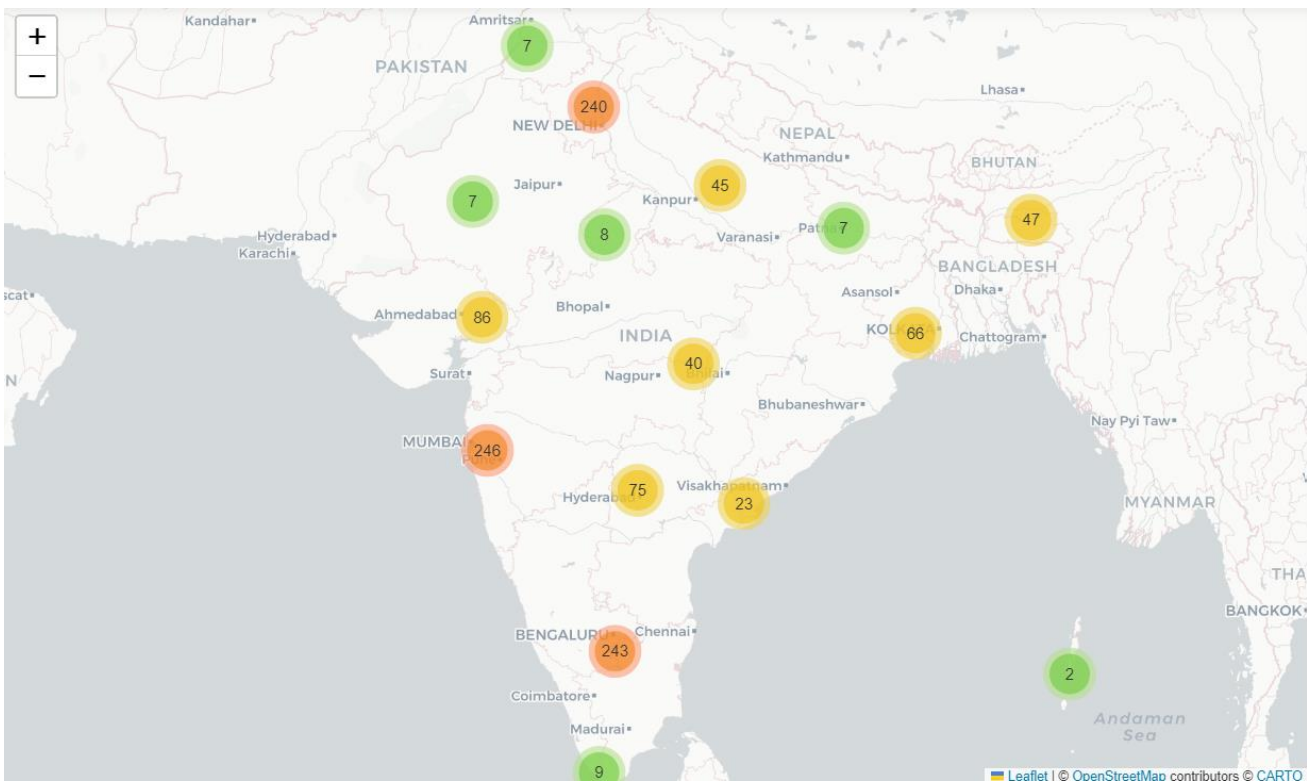


Fig 7: Heat Map: Revenue Distribution Across India

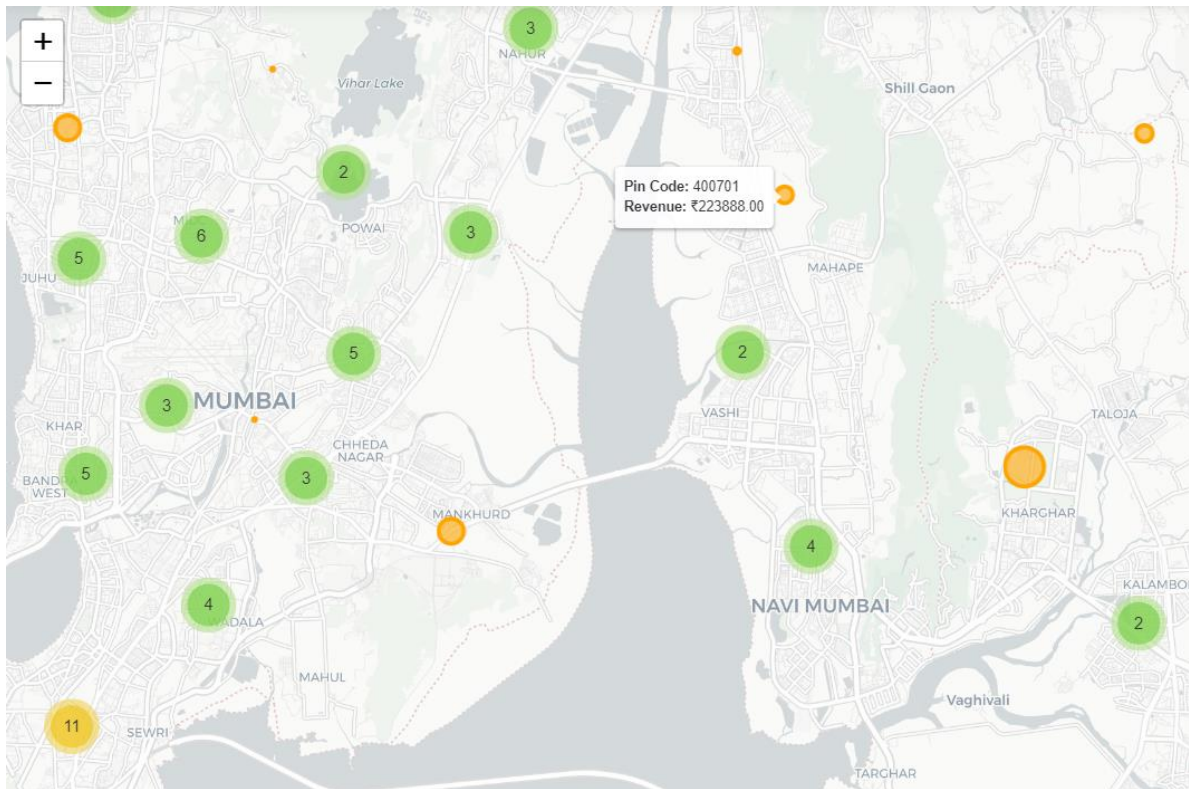


Fig 8: Heat Map: Revenue Concentration in Mumbai

Observations:

1. The top-performing pin codes belong to major cities like Gurugram (122002), Mumbai (400050, 400053, 400052, 400049), and Bengaluru (560037, 560103, 560078), suggesting these cities are key business hubs.
2. Gurugram has generated the highest revenue, contributing significantly more than other locations. This indicates strong demand or business activity in this region.
3. Mumbai and Bengaluru appear to dominate the list with multiple pin codes in the top 10, highlighting their importance in the overall revenue distribution.
4. Ahmedabad with pin code 380015, also stands out as a high-revenue location.
5. The heat map (Fig. 7) highlights dense revenue concentrations in metropolitan areas such as Delhi-NCR, Mumbai, and Bengaluru, aligning with their status as economic and population hubs.
6. Areas around Mumbai (Fig. 8) exhibit particularly dense revenue activity in Bandra (400050) and Andheri West (400053), indicating affluent and active customer bases.
7. Regions outside of metropolitan areas show sparse revenue distribution, potentially signifying underpenetrated markets.

Insights & Recommendations

1. Pin codes with top 10 cities having storage/shipping locations with high revenue indicate regions with high demand.
2. Placing storage facilities near these locations will reduce delivery times and shipping costs, improving customer satisfaction and operational efficiency.
3. Focus should be given on fast-tracking deliveries in top-performing pin codes, especially during high-demand periods.
4. More focus on localized inventory for popular sizes and colors based on historical data for each storage location could avoid overstocking or delays.
5. Understanding why these locations are top performers like high population density, higher spending power or strategic location, etc can help identify similar areas to target.
6. Regions with slightly lower revenues might still hold growth potential if supported by targeted strategies.
7. Consider enhancing marketing and sales strategies in underperforming regions visible in Fig. 7, such as Tier-2 and Tier-3 cities.
8. For Mumbai's high-performing areas (Fig. 8), adding localized micro-warehousing hubs can improve delivery times and reduce operational costs.

Conclusion:

This analysis highlights SwissClub's stronghold in major cities and the rising demand for targeted sizes and colors. Weekly revenue trends underscore the importance of sustaining momentum during peaks through targeted campaigns and follow-up strategies. Optimizing storage locations in high-demand areas like Delhi-NCR, Mumbai, and Bengaluru can improve operational efficiency, while untapped Tier-2 and Tier-3 markets hold potential for expansion. Incorporating short-term adjustments (promotions, restocks) with long-term investments (AI-driven inventory optimization, regional warehousing, and predictive analytics) will ensure sustainable growth and maintain strong customer satisfaction.