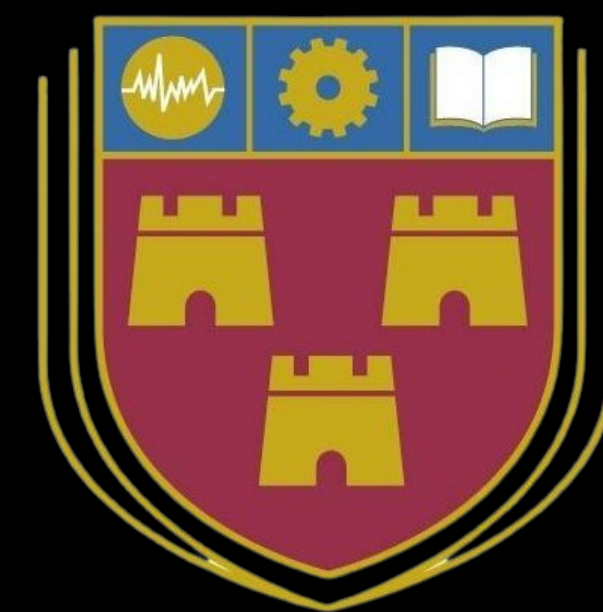


# Assessing pre- and during-pandemic attitudes from social media data

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## Introduction

**Social media platforms** have become ubiquitous communication mediums in our lives. People use social media as a medium to **express their emotion, opinion, personality and activities**. Thus, the individuals' day-to-day activities can be monitored and analysed from their social media activities. For example, researchers utilise sentimental analysis to observe individuals' health status based on their social media activities. During the **COVID-19 pandemic** outbreak, governments have introduced different levels of **lockdowns**, and the use of social media has increased significantly. This study hypothesises that social media data can be utilised to understand how the COVID-19 **pandemic impacted Irish individuals' eating habits and lifestyle**. The finding of this study will help governments track individuals' social behaviour and take actions accordingly.

## Research Questions and Hypothesis

In this study, we hypothesise that social media can effectively be utilised to understand how individuals' attitude evolves during COVID-19 pandemic. Thus, the following research question is formulated:

- **How do Irish individuals' eating habits and lifestyle evolve pre and during the 1st, 2nd and third wave of coronavirus?**

## Related Work

In Su et al. (2020) study, the authors tried to understand and compare the impact of COVID-19 lockdown on residents' psychological states in China. The authors reported that individuals focused more on "home" and expressed a higher cognitive process level after a lockdown in both Wuhan and Lombardy.

Machuca et al. (2021) aimed to use machine learning techniques on Twitter data to perform sentiment analysis of Twitter data during covid 19 pandemic in 2020. The authors classified tweets as positive or negative using the Logistic Regression algorithm; The authors reported a classification accuracy of 78.5%. In a similar study conducted by Şahin et al. (2021), the authors reported that the number of tweets with both positive and negative sentiments score considerably increased in the COVID period compared to the pre-COVID period.

## Methodology

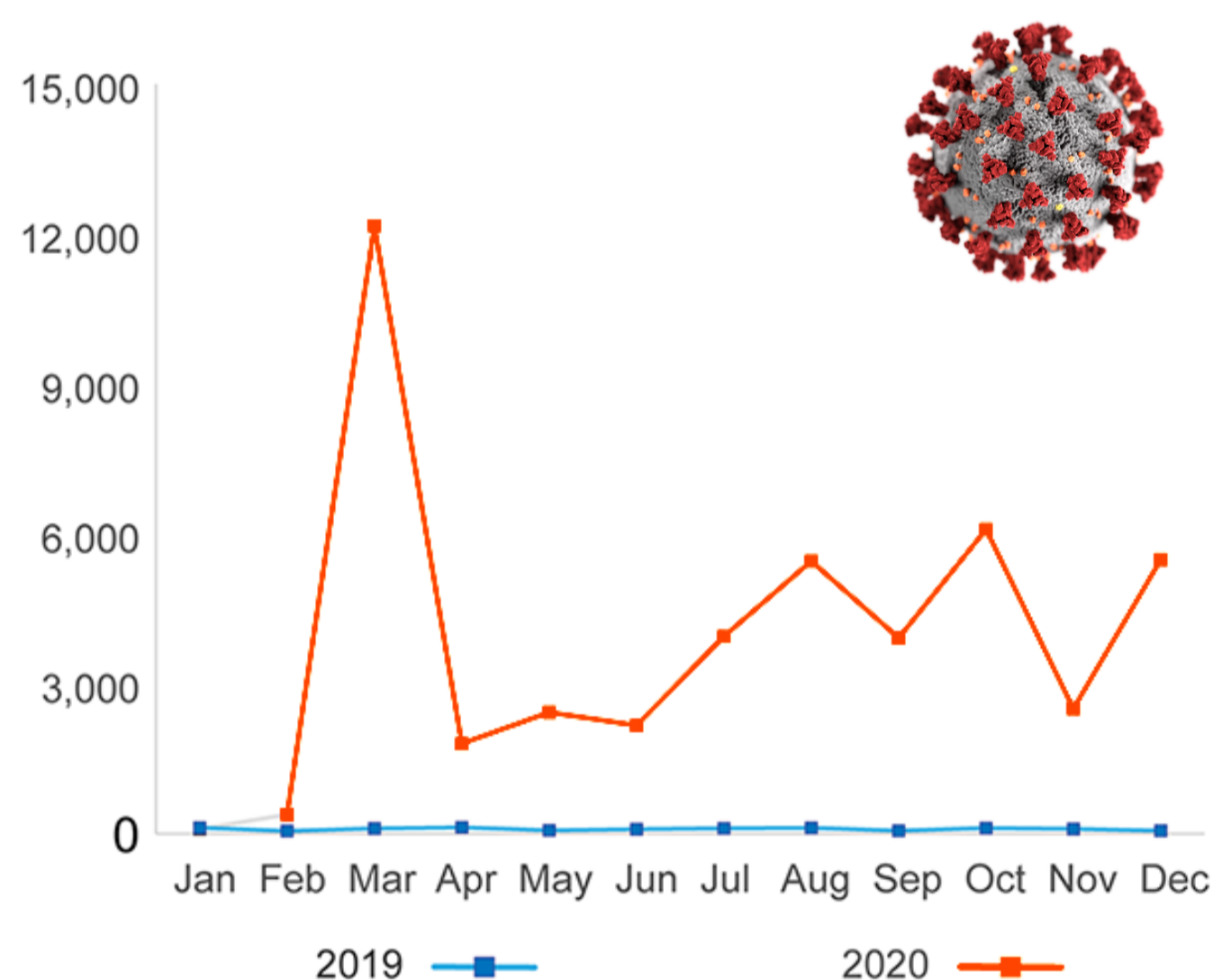
Considering this study's main aim, we will follow a methodology proposed by Şahin et al. (2021). We will perform a Twitter query based on geo-tags (e.g., Irish tweets) between 1st of March 2019 to 1st of March 2020 for pre-pandemic attitude analysis and from 1st of March 2020 to 1st of May 2021 during-pandemic analysis.

We will use keywords including "lifestyle" or "food" or "restaurant" or "plates" or "diet" or "inactive" "calory". The collection will be stored in a JSON file format for further analysis.

We will use topic modelling to understand the abstract "topics" that occur in the tweets during different time frames; latent Dirichlet Allocation (LDA) will be employed. We then use **sentiment analysis** to further investigate how individuals' sentiment regarding their lifestyle evolves during the COVID-19 pandemic. The positive and negative sentiments score can reveal how individuals' overall sentiment regarding eating and lifestyle changes during the COVID period compared to the non-COVID period.



Individuals use social media platforms to express their emotion, opinion, personality and activity

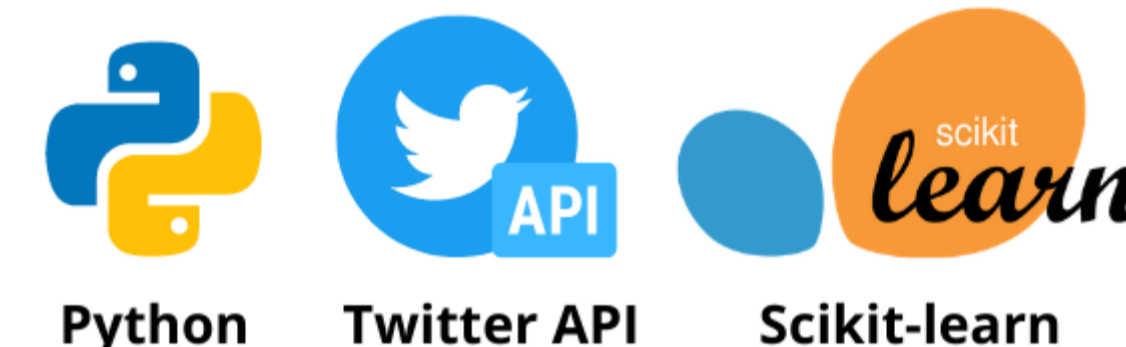


According to HSE Ireland, the amount of social interaction through Twitter has grown rapidly as the pandemic has developed.

## Technical Stack

To conduct this study, various technical stacks will be utilised. Python will be used as the main language for collecting data, data analysis and visualisation.

- Social media activities will be collected using Twitter API.
- Scikit-learn library is considered for applying machine learning techniques to the collected data.



Python Twitter API Scikit-learn

## Conclusion and Future Direction

Researchers have shown that, during the COVID-19 pandemic, social media use among individuals has been increased.

This study effectively utilises Twitter data to understand how Irish eating habits and lifestyle evolve during the COVID-19 pandemic. The next logical step towards this study is to complete the literature review and build the technological stack for collecting, analysing and visualising the data. The result of this study provides valuable insights towards the improvement of individuals social well-beings.

## References

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