

FINAL PROJECT

# **IMPACT OF COVID-19 ON ABC COMPANY'S PARCEL DELIVERY BUSINESS**

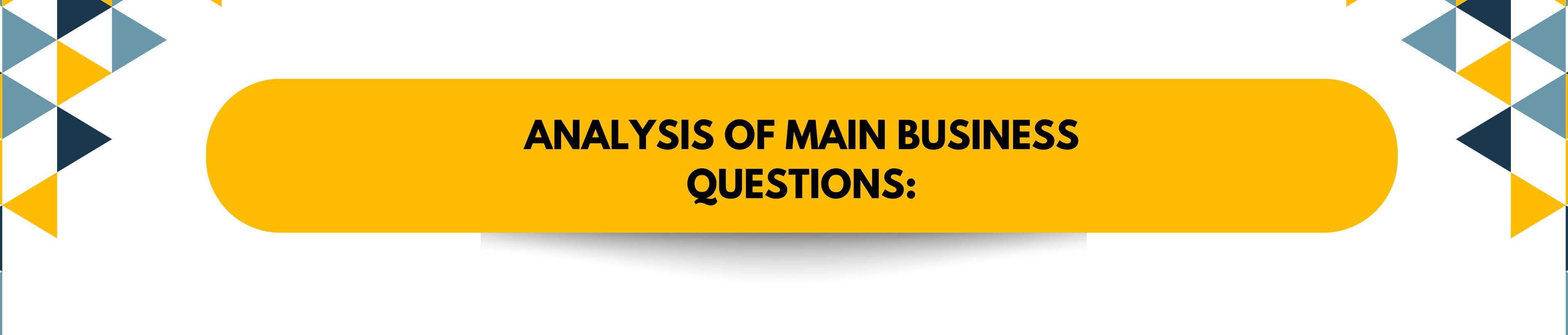
**Sub: Programming for Data  
Science**

# INTRODUCTION

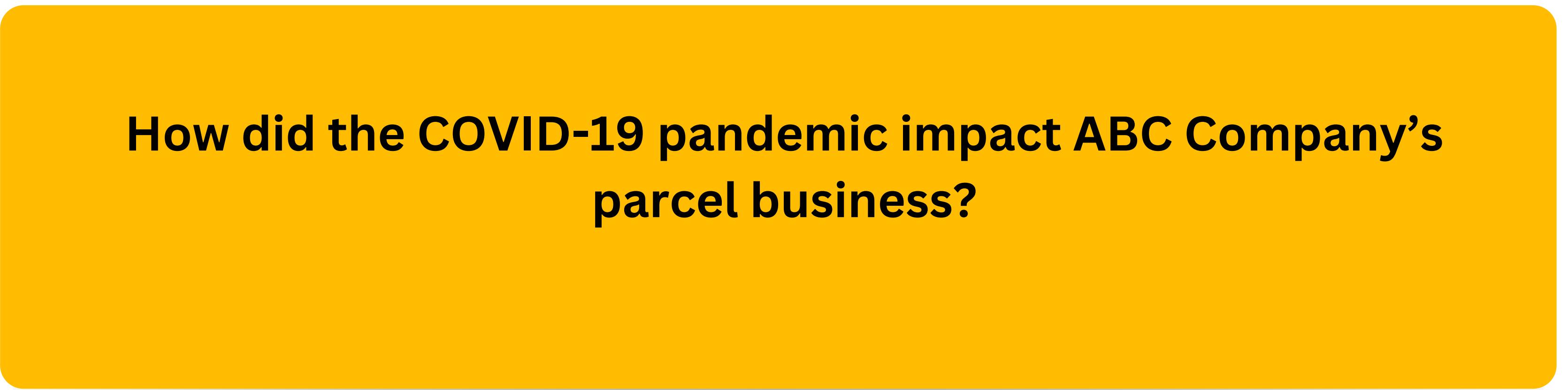
The COVID-19 pandemic has affected businesses in Canada differently. Some have thrived due to increased online shopping, while others have struggled. ABC Company, operating in parcel delivery, serves clients from various sectors, each facing unique challenges during the pandemic.

In this presentation, we'll explore how COVID-19 has impacted ABC Company's parcel delivery business, helping us understand the changes and make informed decisions.



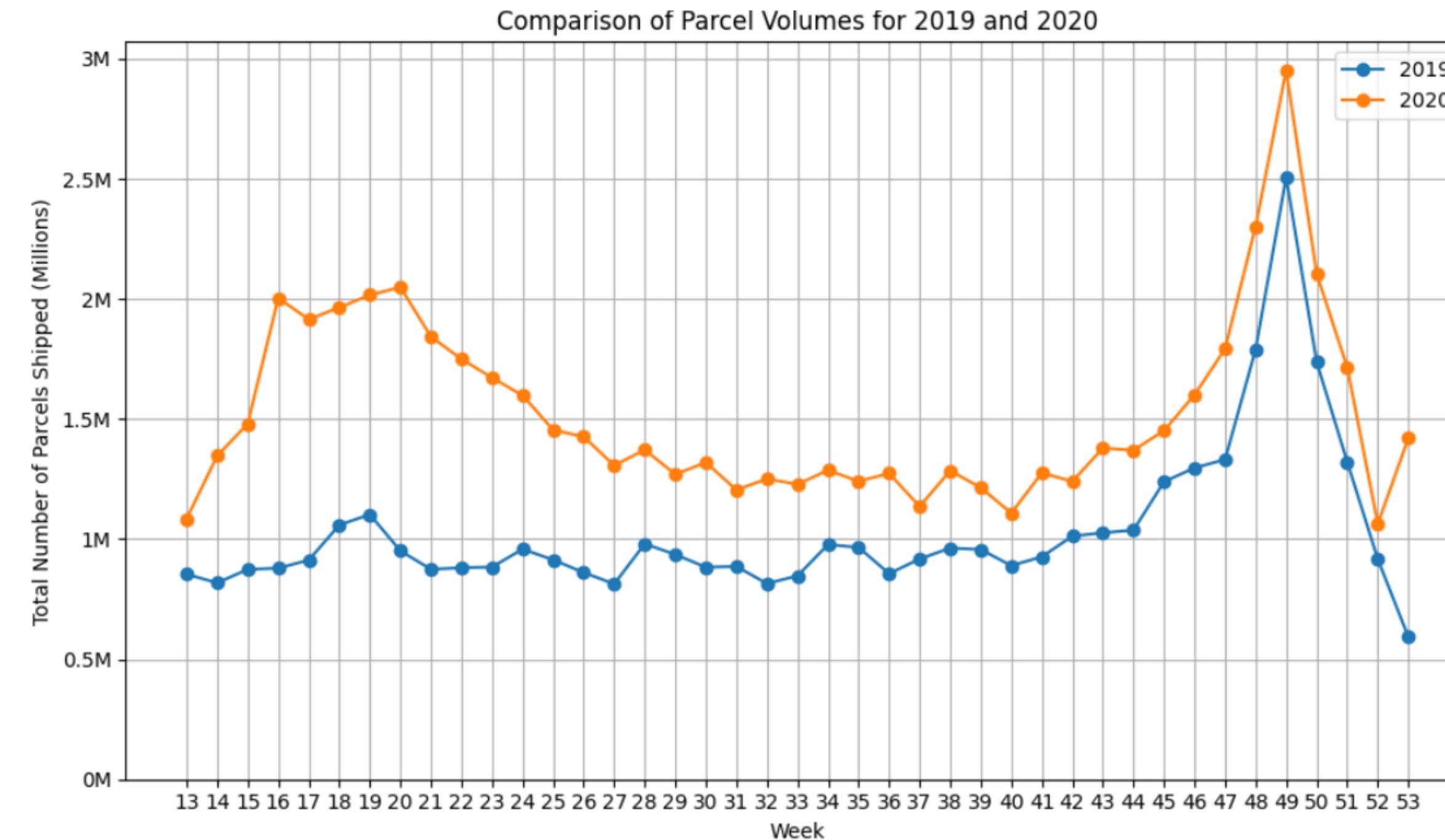


## **ANALYSIS OF MAIN BUSINESS QUESTIONS:**



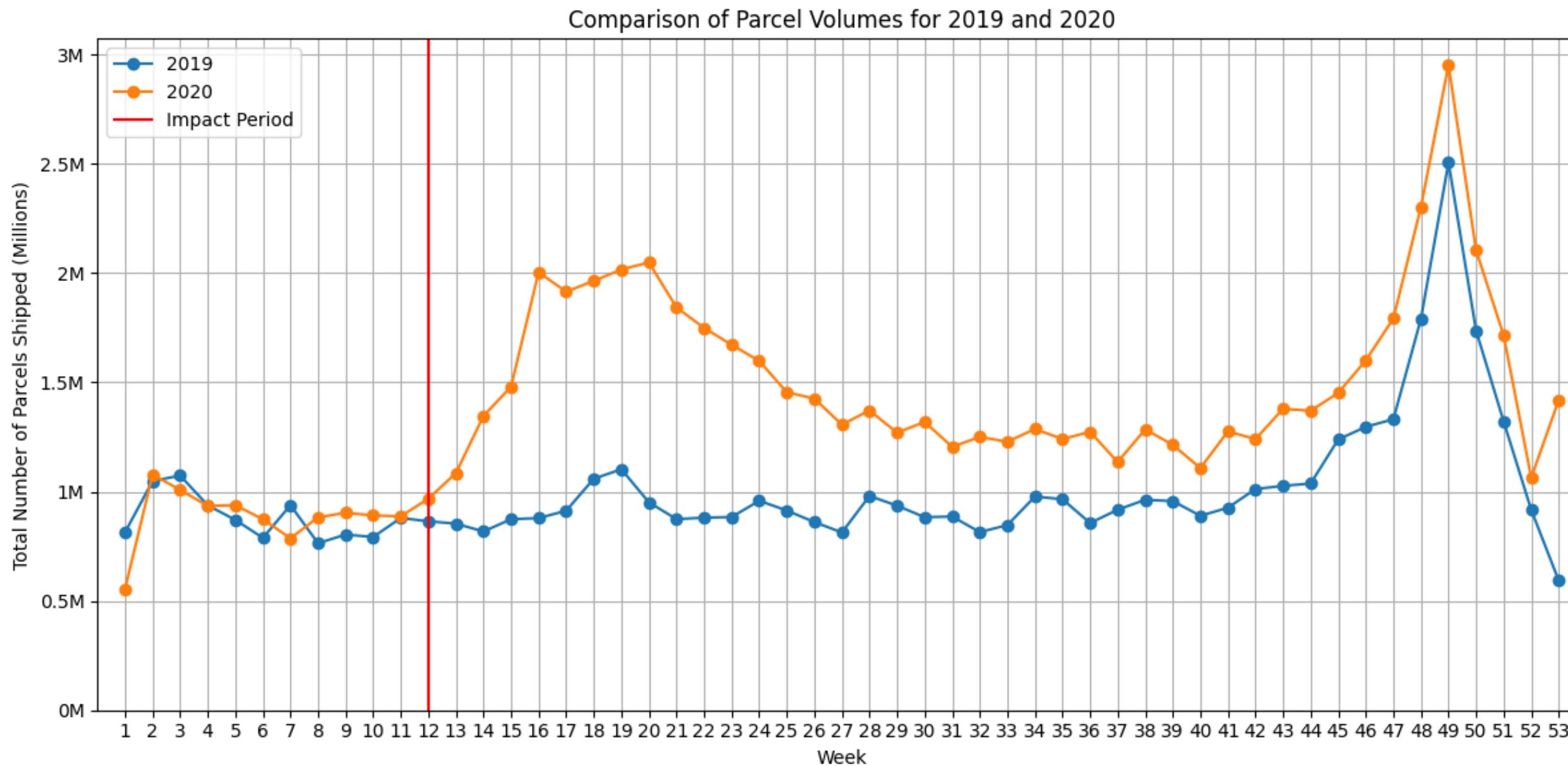
**How did the COVID-19 pandemic impact ABC Company's  
parcel business?**

# IMPACT OF THE SHIPMENTS VOLUME:



In 2020, there was a noticeable change in the pattern of parcel shipments, with a substantial increase in shipment volumes during certain periods of the year. This surge in parcel shipments aligns closely with the timing of lockdowns and restrictions imposed due to the pandemic, indicating a surge in demand for parcel delivery services as consumers turned to online shopping and remote work arrangements.

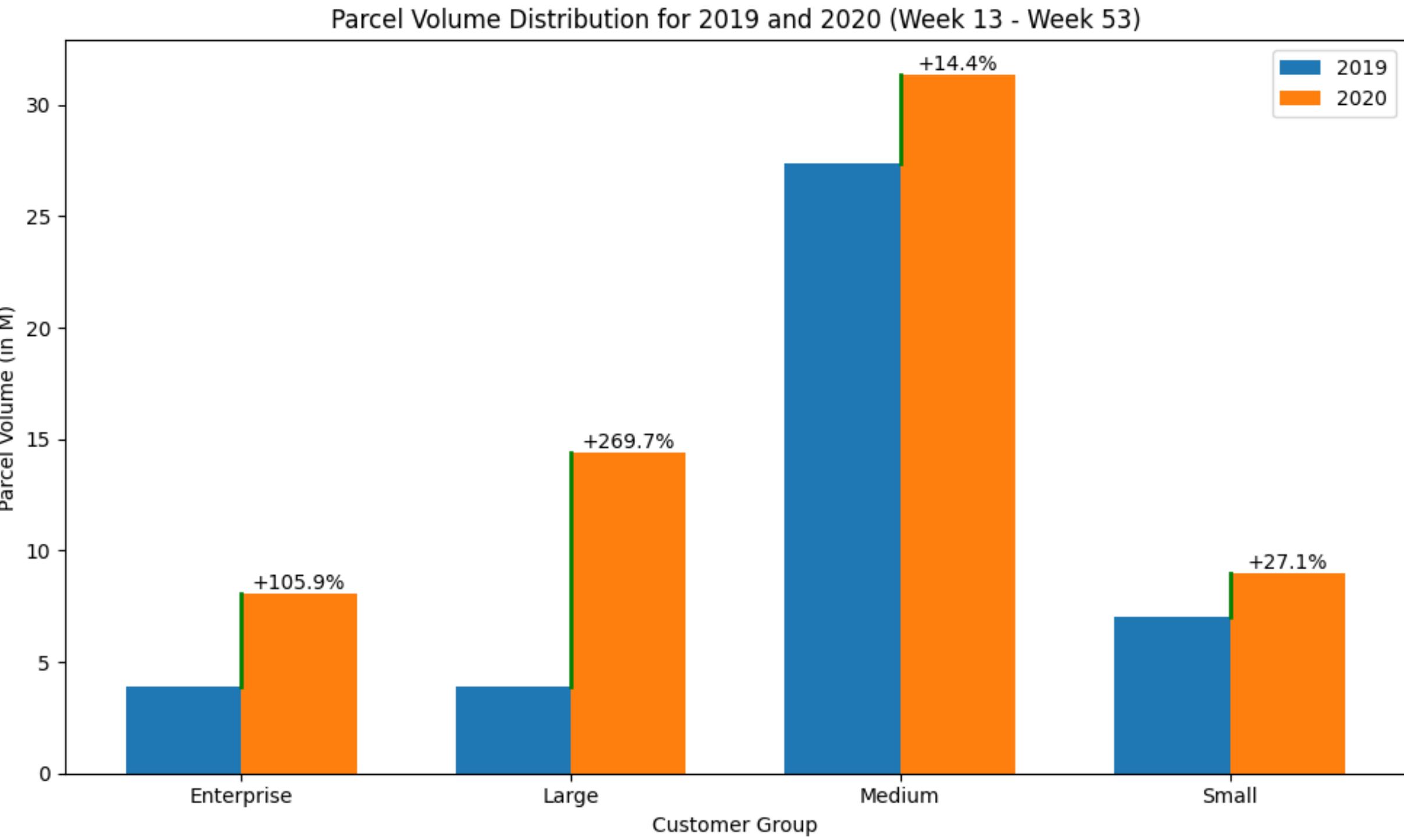
## WHEN WERE CUSTOMER VOLUMES FIRST IMPACTED BY COVID-19?



- We observe the trends in parcel volumes for both years, with each data point representing a week.
- We can see fluctuations in parcel volumes throughout the year.
- However, it's the vertical red line that commands our attention. This line denotes the 'Impact Period,' marking the onset and duration of the pandemic's most significant effects on our operations.

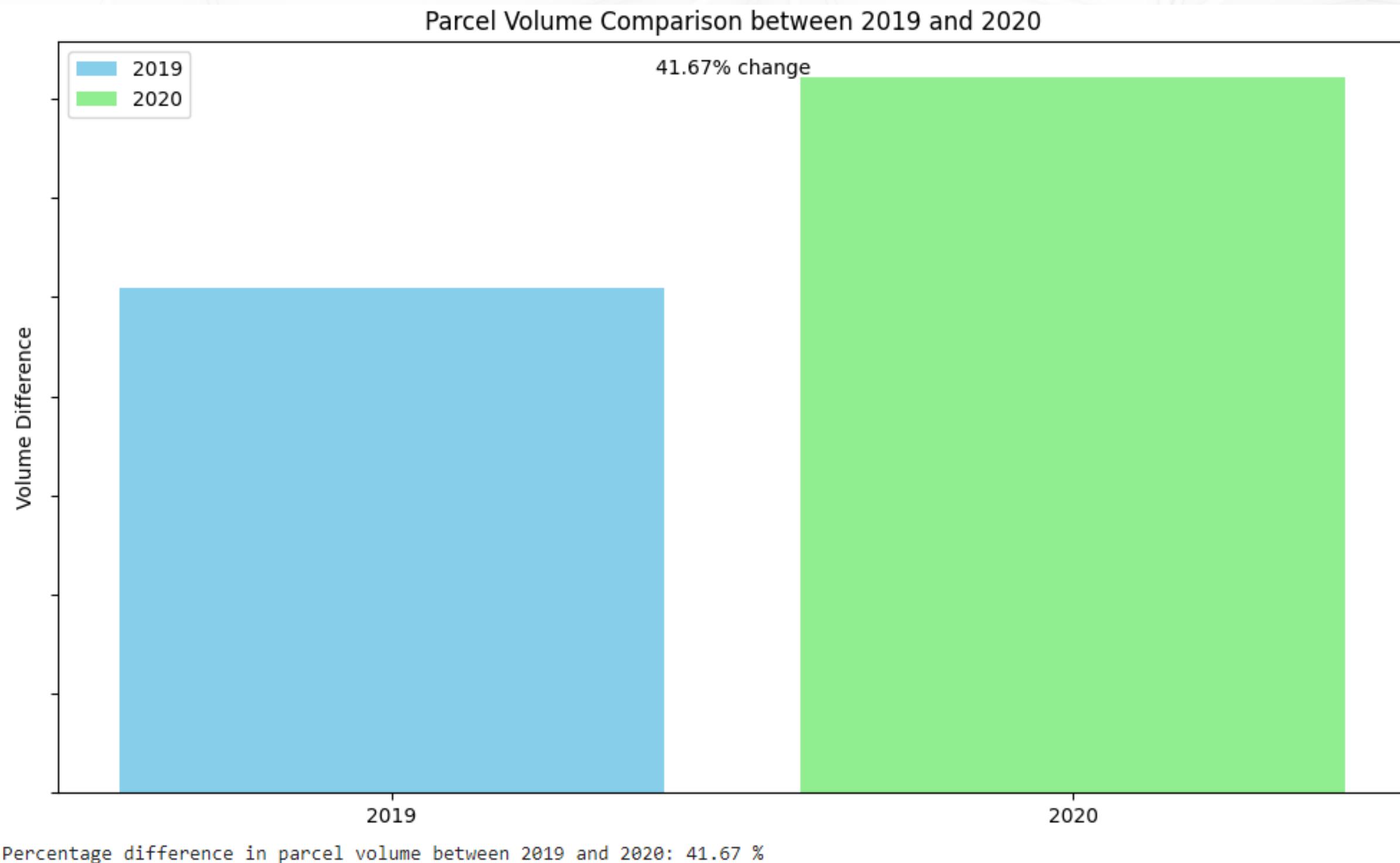
## WHAT EVENTS WITHIN THE COVID TIMELINE MAY HAVE CONTRIBUTED TO THE CHANGE?

- Our dataset comprises parcel delivery data spanning the years 2019 and 2020, focusing on weeks 13 to 53.
- These weeks were chosen to provide a comprehensive view of parcel volumes during the operational months of the year.
- Noticeable shifts in parcel volumes are apparent across various customer groups, reflecting the evolving demands during the pandemic.
- To highlight these changes, green lines indicate an increase in parcel volumes from 2019 to 2020, while red lines signify a decrease.

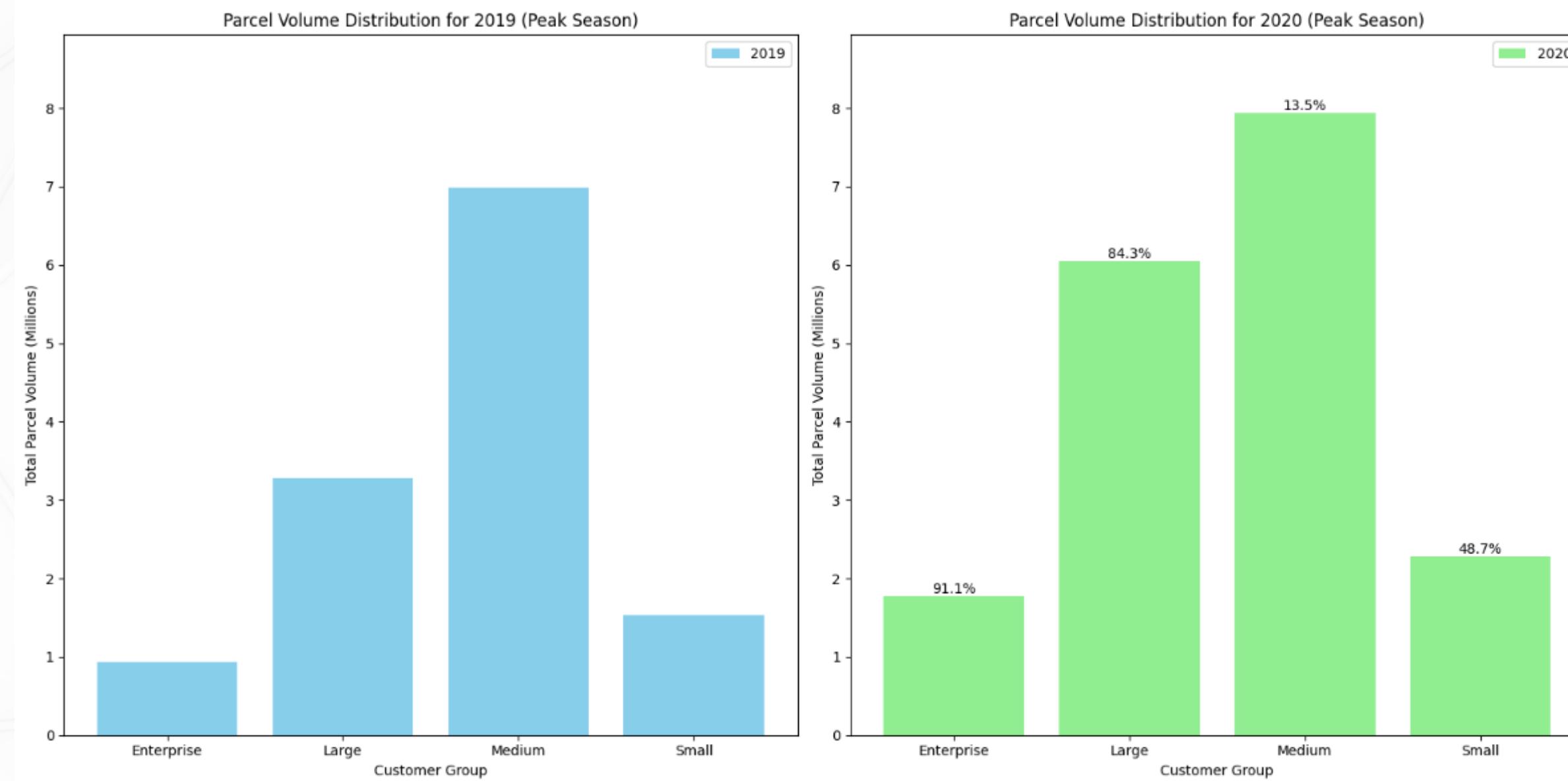


## HOW DID COVID-19 IMPACT PEAK SEASON IN 2020?

- We see a noticeable difference between the two years, with 2020 showcasing a higher parcel volume compared to 2019.
- To quantify this difference, we calculated the percentage difference in parcel volume between 2019 and 2020. The calculated percentage difference is 41.67% change..

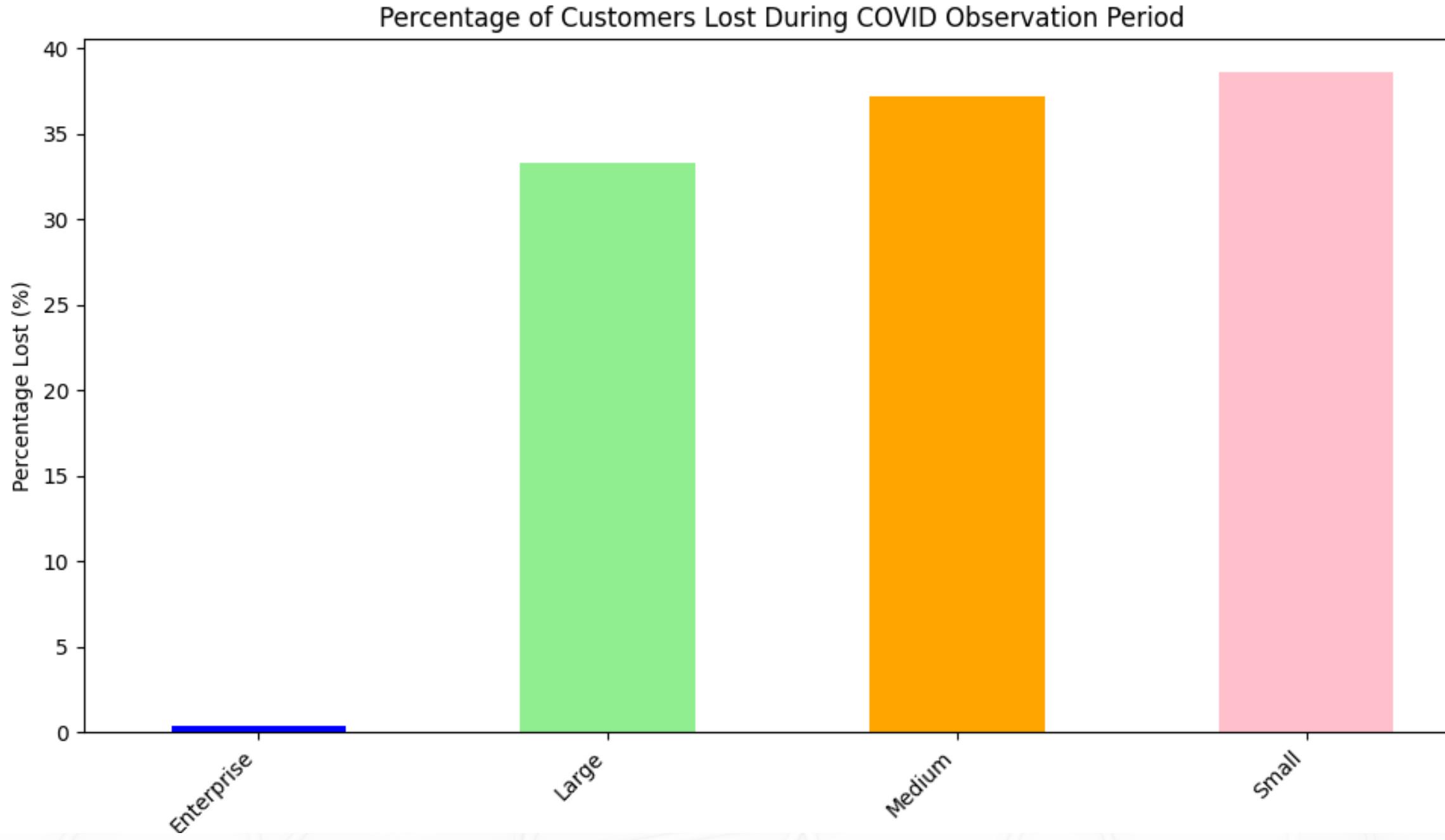


# HOW HAS COVID AFFECTED COMPANIES IN THE DIFFERENT CUSTOMER GROUPS?



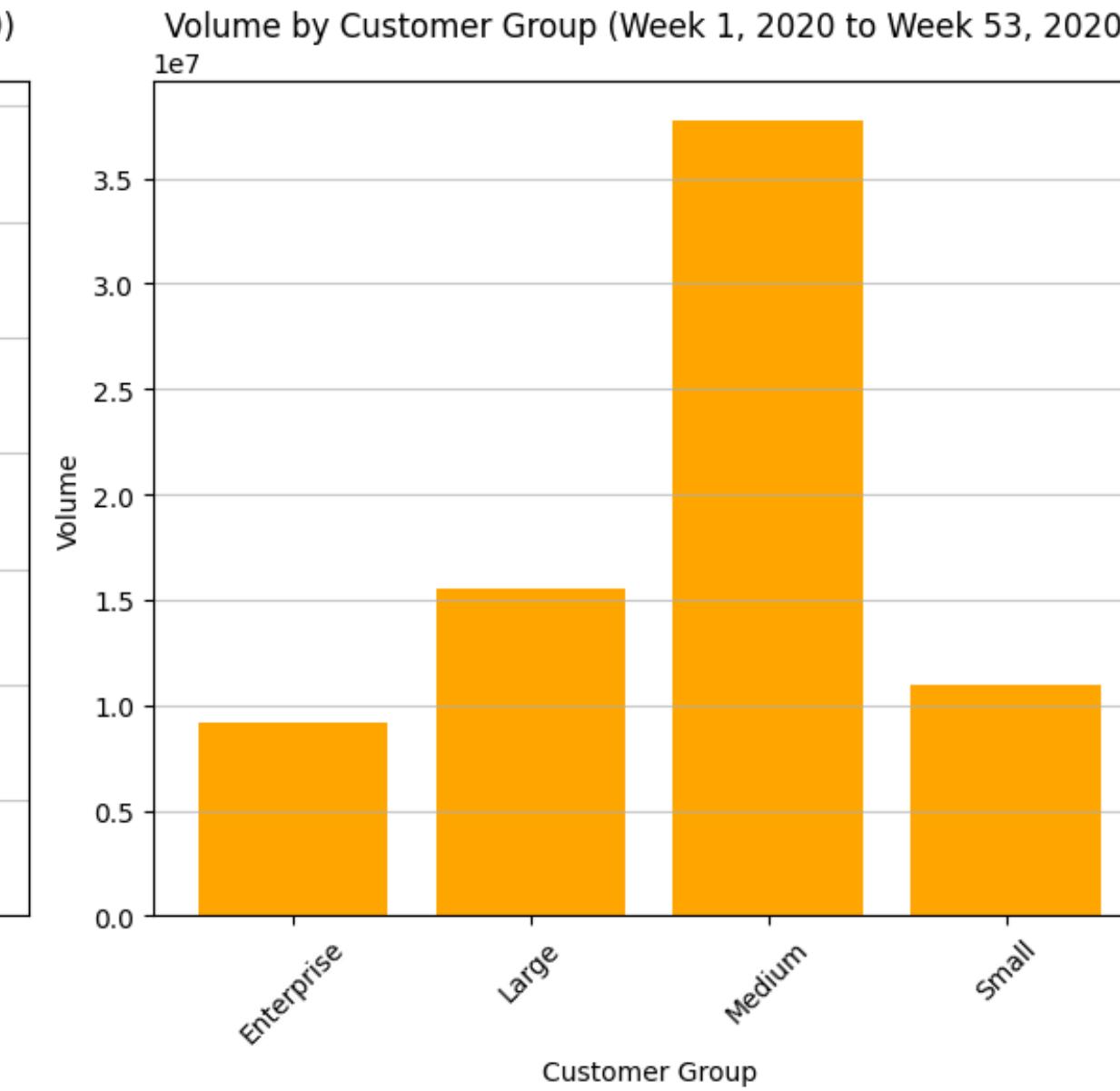
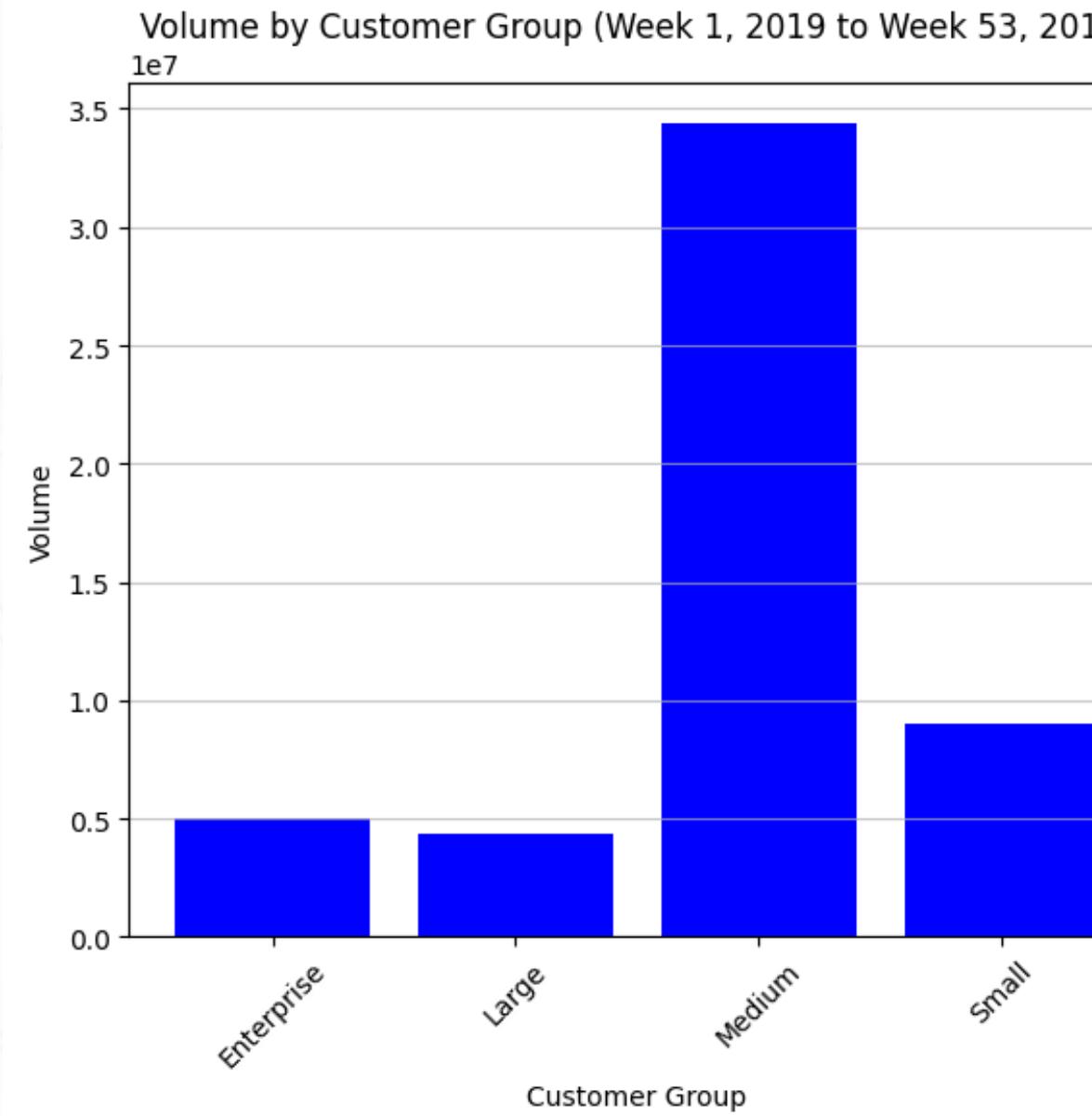
- In 2019, depicted by the graph on the left, we observe the distribution of parcel volumes across Enterprise, Large, Medium, and Small customer groups during the peak season. Each bar represents the total parcel volume for that particular customer group.
- In contrast, the graph on the right illustrates the parcel volume distribution for the peak season of 2020. Notably, there are fluctuations in parcel volumes compared to the previous year, reflecting the impact of the pandemic on our operations.
- This analysis offers valuable insights into how our business adapted to the challenges posed by the pandemic, enabling us to identify areas of growth and opportunities for improvement.

## WHAT PERCENT OF 2019 CUSTOMERS IN EACH GROUP DID WE LOSE DURING THE COVID OBSERVATION PERIOD?



- First, we filtered the data to focus on the COVID observation period, spanning weeks 11 to 53 of 2020.
- Next, we calculated the total parcel volume for each customer during this period and computed the Industry Standard Growth Rate (ISGR) to determine customer growth.
- Based on their growth rates, we classified customers into "High Growth" and "Low Growth" categories.
- Then, we grouped customers by their growth categories and calculated the percentage of lost customers within each customer group during the COVID observation period.

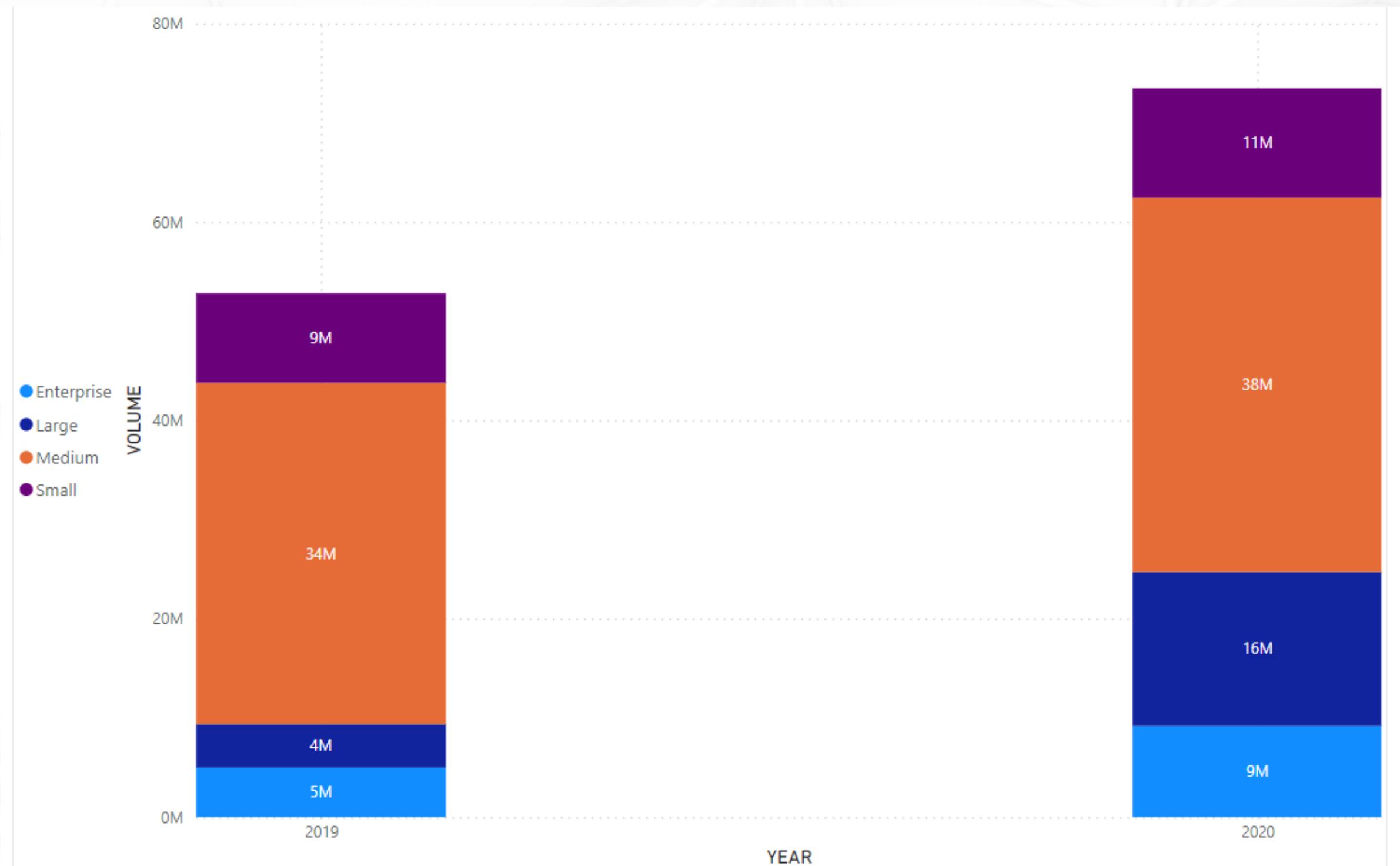
## WHAT WAS THE OVERALL IMPACT OF COVID ON VOLUMES AND REVENUE BY CUSTOMER GROUP?



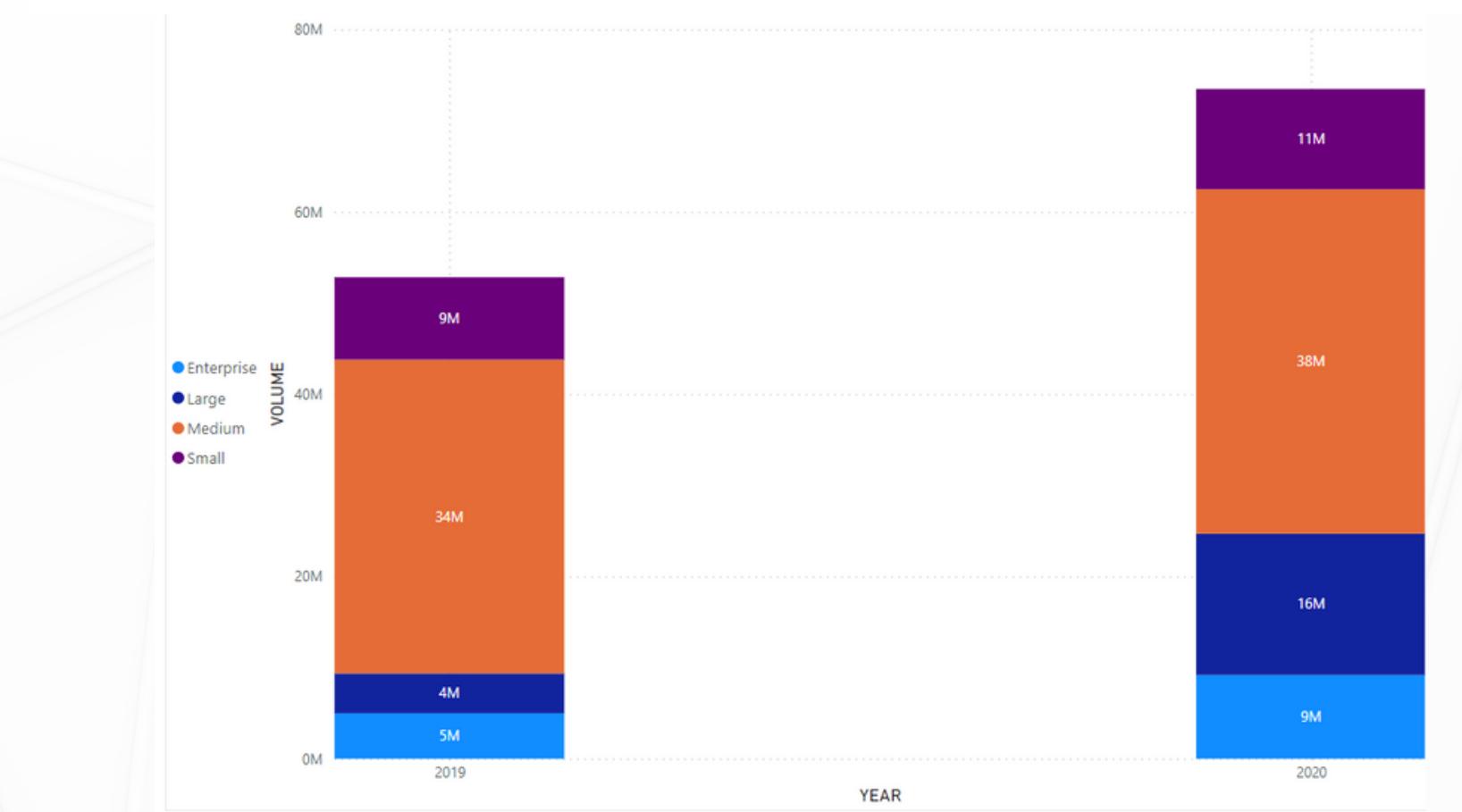
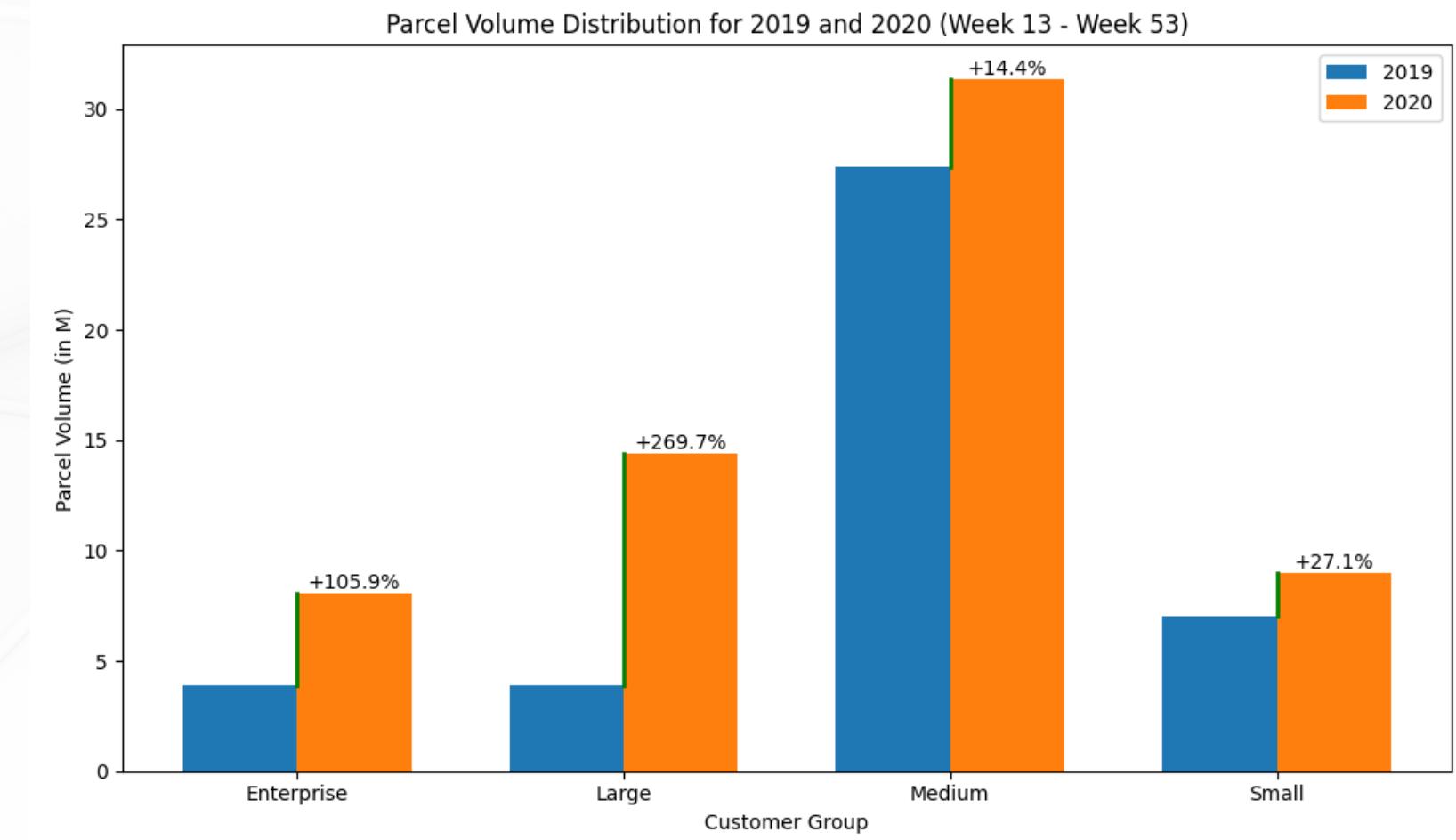
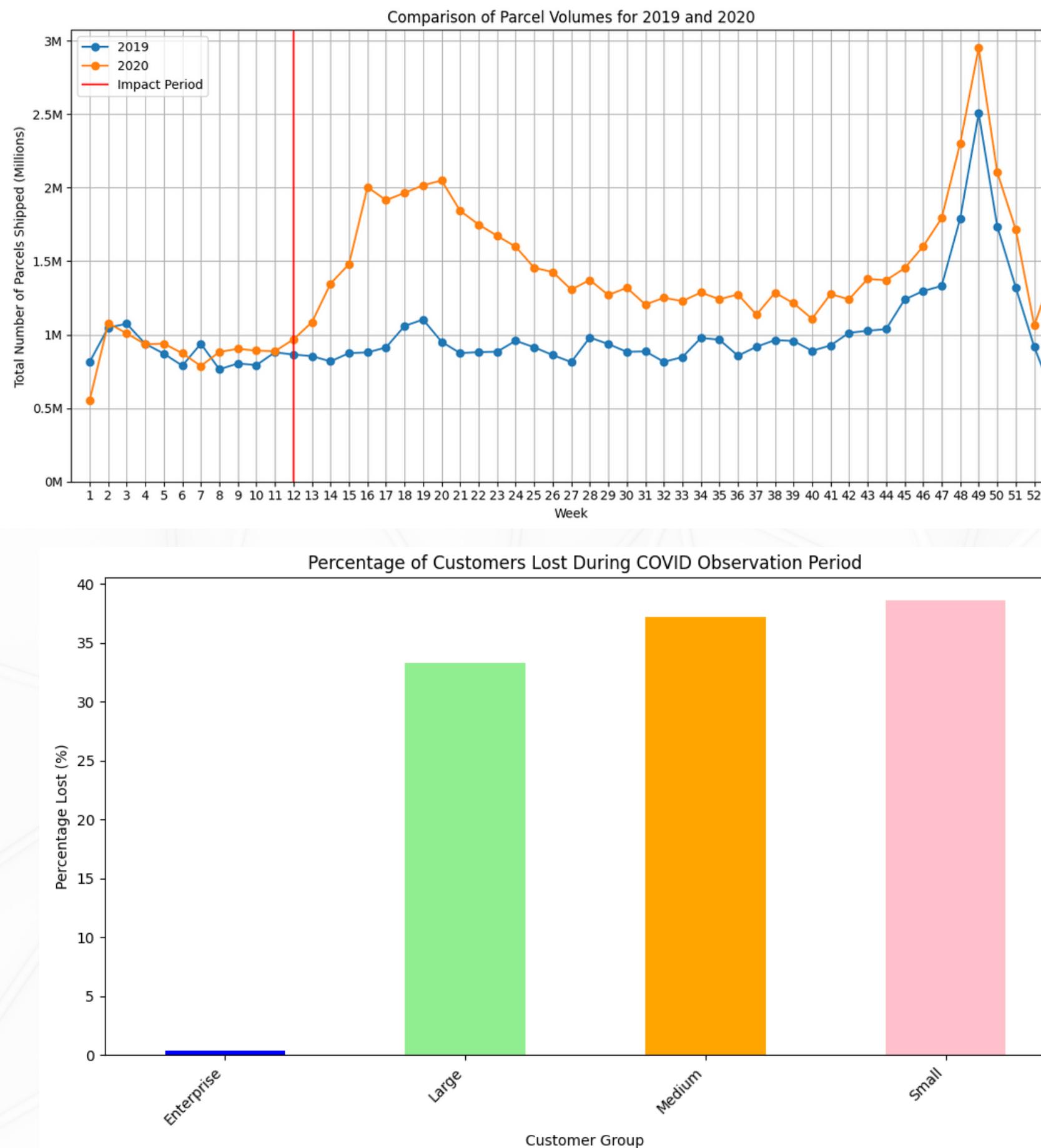
- We have the volume distribution across different customer groups for the year 2019, spanning from Week 1 to Week 53.
- On the right side, we observe the volume distribution for the year 2020, covering the same time frame.
- From the visualizations, we notice fluctuations in parcel volumes across customer groups between the two years. These changes reflect the dynamic nature of our business environment, influenced by factors such as market trends and operational adjustments.

# OVERALL IMPACT OF COVID-19 ON VOLUME BY CUSTOMER GROUP BETWEEN 2019 AND 2020.

- We've meticulously analyzed data spanning the pre-COVID period of 2019 and the COVID observation period of 2020.
- We've calculated the total parcel volumes for each customer group in both periods, allowing us to discern changes over time.
- As you can see, the bar chart illustrates the change in parcel volumes by customer group from the pre-COVID to the COVID observation period.



# SUMMARY



# CONCLUSION

In conclusion, our research has shown important changes in parcel shipment trends for 2020, which are directly linked to lockdowns and other measures related to the pandemic. The increase in package volumes from the week 45, 2020, to Week 2, 2021, the peak season, highlights the critical role our organization plays in providing basic services in emergency situations.

When we contrasted parcel volumes in 2019 and 2020, we saw significant shifts for various customer segments, which is indicative of how the market demands changed during the pandemic.

We can better adjust our strategies and improve our services to match changing customer needs by utilizing these insights.





**THANK YOU FOR  
YOUR  
ATTENTION**