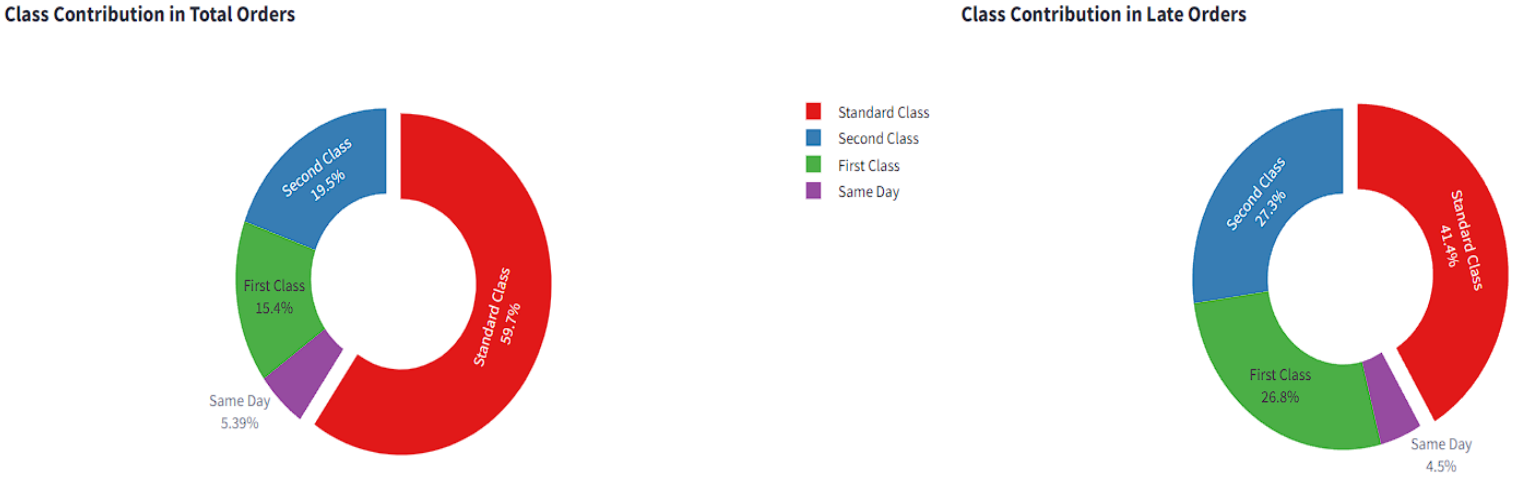
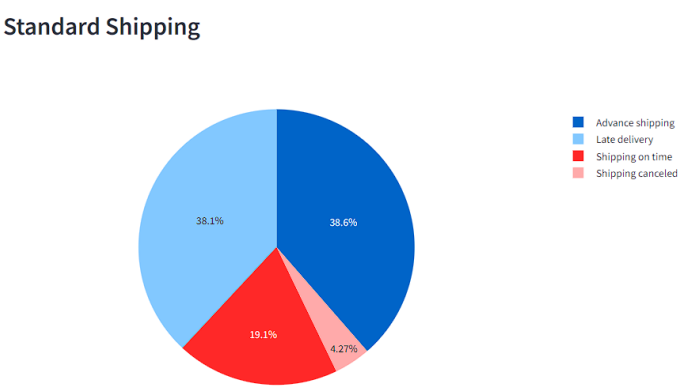
ACTIONABLE INSIGHTS

LOGISTICS DATA



The pair of donut charts compares the contribution of different shipping classes to total and late orders. In the chart on the left, 'Standard Class' shipping accounts for the majority of total orders at 58.7%, with 'Second Class' and 'First Class' making up 19.5% and 15.4% respectively, and 'Same Day' shipping being the least at 5.39%. However, the chart on the right shows a significant shift in late orders, with 'Standard Class' still leading at 47.4%, but with a larger proportion of late orders in the 'First Class' category at 26.8%. 'Second Class' and 'Same Day' shipping show less impact on late orders, at 21.3% and 4.5% respectively. This disparity indicates that while 'Standard Class' is the most commonly used shipping option, 'First Class' orders are disproportionately represented in the late orders, **suggesting potential issues with expedited delivery processes that need to be addressed.**

To examine this thing in depth We then look at the proportion of late orders within each of the classes.



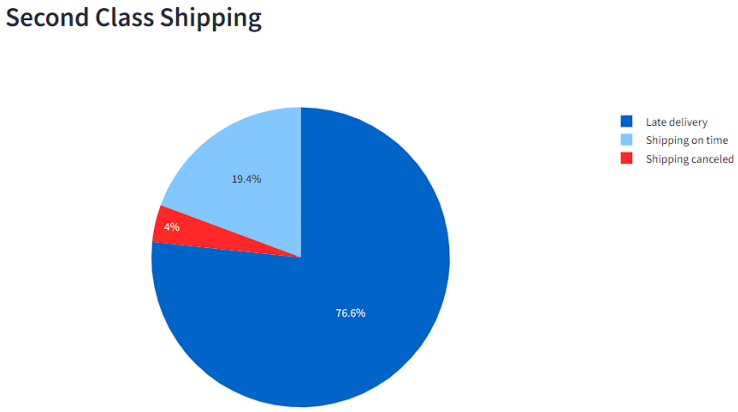
STANDARD SHIPPING

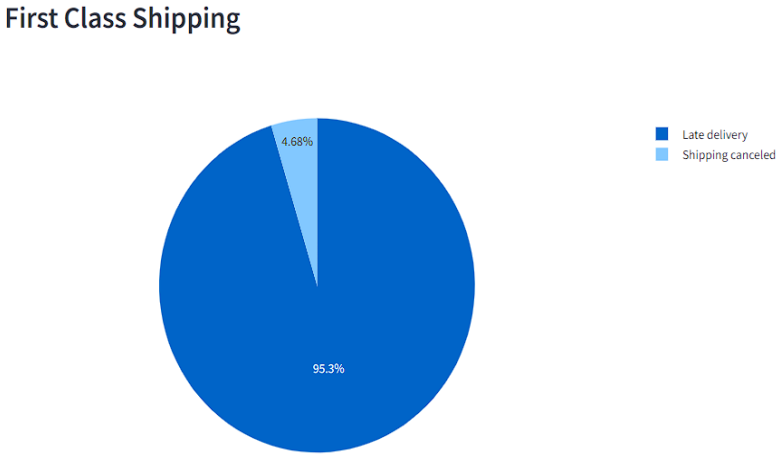
'Shipping on time' and 'Advance shipping' both account for a substantial share of orders at 38.6% and 38.1% respectively, while 'Late

delivery' constitutes 19.1% of the orders. 'Shipping canceled' orders represent a minimal fraction at 4.27%, indicating a high fulfillment rate for standard shipping orders. **This suggests that the majority of standard shipments are managed effectively, with a smaller yet significant portion experiencing delays.**

SECOND CLASS SHIPPING

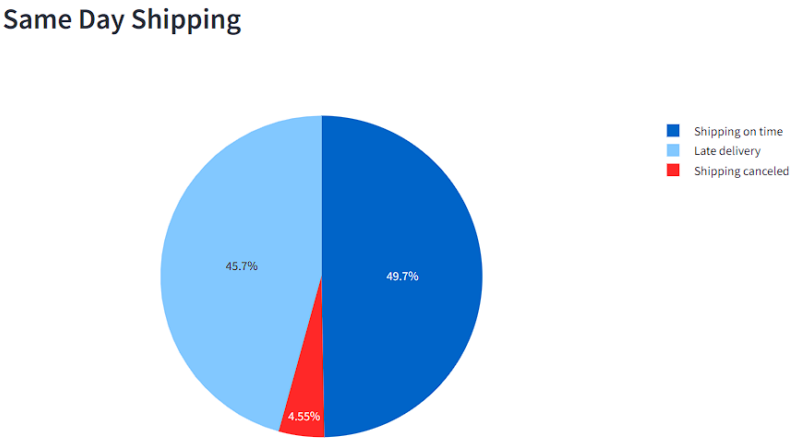
The pie chart for Second Class Shipping indicates that a predominant majority of orders, 76.6%, are delivered late. Only 19.4% of the shipments are on time, while a small percentage, 4%, represents canceled orders. **This distribution suggests a significant challenge with punctuality in the Second Class Shipping category**.





FIRST CLASS SHIPPING

The pie chart for First Class Shipping indicates that all orders experience delays or cancellations, with a significant majority, 95.3%, being late deliveries and 4.68% resulting in cancellations. **This suggests critical issues within the First Class Shipping process, highlighting the need for immediate attention to improve delivery times and reduce cancellations.**

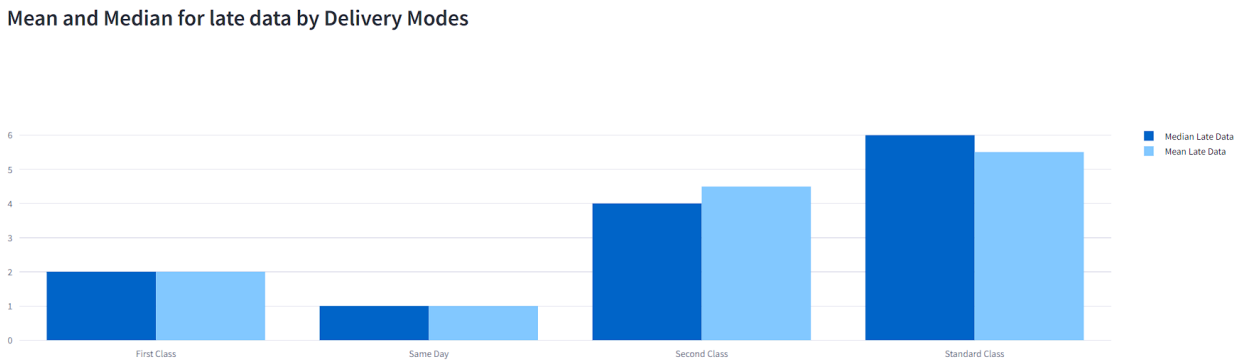


SAME DAY SHIPPING

The pie chart for Same Day Shipping shows nearly an equal distribution between

on-time deliveries and late deliveries, with 49.7% of orders arriving on time and 45.7% experiencing delays. Additionally, a small percentage, 4.55%, of the orders were canceled. **This data indicates that while Same Day Shipping is generally reliable, there is a nearly equivalent chance of orders being delayed, which points to potential areas for logistical improvement.**

ACTIONABLE INSIGHT 1



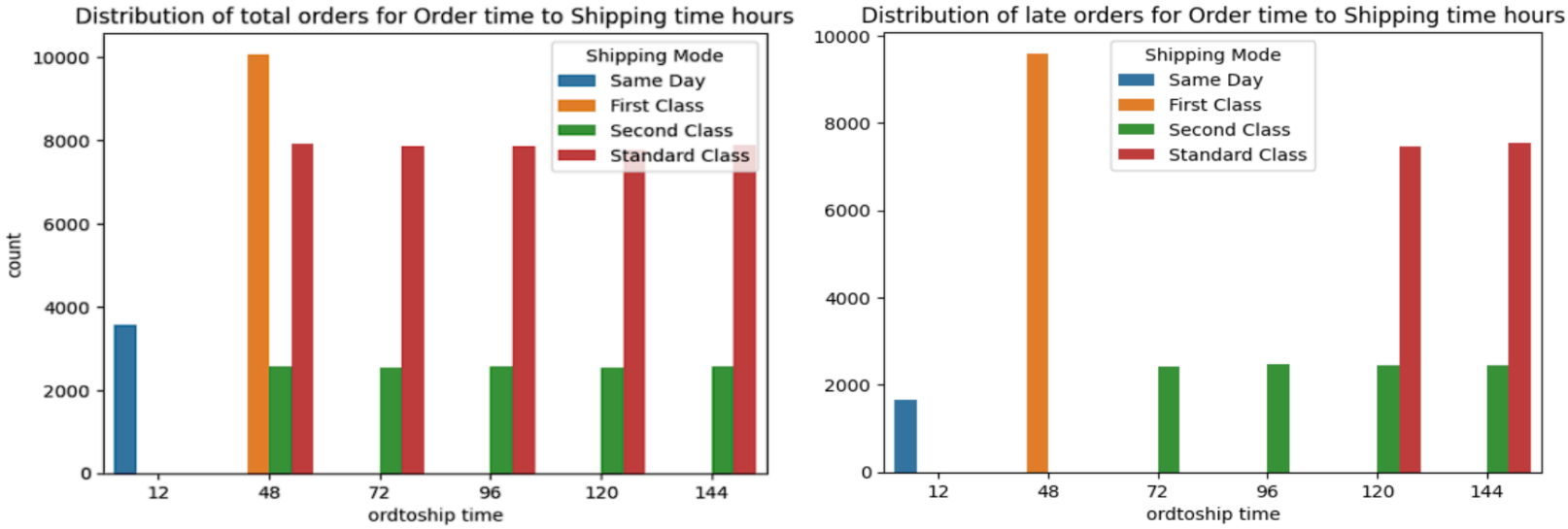
The bar chart compares the mean and median late delivery times across different shipping classes. For First Class and Same Day shipping, the mean and median values are closely aligned, suggesting a relatively symmetrical distribution of late delivery times. However, for Second Class and Standard Class shipping, there is a noticeable difference between the mean and median, indicating that there are outliers affecting the average late delivery times. Particularly, Standard Class shipping shows the highest discrepancy, which may point to more extreme cases of late deliveries in this category. **This analysis is crucial for identifying inconsistencies in delivery performance and targeting improvements in logistics operations.**

Actionable Strategy:

The Logistics team should have a reconsideration of the promised time to the consumers and **propose the new time to ship an order to be the median of each of the shipping mode. This would help build trust among consumers and in the meanwhile the team can also work on the inconsistencies in each of the shipping mode**.

ACTIONABLE INSIGHT 2

Actionable insight



For these 2 charts we calculated the order to shipment time (the time when the order was placed to the time when the order was shipped from store). We saw that order was shipped from the store on the same day, 1 day and till 6 days after the order was placed. For each of these times, we saw the distribution of orders for different shipping modes and number of late deliveries for each shipping mode.

We found that:

- ➔ **All of the Standard Shipping mode orders which were shipped within or before 4 days of order, were delivered on time. Any order which took more than 4 days were mostly late.**
- ➔ **All of the Second Class Orders which were shipped within or before 2 days were delivered on time. Any order which took more than 2 days were mostly late.**

Actionable Strategy to reduce late deliveries:-

The company should push for shipping the standard class orders within or before 4 days from the time the order was placed so that the number of late deliveries will be almost to none and similarly for the second class orders, it should push for shipping the orders within or before 2 days.

ACTIONABLE INSIGHT 3

Risk of Late Delivery by Order Placed Time

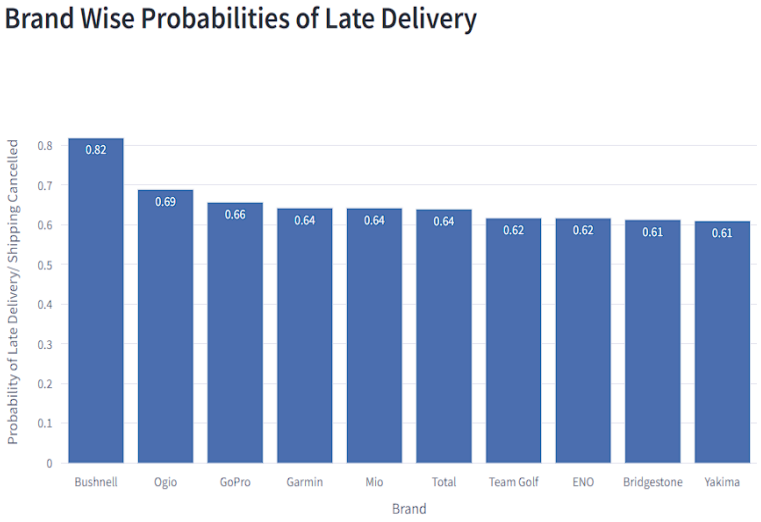
The graph displays the relationship between the **hour an order is placed** and **the risk of it being delivered late**. The **red dashed line represents the average risk of late delivery across all hours**. The graph fluctuates above and below this average, indicating that the risk of late delivery is not constant throughout the day. Notably, there is a significant peak in late delivery risk for orders placed around the 12th hour (12 PM), suggesting a **correlation between orders after noon and increased risk of late delivery**. Conversely, the risk tends to dip below the average during early hours.

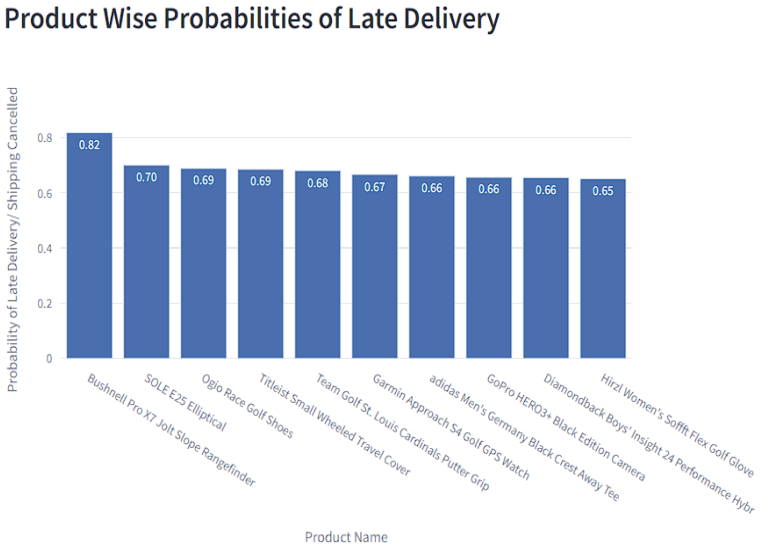
There is observed an increase of late delivery risk by an average of 10% for orders placed after noon as compared to the orders placed before noon and the sudden spike at noon accounts for a 16% increase in the number of late orders.

Actionable Strategy:

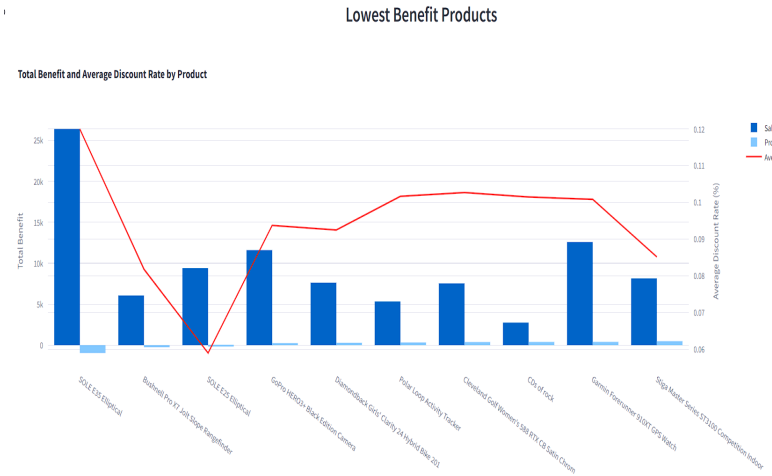
This pattern can inform the logistics department about potential strain in the delivery system at specific times, which may benefit from process optimization or resource reallocation. Also, orders placed after noon should be estimated a shipping date of somepoint later as compared to the other orders that were placed before noon.

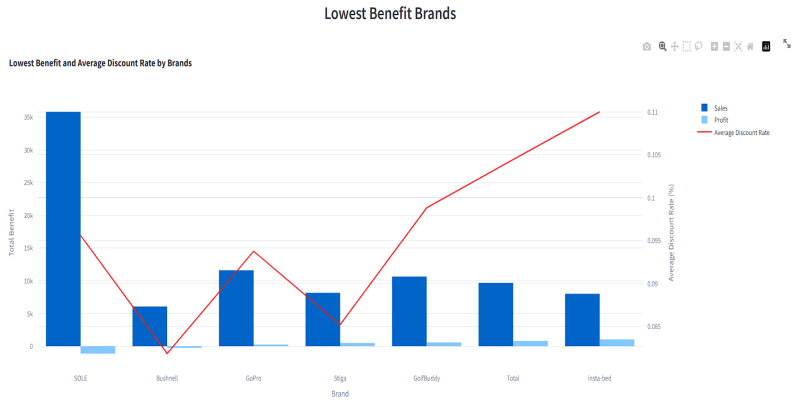
ACTIONABLE INSIGHT 4





The bar charts detail the probabilities of late delivery by brand and by individual product. The brand chart shows **Bushnell with the highest likelihood of late delivery at 0.82, indicating potential supply chain issues specific to this brand**. Other brands, such as **Ogio and GoPro, also have high probabilities of late delivery, at 0.69 and 0.66 respectively.** The product-specific chart reveals that the **Bushnell PRO X7 Jolt Slope Rangefinder shares the same highest probability of late delivery as its brand at 0.82,** while other products such as the **SOLE E25 Elliptical and Ogio Race Golf Shoes also have significant late delivery probabilities**. In contrast, products like the Hirzl Women's Soffft Flex Golf Glove have a relatively lower probability at 0.65. **These charts provide critical data that can help identify which brands and products require logistic improvements to mitigate the risk of late deliveries.**





It can be observed that **there exists a correlation between the Profit and the Probability of late delivery of a product** as most of the brands and products that are having the lowest benefit ratio also happen to be the ones who have very high probability of late delivery.

Actionable Strategy:

The routes and operations of shipping for these brands and products must be investigated in detail to understand why there exists such a relationship and why they have such high probability of being delivered late. It also opens a new domain to look into i.e. the pre processing of products from the manufacturer to Dataco.

ACTIONABLE INSIGHT 5

PRODUCTS WITH HIGH PROFIT MARGIN %.

	Category Name	Product Name	Benefit per order	Order Item Discount Rate	Product Price	count	Profit % per order
4	Kids' Golf Clubs	Polar FT4 Heart Rate Monitor	57.947500	0.077167	[89.98999786]	196	[64.3932669255094]
8	Soccer	Elevation Training Mask 2.0	44.588784	0.098649	[79.98999786]	231	[55.7429487513563]
10	Golf Gloves	Bag Boy M330 Push Cart	43.030580	0.103623	[79.98999786]	208	[53.79495120813335]
7	Hunting & Shooting	The North Face Women's Recon Backpack	49.189473	0.111404	[99.0]	181	[49.68633642153111]
67	Golf Gloves	Bag Boy Beverage Holder	11.375556	0.099785	[24.98999977]	845	[45.52043092849269]
28	Baseball & Softball	adidas Men's F10 Messi TRX FG Soccer Cleat	26.928098	0.107443	[59.99000168]	939	[44.887644123133704]
14	Boxing & MMA	Brooks Women's Ghost 6 Running Shoe	39.497727	0.114697	[89.98999786]	212	[43.891241561200225]
89	Golf Balls	Glove It Women's Mod Oval Golf Glove	8.687978	0.106606	[19.98999977]	802	[43.46162307074836]
38	Electronics	Titleist Pro V1x High Numbers Personalized Go	21.800948	0.098725	[51.99000168]	908	[41.93296190082451]
74	Accessories	Team Golf Pittsburgh Steelers Putter Grip	10.303491	0.108373	[24.98999977]	887	[41.23045854471777]

The table provides a detailed breakdown of sales data across various product categories, highlighting the benefit per order, order item discount rate, product price, count of items sold, and profit percentage per order. Products like the **'Polar FT4 Heart Rate Monitor' in the Kids' Golf Clubs category exhibit the highest benefit per order at approximately 57.95, with a relatively low discount rate, resulting in a high profit per order of nearly 64.34%**. Meanwhile, **items like the 'Bag Boy Beverage Holder' in Golf Gloves show a lower benefit per order but have a high sales count, suggesting volume sales are compensating for lower margins**. The data underscores the varied performance across categories and products, offering insights for targeted sales strategies and inventory management.

PRODUCTS WITH LEAST PROFIT MARGIN %

	Category Name	Product Name	Benefit per order	Order Item Discount Rate	Product Price	count	Profit % per order
46	Hockey	Stiga Master Series ST3100 Competition Indoor	17.751112	0.085185	[329.9899902]	27	[5.379287927508418]
82	Kids' Golf Clubs	GolfBuddy VT3 GPS Watch	9.644407	0.098814	[199.9900055]	59	[4.822444465131458]
81	Men's Clothing	Men's gala suit	9.644423	0.102692	[210.8500061]	208	[4.574068129412597]
105	Golf Apparel	Cleveland Golf Women's 588 RTX CB Satin Chrom	5.294429	0.102714	[119.9899979]	70	[4.412391656450129]
76	Basketball	Diamondback Girls' Clarity 24 Hybrid Bike 201	10.157857	0.092500	[299.9899902]	28	[3.386065396767552]
69	Kids' Golf Clubs	Garmin Forerunner 910XT GPS Watch	11.175143	0.100857	[399.9899902]	35	[2.7938555550526227]
93	Strength Training	GoPro HERO3+ Black Edition Camera	7.675939	0.093750	[399.9899902]	32	[1.9190327971877945]
115	Basketball	SOLE E25 Elliptical	-16.956000	0.059000	[999.9899902]	10	[-1.6956169437864856]
117	Strength Training	SOLE E35 Elliptical	-64.341331	0.120000	[1999.98999]	15	[-3.2170826620320567]
116	Kids' Golf Clubs	Bushnell Pro X7 Jolt Slope Rangefinder	-23.268182	0.081818	[599.9899902]	11	[-3.8780950425020166]

Notably, the 'Stiga Master Series ST3100 Competition Indoor' in the Hockey category still shows a positive profit percentage per order of approximately 5.38%, with a moderate benefit per order. In stark contrast, the 'SOLE E35 Elliptical' in Strength Training indicates a significant negative benefit per order and a consequent negative profit percentage, suggesting a loss on each order. Items like the 'Bushnell Pro X7 Jolt Slope Rangefinder' also show a negative benefit per order, potentially due to high discount rates or low sales volume. **This information is pivotal for evaluating product performance, optimizing pricing strategies, and assessing the impact of discounts on overall profitability.**

Actionable Strategy:

Products with higher profit margin can be pushed more into the market by advertisements, offers and discounts to improve the sales and on the other hand for products which are generating losses, they should either be removed from the product base or there should be adjustments with the discount rates to make then profitable.

SUMMARY

In conclusion, this report synthesizes key insights and actionable strategies derived from an extensive data analysis. A recurring theme is the challenge of late deliveries, notably within First Class and Second Class shipping options, suggesting the need for an overhaul of logistics strategies. The report recommends prioritizing shipping standard class orders within four days, first class orders within one day and second class orders within two days to mitigate delays. Analysis of order placement times reveals that orders made after noon carry a higher risk of late delivery, guiding the logistics team to reallocate resources and adjust delivery estimates accordingly. Furthermore, certain brands and products with high late delivery probabilities, such as Bushnell and SOLE Elliptical products, demand an in-depth review of their supply chain processes. The report highlights products that command high profit margins and suggests leveraging marketing efforts to amplify sales, while advising a reevaluation of discount strategies or potential discontinuation of loss-making products. Overall, the insights aim to streamline operations, enhance customer trust, and bolster the profitability of the business.