



Twitter and human trafficking: Purposes, actors and topics in the Spanish-speaking scene

La trata de personas en Twitter: Finalidades, actores
y temas en la escena hispanohablante

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ABSTRACT

Human trafficking is a phenomenon linked to several forms of exploitation, such as sexual exploitation, forced labour, forced marriage, begging, forced criminal activity, or organ removal. There are different debates about a potential overrepresentation of some of these exploitation purposes, such as the sexual one, in the discourses underlying international regulations, news or institutional campaigns. This may have consequences on the identification of some of the population affected by this phenomenon and the assistance provided to them. The aim of this paper is to analyse the temporal evolution of the purposes of exploitation, actors and topics most represented in the activity on human trafficking and exploitation on Twitter during the 2011-2020 period. The results show that sexual exploitation is the purpose most represented in Twitter activity and the fact that international organisations and the criminal prosecution of the crime of human trafficking have progressively become more relevant. Furthermore, the networks of topics suggest that sexual exploitation seems to be linked to the notion of prostitution. This may have consequences for the displacement of other purposes of exploitation or the approaches centred on the promotion of human rights to less relevant positions, as well as for the construction of certain images of victims of human trafficking.

RESUMEN

La trata de personas es un fenómeno vinculado a diferentes finalidades de explotación, como la sexual, laboral, para el matrimonio, la mendicidad, la comisión de delitos o la extracción de órganos. Existen numerosos debates que remiten a una posible sobrerrepresentación de algunas de estas finalidades, como la sexual, en los discursos presentes en normativa internacional, prensa escrita o campañas institucionales. Esto puede derivar en posibles consecuencias sobre la detección de parte de la población afectada por este fenómeno y la atención que se le proporciona. El presente trabajo tiene como objetivo analizar la evolución temporal de las finalidades de explotación, actores y temas más representados en la actividad sobre trata de personas y explotación acontecida en Twitter durante el periodo 2011-2020. Los resultados arrojan que la explotación sexual es aquella con una mayor presencia en la actividad en esta red social, así como que los organismos internacionales y la persecución penal del delito de trata se tornan progresivamente más relevantes. Además, las redes de comunidades de temas analizadas sugieren que la explotación sexual parece estar vinculada a la idea de prostitución en los tuits publicados. Todo ello puede tener consecuencias sobre el desplazamiento de otras finalidades de explotación o de enfoques como los centrados en la promoción de Derechos Humanos a posiciones menos relevantes, así como sobre la construcción de determinadas imágenes de víctimas de este fenómeno.

KEYWORDS | PALABRAS CLAVE

Trafficking, sexual exploitation, Twitter, social media, social media analysis, prostitution.
Trata, explotación sexual, Twitter, redes sociales, análisis de redes sociales, prostitución.



1. Introduction and state of play

The United Nations Protocol to Prevent, Suppress and Punish Trafficking in Persons (2000), also known as the Palermo Protocol, established the most widely accepted definition of trafficking in persons, embracing the act of recruitment, transfer and receipt of persons through the use of coercive means for the purpose of their exploitation, whether sexual, labour, for forced removal of organs or other slavery-like practices such as forced marriages, begging, or the commission of crimes (Bernstein, 2018). Women and girls are the most severely affected by this phenomenon and sexual exploitation is the most widespread purpose (United Nations Office on Drugs and Crime — UNODC, 2018), although the numbers of cases of labour exploitation seem to have increased in recent years (UNODC, 2020). The lines established for the eradication of human trafficking are prosecution, prevention, and victim protection.

The Palermo Protocol has been criticised for its focus on women and children, influenced by the ‘white slave trade’ policies initiated in the early 1900s to control the sexuality and mobility of European, Anglo-Saxon and American women engaged in prostitution, which, regardless of their consent, were considered forms of slavery (Attwood, 2021; Doezema, 2010; Kempadoo, 2015). Currently, this influence has contributed towards the assimilation of all forms of prostitution with situations of exploitation, thereby leading to an overrepresentation of sexual exploitation (Andrijasevic & Anderson, 2009; González, 2019). Indeed, there are concerns that other exploitation purposes such as labour exploitation have been underrepresented due to the difficulties of their detection (Hebert, 2016; Rodríguez-López, 2020; Zhang, 2012). The Palermo Protocol has also been criticised for prioritising prosecution of the crime as a strategy, reinforcing a criminal approach that displaces others, such as the human rights approach (Edwards, 2007; Reina-Peñas, 2019).

Coverage of the phenomenon in the media seems to reinforce dominant discourses regarding human trafficking (Couto et al., 2012), promoting understanding of its status as a crime, and placing the focus on sexual exploitation (Austin & Farrell, 2017; Denton, 2010; Meneses-Falcón & Urío, 2021). This could contribute to people suffering from other types of exploitation receiving less visibility and attention in public policies (Albright & D’Adamo, 2017; Rodríguez-López, 2020). The issue of sexual exploitation predominates in press articles (Marchionni, 2012; Sanford & Weitzer, 2016) and also in other fields such as academic publications (Gerassi, 2015; Sweileh, 2018), which emphasise criminal prosecution to achieve its eradication.

Other studies analysing the press point to the frequent presence of violated female bodies that reinforce an image of trafficking victims linked to contexts of prostitution (Rodríguez-López, 2018; Sobel, 2014). Advertising campaigns to raise awareness of the phenomenon which are based on the hypervisibility of women and the violence they suffer also seem to reiterate this prototypical idea of the sex slave (Saiz-Echezarreta et al., 2018). This representation may have led to the criminalisation of some of the people subject to human trafficking, especially those present in migration contexts, as they do not fit this image of victims of this phenomenon (Clemente, 2017; Gregoriou & Ras, 2018; O’Connell-Davidson, 2006; Wolken, 2006).

The analysis by Papadouka et al. (2016) of the interaction between journalists and readers also highlighted that news about human trafficking engenders debate regarding prostitution among readers. Adopting a similar approach, the analysis of a social media platform such as Twitter, allows us to explore the interaction between groups of actors and debates regarding different topics, although covering a period of up to 15 years given that Twitter was created in 2006. Twitter has proven useful in many studies, such as the analysis of topics in publications about climate change that may or may not be shared on Twitter or in the press (Haunschild et al., 2019), communities related to anti-vaccine movements (van-Schalkwyk et al., 2020), the relationship networks between educational influencers and the topics of their publications, (Marcelo & Marcelo, 2021) and the networks of actors in the debate regarding dual vocational training in Spain (Barroso-Hurtado et al., 2021).

However, there are hardly any studies focusing on the debate and activity relating to human trafficking on social media. Those that do exist have focused their efforts on understanding how trafficking networks use Twitter to recruit new victims (Burbano & Hernández-Álvarez, 2017; Granizo et al., 2020; Hernández-Álvarez & Granizo, 2021; Tundis et al., 2019). A different survey and interview research

suggests that increased use of social media such as Facebook is associated with increased knowledge about human trafficking (Ruiz-Herrera et al., 2018) or it points to the existence of digital anti-trafficking activism (Gong, 2015).

This article aims at identifying the exploitation purposes linked to trafficking that are most widely disseminated on Twitter, along with some of the main actors and topics present in the activity on this social network. This analysis is considered relevant because the representations and imaginaries contained in debates and discussions on human trafficking can have consequences for the population that experiences it; because of the scarcity of publications addressing this issue and activity on Twitter from the context of social media analysis; and because this social network allows us to explore the activity and interactions of numerous actors in different fields, and of different types and scales. Despite the steady increase in the number of people suffering labour exploitation, the expected result is that Twitter activity on human trafficking and exploitation focuses primarily on sexual exploitation, given the various references to the prominence of this type of exploitation in academic articles, the press, and publications by international agencies. For all these reasons, the following objectives are proposed:

- Objective 1: To describe the level of representation of the different exploitation purposes associated with human trafficking and their evolution over time in Twitter activity.
- Objective 2: To identify the total number of actors and their activity, as well as some of the main actors who tweet and are mentioned in tweets for each of the different exploitation purposes linked to human trafficking, considering their evolution over time.
- Objective 3: To detect the topics present in tweets on human trafficking, considering their evolution over time.

2. Materials and methods

2.1. Data

Different combinations of terms were established to develop a search strategy divided into six blocks to retrieve all the tweets in Spanish that highlight the main purposes of exploitation linked to human trafficking. These combinations are composed of different root terms that refer to trafficking in persons per se and are complemented by specific words for each type of exploitation: a) sexual; b) labour; c) for begging; d) for forced marriage; e) for the commission of crimes; and f) for forced removal of organs.

Accordingly, each tweet was labelled considering the type of exploitation to which it referred, and some of them could appear in more than one. It is assumed that by naming one or more of the word combinations included in Table 1MC (supplementary materials), a tweet is introducing one or more types of exploitation into the activity and public debate on this phenomenon. In addition, other data were extracted from the tweet, such as the actor who posted it and the mentions made.

The terms associated with each of the exploitation purposes were selected according to different inclusion criteria. The first criterion was the relevance of the terms, defined as their potential to locate a large number of tweets for a particular purpose and their ability to represent some of the most important concepts associated with that purpose. Secondly, the relevance and unambiguity of the terms were assessed, defined as the degree of specificity of the term for the type of exploitation it addresses and the number of potentially misleading results its use could lead to, either because it does not refer to the exploitation purpose in question or because it includes results referring to other purposes.

The download of tweets was carried out on 8 June 2021 using Graphext's Tractor¹ tool, setting 31 December 2020 as the deadline for the publication of tweets and retrieving tweets, retweets and replies. However, tweets dated before 2011 were removed from the analysis due to the low activity prior to that year (two crime tweets, 84 labour tweets, seven marriage tweets, three begging tweets, 18 organ tweets and 764 sex tweets). The final set of tweets consists of 101,051 tweets, of which 90,328 are unique.

2.2. Method

Firstly, a descriptive analysis of the tweets was carried out using R. Descriptive statistics were applied and the activity was explored in general and for each type of exploitation in particular, at the level of tweets and actors and differentiating between active actors (those who tweet about trafficking) and mentioned

actors. Semantic networks were also generated with Graphext based on the text of the tweets. In these networks, each node represents a tweet and the connections between pairs of tweets are given by their semantic relationships. By detecting communities using the Louvain algorithm (Blondel et al., 2008), the main topics of interest were identified and the main communities were tagged after manually reviewing the tweets and the most relevant terms in each of them. Two researchers were involved in this labelling task, reaching a consensus on the solution in the event of discrepancies. In both analyses, the activity was considered for the full period (2011-2020) and also for two different periods (2011-2015 and 2016-2020).

3. Analysis and results

3.1. Evolution of general activity for each exploitation type

Of the 101,051 tweets analysed (90,328 unique tweets), the most frequent exploitation purpose linked to human trafficking is sexual exploitation (Table 1). Not only does it account for the largest volume of tweets (66,615), it also has the highest number of unique tweets, making it the purpose most frequently addressed exclusively (60,301 tweets; 90.52%). It is followed by labour exploitation (13,493 tweets; 69.2%), while the rest are much further behind. The type of exploitation with the lowest number of tweets is 'for commission of crimes' (242 tweets; 54.88%).

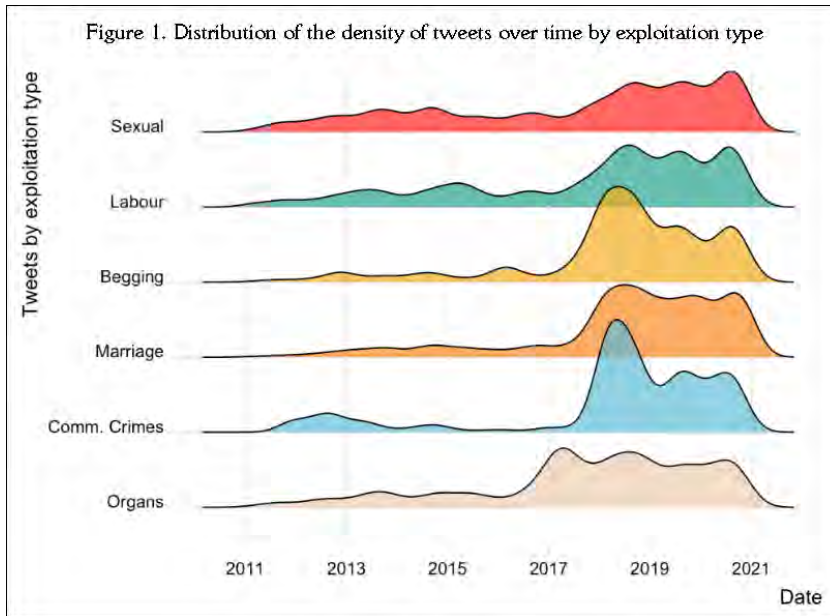
Exploitation type	Tweets	Unique tweets (% unique)
Sexual	66,615	60,301 (90.52%)
Labour	19,498	13,493 (69.2%)
Begging	4,506	2,582 (57.3%)
Forced marriage	4,016	2,458 (61.21%)
Commission of crimes	441	242 (54.88%)
Organ removal	5,975	3,794 (63.5%)
Total	101,051	90,328

Note: The number of tweets and the sum of the 'unique' column do not match because tweets that were repeated in more than one exploitation type were only counted once.

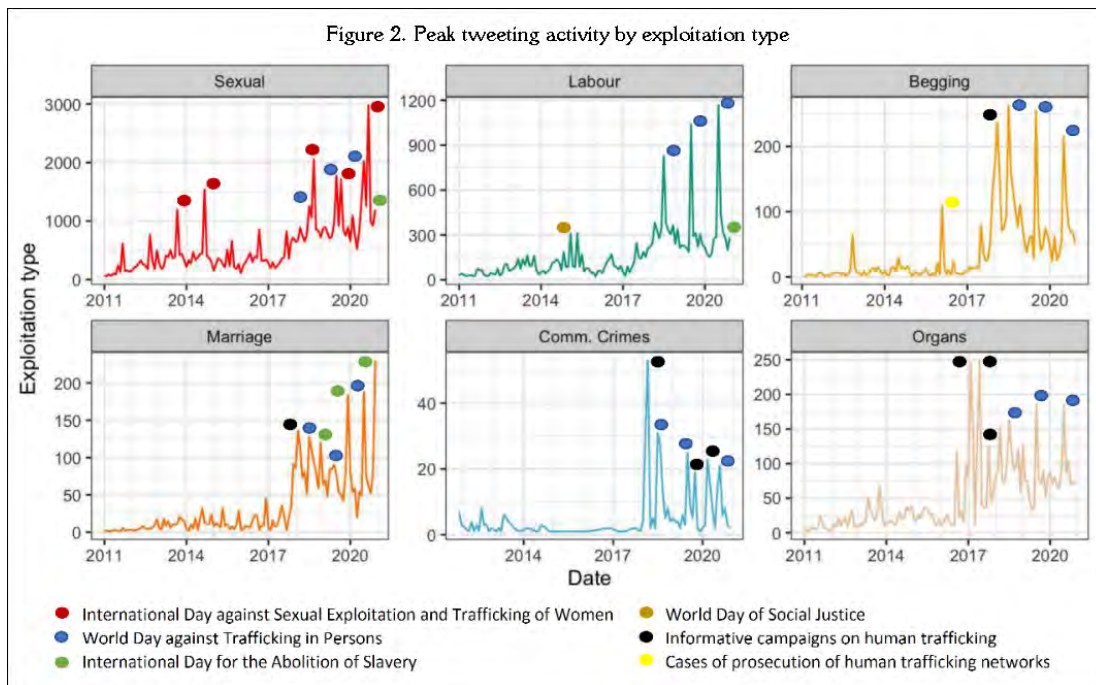
If we take sexual exploitation (the purpose most frequently present among the tweets) as a reference to analyse the overlap between tweets that talk about two exploitation types, it converges with 25.54% of the tweets that address labour exploitation, 31.89% of 'begging', 32.59% of 'forced marriage', 31.97% of 'commission of crimes' and 23.66% of 'forced removal of organs'. Thus, sexual exploitation is not only the exploitation type most frequently represented exclusively, it also comprises roughly a quarter of the tweets about other exploitation types, sharing some of the attention they receive.

The evolution of the level of presence of the different exploitation types in tweets over time has a series of common and divergent features. Firstly, an analysis of the distribution of tweets based on a density graph (Figure 1) shows that activity on Twitter began timidly in 2010 for most exploitation types. Some events in 2010 that could be related to the beginning of the Twitter debate activity include: a) the fact that Twitter use became popular at that time; b) consolidation of international guidelines and national legislation, especially relating to the codification of the crime of human trafficking (General Congress of the United Mexican States, 2012; United Nations, 2000).

The exponential increase in activity is concentrated between 2017 and 2018 in the case of sexual and labour exploitation, begging, forced marriage and commission of crimes and during 2016 and 2017 in the case of forced removal of organs. Most countries that have ratified the Palermo Protocol (2000) had criminalised both human trafficking as a stand-alone offence and any kind of purpose of human trafficking by 2016 (Sweileh, 2018). In the case of exploitation for forced organ removal, the growth in visibility from 2017 onwards could be related to the dissemination of news based on UNICEF reports pointing to the high percentage of people exploited for this purpose in Mexico (Arena Pública, 2017). In fact, Mexico's National Human Rights Commission (CNDH) implemented a strategy in 2019 that aims to collect statistical data at the state level on people affected by this phenomenon, among others, with the involvement of the State Attorney-General's Offices (FGRs) (CNDH, 2019), which are also very active in promoting prevention campaigns that have an impact on this greater visibility.



Following this exponential growth during 2017 and 2018, the cumulative activity on exploitation for begging, for the commission of crimes, and to a lesser extent, for forced removal of organs, declined. Exploitation for marriage and especially labour and sexual exploitation did not experience such a notable decrease, with the activity even increasing for the latter two.



It is worth noting that sexual and labour exploitation have the highest volume of tweets, so the variability of their growth in the previous graphs is not as dependent on such a small number of tweets as might be the case for other types of exploitation, suggesting consolidation of the debate in general terms. Some of these fluctuations in activity may be related to the presence of certain peaks of activity on Twitter (Figure 2), identified based on days or periods with a higher number of tweets, although the events to which

these peaks relate vary according to the exploitation type and do not represent the total amount of activity for each exploitation type. A large proportion of the tweet production peaks is related to the celebration of different international days sponsored by various international actors and organisations. Among these, World Day against Trafficking in Persons is particularly noteworthy, it has been organised since 2013 by the United Nations. This event seems to stand out, in particular since 2018, although there are other prior activities related to this Day, and it also seems to be related to peaks in all exploitation types. The International Day for the Abolition of Slavery, held since 1985 and also sponsored by the United Nations, is more prominent in the case of exploitation for marriage, and in 2020 for sexual and labour exploitation. In contrast, the International Day against Sexual Exploitation and Trafficking of Women, sponsored by the World Conference of the Coalition Against Trafficking in Persons and the Women's Conference, seems to be linked to the main peaks of sexual exploitation, and, although to a lesser extent, also to publications on other types of exploitation such as labour exploitation.

Also, noteworthy are the media impact of the dismantling of a network of human traffickers who engage in forced begging and, even more so, the implementation of informative campaigns on human trafficking carried out for days or weeks by the FGRs of different Mexican regions. These usually refer to several exploitation types and, on fewer occasions, to just one, as in 2017 with the campaigns relating to exploitation for forced removal of organs destined for trafficking. Other events that also seem to lead to increased activity in the debate are the celebration of the World Day against Child Slavery and International Women's Day; the increase in agricultural activity, given that a high percentage of trafficked persons end up working in this sector (UNODC, 2018; 2020); the implementation of campaigns in Spain — #trabajoforzoso— in 2019 and 2020; and the migration crises relating to the migrant caravans in Mexico (05/11/2018 and 18/01/2019), where migration seems to be linked to trafficking and organised crime and where institutions such as the Mexican regional FGRs seem to highlight exploitation for organ trafficking (second caravan).

3.2. Analysis of the actors participating in publications and their activity

The number of active actors —those who tweet— who are mentioned and the average dissemination of their activity in terms of tweets, retweets, favourites, and replies also varies depending on the exploitation type and the period: 2011-2015 or 2016-2020 (Table 2).

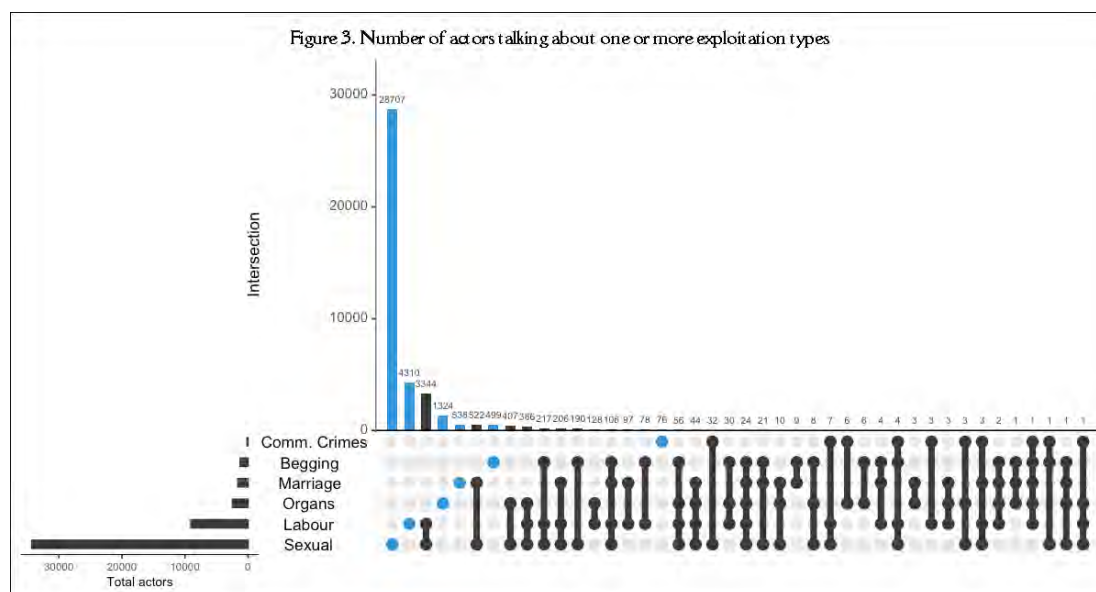
Table 2. Descriptions of the actors participating in tweets and dissemination of their activity, differentiated by exploitation type and period									
Exploitation	Actors and mentions				Activity				
	Active actors	Actors mentioned	Mentions	Avg mentions	Tweets	Avg tweets	Average retweets	Avg favourites	Avg replies
2011-2015									
Sexual	12,107	3,427	6,920	0.35	19,796	1.64	1.50	0.50	0.17
Labour	3,109	830	1,323	0.27	4,922	1.58	1.57	0.49	0.14
Begging	330	114	153	0.32	484	1.47	1.53	0.40	0.12
Forced Marriage	399	107	143	0.27	529	1.33	1.54	0.34	0.11
Comm. Offences	54	13	21	0.33	64	1.19	2.50	0.13	0.23
Organs	789	272	368	0.32	1,143	1.45	1.28	0.39	0.15
2016-2020									
Sexual	23,870	14,098	31,455	0.67	46,819	1.96	5.34	8.89	0.63
Labour	6,796	3,242	6,040	0.41	14,576	2.14	6.58	11.37	0.46
Begging	1,372	575	1,338	0.33	4,022	2.93	3.69	4.25	0.37
Marriage	1,675	671	1,036	0.3	3,487	2.08	3.94	6.34	0.33
Comm. Offences	196	144	164	0.44	377	1.92	4.37	6.74	0.29
Organs	2,116	1,725	2,381	0.49	4,832	2.28	4.57	7.14	0.36

Although sexual and labour exploitation have the highest volume of active actors during both periods, the number of actors tweeting increased in 2016-2020 for all exploitation types. Most actors are mentioned in relation to sexual exploitation, especially in the period from 2016-2020. This suggests a greater inquiry

to other actors in the tweets posted, recognising them as relevant in the debate. Other exploitation types such as the forced removal of organs also have a higher average number of mentions than the rest.

On the other hand, there is also an increase in the dissemination indicators referring to the number and average number of tweets and the average number of retweets, favourites and replies for all exploitation types during the period from 2016-2020. However, while the average number of favourites is higher in the case of labour exploitation than sexual exploitation, there is a greater increase in the number of replies in the case of sexual exploitation. This might suggest that while actors are directly aligned with other tweets on labour exploitation without introducing their convergent or divergent opinion, activity on sexual exploitation seems to elicit greater participation and expression of actors' own opinions on third-party posts.

The emphasis on sexual and labour exploitation is also reflected in the number of actors talking about one or several exploitation types (Figure 3), considering that at least 20% of the tweets made by an actor must be about an exploitation type to be assigned to that group. The highest volume of actors corresponds to those who talk only about sexual exploitation (28,707), followed by labour exploitation (4,310), those who talk about both sexual and labour exploitation (3,344) and those who talk about forced organ removal (1,324 actors).



The actors posting the highest volume of tweets for each exploitation type vary for the periods between 2011-2015 and 2016-2020 (Table 2MC). During the period from 2011-2015, the activity of actors such as social organisations, academics and activists stands out, as is the case for sexual and labour exploitation. On the other hand, especially in the case of exploitation for forced organ removal but also exploitation for forced marriage, actors related to the criminal prosecution of human trafficking stand out, such as the police, the Ministry of the Interior and an international network to counter organised crime. During the period from 2016 to 2020, which had a substantial increase in activity, actors related to the criminal prosecution of human trafficking generally gained relevance. The presence of FGRs, Public Ministries, Ministries of the Interior, their advisors and police forces (all from Latin American countries) stands out. Although less frequently represented, the media and some social organisations are also present. In the case of sexual exploitation, for example, the most active actor was a social organisation.

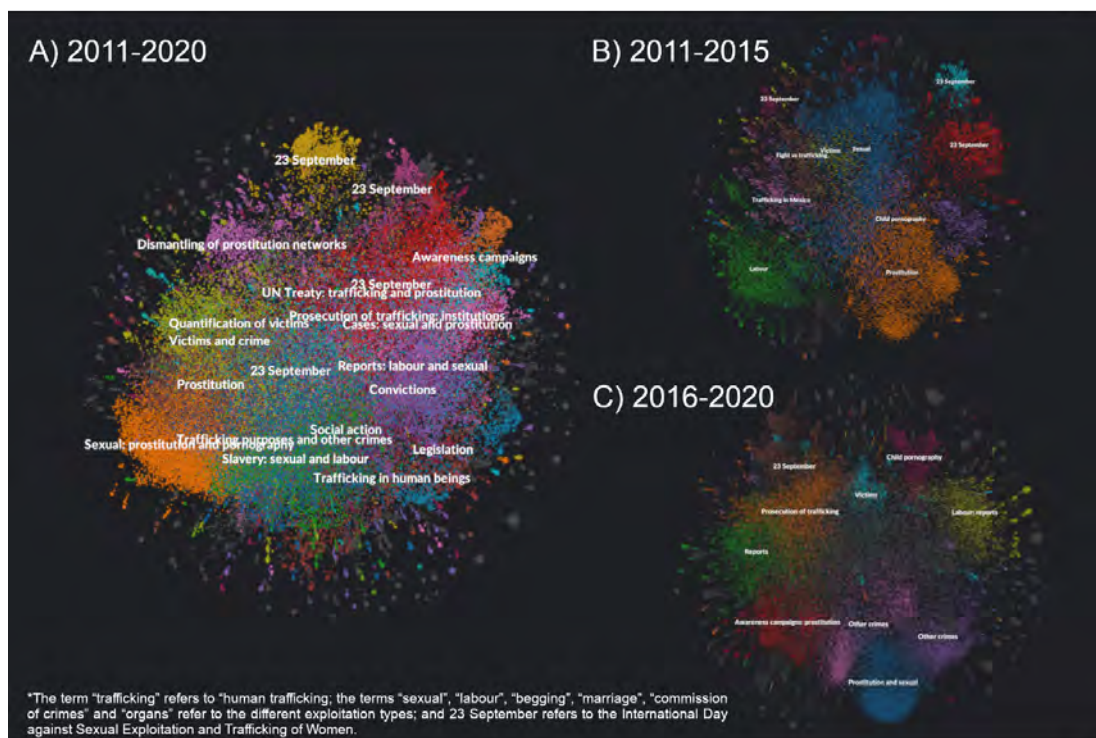
The most frequently mentioned actors also vary according to the exploitation type and period (Table 3MC). During the period from 2011-2015, some of the most frequently mentioned actors are the media and audiovisual products (e.g. films), anti-trafficking campaigns, initiatives or institutional bodies, politicians and some social organisations. International organisations such as UNODC and UNICEF also appear, albeit discreetly. It is precisely during the period between 2016-2020 that these international organisations become particularly relevant. For almost all exploitation types, the UNODC division in Mexico, the

UNODC itself as an umbrella organisation, and the United Nations stand out. Other bodies involved in the criminal prosecution of human trafficking such as the Guardia Civil and the FGRs are also noteworthy. In addition, personalities such as Pope Francis, López Obrador (President of Mexico), the documentary filmmaker Mabel Lozano, and institutions such as the CNDH stand out.

3.3. Identifying topic communities in the tweet network

The main communities of topics identified in the general network of tweets on trafficking and exploitation purposes during the period from 2011-2020 and the sub-periods of 2011-2015 and 2016-2020 (Figure 4) show that sexual exploitation is the purpose with the highest representation among the topics addressed.

Figure 4. Semantic networks of tweets about trafficking in: A) 2011-2020, B) 2011-2015 and C) 2016-2020



Note. The term "trafficking" refers to "human trafficking; the terms "sexual", "labour", "begging", "marriage", "commission of crimes" and "organs" refer to the different exploitation types; and 23 September refers to the International Day against Sexual Exploitation and Trafficking of Women.

The network for the entire period (2011-2020) includes a total of 90,328 nodes, each representing one tweet. 112 communities were detected, of which the 20 main ones were analysed (77.74% of the nodes are included in them). This network shows that the community with the highest volume of tweets (8% of the total) compares human trafficking with other crimes, making references to South, Central and North American countries. The communities relating to sexual exploitation, prostitution and pornography (7%), and prostitution (6%) are contiguous within the network. The International Day against Sexual Exploitation and Trafficking of Women is also well represented (7%, 3%, 3% and 2%). In addition, there are different communities on the criminal prosecution of the crime of human trafficking (4%, 3% and 2%); cases and convictions for sexual exploitation and prostitution (4% and 3%); social action against the crime of trafficking (3% and 2%), and legislation to combat this problem (1% and 1%).

An analysis of the evolution of the network between the periods 2011-2015 (25,515 nodes and 23 communities) and 2016-2020 (64,813 nodes and 84 communities), with 10 communities identified in each (94.99% and 62.6% of nodes, respectively), shows that most of them deal with sexual exploitation and prostitution. During 2011-2015 they represent the two largest communities (25% and 22%, respectively),

although during 2016-2020, when the network fragments, these topics are presented transversally within the rest of the communities (Table 4MC). Prostitution, which seems to gain relevance, has an exclusive community (10%). Also noteworthy is the increase in references to criminal prosecution of the crime of human trafficking, different cases and their reporting, representing three of the 10 communities from 2016-2020 (21% of the nodes). During 2011-2015 there was also a large community on labour exploitation (16%), which decreased from 2016-2020 (6%), although two communities appear on other exploitation purposes and other crimes (6% and 6%).

The topic networks of the tweets were also analysed (2011-2020) for the two exploitation purposes most frequently present in the analysis: sexual (Figure 1MC) and labour (Figure 2MC). As it is the main purpose, the top 20 communities in the sexual exploitation network were identified. As can be seen, it is very similar to the general network of tweets where all exploitation types are included. On the other hand, and as in this general network, most of the communities in the network of tweets on labour exploitation, with 10 communities identified, also include references to sexual exploitation (Table 4MC).

The network on sexual exploitation focuses on topics such as prostitution and sexual exploitation (communities with 11% and 7% of tweets), together with references to pornography and women; other organised crime offences (7%) where the word 'prostitution' stands out, forming a community located in the centre of the network and close to the two previous ones, as well as that on sexual exploitation as a crime, especially child sexual exploitation (6%); criminal prosecution of sexual exploitation and human trafficking, reports of offences, convictions, and dismantling of networks (5%, 4%, 4%, 3% and 2%), some of which are located in the centre of the network; and the International Day against Sexual Exploitation and Trafficking of Women (5%, 3% and 3%).

In the network on labour exploitation, the majority community on the criminal prosecution of the crime of human trafficking and the institutions and agencies involved stands out (9% of tweets). Also prominent are other communities on labour exploitation which highlight its forced nature or slavery (6% and 8%); the victims of this exploitation (the previous community with 8% and another with 8%); different purposes of exploitation (7% and 5%); human trafficking in America (4%); and, finally, the quantification of people experiencing this phenomenon (4%), forming a larger community than in the general tweet network, although it is impossible to clarify whether it refers to victims of human trafficking, labour exploitation or both.

4. Discussion and conclusions

The process established for data collection and analysis allowed us to explore a set of 101,051 tweets (90,328 unique tweets) that were recovered and classified according to six different exploitation purposes linked to human trafficking: sexual, labour, begging, forced marriage, commission of crimes and forced removal of organs. Through this process, we have analysed the evolution of the presence of these different types of exploitation in Twitter activity over time; the volume of actors posting about each of these exploitation types; and the topics present in the general network of tweets and in the specific networks on two of the most widespread types of exploitation, sexual exploitation and labour exploitation. Thus, the research conducted used substantially more data and is far removed from other more mainstream approaches to studies of human trafficking and Twitter, such as victim recruitment (Burbano & Hernández-Álvarez, 2017; Granizo et al., 2020; Hernández-Álvarez & Granizo, 2021; Tundis et al., 2019).

However, this process of data collection and analysis has a number of limitations: not all the tweets on each exploitation type were retrieved because the process for inclusion and exclusion of terms meant that not all possible words associated with each exploitation type were used; the category 'other exploitation purposes' (e.g. armed conflict) was not created in order to avoid making the presentation of data more complex; and the difficulties encountered to differentiate the geographical scope of the actors did not allow specific analyses by country or region. Despite these limitations, the research carried out yielded unique results that allow us to characterise Twitter activity on human trafficking and exploitation in Spanish, with certain outstanding aspects and trends that are related to the objectives of this study: the prominence of sexual exploitation over other types of exploitation in this social network's activity; the importance of international actors and organisations in the capitalisation of attention; the current focus on the criminal

prosecution of the crime and the reporting of cases of human trafficking; and the link between sexual exploitation and prostitution in the networks of topics in the tweets.

The high percentage of tweets that highlight human trafficking for sexual exploitation either exclusively or overlapping with other purposes, the high volume of active or mentioned actors for this exploitation type, the high number of replies to other actors' tweets, the prominence of sexual exploitation in the topics of the tweet network and the incidence of the International Day against Sexual Exploitation and Trafficking of Women in the highest peaks of activity and in that network are all examples of the overrepresentation of this purpose in the overall visibility of the phenomenon of human trafficking and the exploitation with which it is associated. In this sense, the analysis conducted yields similar conclusions to analyses of the representation of human trafficking in other areas of communication such as the press (Marchionni, 2012) and academic publications (Sweileh, 2018).

This high presence and the level of overlap and influence in Twitter network topics on other types of exploitation also points to the fact that the overrepresentation of sexual exploitation hinders the visibility of other exploitation purposes, as other media studies have pointed out (Ruiz-Herrera et al., 2018). This is despite the fact that the gap between those experiencing sexual and labour exploitation appears to have narrowed considerably according to the latest UNODC reports (2018; 2020), with figures of 59% sexual and 34% labour in 2018 and 50% and 38% respectively in 2020. In the future, it might be possible to discern whether this could be related to the fact that the Twitter debate could be carried out in terms and dimensions that are far removed from the real volume of the different exploitation purposes; whether the characteristics of this social debate could ultimately be related to the difficulties in identifying victims; whether the volume of people identified as affected has changed due to the construction of the statistics themselves; or whether the social debate will change in the face of these new data.

Precisely, the increasing prominence of actors related to the criminal prosecution of the crime of trafficking, whether international organisations such as the UNODC or other actors such as the Mexican regional FGRs, the impact on networks of the campaigns deployed by some of these actors, the increase in the number of communities of topics in the networks of tweets related to the criminal prosecution of the crime and the development of criminal measures against the crime of trafficking in different countries (e.g. General Congress of the United Mexican States, 2012) give cause for reflection regarding the impact of the interpretation of the phenomenon of human trafficking and exploitation mainly as a criminal issue. The results do not show a prominent presence of other alternative approaches, suggesting a displacement of approaches such as human rights or broader macro-structural approaches that relate human trafficking to migration policy, for example (Mendel & Sharapov, 2016; O'Connell-Davidson, 2006).

In addition to the hypervisibility of the sexual exploitation purpose, the activity on Twitter and the interpretation of the phenomenon of human trafficking as a crime, there is also a recurring connection between sexual exploitation and prostitution as reflected in the main communities of the tweet networks, whereby it is sometimes linked to notions such as slavery. This is also reflected in the prominence of the International Day against Sexual Exploitation and Trafficking of Women, and the increased exposure of this exploitation purpose during the Days for the Abolition of Slavery. The relationship between prostitution and sexual exploitation and its link to slavery reinforces the criticism of the current concept of human trafficking as being influenced by policies to combat white slavery which assimilated the phenomena of prostitution and slavery, conjuring an image of the trafficked person as a 'white sex slave' that occupies centre stage in representations related to the phenomenon (Doezema, 2010; Kempadoo, 2015). This is related to what happens in other areas, such as human trafficking awareness campaigns, where the hypervisibility of women's violated bodies seems to promote the image of a trafficking victim as a sex slave (Saiz-Echezarreta et al., 2018).

Furthermore, the results and the construction of this image invite reflection on the risk of overlooking or criminalising part of the population that does not fit this dominant image, especially those located in migratory contexts, once again displacing other approaches such as the human rights approach (Andrijasevic & Anderson, 2009; Gregorio & Ras, 2018; O'Connell-Davidson, 2006; Wolken, 2006). In fact, the appearance on Twitter networks of certain topics relating to migratory contexts suggests a need for further research on the relationship between human trafficking, migration, humanitarian crises and the

consequences that the emphasis on the criminal prosecution of the crime of human trafficking in these contexts may have.

The dominant presence of sexual exploitation, heightening of its visibility as a crime, its link to prostitution in Twitter activity (and, to a lesser extent, to migratory contexts) as well as new data from the UNODC (2020) all pose an urgent need to rethink and diversify approaches for the interpretation and visibility of human trafficking for other exploitation purposes. This is necessary for the design and deployment of effective eradication measures and to meet the needs of a greater proportion of the population suffering human trafficking. The implications of this study for education purposes may also include diversification and promotion of alternative approaches to human trafficking in the training of professionals and decision-makers in the socio-educational sector and also in awareness-raising campaigns for the general public, including through social media such as Twitter.

More research is needed on human trafficking and the dissemination of certain discourses and issues on social media such as Twitter where a wide range of actors is involved. The results of this initial descriptive study, which is useful for mapping actors and issues in areas that have been subject to limited exploration in social media (Hodge et al., 2020), may be used as a basis for further analysis of the specific content or ideas disseminated by some of the actors identified as most relevant in this research, the propagation of the tweets posted and reflection on other terms present in the Palermo Protocol, such as 'victim-aggressor'.

Authors' Contributions

Idea: A.S.R., D.B.H.; Literature review: A.S.R., D.B.H.; Methodology: W.A.M., A.S.R.; Data analysis: A.S.R.; W.A.M., D.B.H.; Results: A.S.R., W.A.M., D.B.H.; Discussion and conclusions: A.S.R., D.B.H.; Writing (original draft), A.S.R., W.A.M., D.B.H.; Final revisions, D.B.H.; Project design and sponsorship, A.S.R., W.A.M., D.B.H.

Notes

¹<https://www.graphext.com/tractor>

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References

- Albright, E., & Adamo, K. (2017). The media and human trafficking: A discussion and critique of the dominant narrative. In M. Chisolm-Straker, & H. Stoklosa (Eds.), *Human trafficking is a public health issue: A paradigm expansion in the United States* (pp. 363-378). Springer. https://doi.org/10.1007/978-3-319-47824-1_21
- Andrijasevic, R., & Anderson, B. (2009). Anti-trafficking campaigns: Decent? Honest? Truthful? *Feminist Review*, 92(1), 151-155. <https://doi.org/10.1057/fr.2009.1>
- Arena Pública (Ed.) (2017). *México, 'foco rojo' en tráfico de órganos, niños migrantes principal blanco: Unicef*. Arena Pública. <https://bit.ly/3mYe9zM>
- Attwood, R. (2021). A very un-English predicament: 'The White Slave Traffic' and the construction of national identity in the suffragist and socialist movements' coverage of the 1912 Criminal Law Amendment Bill. *National Identities*, (pp. 1-30). <https://doi.org/10.1080/14608944.2021.1895096>
- Austin, R., & Farrell, A. (2017). Human trafficking and the media in the United States. *Oxford Research Encyclopedia of Criminology*. <https://doi.org/10.1093/acrefore/9780190264079.013.290>
- Barroso-Hurtado, D., Arroyo-Machado, W., & Torres-Salinas, D. (2021). Formación Profesional Dual: Evolución de red de actores en Twitter. *Educación XX1*, 1, 209-230. <https://doi.org/10.5944/educXX1.28136>
- Bernstein, E. (2018). *Brokered subjects sex, trafficking, and the politics of freedom*. The University of Chicago Press. <https://doi.org/10.7208/chicago/9780226573809.001.0001>
- Blondel, V.D., Guillaume, J.L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, 2008(10), 10008. <https://doi.org/10.1088/1742-5468/2008/10/P10008>
- Burbano, D., & Hernandez-Alvarez, M. (2017). Identifying human trafficking patterns online. In *2017 IEEE Second Ecuador Technical Chapters Meeting (ETCM)* (pp. 1-6). IEEE. <https://doi.org/10.1109/ETCM.2017.8247461>
- Clemente, M. (2017). Human trafficking in Portugal: An ethnography of research and data. *Studi Emigrazione*, 208, 663-687. <https://bit.ly/3plyKrO>

- Comisión Nacional de los Derechos Humanos (Ed.) (2019). *Diagnóstico sobre la situación de la trata de personas en México 2019. Resumen ejecutivo*. Quinta Visitaduría General/Programa contra la Trata de Personas. <https://doi.org/10.5377/cuadernojurypol.v5i13.11134>
- Congreso General de los Estados Unidos Mexicanos (Ed.) (2012). *Ley General para prevenir, sancionar y erradicar los delitos en materia de trata de personas y para la protección y asistencia a las víctimas de estos delitos*. Primera Sección: Diario Oficial de la Federación, de 14 de junio de 2012, Primera Sección, 2-32. <https://bit.ly/3kJW1XC>
- Couto, D., Machado, C., Martins, C., & Abrunhosa, R.A. (2012). A construção mediática do tráfico de seres humanos na imprensa escrita portuguesa. *Análise Psicológica*, 30, 231-246. <https://doi.org/10.14417/ap.551>
- Denton, E. (2010). International news coverage of human trafficking arrests and prosecutions: A content analysis. *Women & Criminal Justice*, 20(1-2), 10-16. <https://doi.org/10.1080/08974451003641321>
- Doezema, J. (2010). *Sex slaves and discourse masters: The construction of trafficking*. Bloomsbury Publishing. <https://doi.org/10.5040/9781350222502>
- Edwards, A. (2007). Traffic in human beings: At the intersection of criminal justice, human rights, asylum/migration and labor. *Denver Journal of International Law and Policy*, 36, 9-53. <https://bit.ly/31FrPqV>
- Gerassi, L. (2015). A heated debate: Theoretical perspectives of sexual exploitation and sex work. *Journal of sociology and social welfare*, 42(4), 79-100. <https://bit.ly/3EFb0Lv>
- Gong, R. (2015). Indignation, inspiration, and interaction on the Internet: Emotion work online in the anti-human trafficking movement. *Journal of Technology in Human Services*, 33(1), 87-103. <https://doi.org/10.1080/15228835.2014.998988>
- González, E. (2019). Apropiación del término 'puta' desde el activismo por los derechos en el trabajo sexual. *Gazeta de Antropología*, 35(1). <https://bit.ly/3dBIUEY>
- Granizo, S., Valdivieso, A., Barona, L., & Hernández-Álvarez, M. (2020). Detection of possible illicit messages using natural language processing and computer vision on Twitter and linked website. *IEEE Access*, 8, 44534-44546. <https://doi.org/10.1109/ACCESS.2020.2976530>
- Gregoriou, C., & Ras, I.A. (2018). Representations of transnational human trafficking: A critical review: Present-day news media, true crime, and fiction. In *Representations of transnational human trafficking* (pp. 1-24). Palgrave MacMillan. https://doi.org/10.1007/978-3-319-78214-0_1
- Haunschild, R., Leydesdorff, L., Bornmann, L., Hellsten, I., & Marx, W. (2019). Does the public discuss other topics on climate change than researchers? A comparison of explorative networks based on author keywords and hashtags. *Journal of Informetrics*, 13, 695-707. <https://doi.org/10.1016/j.joi.2019.03.008>
- Hebert, L.A. (2016). Always victimizers, never victims: Engaging men and boys in human trafficking scholarship. *Journal of Human Trafficking*, 2(4), 281-296. <https://doi.org/10.1080/23322705.2016.1144165>
- Hernández-Álvarez, M., & Granizo, S.L. (2021). Detection of human trafficking ads in twitter using natural language processing and image processing. In *Advances in artificial intelligence, software and systems engineering. Proceedings of the AHFE 2020 Virtual Conferences on Software and Systems Engineering, and Artificial Intelligence and Social-Computing* (pp. 77-83). Springer. https://doi.org/10.1007/978-3-030-51328-3_12
- Hodge, E., Childs, J., & Au, W. (2020). Power, brokers, and agendas: New directions for the use of social network analysis in education policy. *Education Policy Analysis Archives*, 28, 1-17. <https://doi.org/10.14507/epaa.28.5874>
- Kempadoo, K. (2015). The modern-day white (wo)man's burden: Trends in anti-trafficking and anti-slavery campaigns. *Journal of Human Trafficking*, 1(1). <https://doi.org/10.1080/23322705.2015.1006120>
- Marcelo, C., & Marcelo, P. (2021). Educational influencers on Twitter. Analysis of hashtags and relationship structure. [Influencers educativos en Twitter. Análisis de hashtags y estructura relacional]. *Comunicar*, 68, 73-83. <https://doi.org/10.3916/C68-2021-06>
- Marchionni, D.M. (2012). International human trafficking: An agenda-building analysis of the US and British press. *International Communication Gazette*, 74, 145-158. <https://doi.org/10.1177/1748048511432600>
- Mendel, J., & Sharapov, K. (2016). Human trafficking and online networks: Policy, analysis, and ignorance. *Antipode*, 48(3), 665-684. <https://doi.org/10.1111/anti.12213>
- Meneses-Falcón, C., & Urío, S. (2021). La trata con fines de explotación sexual en España: ¿Se ajustan las estimaciones a la realidad. *Revista Española de Investigaciones Sociológicas*, 174, 89-108. <https://doi.org/10.5477/cis/reis.174.89>
- Naciones Unidas (Ed.) (2000). *Protocolo de Naciones Unidas, para prevenir, reprimir y sancionar la trata de personas, especialmente mujeres y niños*. Naciones Unidas. <https://bit.ly/31KS3sf>
- O'Connell-Davidson, J. (2006). Will the real sex slave please stand up? *Feminist Review*, 83(1), 4-22. <https://doi.org/10.1057/palgrave.fr.9400278>
- Papadoukaa, M.E., Evangelopoulos, N., & Ignatow, G. (2016). Agenda setting and active audiences in online coverage of human trafficking. *Information, Communication & Society*, 19, 655-672. <https://doi.org/10.1080/1369118X.2016.1139615>
- Reina-Peñas, M. (2019). Análisis del fenómeno de la trata de personas desde la perspectiva de los derechos humanos. *Icade. Revista de la Facultad de Derecho*, 107. <https://doi.org/10.14422/icade.i107.y2019.006>
- Rodríguez-López, S. (2018). De)constructing stereotypes: Media representations, social perceptions, and legal responses to human trafficking. *Journal of Human Trafficking*, 4(1), 61-72. <https://doi.org/10.1080/23322705.2018.1423447>
- Rodríguez-López, S. (2020). The invisibility of labour trafficking in Spain. A critical analysis of cases and policies. *Revista Española de Investigación Criminológica*, 18(2), 1-25. <https://doi.org/10.46381/reic.v18i2.329>
- Ruiz-Herrera, A., Ruiz-Guevara, S., & López-Cantero, E. (2018). El papel de los medios de comunicación masiva en la comprensión del fenómeno de la trata de personas. *Revista Criminología*, 60(2), 25-39. <https://bit.ly/33jyA2F>
- Saiz-Echezarreta, V., Alvarado, M.C., & Gómez-Lorenzini, P. (2018). Advocacy of trafficking campaigns: A controversy story. [Incidencia política de las campañas contra la trata: Un relato controvertido]. *Comunicar*, 55, 29-38.

- <https://doi.org/10.3916/C55-2018-03>
- Sanford, R., Martínez, D.E., & Weitzer, R. (2016). Framing human trafficking: A content analysis of recent US newspaper articles. *Journal of Human Trafficking*, 2(2), 139-155. <https://doi.org/10.1080/23322705.2015.1107341>
- Sobel, M.R. (2014). Chronicling a crisis: Media framing of human trafficking in India, Thailand, and the USA. *Asian Journal of Communication*, 24(4), 315-332. <https://doi.org/10.1080/01292986.2014.903425>
- Sweileh, W.M. (2018). Research trends on human trafficking: A bibliometric analysis using Scopus database. *Globalization and Health*, 14(106), 1-12. <https://doi.org/10.1186/s12992-018-0427-9>
- Tundis, A., Jain, A., Bhatia, G., & Muhlhauser, M. (2019). Similarity analysis of criminals on social networks: An example on Twitter. In *2019 28th International Conference on Computer Communication and Networks (ICCCN)* (pp. 1-9). <https://doi.org/10.1109/icccn.2019.8847028>
- United Nations Office on Drugs and Crime (Ed.) (2018). *Global Report on Trafficking in Persons 2018*. United Nations. <https://bit.ly/2YfbOG0>
- United Nations Office on Drugs and Crime (Ed.) (2020). *Global report on trafficking in persons 2020*. United Nations. <https://bit.ly/3DHTkx>
- Van-Schalkwyk, F., Dudek, J., & Costas, R. (2020). Communities of shared interests and cognitive bridges: The case of the anti-vaccination movement on Twitter. *Scientometrics*, 125, 1499-1516. <https://doi.org/10.1007/s11192-020-03551-0>
- Wolken, C.L. (2006). Feminist legal theory and human trafficking in the United States: Towards a new framework. *U. MD. LJ. Race, Religion, Gender & Class*, 6(2), 407-438. <https://bit.ly/3rVW3597>
- Zhang, S.X. (2012). Measuring labor trafficking: A research note. *Crime, Law and Social Change*, 58, 469-482. <https://doi.org/10.1007/s10611-012-9393-y>