

Scenario

Data of U.S. Superstore had been collected from January 1, 2015 to December 31, 2018. From observing profit in by region and year, profit in year 2018 dramatically drops from year 2017 in **Central** and **South** region. As we all know, decreasing in profit is a big issue in marketing of Superstore. To find causes, some factors were found and they were correlated to this problem.

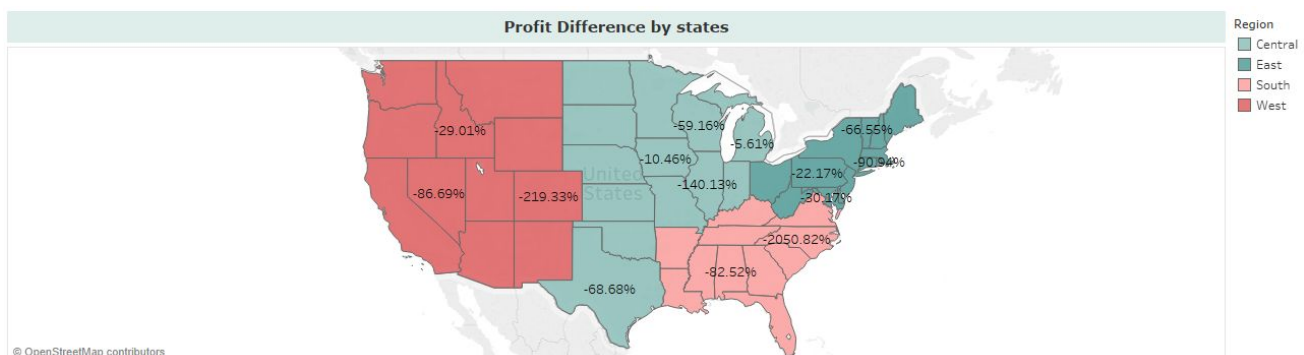
Story

Reduction of profit in **Central** and **South** region was obviously caused by several factors. **Percentage of profit difference** (in dashboard, called 'profit difference') from 2017 to 2018 is one of significant measures which related to causing factors.

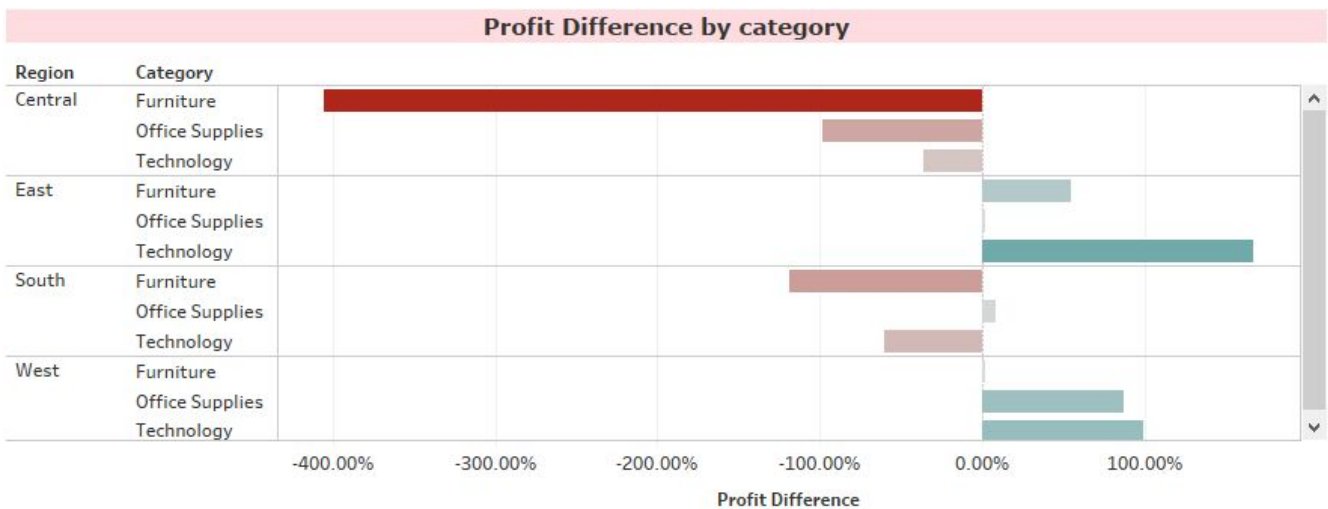
Profit Difference from 2017 to 2018 in regions	
Central	-62.05%
East	64.98%
South	-50.01%
West	82.15%

(a) Table of Profit Difference from 2017 to 2018 in US regions

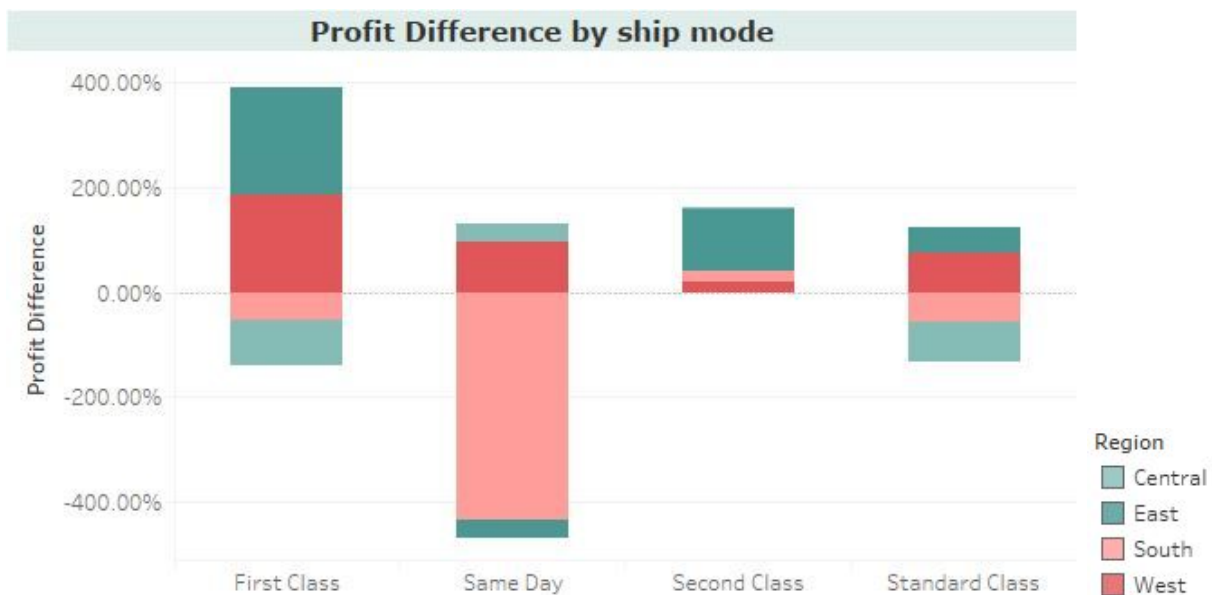
As you can see from table (a), **Central** and **South** region were appeared with **negative percentage of profit difference**. If they were negative in tiny percentage or positive in percentage, they would not be a problem to us. However, they were negative in a big number of percentage (less than -50%). Clearly, they are our problem.



(b) Profit Difference from 2017 to 2018 in US states



(c) Profit Difference from 2017 to 2018 in US states



(d) Profit Difference from 2017 to 2018 in US states

From image (b), (c) and (d), these are 3 important factors correlated to dropping percentage of profit: state, category of product and ship mode of order. For more explanation, they will be explained below.

- By State (b): there are 6 states having negative in percent of profit difference in **Central**, and 5 states in **South**. While 4 states in **West** and 5 states in **East**. This seems not important but those states in **Central** and **South** are mostly negative in high percentage (less than -50%).
- By Category (c): Percent of profit difference for **Furniture** and **Technology** in **Central** and **South** are **greatly negative**. While, percent of profit difference for every category of product are positive in **West** and **East**

- By Ship Mode (d): In **Central** and **South**, percent of profit difference are **negatively high** in both **First Class** and **Standard Class**.