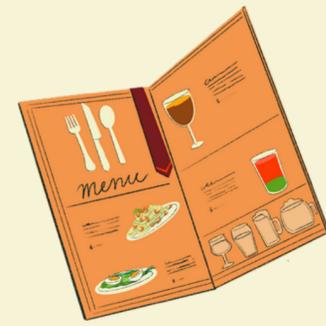


ANALYZING THE CHANGES IN MENU PRICES IN RELATION TO SUPPLY SHOCKS AND CONSUMER BEHAVIORS ON ITALIAN EATERIES IN TORONTO



INTRODUCTION AND OBJECTIVE:

The purpose is to analyze whether menu price changes have a correlation to consumer behaviors in Italian eateries by investigating open and closed restaurants and whether the restaurants' operating status correlates with menu price changes during the years 2020 - 2022

HYPOTHESIS TESTING:

Hypothesis testing on the difference in the percentage of restaurants raising menu prices after 2020 across the two restaurant categories: currently open, closed permanently

Null hypothesis: There is no difference in the percentage of restaurants raising menu prices after 2020 across the two restaurant categories: currently open, closed permanently

Alternative hypothesis: There is a difference in the percentage of restaurants raising menu prices after 2020 across the two restaurant categories: currently open, closed permanently

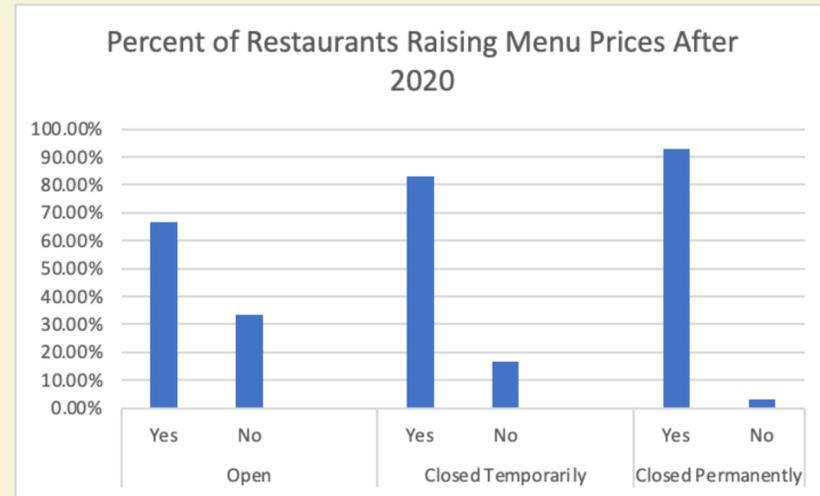
Through generating a bootstrapping sample of 1000 restaurants, the test results in a p-value of 0.02. With an alpha significance level of 0.05, the null hypothesis is rejected, concluding that there is a difference in the percentage of restaurants raising menu prices after 2020 across the two restaurant categories: currently open, closed permanently

FINDINGS:

Through analyzing the change in menu prices in Italian restaurants that are currently open, closed temporarily, and closed permanently, the highest percentage of restaurants that raised menu prices after the year 2020 is observed in the closed permanently category and the lowest percentage is observed in the currently open category.

The analysis concludes that there is a correlation between restaurants' operating status and menu price changes during the years 2020 - 2022. While this correlation does not imply causation, it is a potential insight indicating that the increases in menu prices may have been an underlying factor that potentially upset consumers and resulted in the decrease in consumer base for certain restaurants, contributing to the restaurants' closure.

MENU PRICE CHANGES



RAW MATERIAL USAGE: WHOLE WHEAT VS. PLAIN WHITE FLOUR

Italian restaurant closures in downtown Toronto may also correlate with the restaurants' use of whole wheat flour rather than plain white flour. During the years 2020-2022, there have been 15% reduction in the consumption of whole wheat flour while only a 7% reduction in the consumption of white flour (Korea JoongAng Daily, 2022).

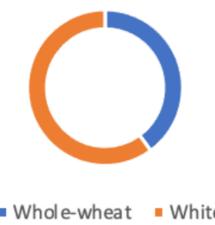
Such decreases in demand are linked to whole wheat flour supply shocks during the pandemic where its import costs increased by 21.8% (AHDB, 2020). With flour prices increasing by 10.3% year on year, whole wheat flour prices are increasing by a larger amount (AHDB, 2020). The more drastic price fluctuations of whole wheat flour compared to plain white flour causes Italian restaurants that use a higher percentage of whole wheat flour in their recipes to be more prone to closure. Research has shown that the challenges in the food supply chain during the pandemic including "the movement restrictions of workers, changes in demand of consumers, closure of food production facilities, and restricted food trade policies" have raised considerable concern to restaurants, and such financial pressures in the food supply chain can potentially cause damage to restaurants who rely heavily on influenced raw materials (Food Quality and Safety, 2020).



Currently Open Italian Restaurants' Use of Flour



Closed Temporarily Italian Restaurants' Use of Flour



Closed Permanently Italian Restaurants' Use of Flour



LEGEND

Outer Ring: Closed Permanently
Middle Ring: Closed Temporarily
Inner Ring: Currently Open



Italian Restaurants' Use of Flour



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