investigation on correlation between discount and deficit for Unicorn operations in the USA from 2015 to 2018

Introduction

Our data analytics team (Nadiya Zahn and Bertrand Flanet) conducted an exhaustive examination of Unicorn company's performance and operations across all states and cities in the USA from 2015 to 2018. Through rigorous analysis, significant correlations emerged between the company's profit or deficit and the discounts offered across different states. Notably, these correlations highlighted a consistent trend of negative profit (loss) in certain states, coinciding with higher discount rates offered to our clients within those states.

Data Insights

The data analysis began with an attentive examination of the difference in profit and deficit across various states, leading to a particular focus on those experiencing deficits. The primary goal of our exploration was to define the correlation between the company's profit or deficit and the discounts extended.

Our analysis delved into the correlation between discounts and deficits (negative profit) at various levels, including state, city, subcategory, and product levels. The noteworthy discovery was made regarding the discrepancy in proposed discounts between states with deficits and those generating profits. Remarkably, the proposed discounts for states in deficit were consistently higher compared to those for profitable states.

Furthermore, this pattern remained consistent throughout the entire duration of the dataset (2015-2018), indicating a persistent trend over the years. Upon closer examination of states in deficit, we observed significant variations in profit or deficit at the city level (refer to Figure below) and at the subcategory level.
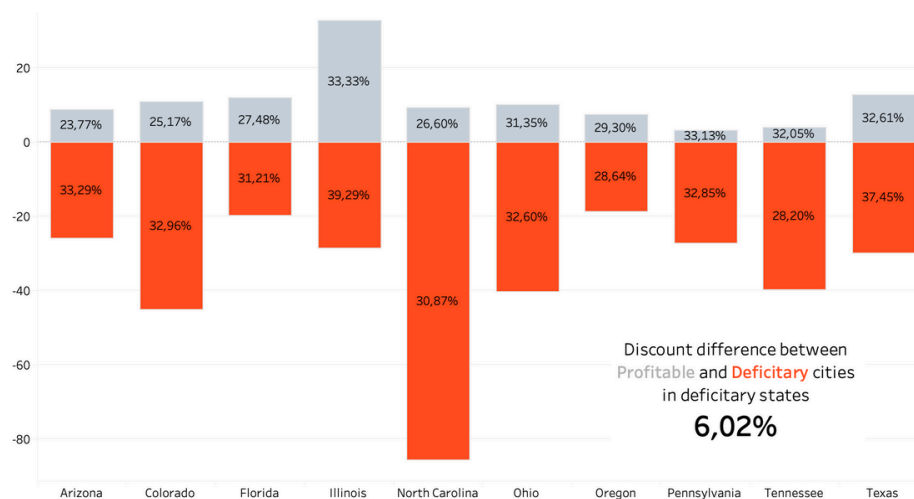
Conclusion and Recommendations

Throughout our analysis, a clear correlation between discounts and deficits has emerged. This correlation is evident at the state, city, and product subcategory levels. It has become apparent that this correlation significantly contributes to Unicorn's underperformance in states experiencing deficits. Consequently, we strongly recommend a comprehensive investigation into the management of discount policies. It is imperative to note that while our analysis has identified a correlation, it has not definitively categorized the causative factors driving this relationship.

Meanwhile, we have provided a hands-on solution to urgently answer Unicorn dramatic deficits at various levels. Our dashboard displays the necessary discounts that should be offered at state, city, product category, and product levels to generate profits and re-establish a positive balance in the categories at a loss.

Moreover, it is noteworthy that despite deficits, certain cities have exhibited positive sales. Therefore, further exploration into the potential role of discounts in facilitating these sales, as well as an examination of factors that enhance their effectiveness is required. This may include evaluating the duration of discount eligibility and considering the socio-economic and demographic profiles of the targeted populations.