Identifying the effect of COVID-19 on the number of fast-food chain restaurant franchises in the USA

GB 760

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Business Research Question

WHAT HAS BEEN THE EFFECT OF THE COVID-19 PANDEMIC ON THE GROWTH AND DISTRIBUTION OF FAST-FOOD CHAIN RESTAURANT FRANCHISES ACROSS VARIOUS U.S. STATES?

INVESTIGATE BOTH THE EXPANSION AND CONTRACTION OF FRANCHISES IN DIFFERENT US STATES

ANALYZING THE CHANGE IN FAST-FOOD CHAINS UNITS POST COVID-19 BY STAR RATINGS AND REVIEW COUNTS

Hypotheses

Following the COVID-19 pandemic, the franchise count of the top 50 chain restaurants in the USA will decline, with certain states experiencing a more pronounced reduction

Fast food chains with higher star rating and review counts will see an increase in number of units after 2020

Steps followed

Data collection

Data cleaning

SQL Queries

Data Visualization

Analysis

SQL Analysis

Primary Data: (Source – Yelp)

Yelp Academic Business: (150347 X 12)

Yelp Academic Category: (668593 X 3)

Secondary Data: (Source – Kaggle)

Top 50 Fast Food Chain Restaurants in US (51 X 7)

Focuses on Franchise count for individual Fast-Food Chains and their Sales Data in US

Final Data set: (1001 X 14)

SQL Joins

We have performed 2 inner joins among Top 50 fast-food data, Business and Category tables.

First Join: (Top_50 fast-food data and Business)

Unique Identifier (PK, FK): Name

Second Join (First join result and Category)

Unique Identifier (PK, FK): Business ID

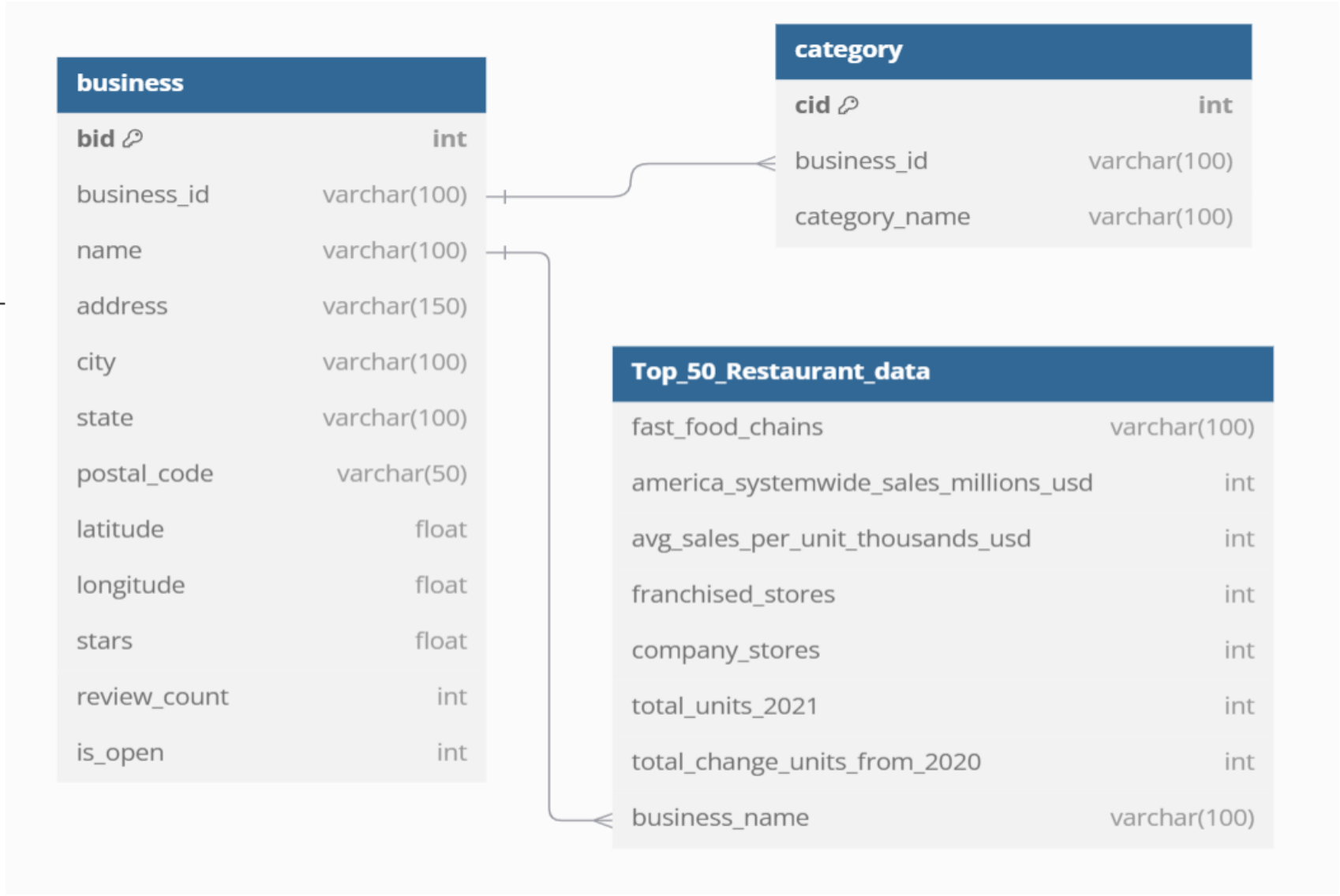
Our final dataset primarily focusses on

31 fast food chains

13 US States

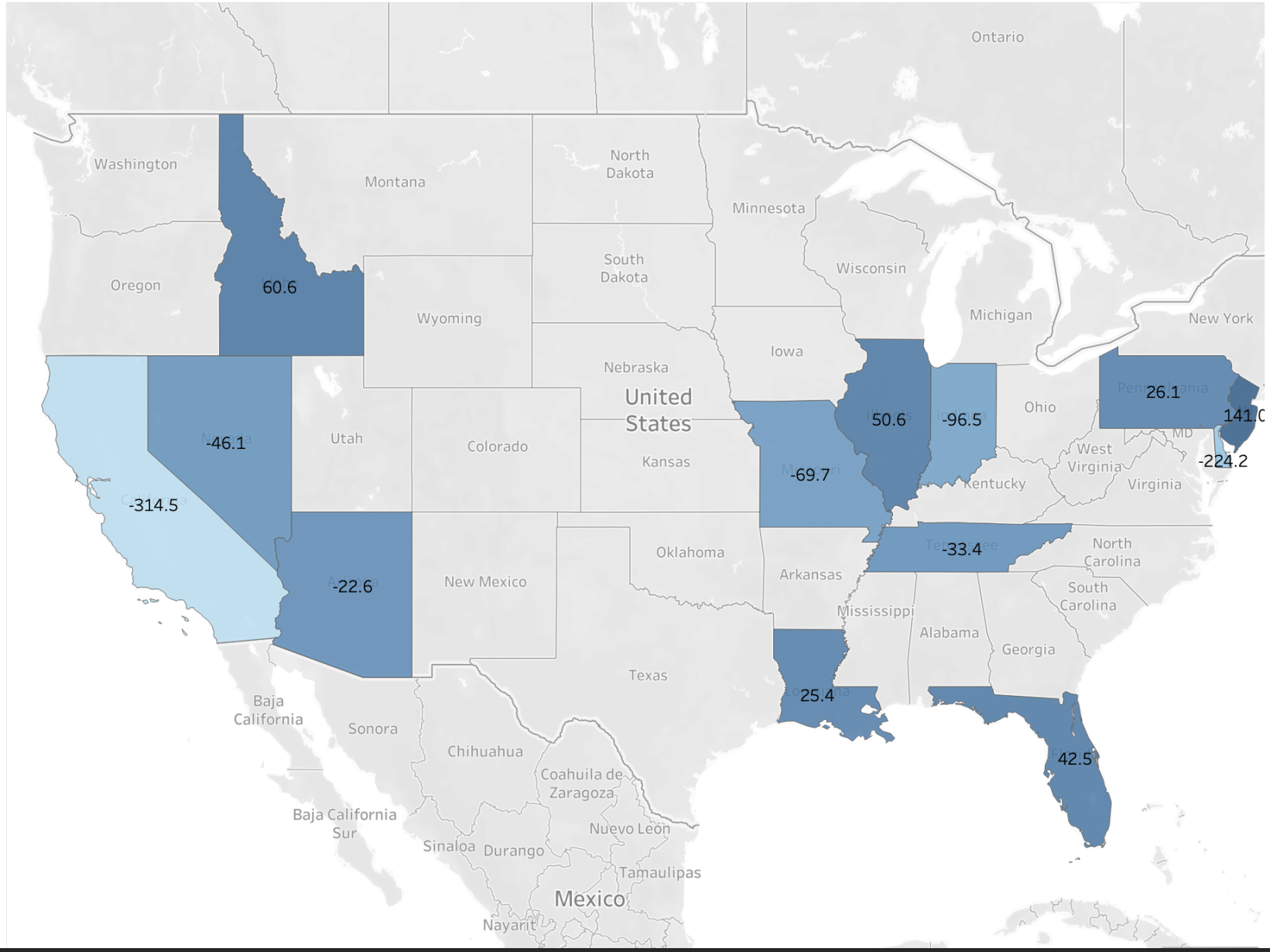
Star ratings and review counts for all 31 fast food chains

ERD


business
bid int
business_id varchar(100)
name varchar(100)
address varchar(150)
city varchar(100)
state varchar(100)
postal_code varchar(50)
latitude float
longitude float
stars float
review_count int
is_open int
category
cid int
business_id varchar(100)
category_name varchar(100)
Top_50_Restaurant_data
fast_food_chains varchar(100)
america_systemwide_sales_millions_usd int
avg_sales_per_unit_thousands_usd int
franchised_stores int
company_stores int
total_units_2021 int
total_change_units_from_2020 int
business_name varchar(100)

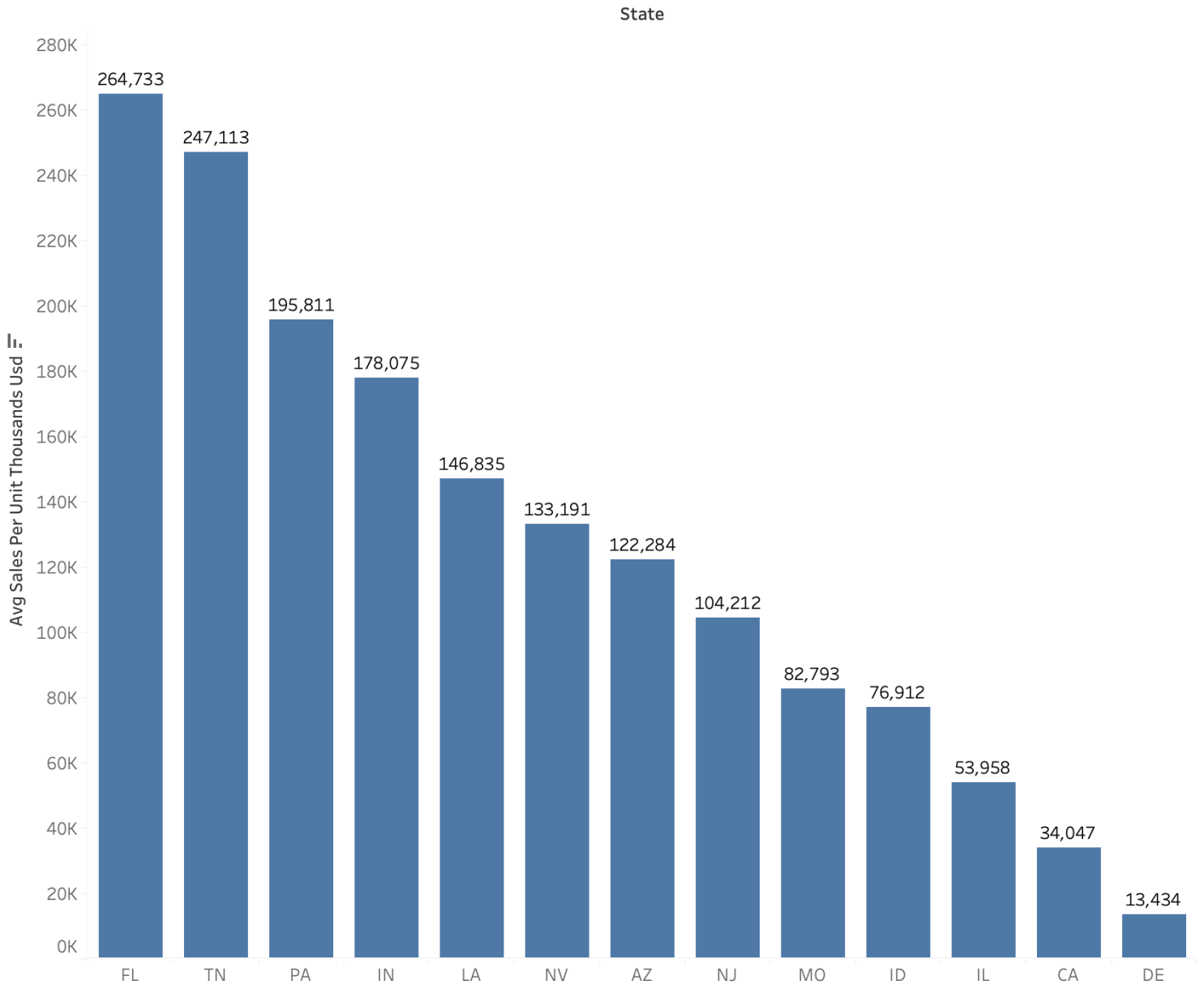
Change in Units of Food Chains in US States

- Some states have seen a surge in units after COVID-19 and others decline
- California, Delaware, Indiana, Nevada, Missouri, Tennessee, Arizona are the ones that witnessed heavy declines
- New Jersey, Idaho, Illinois, Florida, Pennsylvania, and Louisiana witnessed an increase



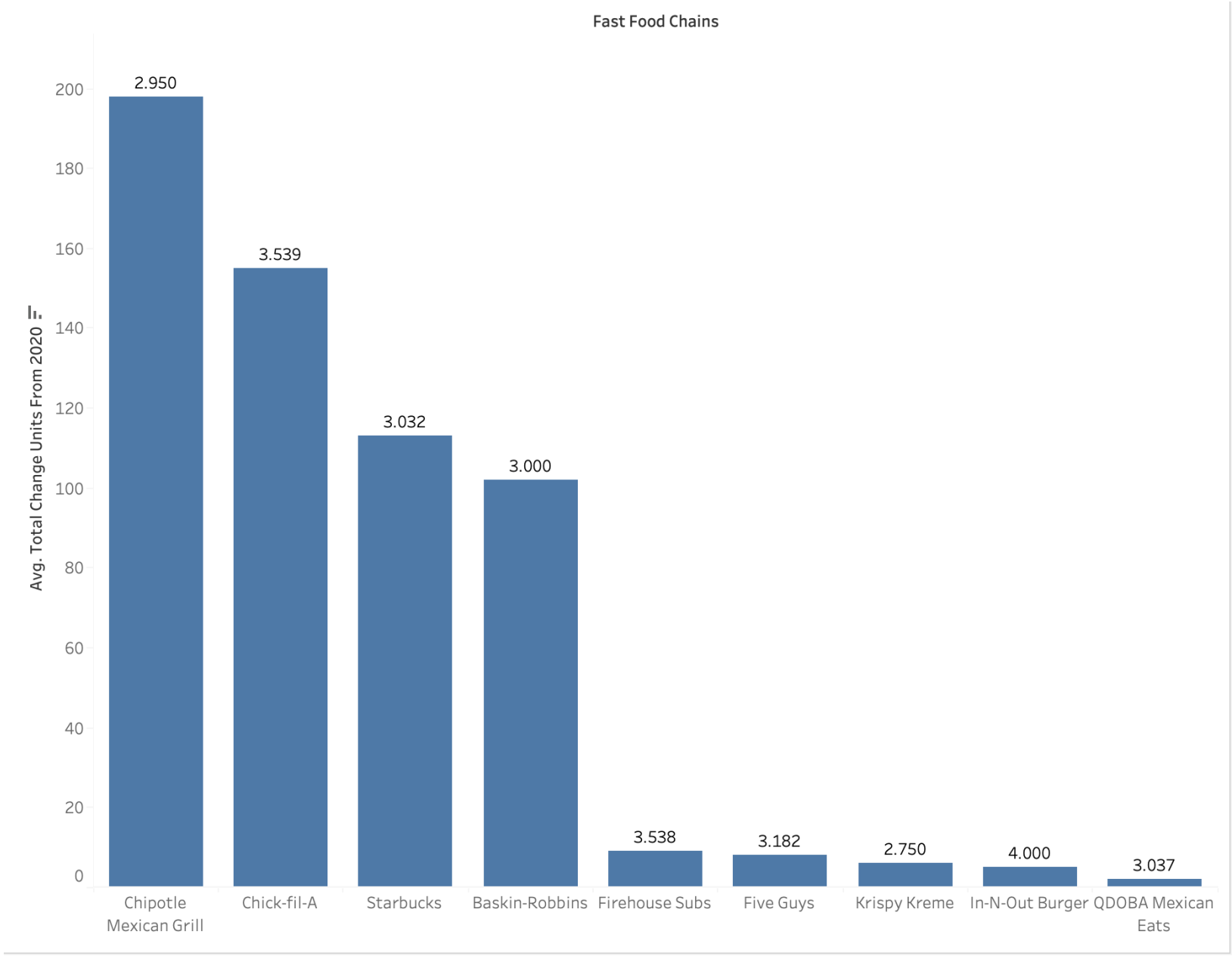
Average Sales of Food Chains in US States in 2020

- California witnessed highest decline in fast food chains after 2020 and thus a low revenue
- Florida witnessed an increase in the units of fast food chains after 2020 and thus a high revenue



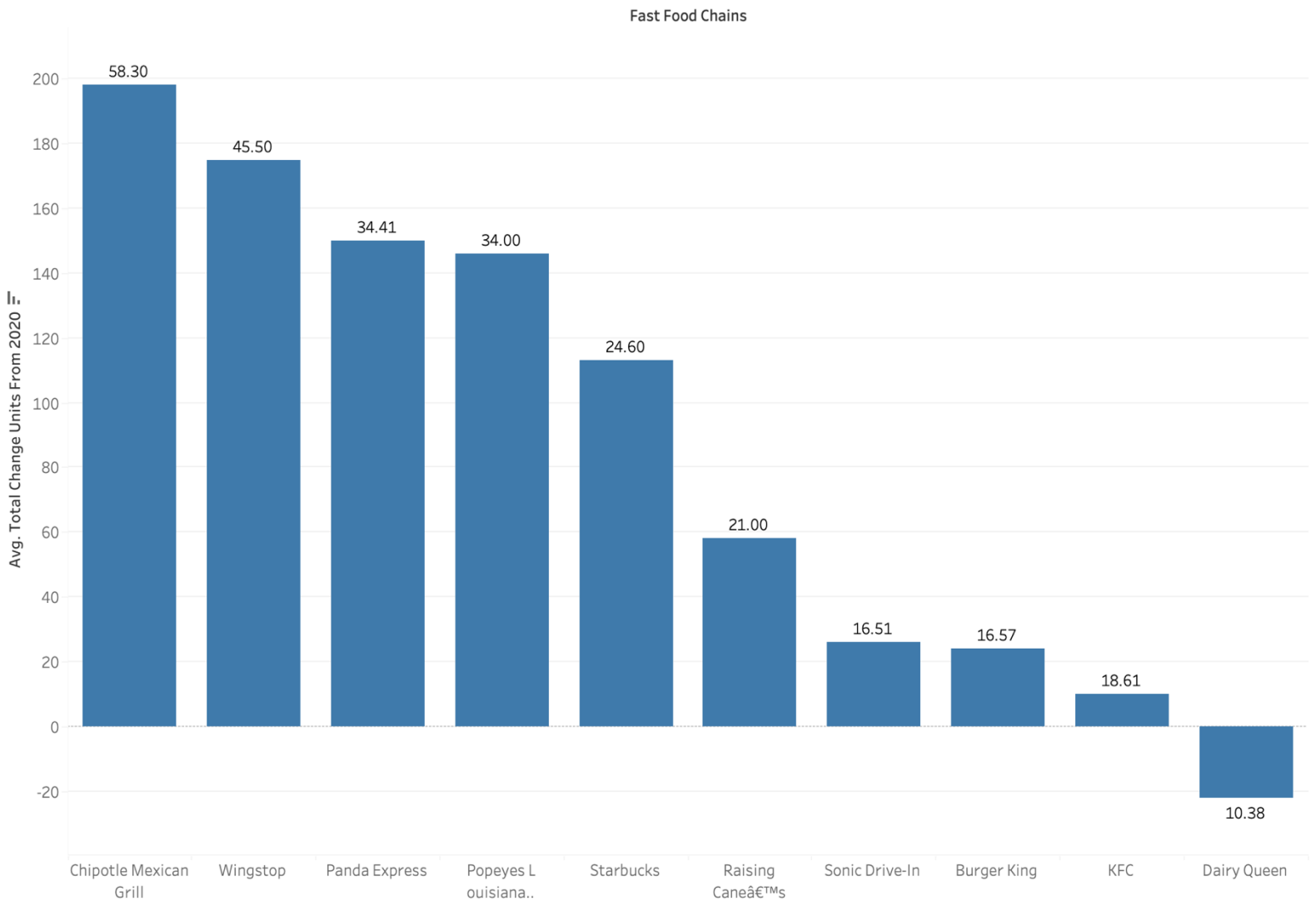
Changes in Units of Food Chains by Average Star Ratings

- Ratings are in range from 2.5-4.0 stars
- For high average star ratings there is an increase in fast food chains in US



Changes in Units of Food Chains by Average Review Counts

- Average of review counts is used for a food chain across all 13 US States
- For high review counts there is an increase in the units of fast food chains in the US



Change in Units for the Top 10 Food Chains with the Highest Total Units

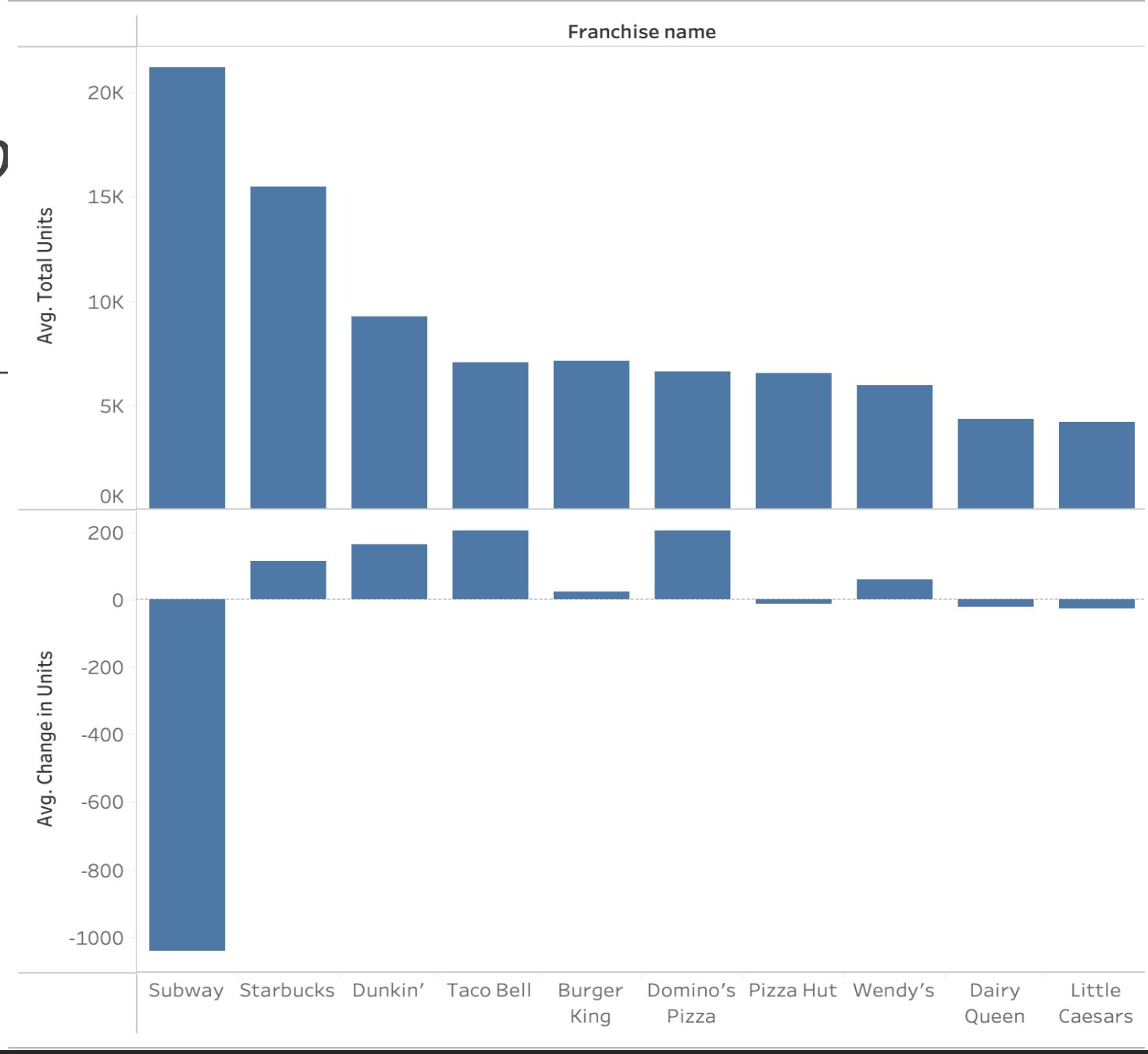
Overall Positive Growth Across All Franchises

Minimal Impact on Subway's Unit Count

Despite a decrease of 1,043 units, Subway's total units remain largely unaffected.

Stable Performance Among Top Franchises

No significant impact of COVID observed on franchises with the highest total units

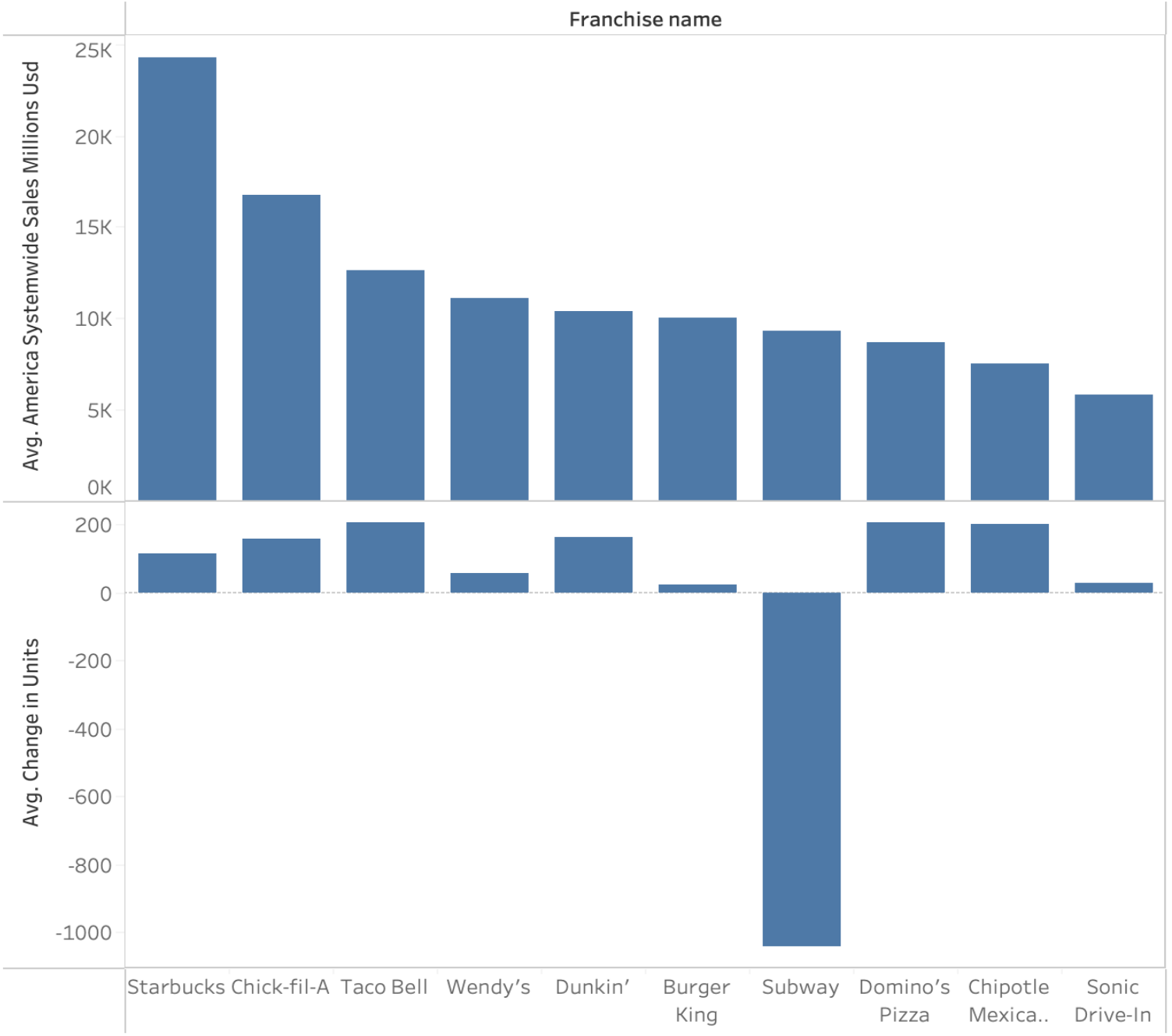


Change in Units for the Food Chain with the Highest Total Systemwide Sales

All franchises have shown a positive trend in performance apart from Subway.

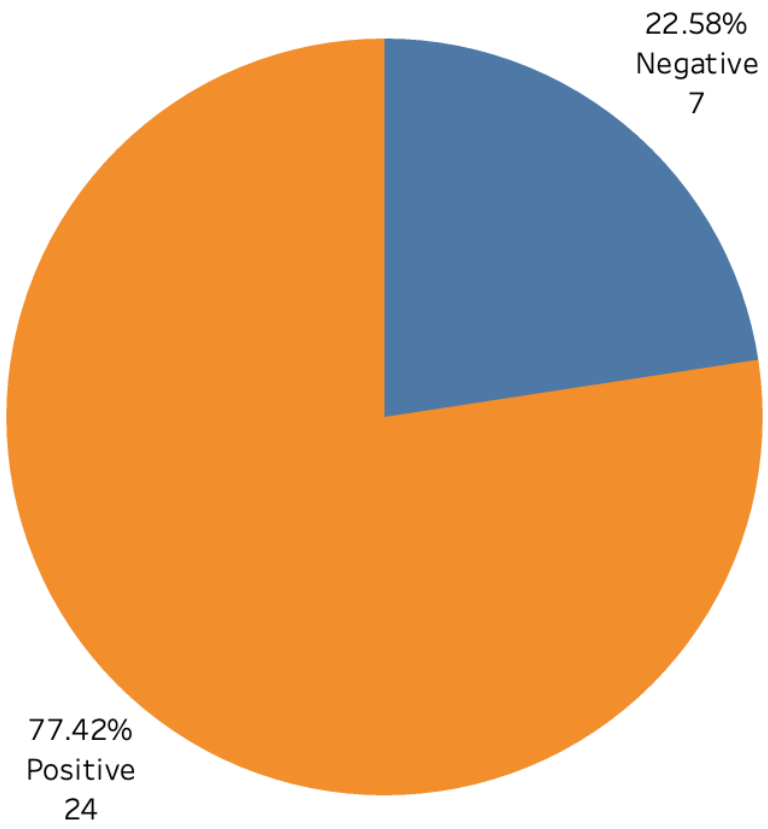
Stable Performance Among Top Franchises

No significant impact of COVID observed on franchises with the highest system wide sale in USA.



% of Food chains with Positive and Negative change of units

1. Out of 31 food chains, 7 experienced a total decrease of 1,160 units, with 1,043 units coming from Subway alone.
2. The other 24 food chains contributed a combined increase of 1,851 units.



Conclusion

- US States like California, Delaware, and Indiana experienced highest decline in fast food chain units.
- The number of Fast-Food units increased for restaurants with higher average star ratings after COVID-19.
- Restaurants with the highest total units and system-wide sales in the USA were less impacted by COVID-19.
- Only 7 fast food chains were impacted negatively by COVID-19.

Questions?