The Social Contract in Iraq through Social Media: A Twitter Analysis

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FOREWORD

This study is part of an attempt to better understand the Iraqi people and their ambitions for the social contract. Recognizing the importance of social media networks in voicing preferences and opinions, it sought to capture how these platforms, especially Twitter, could reveal trends that might contribute to reimagining the social contract. Analysis of over 76 million tweets, an exercise that became the largest United Nations artificial intelligence study to date, yielded findings presented on the following pages.

This research adds to ongoing conversations on the future of Iraq aimed at catalysing further reflections on realizing a stronger, more equitable social contract. This study is part of overall analysis of the social contract in 2021.

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

In 2021, the United Nations Development Programme (UNDP) in Iraq and the Stockholm International Peace Research Institute (SIPRI) launched the project 'Reimagining a New Social Contract in Iraq'. It sought to explore how Iraqis envision the social contract and to propose policy recommendations for bridging the gap between the current social contract and desires for a better future. To capture the diverse perceptions of all groups and communities making up Iraq's rich social fabric, this process used a multisource and multimethod framework of data collection and analysis. The exercise included desk-based research of literature in Arabic and English, primary quantitative and qualitative data from 36 focus group discussions between April and June 2021, social media surveys rolled out in June and July 2021, and big data analysis of 76.8 million tweets from Twitter users in Iraq from January 2018 to June 2021. By June 2021, the number of active Twitter users had reached 882,556.

The analysis and findings in this paper are the outcome of mining the full data set of Twitter users, tracking the volume of content around core grievances and listening to conversations related to these grievances and perceptions of the future. Considering that Twitter data mining captures the views of no more than 2 percent of the population and 3.6 percent of the connected population, it is important to interpret the findings in a conservative manner. This must consider that Twitter is usually preferred by elites, reflecting the views of those who are connected and socially empowered to express themselves on social media. Even so, the findings are highly relevant to reimagining the social contract in Iraq, given that elites often influence the perceptions of the rest of the population. More importantly, Twitter data allow us to observe real-time trends.

In total, **3,495,058** tweets discussed core grievances—3,229,105 in Arabic, 52,216 in the Kurdish language and 129,109 in other languages, mainly English. **Of all the content produced on core grievances, 48 percent was about security-related concerns, 20 percent about governance, 16 percent about corruption, 14 percent about services and 2 percent about the economy**. Analysis showed that when cross-referencing grievances, 19.6 percent of security-related tweets, 16.2 percent of governance-related tweets, 15.3 percent of tweets on corruption and 8.3 percent of tweets on services also addressed the economy. This indicates that the economy is a major concern but discussion on it tends to shift towards factors obstructing it. When tweeting about the economy, Iraqi Twitter users were mainly concerned with unemployment and job security (53 percent of total tweets on the economy), state resources and oil revenues (18 percent) and networks of patronage (17 percent).

The October 2019 protests catalysed citizens to tweet about security and corruption and critique the status quo. When tweeting about security, Iraqis seemed concerned with the Islamic State (31 percent), violence and crime (22 percent), and militias, including paramilitary groups (19 percent). Iraqis were least likely to tweet about trust (7 percent), security sector reform (6 percent) and domestic violence (2 percent). Despite a few peaks in content on corruption prior to the demonstrations, content around all facets of corruption reached its highest volume after October 2019. **When tweeting about corruption, Iraqis mainly dwelled on the economic cost (49 percent) and the need to advance accountability and transparency (41 percent).**

The COVID-19 pandemic has clearly shifted priorities. When tweeting about services, Twitter users primarily related concerns around COVID-19 (88 percent), followed by the costs of services (7 percent) and electricity (5 percent). The most prominent peak in the volume of tweets related to services occurred in September 2020, when a record increase in COVID-19 cases tipped Iraq's total over 250,000. In the

pre-COVID 19 period, Iraqis were mainly preoccupied with the high costs of services, especially for electricity and health.

Tweets by women and men seemed to converge on a general set of core grievances but with divergent priorities that are important to consider in reimagining the social contract. Whereas men and women were aligned on most security and economy-related issues, when tweeting about corruption, women were more likely to discuss the economic cost along with accountability and transparency. Men tweeted more about corruption in the justice system, the link to sectarianism and the pervasiveness of corruption. With services, women were more likely than men to discuss the cost. Finally, in terms of governance, women vocalized concerns about political fragmentation and ethnocentric divisions more than men, who tweeted more about legitimacy and distrust in the Government.

Arabic-speaking and Kurdish-speaking Twitter users both emphasized security as the main grievance, yet this was more pronounced among the latter. Security was the most prevalent core grievance in youth-related content, with 56 percent touching on security-related concerns, 16 percent on governance, 13 percent on corruption, 9 percent on services and 6 percent on the economy.

One of the most important findings was that Iraqi Twitter users were much more likely to tweet about core grievances shaping the present than the future. Twitter users may be so preoccupied with present concerns that they cannot think about the future. In total, only 21,425 tweets expressed a future outlook, with 55 percent discussing factors shaping the future, 40 percent expressing positive or negative sentiments and only 5 percent demonstrating a willingness to take action to influence the future.

1. METHODOLOGY

1.1. Conceptual framework

The big data listening tool used to develop this study was based on a conceptual framework devised by SIPRI, based on in-depth analysis of core grievances and dynamics around the social contract in Iraq. The framework is outlined below.

1.1.1. Core grievances

SIPRI identified five broad categories of core grievances related to the social contract in Iraq, namely: **security**, encompassing physical security, representation of various population groups in the security apparatus[1] and perceptions of which aspects of security the State most urgently needs to address; corruption or the privileged allocation of resources, positions and opportunities as well as illicit activities by political elites and their networks for exclusive group gains; the State's provision of essential **services** such as electricity, water and sanitation, and health care; the **economy**, with a particular focus on the availability of employment for all segments of society; and **governance** or the population's feeling of being rightfully represented within the political system, and perspectives on whether or not the system is fit for purpose.

Each core grievance was subdivided into a set of topics providing more nuance to better capture the specificities of how Iraqi citizens communicate their priorities and concerns on social media. The details are in Annex 1.

1.1.2. Future outlook

The main goal of the study was to investigate how Iraqis reimagine the social contract and their priorities and concerns. Big data provided insights on how active Twitter users in Iraq perceive the future of their country, and their future as individuals and members of different communities. Three key subdimensions were examined: perceptions and sentiment, the willingness to take action and variables shaping outlook.

For *perceptions and sentiment*, the focus was on whether Twitter users, when discussing the future of Iraq, are **hopeful, positive and optimistic**, or **hopeless, negative and pessimistic**. Examining the *willingness to take action* looked at language indicating the propensity of users to be **active agents and participants in social change**. Variables that shape future outlook were reviewed with a focus on expectations related to **leadership** or awaiting a leader, **collective action** and popular movements, **external pressure** and/or foreign intervention or **divine intervention**.

1.1.3. Key groups and disaggregation

Considering the complexity and richness of the Iraqi social fabric, it was important to analyse whether various social groups converge or diverge around key priorities for a reimagined social contract. Various limitations under the current legal agreement between UN Global Pulse [2] and Twitter, however, meant it was only possible to disaggregate data based on the following group criteria:

- **Women and men:** A username-based approach was applied to identify the sex of users and look at similarities and differences in core grievances and future outlook between women and men.

A substantive number of users remained genderless either due to the inability to label them or because accounts were associated with institutions, corporations, etc.

- **Arabic- and Kurdish-speaking populations:** As the Kurdish-speaking population is an important group in Iraq, the language of tweets was used as a proxy to compare Arabic- and Kurdish-speaking populations.

- **Youth:** Iraq is a very young country with nearly half the population under age 19. With young people driving recent popular protests, studying the social contract must therefore consider their views. Data from Twitter do not provide metadata on user age given privacy-related limitations so the study used youth-focused content as a proxy.

1.2. The technical design of Iraq's Twitter data listening tool

Designing a Twitter data listening tool involved three steps: taxonomy preparation based on the conceptual framework, data cleaning, and data pipeline preparation and collection. These steps are outlined below.

1.2.1. Taxonomy preparation

To collect data relevant to the conceptual framework, a taxonomy was built with key terms and phrases in formal Arabic, Iraqi dialects and Kurdish. It reflected each core grievance and subdimensions of these as well as subdimensions of a future outlook. The taxonomy was based on three rounds of building keywords. The first round developed a dictionary of the most frequent keywords in tweets. The second round reviewed inputs from questionnaires completed by UNDP Arabic and Kurdish speakers to identify specific words and phrases used by Iraqis in general in expressing their opinions, emotions or perceptions around various issues. Twenty-six questionnaires were returned, which aided in developing context- and language-specific dictionaries that guided the listening tool.

The third round aggregated responses by core grievances and their subdimensions that were tested on Twitter. Words and phrases that yielded hits were retained. Ones that were too personal and not general enough to yield any results were discarded. Following that, a list of keywords and their synonyms was generated and tested on Twitter, with those that yielded hits retained. This list was then translated and the Kurdish language and again tested on Twitter. Finally, the Arabic and Kurdish lists were used as the basis for data collection (see Annex Compendium).

1.2.2. Data cleaning, data pipeline preparation and collection

This section highlights the methodology for preparing the data set using the UN Global Pulse interface, which is accessible only to UN organizations. It features a set of exhaustive and useful operators that make filtering tweets more powerful and accessible.

Step 1: Data identification and collection

This collected the full volume of tweets from all Twitter users physically tweeting from Iraq (the structure of the database does not allow the capture of perceptions of Iraqis tweeting outside the country). Tweets were collected from historical data over **1,015 days**—from January 2018 to June 2021 (see Annex 6). Data collection yielded a total of **76,863,907 tweets, a sample size that positions this research among the leading big data analytical initiatives by the United Nations**.

Step 2: Data cleaning and preparation

Identifying user sex: Since Twitter offers no metadata on user sex, a distinction was drawn based on user first names. Each user's full name was first cleaned by removing diacritics and non-alphabetic characters. Based on a database of Arabic and Kurdish names by sex,[3] the list of users was classified by sex. This resulted in classifying only 53 percent of users. The rest were labelled genderless.

Classifying tweets by core grievances and future outlook: The full body of over 76 million tweets was classified according to the taxonomy dictionaries developed by the big data team. Each tweet was first cleaned by removing diacritics and non-alphabetic characters, transforming tweet letters to lowercase when applicable, normalizing the 'Alef', and removing El- and Al- (ال) from the beginning of every word. The same steps were applied to the core grievances and future outlook dictionaries. Next, each tweet was analysed for the number of keywords per core grievance and future outlook dimension and subdimension. Finally, tweets were classified by dimension or subdimension based on the largest number of relevant keywords.

Identifying tweets with youth content: As identifying young users was not possible, the listening tool examined content focused on youth-related topics and that very explicitly mentioned 'youth' or key words around youth. Tweets containing the keywords شباب (youth), شاب (young man) or شابة (young woman) were collected and data cleaning strategies applied. Tweets with at least one of these three key terms were retained and analysed as youth-focused content.

Identifying word frequencies around core grievances during key events: A list of key events during the time frame under review was generated. Arabic and Kurdish tweets on core grievances posted at the time of these specific events, and during the seven days before and seven days after them, were classified separately for analysis on peaks in volume or content. The tweets were further cleaned and tokenized, and single letter words were excluded. Then, unigrams (one-word sequences or most frequent words), bigrams (two-word sequences) and trigrams (three-word sequences) in every tweet were identified and the results grouped by date, sex, language and key words. The frequency of each uni/bi/trigram was aggregated, and those with a total frequency per event of less than 100 were excluded.

1.3.   Data privacy and protection concerns and methodological limitations

The big data analytical model designed for this research project was aligned with the UN Personal Data and Protection Principles (2018)[4] as well as ethical data use guidelines[5] (see also Annex 5). As such, the analytical framework avoids exposing individuals or groups. It hides cluster IDs and does not define groups based on identities that might be discriminatory. Since data privacy concerns prohibit the analysis of trends and relationships at the user and tweet levels, the study relies on trends and frequencies rather than individual tweets or individual users.

Additional limitations are as follows.

- **Elitism of the Iraqi Twitter population and the digital divide:** Twitter users represent a very limited segment of Iraqi society compared to other platforms such as Facebook and Instagram. This segment is often seen as the elite of the country, albeit a very socially active element concerned with the news. This means that this analysis is not necessarily representative of the country as a whole. Additional considerations involve the digital divide in access to the Internet. Disadvantaged segments of society like women, the elderly, the less educated and lower-income individuals are less likely to use the Internet than their male, younger, higher-educated and higher-income counterparts. Even when access is available, underprivileged or vulnerable groups might not feel

safe in freely expressing themselves given that power dynamics in the non-virtual world influence expression online.

- **Fake accounts, bots and content manipulation:** Fake and bot accounts are a widespread phenomenon on Twitter, although recently the company has become more focused on tracking the 'behaviour' of an account. This refers to the degree to which it is causing „malicious use of automation to undermine and disrupt the public conversation, like trying to get something to trend; artificial amplification of conversations on Twitter, including through creating multiple or overlapping accounts; and generating, soliciting, or purchasing fake engagements."[6] This study developed lists of active users, especially around events important to Iraq, which automatically limits bots.

- **Coordinated messaging and online political campaigns:** Since political groups use Twitter for propaganda, the research attempted to identify collective messaging aimed at hijacking specific hashtags or content.

- **Disaggregated analysis and social network analysis:** Since United Nations and Twitter privacy policies do not allow analysis that exposes vulnerable groups or individuals or attempts an identity-based assessment of Twitter data, the research method tried to investigate intergroup dynamics across cities and groups to overarching research on social constituencies, such as youth, women, etc.

2. CONTEXT OF IRAQ

Before looking into content generated by the Iraqi Twittersphere, and how this relates to core grievances and perceptions of the future, it is important to consider Iraq's social media context, the level of interconnectedness and the digital divide.

2.1   The scope of social media use in Iraq: trends and highlights

In Iraq, mobile subscriptions reached 94.9 percent (per 100 inhabitants) in 2019, up from 64.4 percent in 2009.[7] Over the same period, the percentage of households with Internet reached 58.8 percent, up from 10 percent in 2009.[8] Amid increased investment in and access to improved information and communications technology infrastructure, social networks have created a platform for people to express their views and opinions.

Among the 21 million active social media users in Iraq, Facebook is the leading social media platform with 17 million users. Instagram and Snapchat are in second and third place, respectively, and Twitter comes in fourth place with 1.28 million users.[9] According to the 2020 Arab Opinion Index, Iraq ranks first in terms of using social media platforms to interact with political issues, where 37 percent of respondents stated that they access social media platforms several times a day to engage in political discussions (Figure 1).[10]

Figure 1: The use of social media platforms to engage on political issues
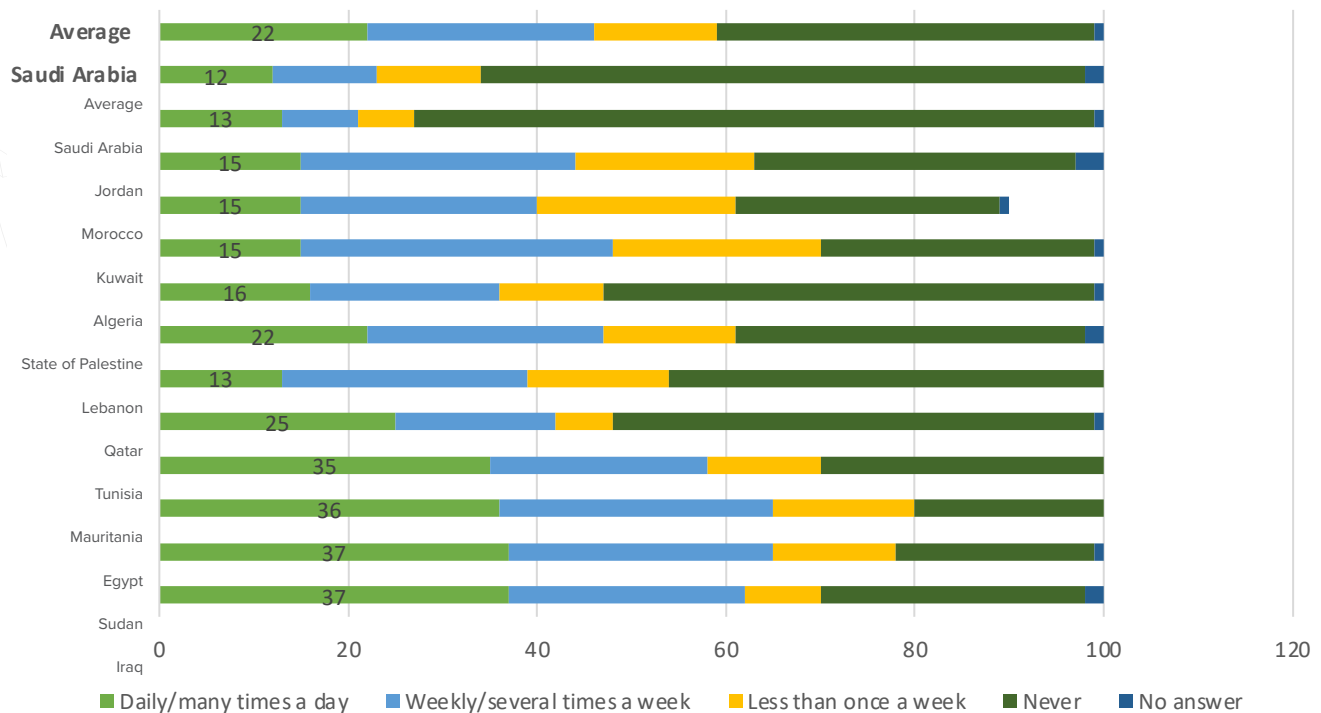
Source: The 2020 Arab Opinion Index.

Since Iraqis seem to increasingly use social media platforms for political expression, dynamics within the society are likely to be mirrored or reflected there. Big data, particularly from social media and artificial intelligence technologies, can therefore be used to better understand attitudes, practices, concerns and perceptions of issues related to the social contract. Analysis of Twitter discourse around the social contract has generated timely and relevant insights on how discussions and priorities shift considering specific events and across user groups (e.g., female and male users, and Arabic- and Kurdish-speaking users). This approach is more cost effective than traditional data collection.

2.2 Snapshot of the Iraqi Twittersphere since 2018

Based on the full Twitter database accessed through the UN Global Pulse interface, reflecting real-time daily data from active accounts over the period from 10 January 2018 to 30 June 2021, there were 882,556 unique Twitter users in Iraq. Of them, 699,805 (79 percent) were Arabic-speaking and 27,371 (3 percent) were Kurdish-speaking.

These users produced 76,863,907 tweets, an average of 87 per user, during the research time frame. Among the Arabic-speaking users, 301,481 users (43 percent) were classified as male and 74,771 users (11 percent) as female. Although male users outnumbered female ones, the latter seemed more active, with an average of 112 tweets per female user compared to 69 tweets per male user (Figure 2).

Figure 2: Demographics of Twitter users, January 2018 to June 2021
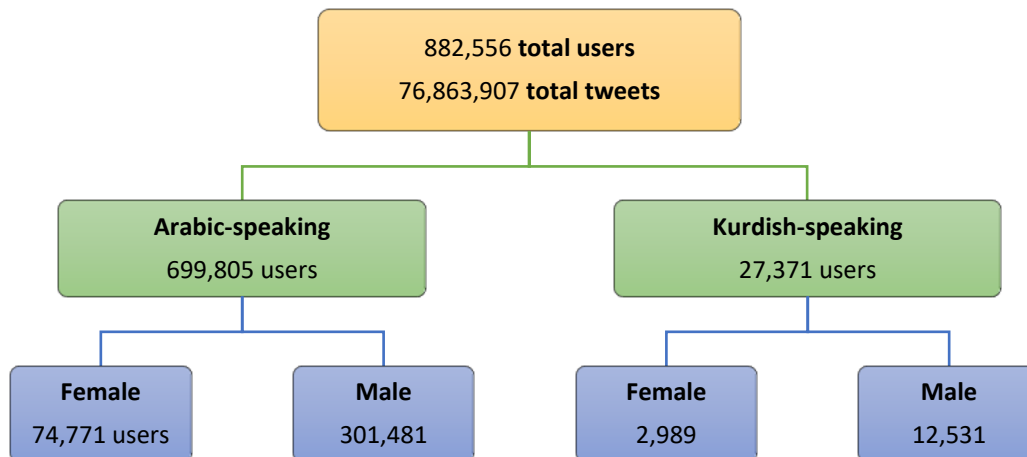
3. KEY FINDINGS OF THE BIG DATA ANALYSIS

3.1 Key topics and temporal trends

Of all core grievances, security featured most often in tweets during the research period. In total, 3,495,058 tweets discussed core grievances—3,229,105 were in Arabic, 52,216 in the Kurdish language and 129,109 in other languages, mainly English. Among these tweets, 48 percent were linked to security, 20 percent to governance, 16 percent to corruption, 14 percent to services and only 2 percent to the economy (Figure 3).

Figure 3: Frequency and percentage of core grievances across 3,414,430 tweets

- Security, 47%
- Corruption, 16%
- Services, 13%
- Economy, 4%
- Governance, 20%
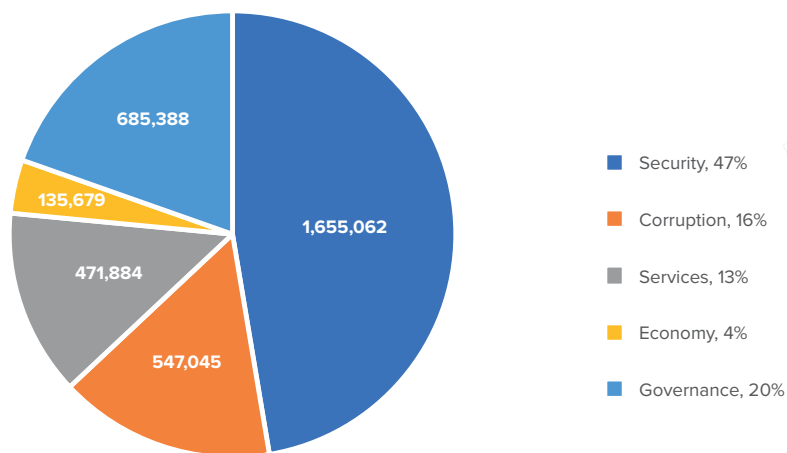
A closer look at the study period highlights the catalytic impact of the October 2019 protests, with a dramatic increase in the expression of core grievances (Figure 4). This increase was evident for all core grievances except the economy. It built until just before the demonstrations and continued to escalate after that point. This suggests several underlying issues: the importance of social media as a tool to express grievances and dissent; the potential for social media to serve as an organizing platform for collective action and engaged citizenship; and the increased use of social media when in-person demonstrations become riskier or less safe, especially given security crackdowns and the pandemic.

Figure 4: Temporal trends in expressing core grievances
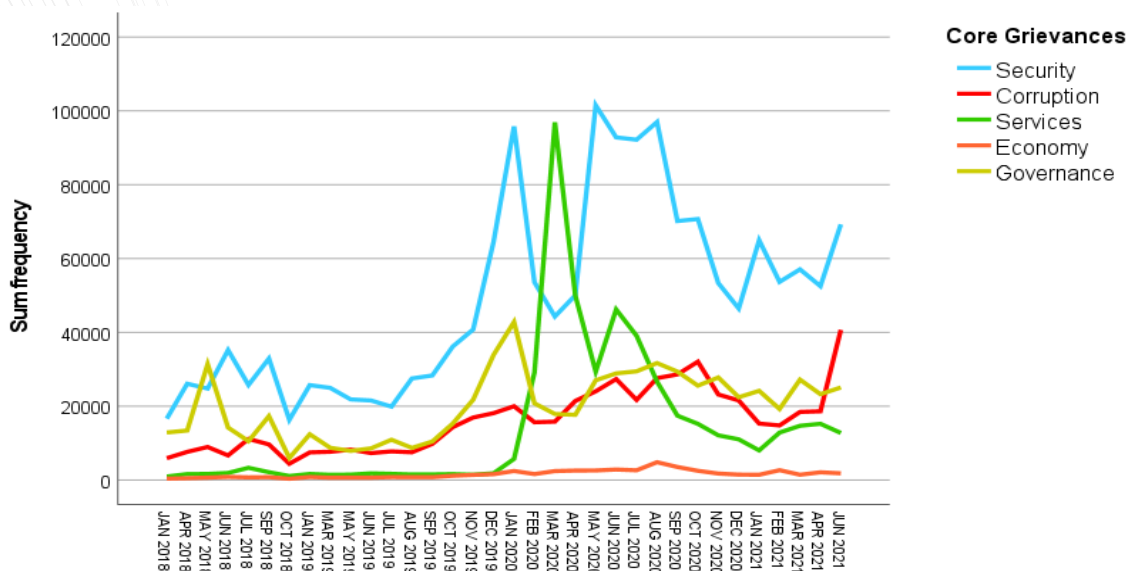
Twitter users were much more likely to tweet about core grievances shaping the present than the future. This suggests that users may be so preoccupied with current concerns that they do not think much about the future. In total, only **21,425** tweets (less than 1 percent) had a future outlook, compared to **3,495,058** tweets (over 99 percent) on core grievances in the present. Among the former, 55 percent discussed factors shaping the future, 40 percent expressed positive or negative sentiments and only 5 percent demonstrated a willingness to take action to influence the future (Table 1).

Table 1: Frequency and shares of tweets with a future outlook

	Future outlook	Frequency of tweets	Percentage
1.	Perception/sentiment	8,479	39.58
2.	Willingness to take action	1,145	5.34
3.	Variables shaping outlook	11,801	55.08
	Total	**21,425**	**100**

When discussing the future, Iraqis on Twitter were evenly split between having a more positive and hopeful outlook and a more negative and hopeless one, up until October 2020. Hopeful content slightly increased after the 2019 demonstrations. By October and November 2020, however, after the anniversary of the protests, a sharp peak in hopelessness and negativity emerged, possibly driven by the lack of tangible outcomes and a continued deterioration in living conditions (Figure 5). Another peak in hopelessness occurred in April 2021.

Figure 5: Temporal trends in sentiment/perceptions around the future of Iraq
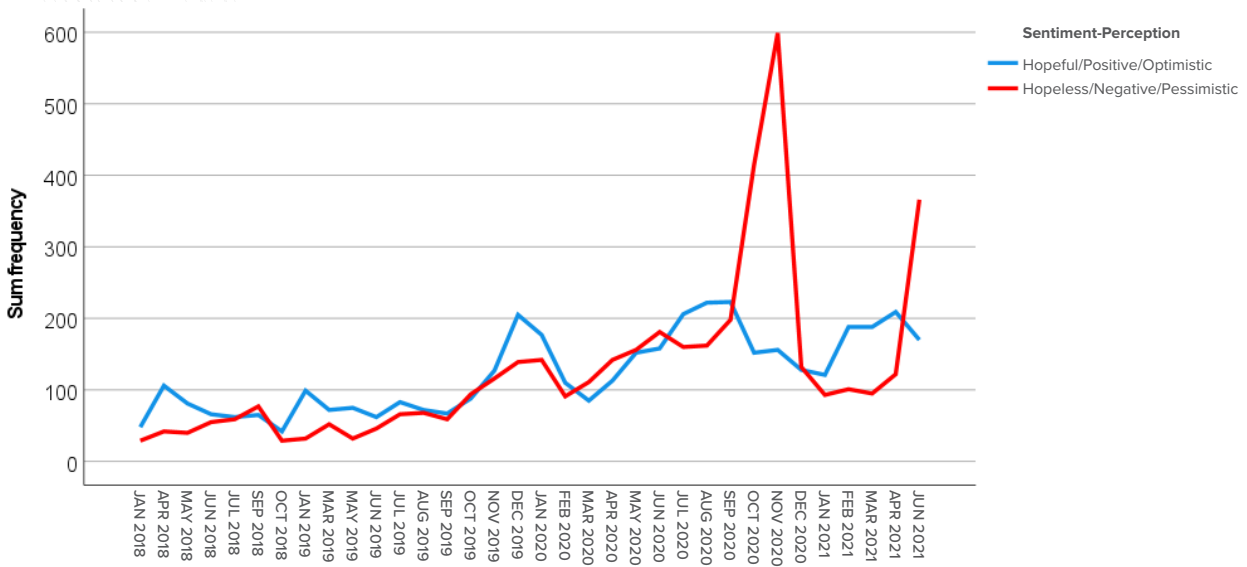
3.2   Core grievances: key priorities and temporal trends

3.2.1   Security

Twitter users most frequently tweeted about security (1,110,677 tweets or 47.35 percent of the total on core grievances). They primarily relayed content on the Islamic State (31 percent); violence and crime (22 percent); militias, including paramilitary groups (19 percent) and legitimate state security forces (13 percent). Iraqis were least likely to tweet about trust (7 percent), security sector reform (6 percent) and domestic violence (2 percent). An examination of temporal trends demonstrated key peaks and periods of interest (Figure 6).

Figure 6: Temporal trends in security-related content
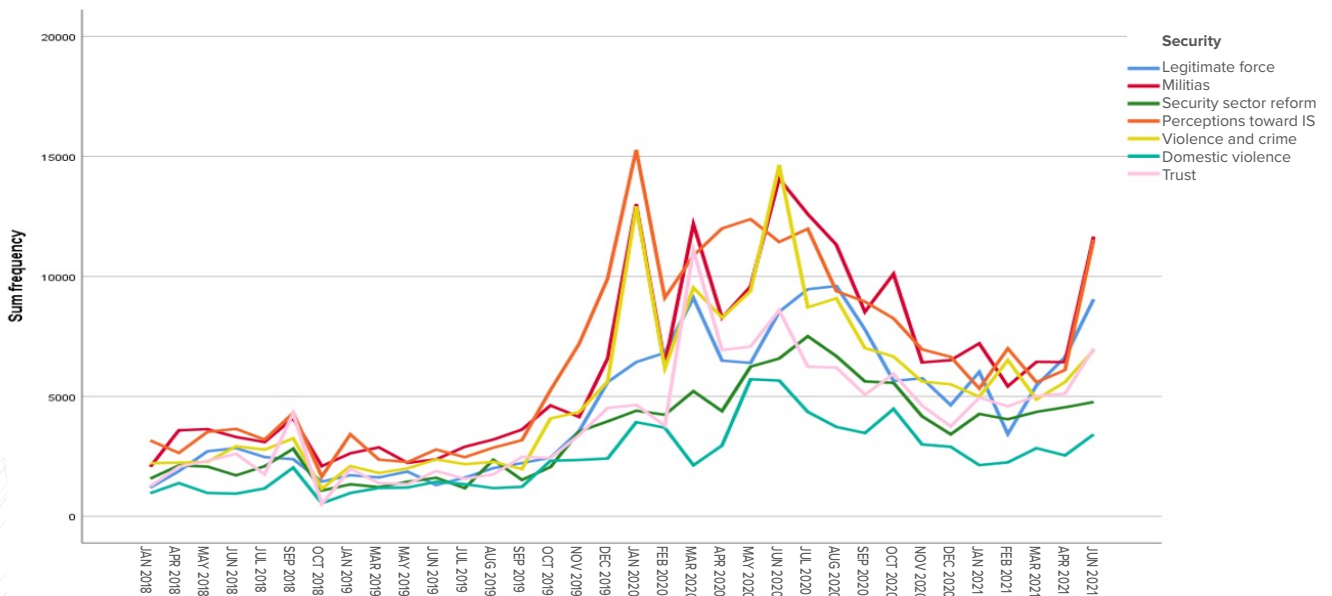
The first peak in content around security occurred from December 2019 to January 2020 (Figure 8). The second, with qualitatively different content, took place in March 2020 (Figure 9), and the third appeared between May and June of 2020 (Figure 10). These peaks all coincided with specific security-related incidents.

Figure 7: Temporal trends in security-related content, December 2019 to January 2020
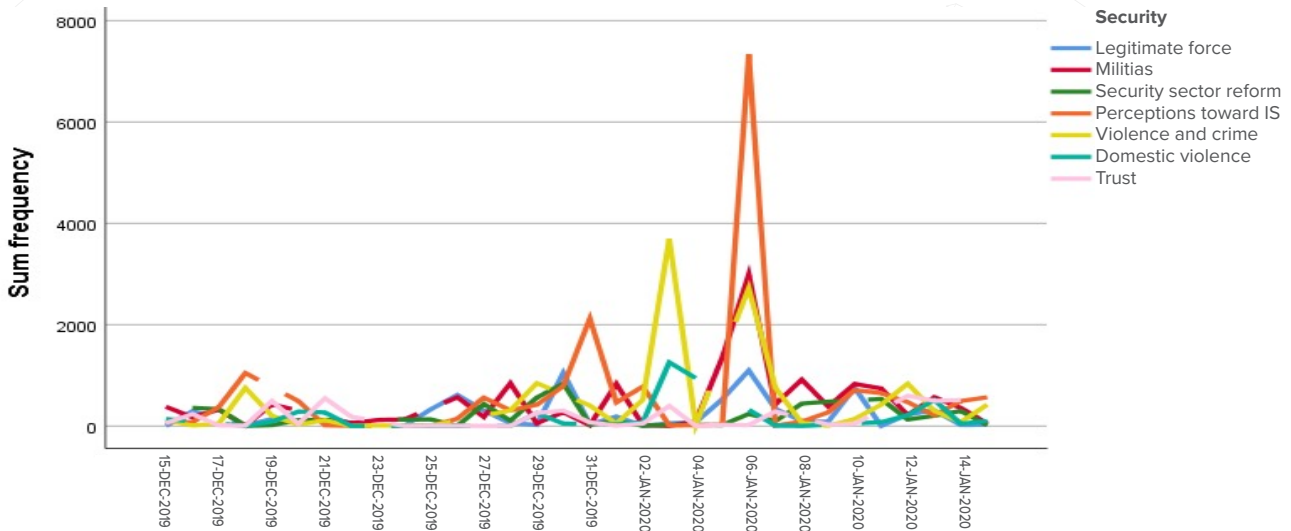
Figure 8 tracks security content from 1-31 March 2020, which saw the highest peak in content related to trust in the security forces. Dissecting this trend reveals peaks on 22 and 28 March, when the Government enforced a nationwide lockdown and travel restrictions to contain COVID-19.[11] Mobilizing the security apparatus to support public health apparently inspired public trust.

Figure 8: Temporal trends in security-related content, March 2020
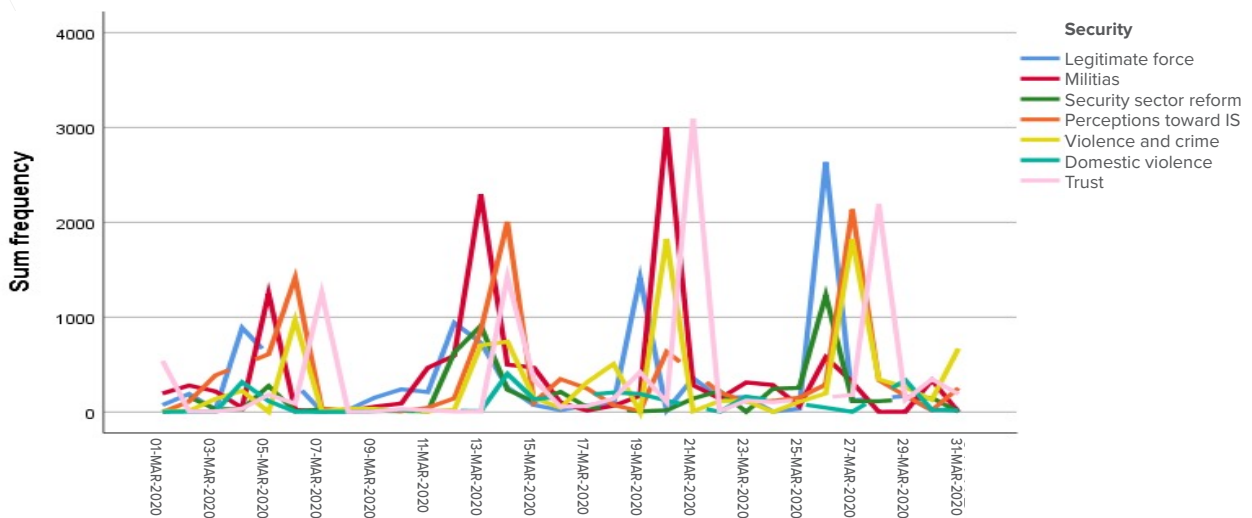
Figure 9: Temporal trends in security-related content, May to June 2020
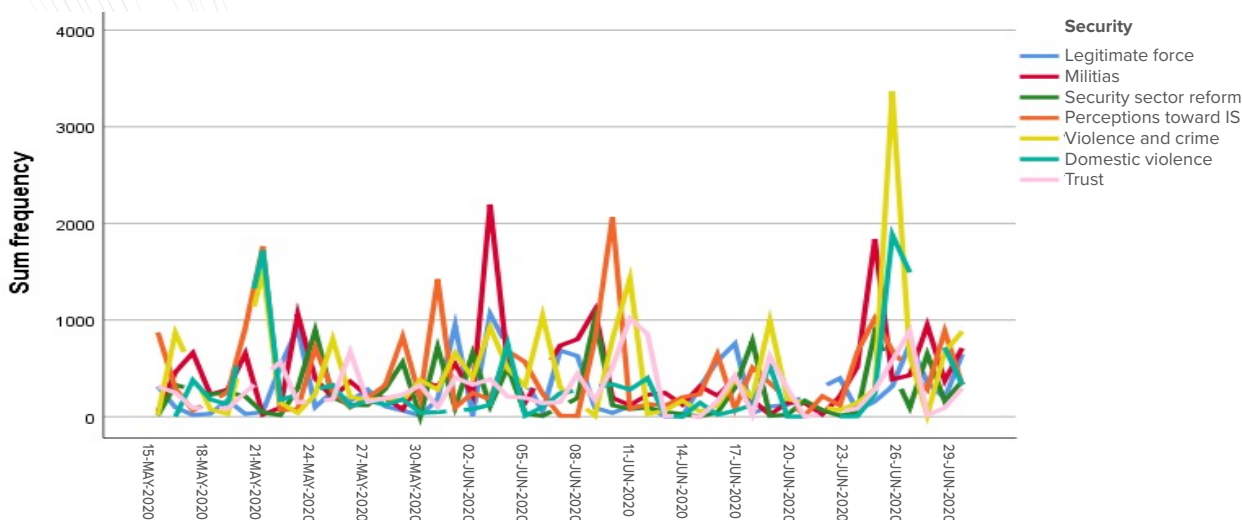
3.2.2 Corruption

When tweeting about corruption (263,135 tweets or 15.65 percent of the total on core grievances), Iraqis primarily referred to its economic cost (49 percent) as well as accountability and transparency issues (41 percent). They were least likely to tweet about the justice system and impunity (5 percent), the link with sectarianism (5 percent) and the spread of corruption (0.7 percent).

An examination of temporal trends found Twitter users were much more likely to produce corruption-related content after the October 2019 protests (Figure 10), despite a few peaks prior to the demonstrations. **The protests seemed to catalyse online dissent with citizens critiquing the status quo**.

A clear peak in discussions about the economic costs of corruption appeared in August 2020. On 26 August, Jeanine-Hennis Plasschaert, Special Representative of the UN Secretary-General for Iraq, reported to the UN Security Council that "corruption remains endemic, and its economic cost untold as it continues to steal desperately needed resources from the everyday Iraqi, eroding investor confidence."[12] It is not clear whether this speech and subsequent media coverage had a ripple effect but the Iraqi Twittersphere around this period lit up with these concerns.

Figure 10: Temporal trends in corruption-related content
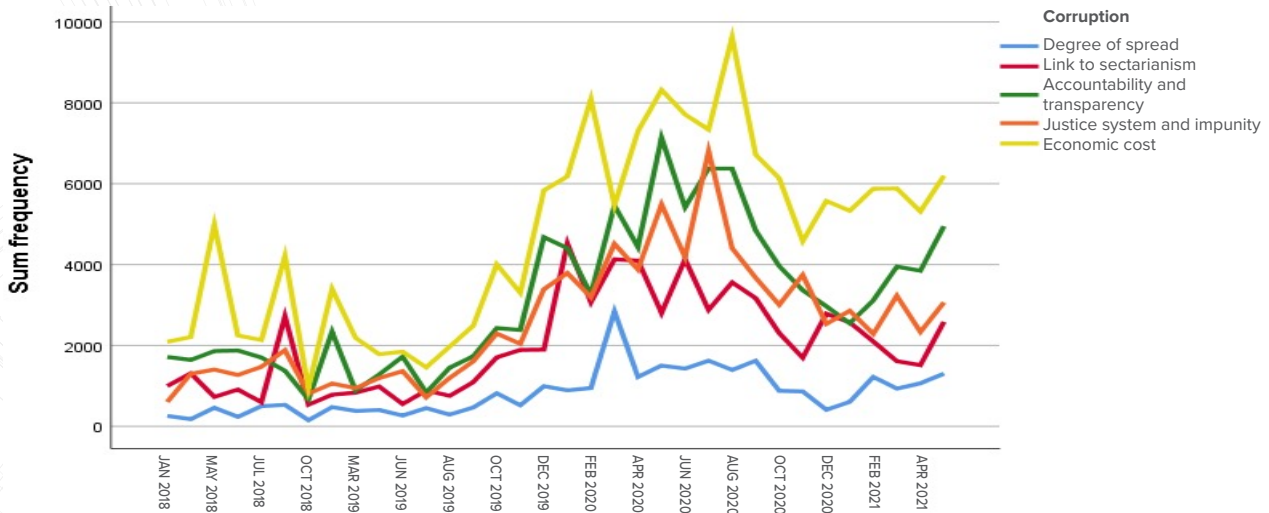
3.2.3 Services

When tweeting about services (444,039 tweets or 13.5 percent of the total on core grievances), Twitter users primarily produced content related to COVID-19 (88 percent), followed by the costs of services (7 percent), electricity (5 percent) and water (1 percent). Compared to these dimensions, tweets about health care in general (608 in total), the fairness of distribution (105) and satisfaction with services (2) were negligible. Most health-care discussions may have centred on the pandemic rather than broader concerns about health care since data collection significantly overlapped with the pandemic.

The most prominent peak in tweets on services occurred in September 2020, with a record increase in COVID-19 cases, tipping over 250,000, and authorities warning on 4 September that hospitals might completely lose control of the situation.[13] In a contradictory vein, Iraqi authorities eased COVID-19 restrictions on 8 September.[14] These events stimulated the sharpest upswing in COVID-19-related content.

Figure 11: Temporal trends in services-related content
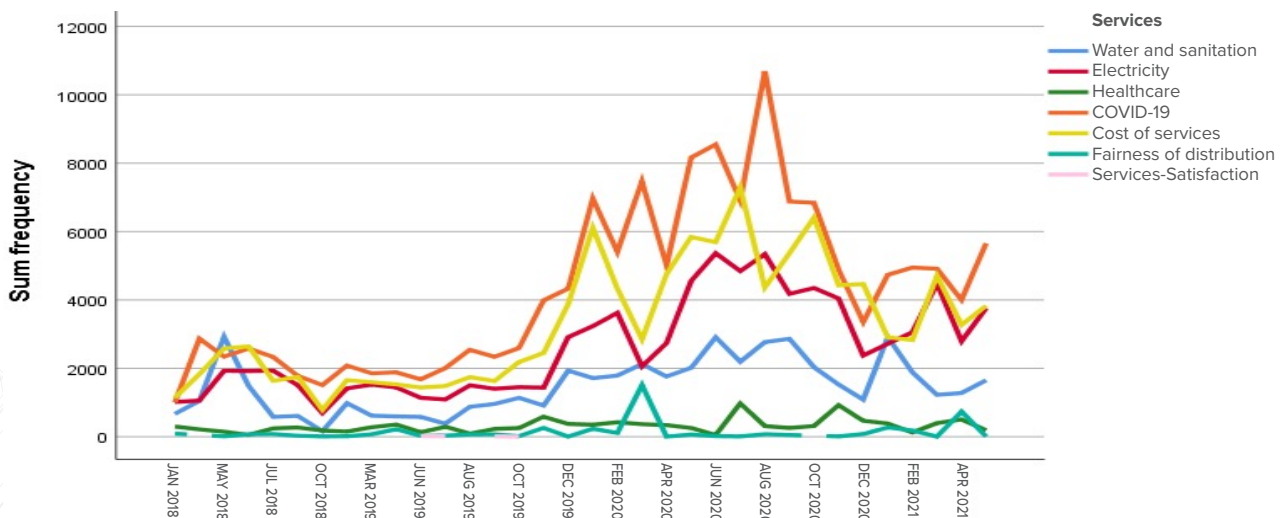
3.2.4   The economy

Iraqi Twitter users were least likely to produce content related to the economy compared to other core grievances (135,679 tweets or 3.88 percent of the total on core grievances). This low share is explored in greater depth in Box 1. Users mostly generated content related to unemployment and job security (53 percent), state resources and oil revenues (18 percent), networks of patronage (17 percent) and aid (12 percent). They were least likely to tweet on economic justice (0.8 percent) and women's economic empowerment (0.3 percent). As with other core grievances, the volume of content about the economy increased exponentially after the October 2019 demonstrations. This was especially so around unemployment and job security, state resources, and networks of patronage and aid.

Box 1: Cross-tagging economy-related tweets

The Iraqi economy and population are both struggling. As such, one might anticipate frequent tweets on economy-related grievances. This is clear in Part 3 of Wave IV of the Arab Barometer Survey conducted in 2021, where 58 percent and 29.3 percent of Iraqis surveyed evaluated the current economic situation as very bad and bad, respectively (the survey is available at https://www.arabbarometer.org/survey-data/data-analysis-tool/).

The low level of economy-related tweets in this current study may reflect the methodology, where a tweet containing economy-related content could be classified under 'governance' or 'corruption' if it contained more governance or corruption-related words. A deeper look into the cross-labelling of economy-related tweets found that of the total tweets with economy-related key words, **19.6 percent were labelled under security, 16.2 percent under governance, 15.3 percent under corruption and 8.3 percent under services. Only 40.6 percent of economy-related tweets** were predominantly about the economy as a core grievance. The rest discussed economic issues but focused more on factors such as governance, corruption and security that hold back the economy.

Some interesting peaks in content on the economy appeared in June 2020, August to September 2020 and February 2021, mostly on unemployment and job security. In late June 2020, Iraq's Parliament passed a law authorizing the Government to borrow US $18 billion as a stopgap measure for the country's financial deficit,[15] which could have triggered economy-related content. The only peak in content on women's economic participation appeared in December 2019, when UN Women released a report[16] on women's access to employment. Key findings were widely circulated on Twitter and likely stimulated further discussion.

Figure 12: Temporal trends in economy-related content
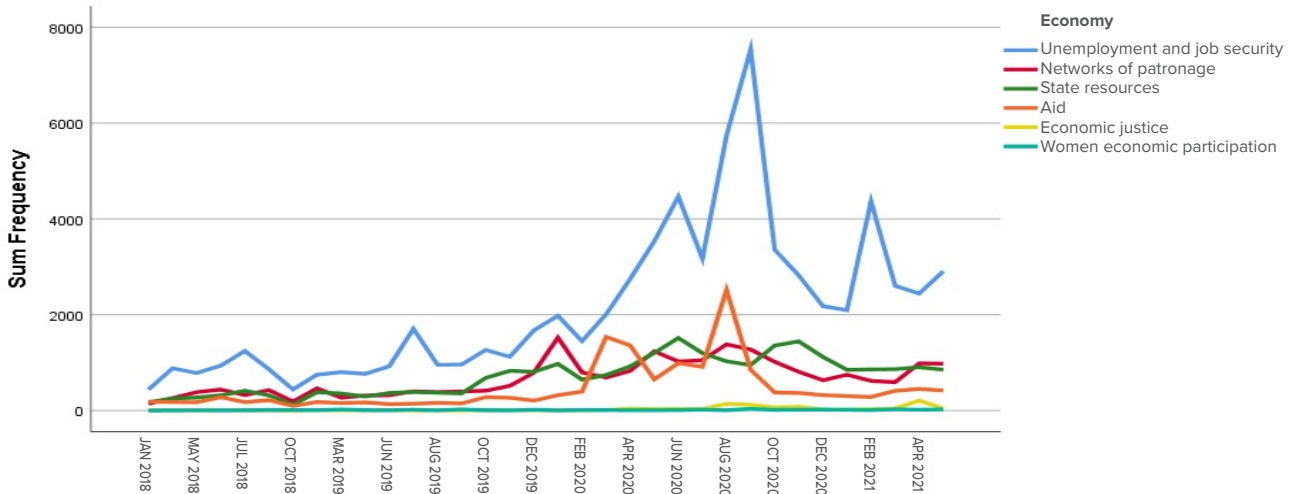
3.2.5 Governance

In terms of governance (685,388 tweets or 19.61 percent of the total on core grievances), most users produced content on representation (65 percent), followed by political fragmentation (18 percent), ethnocentric divisions (9 percent), discrimination and marginalization (4 percent), and issues of legitimacy and trust (3 percent). Some subdimensions generated less content, such as Iraqi identity (12,377 tweets, 1.8 percent), identity politics (only 272 tweets, 0.04 percent), power-sharing (0.4 percent) and satisfaction with governance (0.18 percent). The last was captured via content related to the lack of legitimacy and trust in governmental bodies, implicitly indicating dissatisfaction with governance. As with all other core grievances, content around governance issues exponentially increased after the October 2019 demonstrations.

Figure 13: Temporal trends in governance-related content
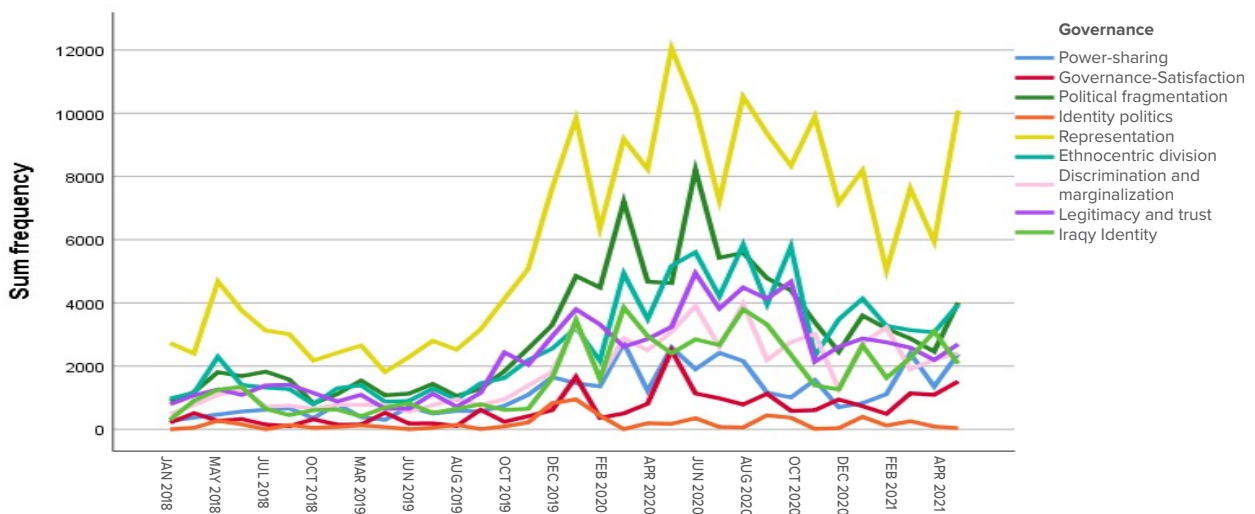
Interesting peaks in discourse around representation, paralleled by simultaneous increases in discussions around political fragmentation and ethnocentric division, were evident during May 2018, with parliamentary elections; November-December 2019, when Prime Minister Adel Abdul Mahdi resigned and Parliament approved the resignation followed by a new electoral law; and May 2020, when Parliament confirmed Mustafa Al-Kadhimi as the new Prime Minister.

Every peak around representation was followed, temporally, by a peak around legitimacy and trust. Most discourse highlighted the lack of legitimacy of governing bodies and officials and the lack of trust in the electoral and representative processes.

Content on illegitimacy and lack of trust in governance has been rising since 2018 (Figure 14). By October 2019, as anti-government protests were mobilizing and getting traction,[17] content on mistrust in representative bodies was booming. This suggests that the **Iraqi Twittersphere reflects public sentiment around the legitimacy of the Government**.

Mistrust dips at some points, indicating trigger events that may restore some semblance of trust. One example was in March 2020, around the withdrawal of Mohammad Tawfiq Allawi as Prime Minister designate after a vote of no-confidence from Parliament,[18] the suspension of anti-government protests due to the pandemic and the nationwide lockdown to contain the pandemic.[19] The data at hand do not make a clear-cut link to these events but the nature of the content and the overlap with the events suggest causality. Another large dip in trust appeared in November 2020, a month that witnessed a renewal of anti-government protests and repression of protests by police and military forces.[20] A closer examination of the period between 1 October and 30 November demonstrates consistent levels of content about mistrust and the illegitimacy of governmental bodies, except on 15 October (Figure 15), with a peak of 2,415 tweets.

Figure 14: Temporal trends in content on legitimacy and trust
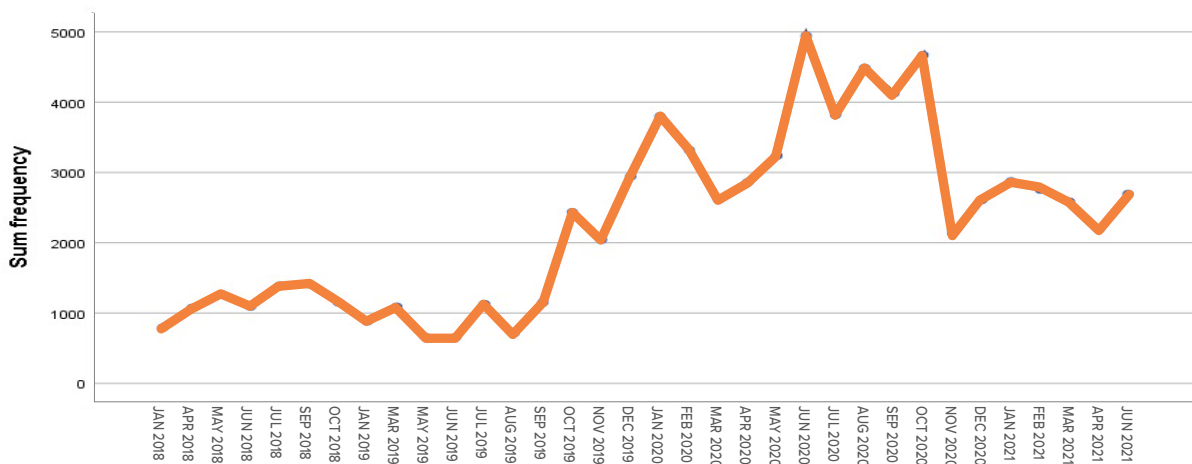
Figure 15: Temporal trends in content on legitimacy and trust, October to November 2020
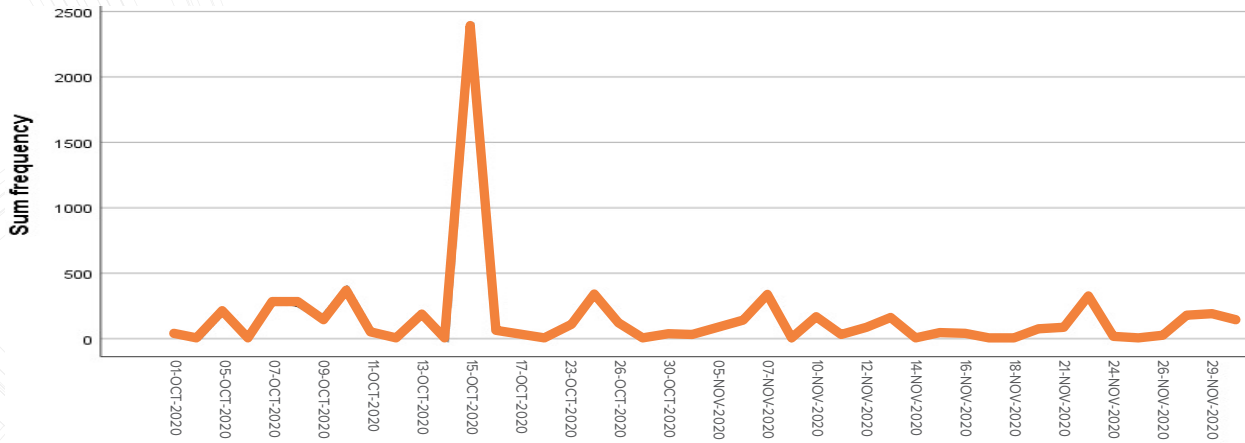
3.3   Core grievances on Iraqi Twitter across groups

3.3.1   Do Iraqi women and men hold different priorities for the social contract?

Tweets around each of the core grievances rose and dropped simultaneously for women and men, indicating a large degree of convergence (Figures 16 and 17). A few instances of divergence arose, mostly around corruption and governance, where peaks in the volume of tweets appeared to be sharper among men than women. Some trigger events likely mobilized more extensive discussions among men. Parallel peaks among women, if at a lower level, indicated that the much smaller but highly active group of female Twitter users maintains systematic engagement on issues related to Iraq.

Figure 16: Breakdown in the volume of content on core grievances by sex, percentage
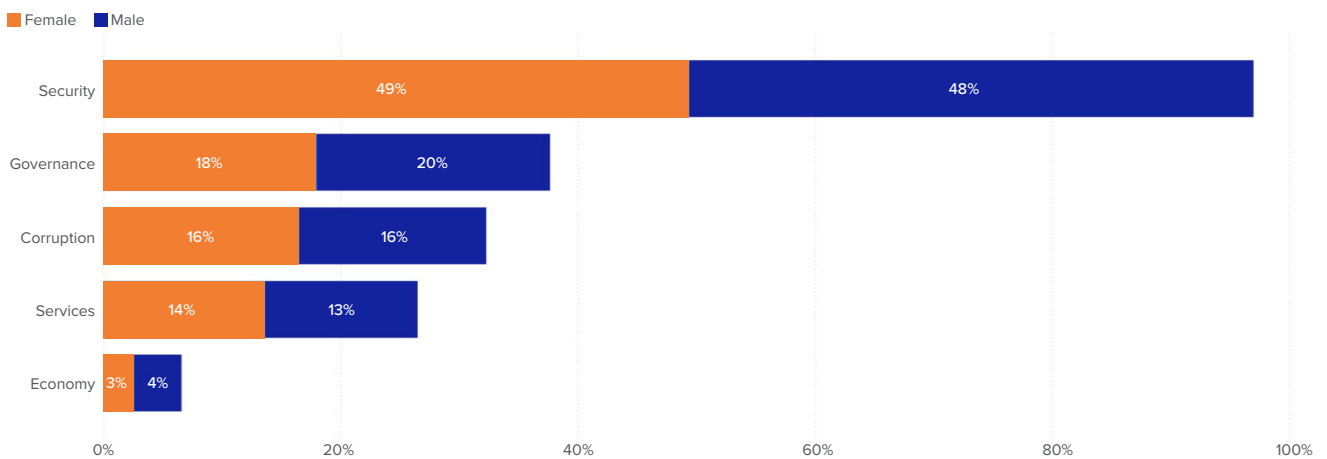
Some gender differences were evident in some core grievances. Whereas men and women tweeted mostly similar volumes of content on security and the economy, divergence was evident in the remaining core grievances, especially at the subdimensional levels. When tweeting about corruption, women were more likely than men to discuss the economic costs along with accountability and transparency. Men tweeted more about corruption in the justice system, the link to sectarianism and

the pervasiveness of corruption. On services, women were more likely than men to discuss the cost, whereas men tweeted more about COVID-19 and water and sanitation. On governance, women vocalized concerns about political fragmentation and ethnocentric divisions more than men, whereas men to a greater extent tweeted about legitimacy and trust in government, Iraqi identity, and discrimination and marginalization.

Although Iraqi women and men converged in general on core grievances, some divergent priorities are important to consider in reimagining the social contract. For instance, from May to June 2020, men were discussing security-related concerns on Twitter at a much higher rate than their female counterparts. Similarly, a spike in male-driven content around corruption was evident in October 2020, the one-year anniversary of the 2019 mobilizations.[21] Finally, on governance, two distinct spikes occurred for men compared to women. The first appeared in May 2018, coinciding with parliamentary elections with record low turnout. The entire electoral process was perceived as fraudulent, leading to contested results and a ballot recount, all of which culminated in political uncertainty.[22] This inevitably translated into heightened discussions around governance, especially among male users. Another distinctive gender-divergent moment appeared on 5 January 2020, when the Iraqi Parliament voted to oust all foreign troops from the country. Men tweeted intensively around political representation and Iraqi identity, generating over 1,500 tweets on Iraqi identity on 5 January alone.

Male and female Twitter users seemed to engage on core grievances in a comparable manner over time (Figure 18). Male users produced more tweets, which could be explained by more male than female users. The few distinct instances of divergence were driven by key events that appeared to be stronger priorities for men.

Figure 17: Breakdown of content on core grievances by sex, percentage

Figure 17: Breakdown of content on core grievances by sex, percentage, cont.

Legend: Female (orange), Male (blue)

Corruption
- Economic cost: Female 38.5%, Male 29.8%
- Accountability and Transparency: Female 23.7%, Male 19.8%
- Justice System and Impunity: Female 20.1%, Male 24.6%
- Link to Sectarianism: Female 15.1%, Male 18.8%
- Degree of Spread: Female 2.6%, Male 7.0%

Services
- Cost of Services: Female 62.7%, Male 30.5%
- Electricity: Female 22.9%, Male 15.5%
- COVID-19: Female 11.4%, Male 37.6%
- Water and sanitation: Female 1.6%, Male 9.6%
- Healthcare: Female 1.4%, Male 3.5%
- Fairness of Distribution: Female 0.1%, Male 3.5%

Economy
- Unemployment and job security: Female 63.2%, Male 50.7%
- Networks of Patronage: Female 15.0%, Male 18.1%
- State Resources: Female 13.2%, Male 18.7%
- Aid: Female 7.0%, Male 11.7%
- Economic Justice: Female 1.4%, Male 0.6%
- Women Economic Participation: Female 0.2%, Male 0.2%

Figure 17: Breakdown of content on core grievances by sex, percentage, cont.
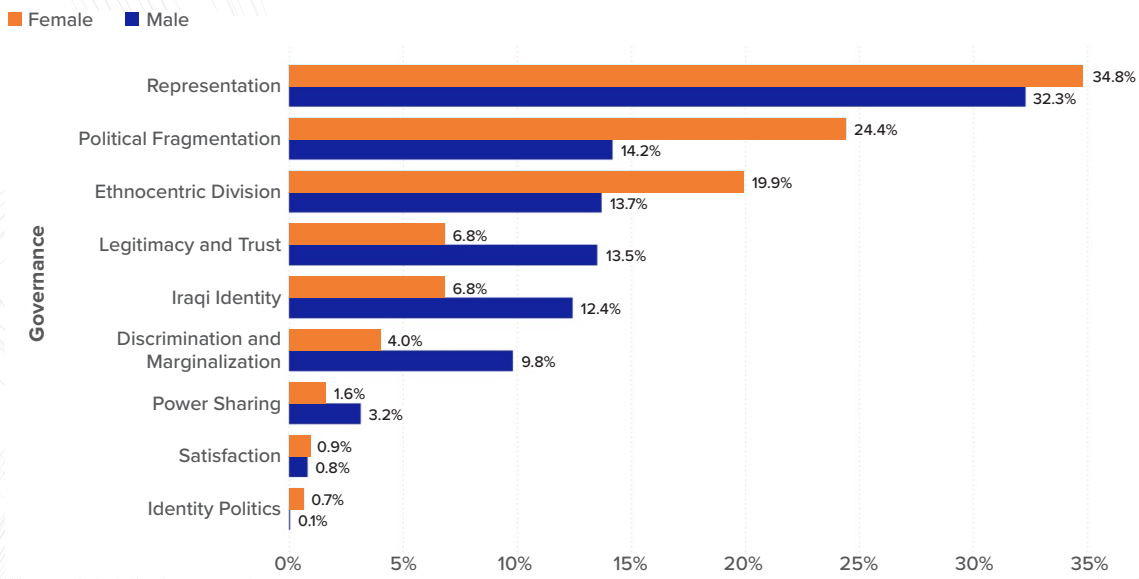
Figure 18: Temporal trends in core grievances by sex
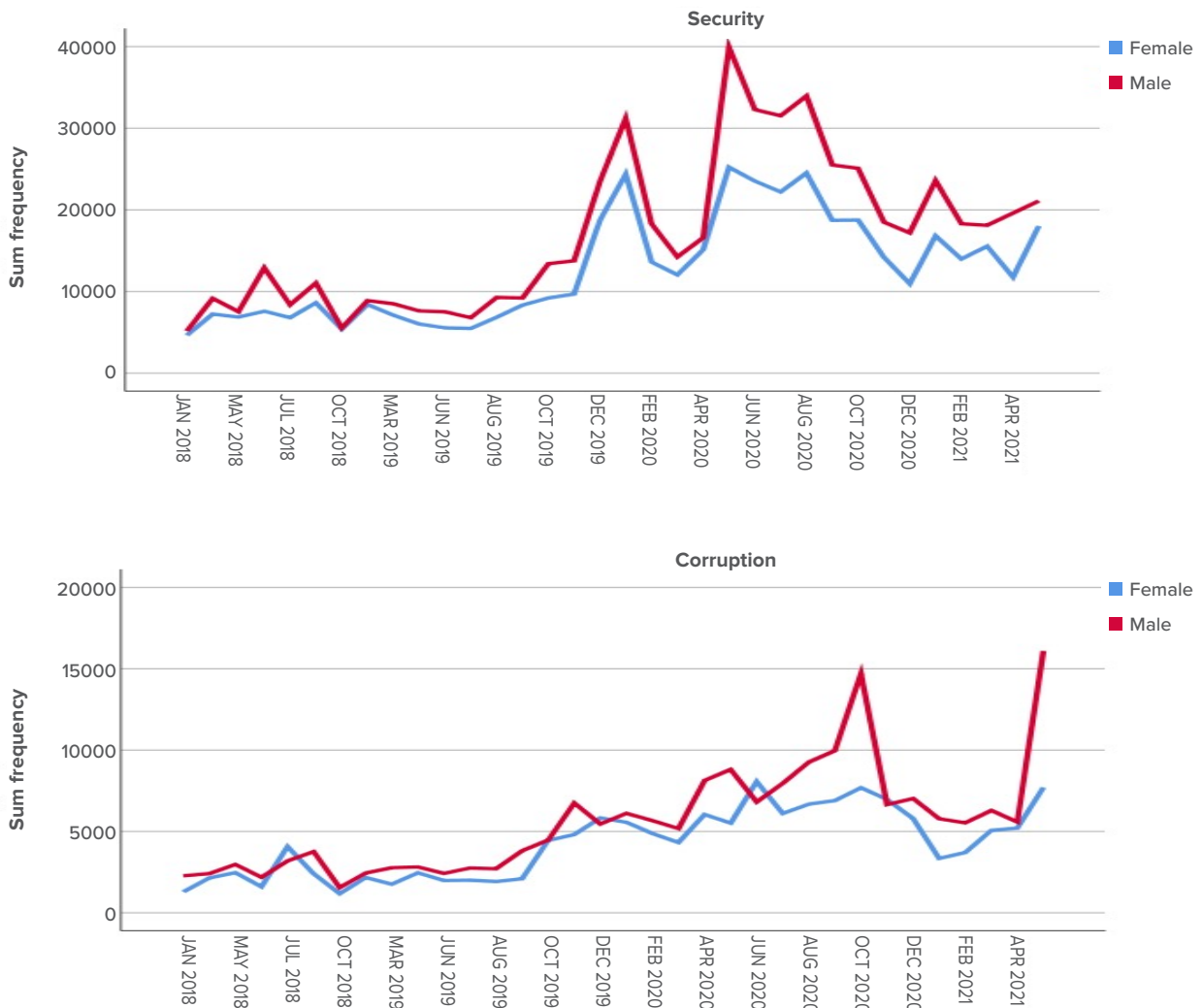
Figure 18: Temporal trends in core grievances by sex, cont.
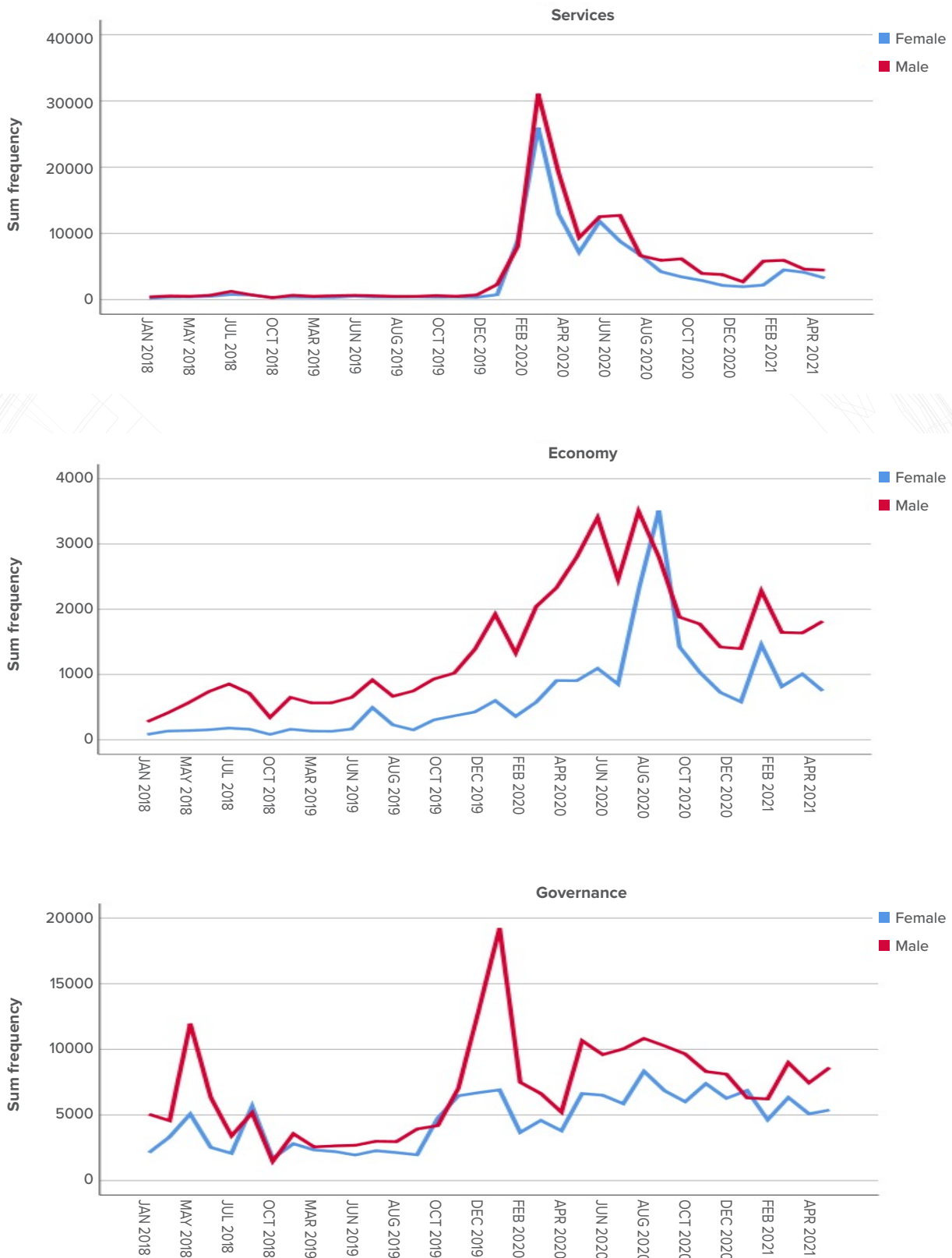
3.3.2   Do Iraqi women and men have similar views on the future?

Overall, Iraqi male and female Twitter users diverged in their sentiments on the future. Iraqi women were more likely to express hopelessness and negativity (793 tweets) compared to hope and a positive outlook (519 tweets). Less difference was evident among Iraqi men, with roughly the same number of hopeless and negative tweets (1,733) and more hopeful and positive ones (1,710). See Figure 19.

Figure 19: Sentiment/perception of the future by sex, percentage
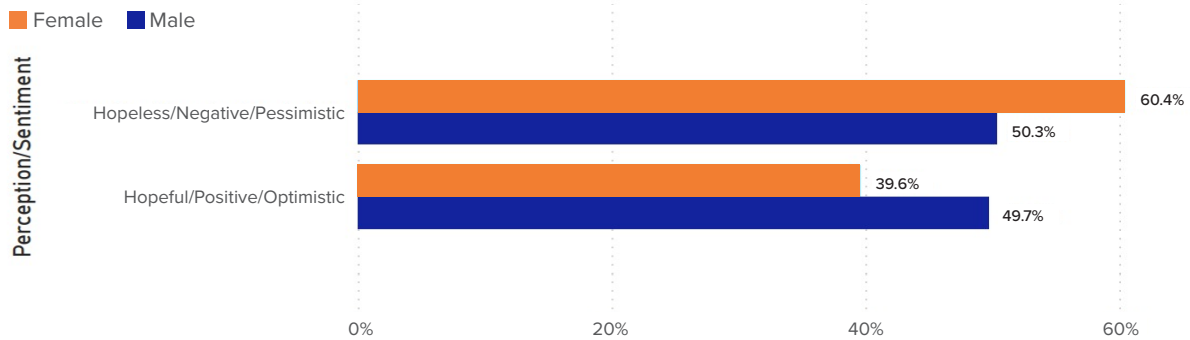
Sentiments about the future ebbed and flowed similarly for male and female users over time (Figure 20). Although women expressed hopefulness and optimism consistently less frequently than men, levels of hopelessness and pessimism were comparable among women and men for most of the time frame under study. This could indicate that certain events promoted convergence. A spike of hopefulness in December 2019 occurred after Prime Minister Abdul Mahdi announced his resignation and Parliament approved it and passed the new electoral law. Another peak among male users came in May 2020 when Parliament approved Mustafa Al-Kadhimi as the new Prime Minister. High levels of hope in September 2020 may have anticipated the one-year anniversary of the October 2019 protests.

Figure 20: Temporal trends in sentiment/perception by sex
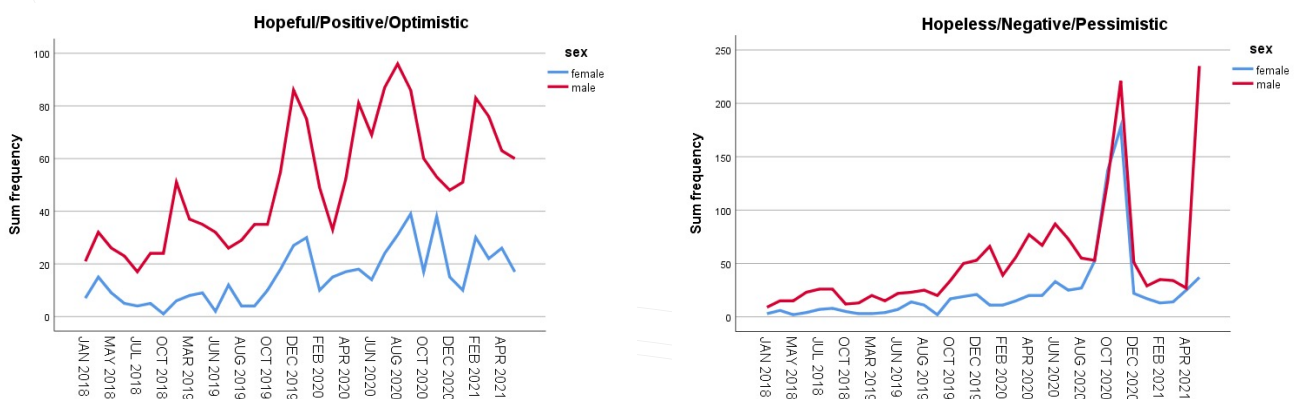
The aftermath of the one-year anniversary saw a decline in expressions of hope and an increase in hopelessness for both male and female Twitter users, however. The first large escalation in hopelessness emerged on 14 November 2020. Another spike arose in April 2021, potentially associated with Iraq surpassing 1 million COVID-19 cases[23] and a massive fire breaking out in the intensive care unit of the Baghdad hospital,[24] which eventually led to the resignation of the health minister.[25]

Although men and women view leadership as essential for the future of Iraq, they diverged in their emphasis on it. Female Twitter users stressed leadership to a greater extent. Male users focused more on external pressure and intervention. While both female and male users viewed collective action and popular mobilization as equally important for the future, female users underscored it more strongly than external pressure, whereas male users placed equal importance on collective action and external pressure. Both males and females often referred to divine inter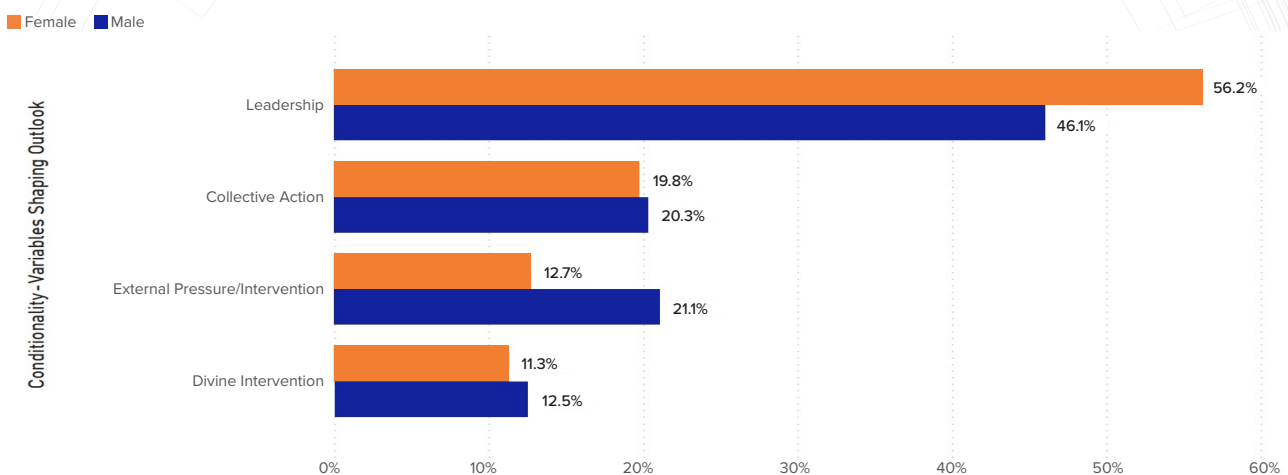vention or putting the future of Iraq in the hands of God. Interestingly, female users gave as much emphasis to divine intervention as external intervention. They focused more on grass-roots and materially tangible variables, such as emerging leadership from popular movements and collective action.

Figure 21: Variables shaping outlook by sex, percentage

3.3.3 Do the Arabic- and Kurdish-speaking Iraqi communities converge on priorities for the social contract?

Since 1991, the Kurdistan Region of Iraq has developed many state-like competencies that have laid the foundation for the region being a special entity or de facto state within Iraq.[26] Kurdish authorities have engaged in building state-like institutions, and in this process, a parallel social contract has developed between them and the population.[27] When the Iraqi Kurds refer to the government, they mean the Kurdistan Regional Government and Kurdish institutions.[28] For many years, there has been significant divergence between the region and the rest of Iraq in terms of perceptions, needs, priorities and demands.[29]

Arabic- and Kurdish-speaking Twitter users had some level of convergence around social contract grievances. Both communities seemed to emphasize security-related content most often. The **Kurdish-speaking community in fact did this to a much greater extent than the Arabic-speaking community (Figure 22)**, which is interesting given that the Kurdistan Region of Iraq has experienced consistent stability since 2003.[30]

Based on the volume of content, after security, the Arabic-speaking Twitter community put the greatest importance on governance, corruption, services and the economy. The Kurdish-speaking community indicated a slightly different order of concerns: services, governance, corruption and the economy. The Kurdish-speaking community seemed less concerned about governance and corruption, both robust concerns for the Arabic-speaking community. Both communities had little engagement on the economy.

Figure 22: Breakdown of content produced per core grievances across language groups, percentage
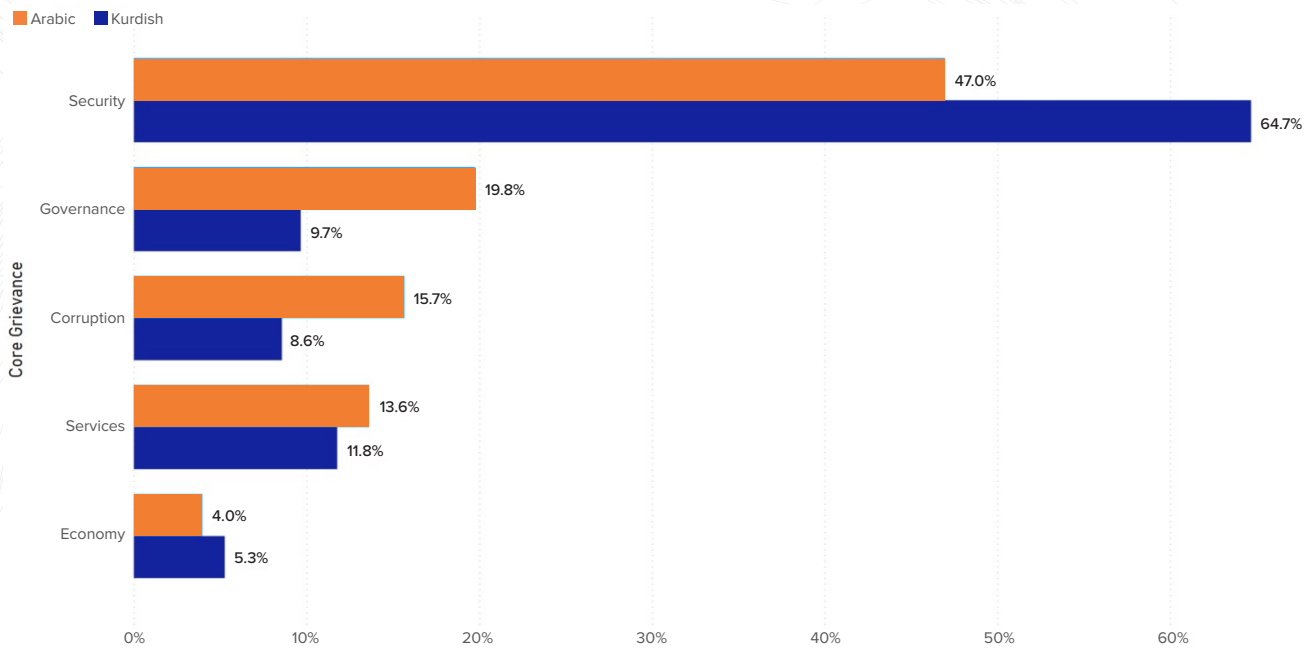
Despite divergences on core grievances, the Arabic- and Kurdish-speaking populations converged greatly on the subdimensions of security and corruption. They diverged on the main grievances related to the economy, services and, to an extent, governance (Figure 23). Divergences could be explained by the fact that the Kurdistan Region of Iraq is highly autonomous, with a context and issues that vary from those in the rest of Iraq.[31] In terms of the economy, the Kurdish-speaking community produced much less content about unemployment and job security, and much more around aid. The presence of international organizations and a large number of refugees and internally displaced people in the region might explain this emphasis.[32] The Arabic-speaking community seemed to generate more content on networks of patronage and state resources, including oil revenues. The increasing proliferation of different centres of power and their fragmentation and penetration into state institutions[33] may explain this preoccupation.

On services, the Kurdish-speaking population was more likely to tweet on electricity and health care; the Arabic-speaking population focused more on COVID-19 and the fair distribution of services. In terms of governance, the Arabic-speaking population tweeted more often about political fragmentation, whereas the Kurdish-speaking population expressed more satisfaction.

Figure 23: Breakdown of core grievance dimensions by language group, percentage

Legend: ■ Arabic ■ Kurdish

Security

Dimension	Arabic	Kurdish
Perceptions toward IS	19.1%	19.8%
Militias	18.5%	19.2%
Violence and crime	16.2%	15.7%
Legitimate force	13.1%	11.1%
Trust	11.9%	11.4%
Domestic violence	10.9%	11.9%
Security sector reform	10.4%	10.8%

Corruption

Dimension	Arabic	Kurdish
Economic cost	33.0%	34.0%
Accountability and Transparency	23.3%	22.6%
Justice System and Impunity	21.8%	21.0%
Link to Sectarianism	15.9%	15.1%
Degree of Spread	6.0%	7.3%

Services

Dimension	Arabic	Kurdish
Cost of Services	36.1%	38.6%
Electricity	24.2%	33.0%
COVID-19	22.1%	12.7%
Water and sanitation	11.5%	10.8%
Fairness of Distribution	4.2%	0.2%
Healthcare	1.9%	4.8%

Figure 23: Breakdown of core grievance dimensions by language group, percentage, cont.

3.3.4 Core grievances in youth-related content

The most prevalent expressions of core grievances in youth-related content were about security. In total, 55,078 youth-related tweets discussed core grievances, the majority in the Arabic language (53,079 tweets). Among these, 56 percent were on security-related concerns, 16 percent on governance, 13 percent on corruption, 9 percent on services and 6 percent on the economy (Figure 24).

Figure 24: Frequency and percentage of core grievances among 53,081 youth-related tweets

- Security, 56%
- Corruption, 13%
- Services, 9%
- Economy, 6%
- Governance, 16%
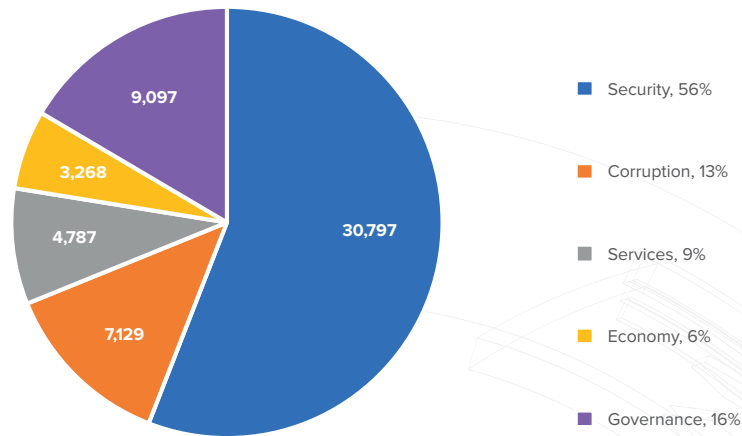
Youth-related content reflected the same level of engagement on core grievances as the general Iraqi Twittersphere. This indicates alignment between youth-related and general priorities for Iraq's social contract. A couple of key differences included a greater focus on security-related content (58 percent compared to 48 percent in tweets as a whole) and less content on the rest of the core grievances. Youth-related tweets around security contained more content around violence and crime (36 percent) and less content about militias (12 percent) than tweets in general (22 percent and 19 percent, respectively). In terms of corruption, the volume of youth-related tweets linking sectarianism and corruption (11 percent) was greater than tweets as a whole (5 percent) but the volume of youth-related tweets linking to accountability and transparency (35 percent) was less than the whole (41 percent). Youth-related content was greater on the high cost of services (14 percent) but tapered off on COVID-19 (80 percent) compared to the overall body of tweets at 7 percent and 88 percent, respectively.

In terms of the economy, youth-related tweets contained more content around unemployment (63 percent) and state resources and oil (20 percent) and less content about networks of patronage (12 percent) and aid (5 percent). For the tweets in general, the shares were 53 percent, 18 percent, 17 percent and 12 percent, respectively. Grievances linked to the economy were the only concerns suggesting youth have a different order of priorities. This is understandable considering high rates of youth unemployment at around 36 percent compared to the overall national rate of 16 percent in 2020,[34] and the heavy reliance on state resources for public sector employment.

Finally, youth-related tweets on governance were more likely to centre on ethnocentric divisions (13 percent) and the illegitimacy and lack of trust in governance bodies (7 percent) but less likely to dwell on representation (59 percent) than the general population of tweets (9 percent, 3 percent and 65 percent, respectively). The order of prevalence in the various subdimensions of governance-related priorities and grievances was identical in youth-related content and the general population of tweets.

4 CONCLUSIONS: KEY SOCIAL CONTRACT PRIORITIES

The Twitter listening tool tapped into the content of close to 77 million tweets produced by 882,556 unique users in the Iraqi Twittersphere. The following conclusions summarize findings on key social contract priorities.

- Of all the tweets around core grievances, 48 percent were about security-related concerns, 20 percent were about governance, 16 percent were about corruption, 14 percent were about services and a meagre 2 percent were about the economy.

- Iraqi Twitter users were much more likely to tweet about core grievances shaping their present compared to their future.

- The protests of October 2019 catalysed Twitter discussions about core grievances, seemingly activating online dissent.

- Of all the grievances identified, Iraqis produced the largest amount of content on security-related concerns. Most tweets were about the Islamic State, violence and crime, and militias. Content predominantly focused on specific security-related events.

- On corruption, Iraqis primarily tweeted about economic costs as well as accountability and transparency issues.

- On services, Iraqis were primarily concerned about the COVID-19 pandemic, which was unique to the period for data collection.

- In terms of governance, users primarily tweeted about representation (elections, representative bodies, etc.).

- Expressions of illegitimacy and a lack of trust in governance bodies have been rising since 2018. Starting in October 2019, overt expressions of cynicism and mistrust in representative bodies boomed and continued to rise.

- Although Iraqi women and men seem to converge on core grievances in general, they hold some divergent priorities that are important to consider when reimagining the social contract.

- Women were more pessimistic than men in their future outlook, despite both groups showing similar trends in hope and hopelessness over time.

- Women were more likely than men to emphasize local, grass-roots variables shaping the future of Iraq, such as emerging leadership and collective action.

- The Arabic- and Kurdish-speaking populations expressed slightly divergent broad and specific priorities for the social contract, underscoring the need to attend to these variations in a renewed social contract.

- Youth-related tweets echoed similar grievances and priorities for the social contract as the overall population, except on economic grievances. This highlighted different economic concerns, such as around unemployment and the use and management of state resources.

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For Annexes, please see the separate Compendium.

ENDNOTES

1   Research participants spoke broadly of the security forces but security in Iraq is a complex system made up of a myriad of actors with varying duties.

2   Founded in 2009, UN Global Pulse is the UN Secretary-General's initiative on big data and artificial intelligence for development, humanitarian action and peace. In 2016, Twitter and UN Global Pulse announced a partnership to provide the United Nations with access to Twitter's data tools to support efforts to achieve the Sustainable Development Goals. This partnership enables innovative uses of Twitter data while protecting the privacy and safety of Twitter users.

3   To build the most comprehensive database of male and female Arabic names, the research team merged data sets from https://www.kaggle.com/ishivinal/arabicnames and https://www.kaggle.com/lailamohammed/arabic-names. Next, the team expanded the database by scraping more data from websites with Arabic names categorized by gender (http://iid-alraid.com/EnOfName/Male.php and http://iid-alraid.com/EnOfName/Female.php). It then compiled names most commonly used by Iraqi Twitter users after extracting active accounts and filtering the mentioned names. For Kurdish names, three references were used: Giwi Mukiriani, 2002, nawi kch u kurani kurdi (Kurdish names for girls and boys), Erbil; Nasr Razazi, 1991, new la komali kurdawrida (Names in Kurdish society), Stockholm; and Diako Hashmi, n.d., nawi kurdi (Kurdish names).

4   For more information, see United Nations 2018.

5   For more information, see UN Global Pulse and IAPP 2018.

6   See: https://blog.twitter.com/en_us/topics/company/2020/bot-or-not.html.

7   See the International Telecommunication World Telecommunication/ICT Indicators Database at: https://www.itu.int/.

8   Ibid.

9   Arab Center Washington DC 2020.

10   About the 2020 Arab Opinion in Index Survey: The sample size ranged between 1,500 and 2,500 respondents in each country and was 50 percent female and 50 percent male, with 24 percent aged 18-24, 25 percent aged 25-34, 20 percent aged 35-44, 15 percent aged 45-54, and 15 percent aged 55 years and older. In terms of education levels, 16 percent were illiterate or had limited education, 34 percent had an education below secondary school, 23 percent had a secondary school education, and 26 percent achieved a level higher than secondary school.

11   Al-Arabiya News 2020.

12   Mosimann 2020.

13   Rasheed, Varshalomizde and Gazo 2020.

14   Garda News 2020a.

15   Mehdi and Al-Saffar 2020.

16   REACH 2020.

17   Human Rights Office and UNAMI 2019.

18   DW 2020c.

19   France 24 2020.

20   Arab Weekly 2020.

21   Al-Ruabie 2020.

22   World Bank Group 2018.

23   Aldroubi 2021.

24   BBC News 2021.

25   AP News 2021.

26   Voller 2014.

27   Palani et al. 2019.

28   Gunter 2014.

29   Voller 2014 and Palani et al. 2019.

30   Jüde 2017.

31   Costantini 2020.

32   UNHCR 2021 and IOM 2021.

33   Mansour 2021.

34   World Bank 2020a.