# Analyzing the Impact of COVID-19 on the Shipping Industry in the GCC region

## Andrew Edward, Abdullah Shaar, Savanid (Nui) Vatanasakdakul, Houda Bouamor
### Carnegie Mellon University Qatar

## Introduction

- Due to the **COVID-19 pandemic**, governments have imposed lockdowns and wide shop-closures to mitigate and slow down the rapid spread of the virus.

- These measures have caused a significant effect on people's daily activities in the **Gulf Cooperation Council (GCC)** countries.

- The predominance of **online shopping**, and specifically **e-commerce**, during the **COVID-19 pandemic** have put an immense amount of pressure on shipping companies to satisfy customer needs.

We argue that it is important to study the effect of product shipping on **customer satisfaction** in the GCC region during COVID-19 for **three reasons**:
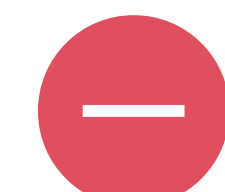
1. Facing delivery-related problems leaves customers with negative sentiment on the brand or service.

2. Understanding the consumer's experience is crucial for the shipping industry and companies to improve process efficiency.

3. Little to no research was done on the effect of COVID-19 on product shipping in the GCC.

This gap needs to be addressed due to the accelerating interest and adoption of online commerce and shipping transactions due to the COVID-19 pandemic (Bain & Company, 2020).

## Methodology

Data Collection & Preparation:
To collect relevant Tweets, we have built a list of comprehensive search terms that helped us to mine textual information that is related to the shipping industry in the GCC region. The keywords varied from popular keywords that customers use when tweeting about their shipments.
Between September 1st, 2019, and March 1st, 2021, we archived around 335,953 tweets written in both **English** and **Arabic**. To form an accurate representation of the general sentiment of customers, it was crucial for us to examine tweets written in both languages because of the wide use of both among locals and residents in the GCC region.
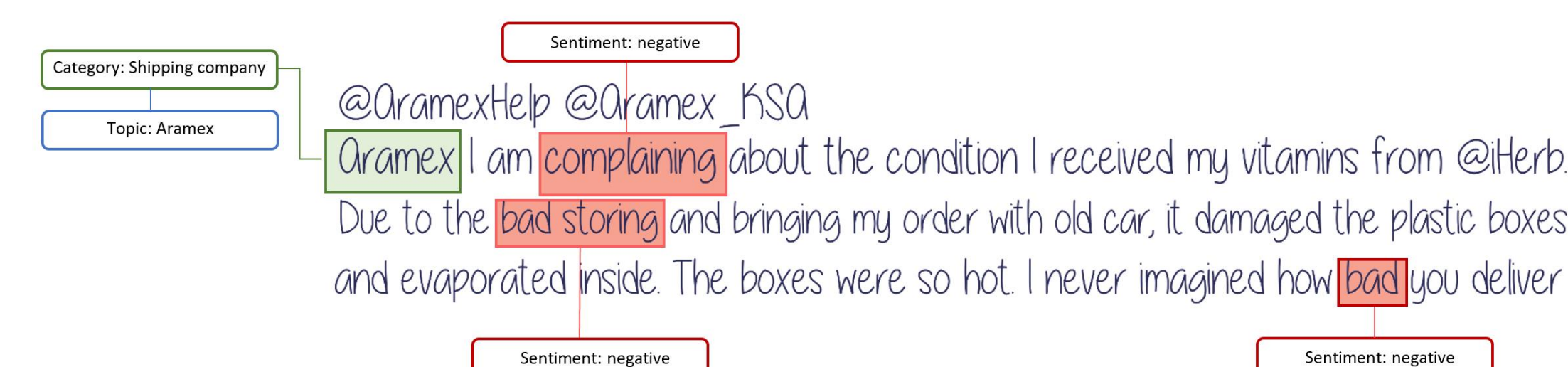
### 96% Arabic | 4% English

Sentiment Analysis:
All tweets were classified for positive, neutral, and negative sentiment strength. In the context of our research, a positively categorized tweet reflects a customer's satisfaction with the shipping service while a negatively categorized one reflects a customer's dissatisfaction with the service.
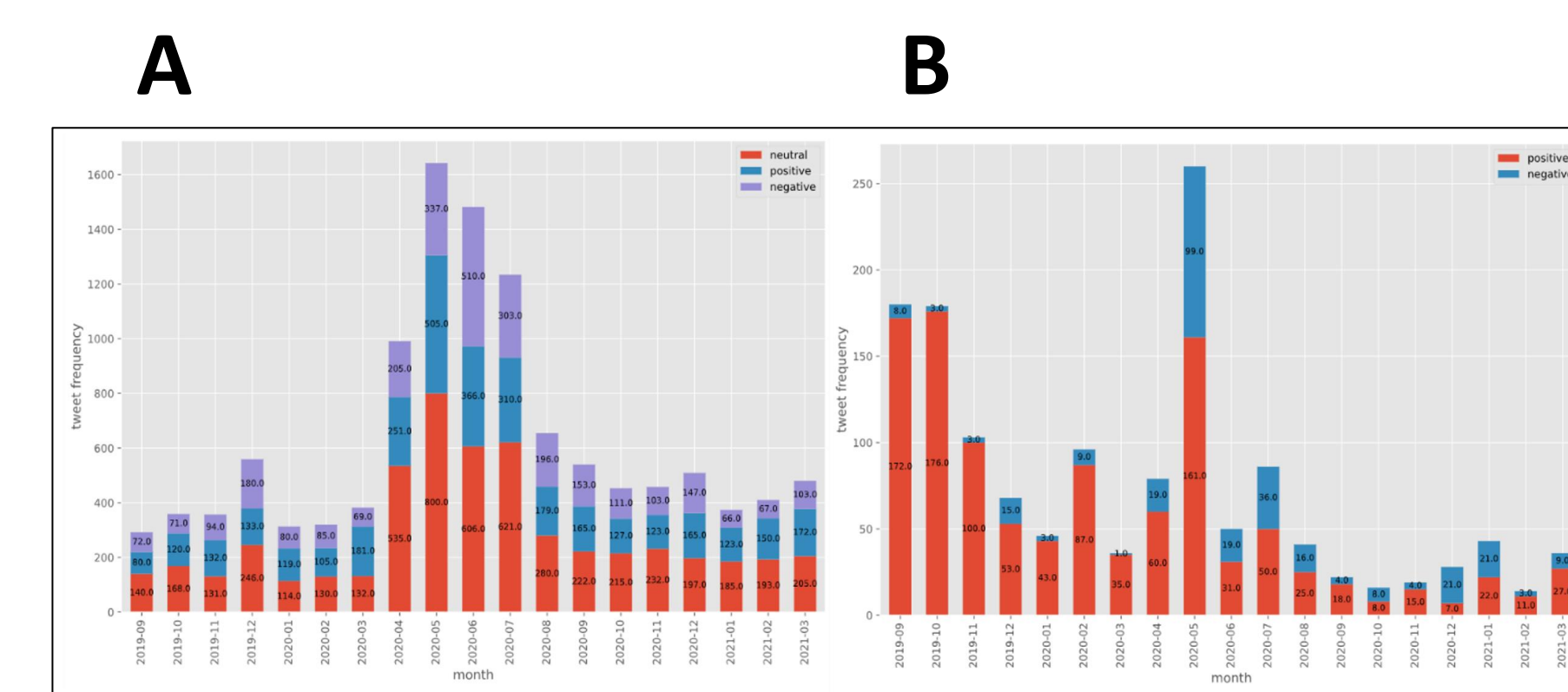


## Results & Discussion



**Figure 1: Polarity of GCC tweets per month.**

The sentiment frequency of Arabic (A) and English (B) tweets per month was measured and assessed between Sep-2019 to March-2021. Note that neutral Tweets were omitted for (A) as they were significantly more frequent than negative or positive tweets.
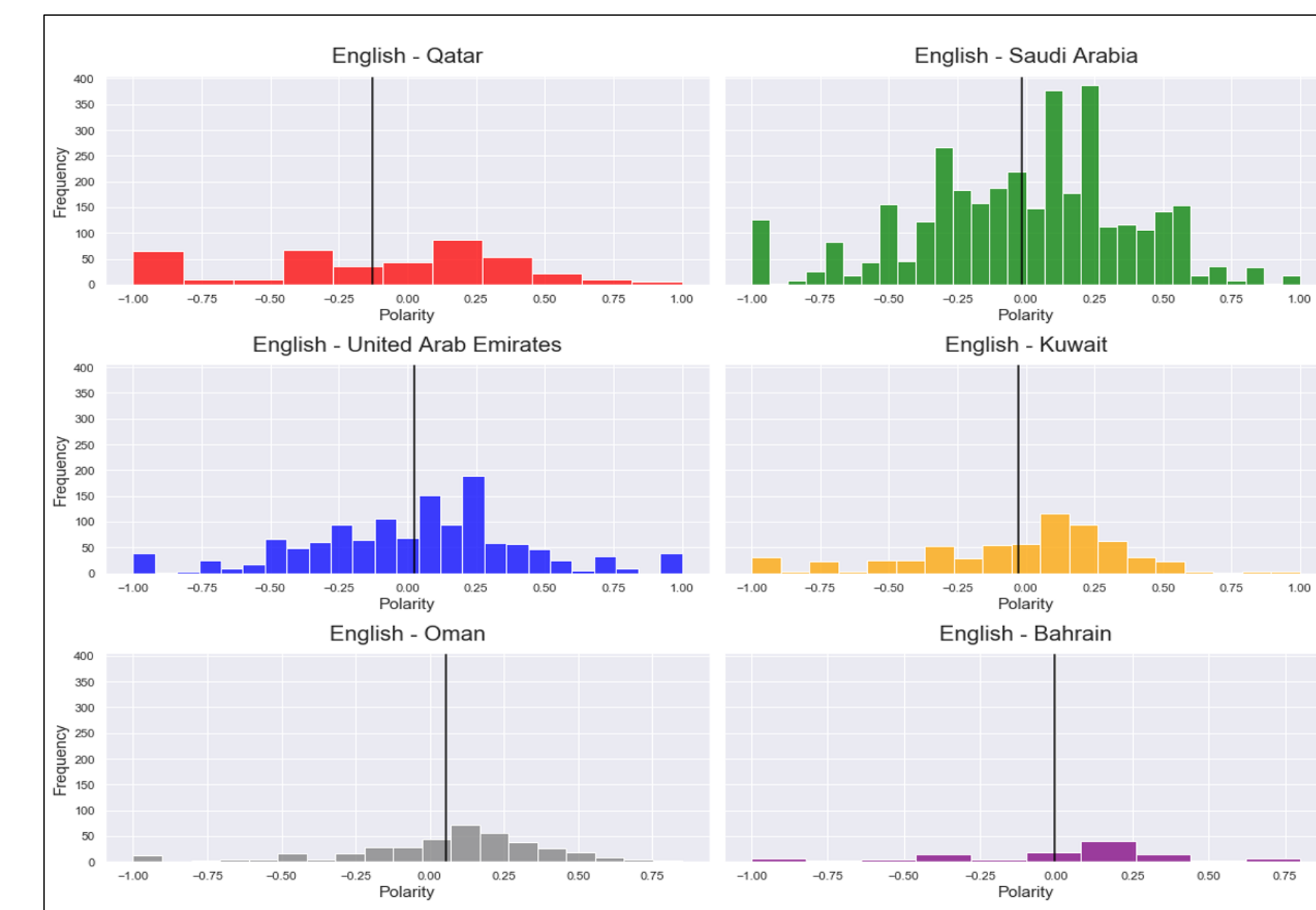


**Figure 2: Sentiment Polarity in the GCC.**

Measuring customer sentiment towards product shipping in Qatar, Saudi Arabia, United Arab Emirates, Kuwait, Oman, and Bahrain using English Tweets. The Tweets spanned the months between September 2019 and March 2021. Positive polarity values (>0.0) reflect positive sentiments whilst negative polarity values (<0.0) reflect negative sentiments. The average of the sentiment values is represented by a blank line for each figure.
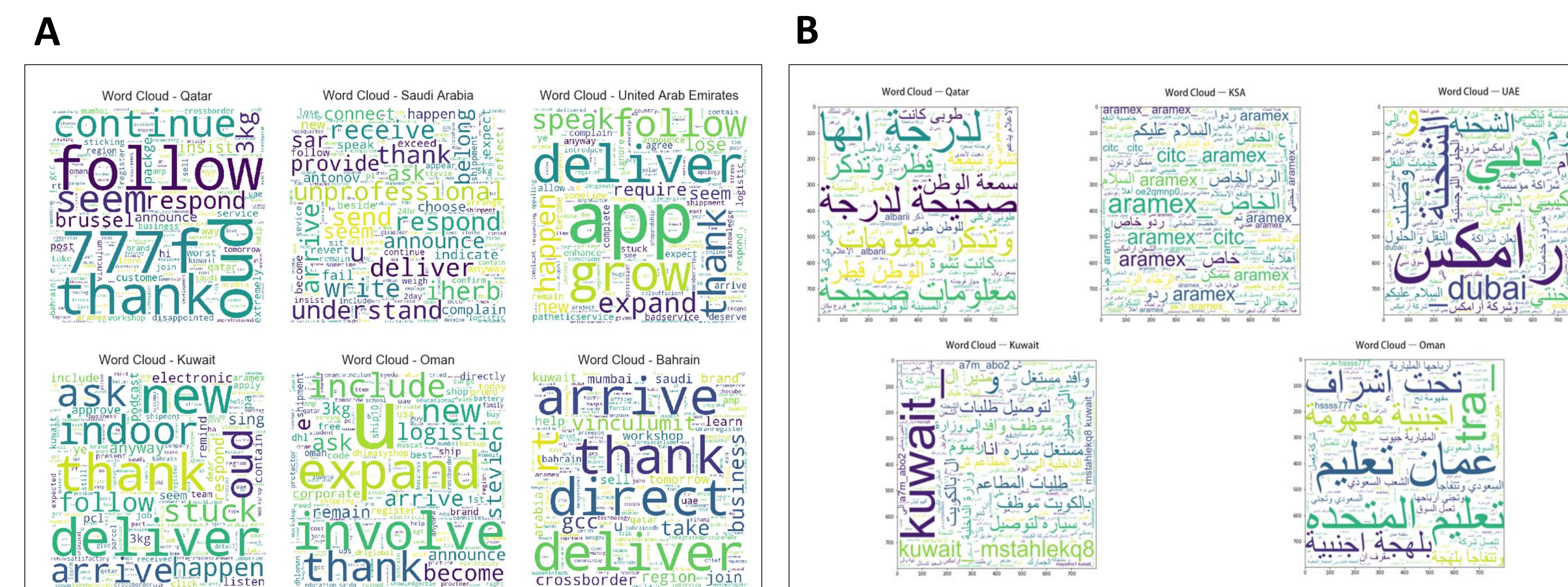


**Figure 3: Sentiment Polarity in the GCC.**

The most 200 abundant words in Qatar, Saudi Arabia, United Arab Emirates, Kuwait, Oman, and Bahrain English Tweets (A) and Arabic Tweets (B). The Tweets spanned the months between September 2019 and March 2021 and noise words (e.g. Aramex) were removed to get better analysis. The more a specific word appear in Tweets the bigger it appears in the word cloud.

## Conclusion

1. Regarding the English Language, the number of positive Tweets was higher than the negative Tweets between the months of September 2019 and April 2020; and between the months of December 2020 and March 2021.

2. Tweets coming from Oman and Bahrain were more positively polarized. This was the opposite in the other GCC countries.

3. In countries where customer's sentiment was more negative towards product shipping (i.e. Qatar, KSA, UAE, Kuwait), the most predominant words in English and Arabic tweets:

**Tarnishing reputation**   **Never arrive**
**Respond in private**
**Worst shipping**   **Delay**
**Please respond**
**Unprofessional**

**758** Occurrences of the word **"worst"** in the tweets collected.

**670** Mentions of government accounts to report issues with companies.

We were able to show the overall customer satisfaction level towards shipping companies and their services prior to and during the pandemic. We analyzed the difference between the sentiment of consumers before the COVID-19 pandemic and during it and we observed that the pandemic had a significant effect on the increase of the number of negative tweets and experiences for consumers.

## References

Andalan, Z. (2018). Social media sentiment analysis of trending topic cigarette price issue. Tobacco Induced Diseases, 16(1). https://doi.org/10.18332/tid/84660

Bain & Company. (February 20, 2019). E-commerce penetration in the Gulf Cooperation Council and Egypt in 2017 with a forecast for 2022, by category [Graph]. In Statista. Retrieved January 11, 2021, from https://www-statista-com.cmu.idm.oclc.org/statistics/1092222/gcc-and-egypt-e-commerce-penetration-by-category/

Chew C, Eysenbach G. Pandemics in the age of Twitter: content analysis of Tweets during the 2009 H1N1 outbreak. PLoS One. 2010 Nov 29;5(11):e14118. doi: 10.1371/journal.pone.0014118.

Chew, E. (2010). Pandemics in the age of Twitter: content analysis of Tweets during the 2009 H1N1 outbreak. PLoS One, 5(11), e14118–e14118. https://doi.org/10.1371/journal.pone.0014118

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