

Group 7: Costco Design Idea for Visualizations
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Visualization 1: Barplot by Product Count, by Category (Altair)

This visualization uses colors as a mark to differentiate the categories of each subcategory. Specifically, blue represents food, red represents beverages, green represents household, and orange represents other products. The gray horizontal lines make it easier for the viewer interpret the values at a glance (though they may also hover over the bars to get the specific values if they choose). Furthermore, the labels on the x-axis are tilted at a 45 degree angle to improve the readability, as they can get fairly long.

Visualization 2: Heatmap by Subcategories in different price ranges in %

This heatmap uses a blue sequential color scheme with Costco's brand to visualize the distribution of product subcategories across different price ranges. Darker blues show higher concentrations of products within a price range, making patterns easy to identify. It uses a tilted label design on the horizontal axis to display subcategory names since many subcategories have long names. The vertical stacking of price ranges, blue sequential color scheme, and angled labels make it more visually appealing.

Visualization 3: Barplot by Product Rating by price range/product lists (D3)

This interactive barplot uses a simple white background with clear black text for readability, and again uses shades of blue that align with Costco's branding. The color scale moves from light to dark blue by increasing price ranges from budget-friendly items to more premium options making it easy to compare. Users can filter the view using the dropdown menus at the top, which let you choose a main product category and then narrow down to a specific subcategory or see them all together. The hover feature adds a helpful layer of detail and when you move your mouse over a boxplot, you can see exactly how many products are in that price range, along with their rating. On the right side, the product list updates automatically based on your selection, showing item names, prices, and ratings.

Visualization 4: Density plot by Customer Rating Distribution Discounted vs. Full price items

This density plot has a simple clean design that makes it easy to compare customer ratings between discounted and full-price items. It uses a white background to keep the focus on the curves with red for discounted products and blue for full-price ones (consistent with Costco's branding). The filled curves help show how ratings are distributed, and the overlap between them makes it clear where the differences lie. Labels on the axes are easy to read, and when you hover over the lines the tooltips pop up with exact rating and density values.

Visualization 5: Occurrences of Food Marketing Terms in Costco's Products, by Price Category (Tableau)

This visualization uses different colors for each marketing term, so viewers can compare the values for each term across the price categories: \$<15, 15-30, 30-50, 50-100, 100-200, and >200 (the same as in visualization 2). For example, the orange bars represent the number of “kosher” products, and the viewer can easily see how this value differs for the different price levels of products, by looking at all of the orange bars. The darker gray horizontal lines separate each price category from each other, and the lighter gray vertical lines help the viewer interpret the product counts for each marketing term.