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## **Measuring the Impact of COVID-19 on the Shipping in the GCC countries**

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# Measuring the Impact of COVID-19 on the Shipping in the GCC countries

## Research-in-progress

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## Abstract

In social commerce, the role of shipping companies is considered essential to provide a good customer experience. The objective of this study is to measure the impact of the COVID-19 pandemic on social commerce customers in the countries of the Gulf Cooperation Council (GCC). Our study is focused on information shared by customers on international and domestic shipping companies through Twitter. We have analysed a total of 10,006 Arabic and English Tweets that were posted during June and July 2020 to conduct our study. After performing sentiment analysis on these Tweets, the results show that even though more people switched to social commerce businesses, the customer experience has dropped drastically due to delayed shipments in the GCC countries.

**Keywords** Social Commerce, Shipping Industry, Sentiment Analysis, Twitter, GCC countries

## 1. Introduction

With the COVID-19 pandemic ravaging through countries around the world, many governments have imposed lockdowns and wide shop-closures that affected people's shopping habits, turning many customers to online shopping. The situation in the GCC countries<sup>1</sup> is no different than the whole world. A survey by Ipsos (2020) showed an increase in online shopping since the COVID-19 outbreak in the MENA region. All of the customers who switched to shopping through social commerce platforms go through a basic set of steps that start with searching for a product, submitting their online order, and waiting by the door for their packages. Despite being the last step in a social commerce transaction, shipping and delivery influence the last impression a customer has on these online businesses. Hence, they are the key to ensure consumer satisfaction. With the rise of social media, customers tend to share their shopping and delivery experience on platforms such as Twitter. They can contact the shipping company directly to express their gratitude or to complain about their services.

The experience of the customers in every step in this cycle is crucial for them to form their opinion about a brand or a product. Online order fulfillment specifically (also called e-fulfillment when referring to the delivery of goods to consumers (Agatz et al., 2008) is a critical part of online shopping. As a social commerce business, managing the logistics to make sure that the customers are satisfied is crucial. A study done by "Voxware" in 2016 showed that 69% of customers are much less likely to shop with a retailer in the future if an item they purchase is not delivered within two days of the date promised. 35% of customers said they would abandon shopping with a retailer after receiving one incorrect item. Therefore, facing delivery-related problems leaves the customers with negative sentiment on the brand or service affecting their purchase intentions in the future.<sup>2</sup>

In this paper, we present a study that aims at exploring the impact of COVID-19 on the operations of the shipping companies in the GCC countries with a focus on customers in Qatar. Currently, there has been little to no research about the effect of shipping services on social commerce in the GCC countries, and this gap needs to be addressed due to the increasing interest in it especially after COVID-19. In this study, we also look at the effect the shipping services have on social commerce brands that are partnered with them for last-mile delivery services, and if it could influence the consumers' purchase intentions. This is identified based on what customers report about the services provided by these companies and the issues they are facing, on Twitter. To the best of our knowledge, there is no analysis of the effects of the Covid-19 pandemic on customers of the shipping companies in the GCC countries. In this work, we base our analysis by mining customer's posts and social interactions on Twitter with the shipping companies. We show that Aramex is the most tweeted about shipping service in the GCC, and the consumers' feedback after using it is slightly positive.

The remainder of this paper is structured as follows. In Section 2, we present a literature review on shipping services and its relationship with social commerce and e-commerce. Then, we describe the data collection and cleaning process, followed by the analysis carried on the data gathered, in Section 3. We then discuss our findings in Section 4. Finally, we conclude and describe our future research work in Section 5.

## 2. Literature Review

Product shipping is an important step in any online shopping experience. Vakulenko et al. (2019) introduced a model that shows that Last Mile Delivery experience has a significant effect on the relationship between the online shopping experience and total customer satisfaction. Nguyen et al. (2018) created a framework that identifies three major fulfillment processes that interact with consumer behaviour and influence them. These works show clearly that there is a relationship between Last Mile Delivery experience and how satisfied a customer is when shopping with the brand. Last Mile Delivery is a non-negotiable important factor that online-shoppers in both e-commerce and social commerce think of before deciding on purchasing from a certain brand (Murfield et al., 2017; Buldeo Rai et al., 2018).

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<sup>1</sup> The GCC include the following countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

<sup>2</sup> <https://www.annexcloud.com/blog/10-statistics-prove-effectiveness-loyalty-programs/>

In social commerce, when customers look for products to buy from a certain seller or brand, they usually check other people about their experience, available nowadays on social media platforms. For instance, on Twitter customers share publicly their reviews, likes, complaints, questions, and much more summarizing their attitude towards the product and its shipping service. All of this is classified as e-word-of-mouth. E-wom is essential for how customers perceive your brand as a social commerce business. E-wom engagement affects consumers' purchase intention in social commerce, as reviews and statements made by consumers tend to affect the behaviours of new potential customers. Therefore, E-wom is an important ingredient in promoting purchase intention (Yusuf et al. 2018).

The main goals of this study are to understand and find the impact of COVID-19 pandemic on the Gulf region social commerce consumers, with a focus on Qatar as an example. We analyse customer's feedback about Aramex, UPS, and DHL shipping companies on Twitter by collecting English and Arabic tweets associated with them covering the period of COVID-19 (from January 2020). We use a text sentiment analysis approach to analyse the tweets. Through this analysis we identify the overall customer satisfaction level towards shipping companies and their services during the pandemic. In the next section, we will describe the research methodology adopted in this work.

### 3. Methodology

To answer our research question, we adopted the methodology presented in Chew and Eysenbach (2010) aiming at analysing tweets during the 2009 H1N1 outbreak. To study the sentiment of customers towards shipping companies in the Gulf region during the COVID-19 pandemic, we explore the Twitter social media platform.

#### 3.1 Data Collection and Preprocessing

We collected tweets associated with the shipping companies in the GCC countries between June 1<sup>st</sup>, 2020 and July 31<sup>st</sup>, 2020 using the Twitter standard search API. We first built a list of search terms that would help us to continuously mine textual information that is related to the shipping industry in the GCC countries. The keywords varied from popular keywords that customers use when tweeting about their shipments such as 'packaging', 'delivery', to country names used in the tweets to indicate user's geographical information like 'GCC region', 'Qatar', 'KSA', and lastly mentions of companies like '@aramex', '@UPS', '@DHL'. This collection of keywords can be seen in the following tweet: *"AramexKSA My **shipment** was received before July 20 and despite that it has not been **delivered** It was supposed to be delivered in **Riyadh** and has been misrouted to **Jubail** I have raised a support request as well but no response till now Even yesterday's tweet also not responded"*.

We used the Tweepy<sup>3</sup> python library to access the Twitter API. We collected a total of 10,006 tweets in English and Arabic. In GCC countries, people tend to express their opinions in Arabic because it is their native language<sup>4</sup>. Hence, it is crucial for us to examine tweets written in both languages to create an accurate sample. Not surprisingly, Arabic tweets constituted 76% of the total number of tweets collected compared to 24% English tweets.

Once the tweets were collected, we pre-processed all the data so that the text of the tweets is ready for the sentiment analysis step. We first identified and removed non-English and non-Arabic tweets using the langdetect library<sup>5</sup>. We then excluded all the retweets from the analysis to prevent any spam from saturating the sample. We also removed stopwords such as "the", "a", "there", punctuation marks, URLs, as well as nonprintable characters such as emojis and any unnecessary link. Lastly, "automated" replies – Pre-defined responses used to communicate with customers across specific scenarios and are mostly generated by bots - such as "Hello kindly check your DM thanks", or "thanks for reaching out" were excluded as they added no value to the goal of this study as we are interested in examining customer sentiment towards these companies.

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<sup>3</sup> <https://www.tweepy.org/>

<sup>4</sup> The Arabic language includes Modern Standard Arabic, the standardized variety and dialectal Arabic, the spoken varieties across the Arab world.

<sup>5</sup> <https://pypi.org/project/langdetect/>



distribution of consumer’s sentiments in our tweet dataset during July 2020. Moreover, Figure 2B shows the analysis done on the tweets collected from July 2019. Here, we can see that the sentiment of people before the COVID-19 pandemic (July 2019) was more positive than their overall sentiment during it, meaning that customers are less satisfied with the shipping services during the pandemic. This could be explained by the high demand for shipping services as most of the retail stores were closed. When we looked closer at some of the tweets, we realized that most of the customers are not happy with the delay in delivery. This is an important detail that shipping companies should take into consideration to adapt their logistics in a time of crisis.

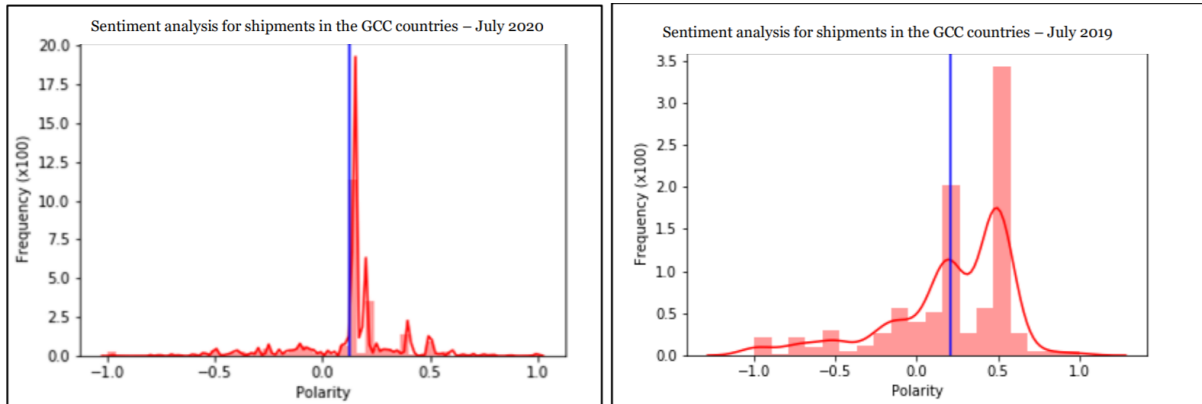


Figure 2: Distribution of the sentiments in our tweet dataset for July 2020 and July 2019.

Then, we analysed the sentiment distribution in each of the GCC countries considered in this study (Kuwait, KSA, UAE, and Qatar) to identify any outliers for the trends observed in Figure 2. The results are illustrated in Figure 3.

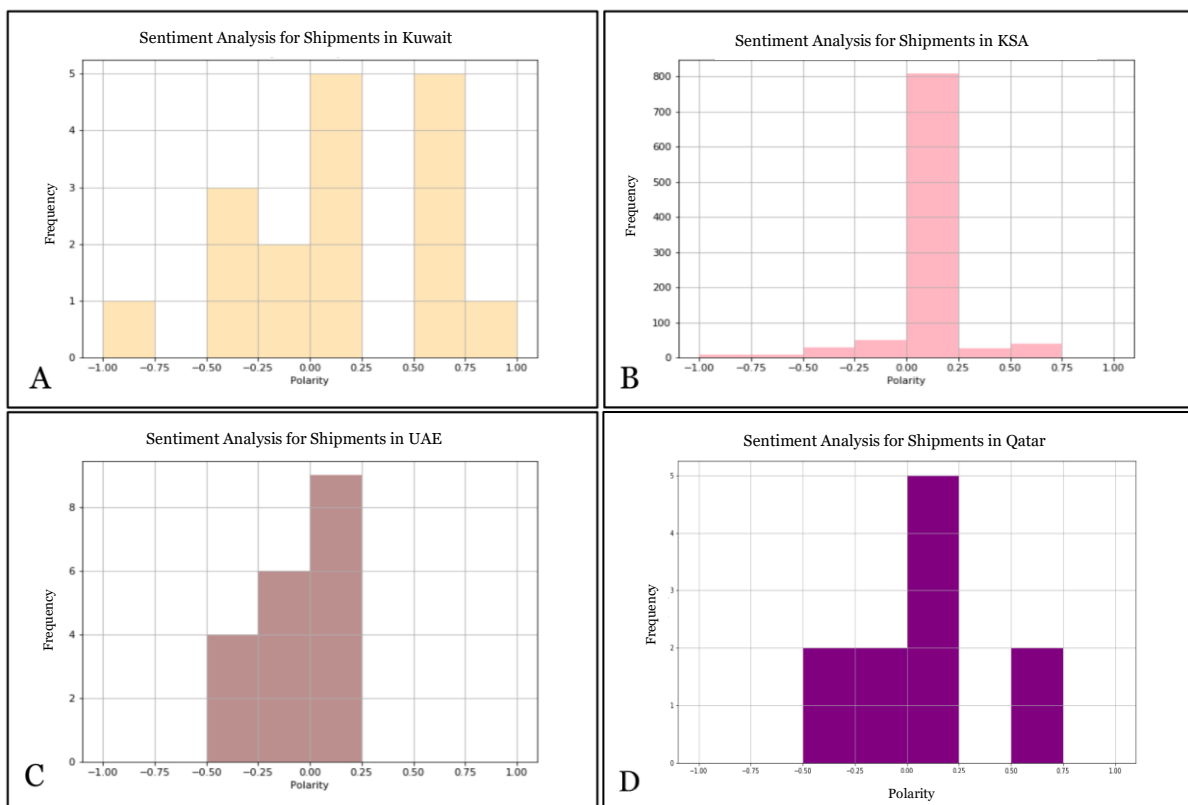


Figure 3: Distribution of customers feedback and sentiments towards shipping services in Kuwait (A), KSA (B), UAE (C), and Qatar (D).

In Kuwait (as illustrated in Figure 3A), the polarity of the tweets showed a broader set as we had extremely negative and positive feedback. Moreover, the frequency of the positive tweets outweighs the negative ones, which means that the consumers in Kuwait are satisfied with the shipping service they receive from DHL, Aramex, and UPS companies. However, when we looked at the trend in UAE (Figure 3C), the opposite was observed: most of the tweets were negative. As for Qatar (Figure 3B) and KSA (Figure 3D), the majority of the tweets collected were neutral. To conclude, customer's attitude towards the shipping services is different from a country to another one. This could be related to the differences in culture and dialects used between these people.

Lastly, as our target country in this study is Qatar, we focus on tweets from this country and compare the polarity of the Arabic and English Tweets. Qatar has always been on the rise in the usage of social commerce businesses especially as it prepares for the FIFA World Cup happening in 2022.<sup>6</sup> The data in Figure 4B shows that the majority of the English tweets are neutral, then positive, and finally negative. However, when it comes to Arabic Tweets, the number of positive and negative were the same. It is important to note that we have omitted a large number of neutral tweets in the Arabic language as initially more than 99% of them were analysed as neutral. This could be explained by the low accuracy of Sentistrength in analysing Arabic text, especially that tweets could be written in dialectal Arabic, which makes it hard to process with a system trained on standard Arabic. Hence, we decided to go only with positive and negative tweets for Arabic.

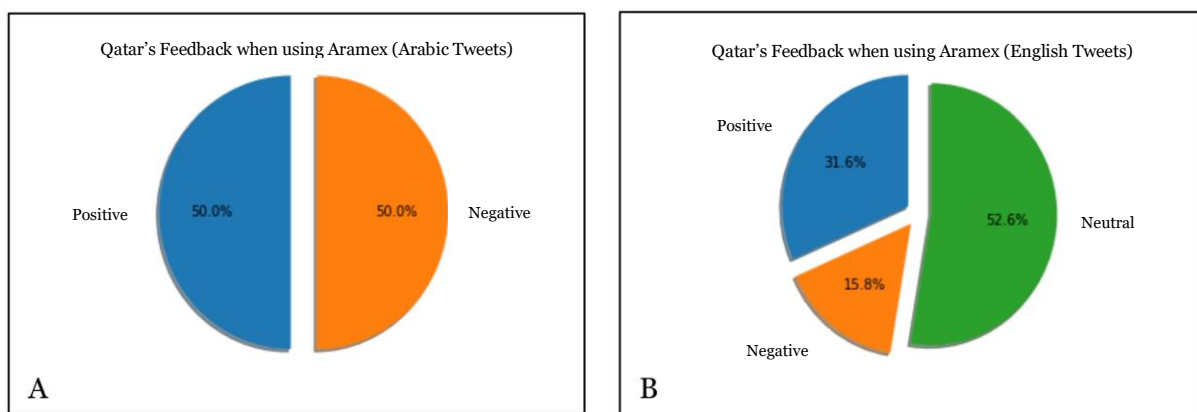


Figure 4: Sentiments reflected in the Arabic (A) and the English (B) tweets for Qatari customers using Aramex shipping services.

## 5. Discussion

The purpose of this work is to study the impact of the COVID-19 pandemic on the GCC customers and their attitude towards shipping services by analysing their feedback about Aramex, UPS, and DHL shipping companies using Twitter; especially as there is little to no research on social commerce in this region. First, we found that the volume of tweets about DHL and UPS was significantly lower than Aramex, suggesting that Aramex is the most used service in the GCC region. We hypothesize that this is due to the Shop & Ship service Aramex offers that facilitates the delivery of products to the GCC countries from many countries in the world (such as the USA, UK, France, etc.) and allows its customers to pay after receiving their product. This completely aligns with a previous study done in Kuwait in 2015 that discusses the most used payment systems in e-commerce (Kamel et al. 2015). Our second finding is that the attitude of Gulf customers about shipping companies during the COVID-19 pandemic is slightly positive. This means that people in the GCC countries continuously use the Aramex shipping company as they are satisfied and happy with their services. Our third and last finding is that there were more positive and negative tweets in Arabic in comparison to English. This suggests that people in the GCC countries use Arabic to express their feelings about a service or a product should be used for the Arabic language to see more accurate results. Even though this is beyond the scope of the research, after examining the tweets, we identified some reasons for the bad experiences that the customers were facing which included: 'Late and delayed shipments', 'Damaged packages', and 'Bad customer service'.

<sup>6</sup> <https://www.fifa.com/worldcup/>

## 6. Conclusion and Future Research

In this on-going research paper, we presented a study of customer's sentiments towards shipping companies in the GCC countries during the Covid-19 pandemic. We were able to show the overall customer satisfaction level towards shipping companies and their services prior to and during the pandemic. Specifically, we showed that despite the outbreak of the pandemic, customers in the GCC region were still happy with the service they received from DHL, Aramex, and UPS shipping companies.

Further research work will explore how shipping service quality is reflected on social media and how it is impacted by the COVID-19 pandemic. In addition, future work will analyse differences in consumers' attitudes towards shipping services across countries. Also, it would be interesting to explore other social media platforms where customers express their sentiment towards services and products such as Facebook. Because of the limited access to the tweets using the regular Twitter API, we were unable to collect tweets for a longer period of time. For future research, and with access to Twitter's premium API, the number of tweets could expand to provide more support to the results this study presents and a more accurate representation of the impact COVID-19 had on the operations of the shipping companies. Furthermore, results obtained from sentiment analysis for Arabic tweets can be further developed and improved using a more accurate and suitable tool including dialectal Arabic processing in addition to the Standard one.

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