Exploring emojis through corpus linguistic approaches:
A cross-industry comparison of webcare communication

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Abstract

Businesses increasingly interact with stakeholders through various digital media channels: a process known as webcare. Although emojis are widely used in webcare, they have not been explored extensively in this context and, as most corpus software cannot process visual modes of expression, their use has not been studied at scale using a corpus linguistic methodology. In this article, we present the results of a large-scale data-driven analysis of emoji use in the US Corporate Twitter Corpus (UCTC), comprising 4.4 million tweets posted by and addressed to US companies across three industries. Through frequency and collocational analyses, we explore the different functions of emojis in the UCTC, with a focus on disambiguating their use in tweets serving different webcare goals. While our study thus offers new insights into the use of emojis in webcare communication, it also demonstrates how they can be studied by adapting well established corpus linguistic methods.

Keywords: business communication, webcare, emojis, social media, Twitter

1. Introduction

Emojis are an established feature of digital communication that add to the multimodal nature of online messages and interact with other semiotic resources to make meaning (Logi & Zappavigna, 2023). Since the introduction of social media platforms in the early 2000s, emojis, and also emoticons, have been studied from a variety of perspectives. Research has, for example, explored emoticons' illocutionary force (Dresner & Hering, 2010), compared the effect of emojis to other non-verbal cues such as facial expressions (Erle et al., 2022), and linked emojis to areas of linguistic study including metaphors and the construction of identities (Seargeant, 2019). One area where emoji use has not been studied extensively is digital business communication, or webcare: "[t]he act of engaging in online interactions with (complaining) consumers" (van Noort & Willemsen, 2012: 133).

In this article, we aim to fill this gap in research by carrying out a large-scale data-driven corpus analysis of emoji use on the social networking platform Twitter (now X).[1] The analysis is based on the US Corporate Twitter Corpus (UCTC), which contains 4.4m English tweets posted by and addressed to US companies from three industries between September 2021 and February 2023, totalling 75 million words. The study explores the use of emojis by US airlines, fast food restaurants and soft drink producers, and video streaming services when interacting with their followers, customers and other stakeholders on Twitter. Through a combination of frequency and collocational analyses, we examine the discourse characterising webcare interactions and the interplay between the text of tweets and the emojis included within them. By relating the findings to the webcare goals of customer care, marketing, and relationship and reputation management, this study offers new insights into the function of emojis in webcare. In addition, it illustrates how best to handle emojis as part of a corpus pre-processing pipeline and demonstrates how corpus linguistic methods can then be used to study emojis and uncover their intended meaning.

Before presenting the results, the next section situates our research within the field of digital business communication and webcare. It discusses emojis as a feature of a Conversational Human Voice (Kelleher, 2009), a specific style of communication that has been found to be particularly beneficial when engaging in webcare interactions. The data and methodology used are then presented in Section 3, which focuses on the methodological possibilities of conducting a corpus linguistic analysis of emojis. Our findings are discussed in Section 4, and the article closes by pointing out the implications for research and practice.

2. Webcare and the use of emojis

When engaging in external business communication, businesses now turn largely to digital channels. They leverage the opportunities online outlets such as social media have to offer and use them to reach large numbers of stakeholders in real time. Within this field of digital business communication, the study of webcare has explored how businesses interact with consumers online and how they respond to consumers' feedback, including their concerns and complaints (van Noort & Willemsen, 2012). In this context, research has mainly focused on corporate responses to customers, who have been referred to as "one of the most important stakeholder groups" (Walsh et al., 2009: 187) as they generate revenue for businesses and the word of mouth they share may affect corporate reputation (Dijkmans et al., 2015: 60). More recently, this

[1] As our data was collected before the rebranding as X, the terms 'Twitter' and 'tweet' will be used throughout this article.

original focus of webcare has been broadened to include any online interaction between companies and stakeholders in general (see e.g. Lutzky, 2026). This is because both corporate responses to stakeholder messages and corporate posts can have an effect on and initiate further interaction with users. Research has found that companies' online communication may influence not only the interlocutors they interact with, but also other users observing these interactions, and its impact is thus not restricted to customers only (Javornik et al., 2020; Weitzl & Einwiller, 2020; Verheijen & Liebrecht, 2025).

Engaging in webcare may serve different organisational goals (van Noort et al., 2015). These include customer care, as interacting with stakeholders online may uncover issues they have with products and services, which can subsequently be addressed to restore customer satisfaction. Webcare also functions as a reputation and relationship management tool as the way companies communicate on social media may encourage user engagement and influence the impression users hold of an organisation, which may contribute to protecting and maintaining its reputation. In addition, webcare may function as a marketing tool, used to advertise products and services. While reputation management has been described as the most important goal of webcare as a company's success depends on maintaining a strong reputation (van Noort et al., 2015; Willemsen et al., 2013), our analysis of webcare tweets by companies from different industries will show that the industry in which a company operates may also influence its focus on specific webcare goals.

Within webcare research, communicating with a Conversational Human Voice (CHV) has been found to be particularly beneficial as it correlates significantly with relational outcomes such as satisfaction and trust, and thus can positively influence relationships between businesses and their stakeholders (Kelleher & Miller, 2006). In addition, it has been shown to have a positive effect on brand attitudes, organizational reputation and purchase intentions (Crijns et al., 2017; van Noort & Willemsen, 2012). A CHV is a specific style of language use that is personal, informal and invitational. When engaging in CHV, messages are personalised through, for example, the inclusion of the addressee's name, personal pronouns and a personal signature. They invite addressees to engage in a conversation and stimulate dialogues, for instance by asking the addressee to leave a comment. And they are characterised by informal language, such as colloquial expressions, contractions and interjections. In addition to verbal cues, informal features may also surface at a non-verbal level, for example through the use of capitalisation to mimic audible effects such as shouting. This category of non-verbal cues also includes features such as images and emojis (Liebrecht et al., 2021). Emojis are an established feature of digital communication that add to the visual nature of online messages (Bai et al.,

2019; Sergeant, 2019). In this context, they interact with other semiotic resources to make meaning (Logi & Zappavigna, 2023; Zappavigna & Logi, 2024). Studying museums' social media posts, Lazzeretti (2023), for instance, discusses how emojis may make meaning when interacting with textual as well as visual content on Facebook and Instagram, creating an effect of playfulness and rendering museum communication more informal and emotional.

Previous research on emojis in digital business communication has focused on their influence on customer engagement, purchase intention and brand reputation. Casado-Molina et al. (2022), for example, studied emojis as a means of brand positioning in the Spanish beer industry. In a content analysis of 848 tweets, they found that emojis expressing positive emotions and emojis related to product and service offerings entailed higher engagement when they were used in customer care tweets and for emphasis in positive messages, allowing companies to connect with their stakeholders and shape their brand image. Likewise, Arya et al. (2018) noted that the use of emojis in brands' social media communication with stakeholders had a positive impact on stakeholders' attachment to the brand. Using a mixed-methods approach, involving the analysis of authentic tweets and lab experiments, McShane et al. (2021) found that emojis increased brand engagement on Twitter, for instance through likes and shares, and that this was particularly the case when there was an interplay between the emojis and the text with which they co-occurred. In addition, engagement was influenced by emojis preceding the text to which they pertained and by the perceived playfulness of their use.

In addition to Twitter, emojis have been found to enhance engagement in email marketing, a genre characterized by less immediate opportunities for engagement compared to social media. In fact, Valenzuela-Gálvez et al. (2022) discovered that emojis positively affected the rates at which emails were opened and reopened, and at which links were clicked on in these emails. They concluded that emojis are a means of attracting and holding stakeholders' attention, and that non-facial emojis such as headphones or a car work best when they relate to the message and the brand. In addition to customer engagement, emojis have also been found to increase purchase intention, especially when addressing young stakeholders, in particular Gen Z, through digital marketing communication (Duffet & Maraule, 2024), and when advertising luxury goods and other hedonic products, where emotional appeal is important (Das et al., 2019). In general, emojis in webcare have several positive features, entailing increased perceptions of warmth and enhancing the tone of messages. They may, however, also lead to decreased perceptions of competence and make messages appear unprofessional (Li et al., 2019; Creen & Latiolais, 2023; Verheijen & Liebrecht, 2025). Research has also suggested that

message credibility and source trustworthiness may suffer when emojis are used excessively (Koch et al., 2023).

In this article, we aim to contribute to research on the use of emojis in webcare exchanges, a topic which has not been explored extensively to date. This is, on the one hand, due to the fact that emojis have not previously been found to be particularly frequent in webcare interactions. For example, Lutzky (2021) did not include emojis in her analysis of British and Irish train operating companies' and airlines' webcare interactions with their customers on Twitter due to their infrequent occurrence. In fact, emojis have been found to occur less frequently on Twitter compared to other platforms in general (Tauch & Kanio, 2016). However, the infrequent use of emojis may also have been influenced by the industry studied, the transport industry. By comparing the use of emojis across different industries in this study, we aim to shed more light on their cross-industry distribution. In particular, we aim to answer the following research questions: To what extent does emoji use differ across webcare posts in the three industries studied? What do these differences reveal about the various goals of webcare and, thus, the functions of emojis in webcare interactions?

3. Data and methodology

This study is based on the US Corporate Twitter Corpus (UCTC), which includes more than 75 million words from 4.4m English tweets that were posted by and addressed to seventeen US companies from three industries between 1 September 2021 and 28 February 2023 (see also Lutzky 2026). The corpus was compiled through the Twitter API in March 2023, before this was closed for free academic access. It focuses on one social networking platform, Twitter, which has been a key platform for business communication and which – even after its takeover by Elon Musk and rebranding as X – still ranks among the most popular social networks worldwide based on its number of monthly active users.[2] With more than 99 million users, the US is the leading country in terms of total number of X users.[3]

The industries represented in the UCTC are commercial airlines, food and beverage providers and video streaming services. The choice of these industries was based on the respective companies' activity on Twitter, involving not only their posting behaviour but also their interactions with users on the platform, as well as the diversity in products and services

[2] https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/ (accessed 12 November 2025)
[3] https://www.statista.com/statistics/242606/number-of-active-twitter-users-in-selected-countries/ (accessed 12 November 2025)

they offer. The specific US companies forming part of the UCTC are the full-service airlines American, Delta and United, as well as the local and budget airlines Alaska, JetBlue and Southwest. For the food and beverage industry, the corpus comprises the fast food and soft drink companies Burger King, McDonalds, Subway, Taco Bell, Coca-Cola, Dr Pepper and Pepsi. Finally, video streaming services are represented by HBO, Hulu, Netflix and Prime Video.

Table 1 lists the total number of words and tweets included in the UCTC per industry. These numbers include tweets posted by the companies (referred to in our subsequent analyses as tweets FROM the companies) and tweets posted by other Twitter users which include the @ handle of one of the companies (referred to as tweets TO the companies). The tweets included in the UCTC were all shared publicly on Twitter. To follow good ethical practice, a case-based and context-sensitive approach was taken when selecting examples for inclusion in the following discussion, and measures of "light disguise" were adopted, for example, by excluding non-corporate usernames (Kozinets 2015), even though the 'gold standards' of anonymity are impossible in an online public space (Mackenzie, 2017).

While retweets were excluded from the corpus, it does still contain duplicate tweets, as Table 1 shows. Duplicate tweets are those which use the same wording when addressing or responding to different users. In a corporate setting, this could involve standard replies that companies give to their customers as well as mass tweets that are addressed to all followers of a corporate account. Although duplicates would normally be excluded from a corpus as they may skew results, they are included in the analyses in this article as they may offer insights into the common strategies used when companies engage in webcare, particularly with regard to the use of emojis.

Table 1. The US Corporate Twitter Corpus (UCTC)

Industry	**Tweets**	**Tweets excl. duplicates**	**% of duplicates**	**Tokens**	**Tokens excl. duplicates**	**% of duplicates**
Airlines	1,187,223	1,042,960	12%	27,236,502	24,630,749	10%
Food & Beverage	1,179,415	827,243	30%	17,699,514	11,648,377	34%
Streaming Services	2,044,834	1,192,702	42%	31,015,692	15,812,188	49%
Total	**4,411,472**	**3,062,905**	**31%**	**75,951,708**	**52,091,314**	**32%**

In this study, the use of emojis in the UCTC is explored using corpus linguistic methods. While corpus linguistics has almost exclusively focused on the study of textual data to date, this paper

contributes to an innovative approach to corpus linguistic analysis by illustrating the possibility of studying visual elements, such as emojis, through corpus linguistic tools (see also e.g. Collins & Platt, 2025; Di Cristofaro, 2025). This is facilitated by the fact that, although emojis look like pictures, they are stored as text characters from a technical perspective, in the same way as letters of the alphabet. For the analyses in this article, we identified emojis by using the definitions provided by the Unicode standard. Unicode is now the most widely used text encoding across the web[4] and it is used for textual content on Twitter. The standard provides a common way of representing characters in text whilst supporting a wide range of writing systems. Emojis were first added to Unicode in October 2010 (version 6.0), with the latest version (17.0) containing more than 3,600 emoji characters. Throughout this article, we present emojis in pictographic form using the Twemoji font, which was used on Twitter during the period covered by the corpus.[5] Where an emoji is referenced by name, we use the CLDR Short Name from the Unicode emoji charts.[6] In addition, we draw on Emojipedia,[7] an open-access reference resource, to check aliases and the different ways emojis are rendered across operating systems and platforms.

Emojis are technically characters but in this article we instead treat them as tokens, equivalent to words. This means that, where a sequence of emojis occurs, each emoji is counted as a separate token. By taking this approach, we are able to integrate emojis into corpus analysis methods such as frequency lists and span-based collocation.[8] The importance of processing emojis during corpus preparation is discussed in Di Cristofaro (2025). We adopted a similar approach by making emoji identification the first step in our corpus processing pipeline. The corpus as a whole was processed with the spaCy part-of-speech tagging software (Honnibal et al., 2020), using the Spacymoji plugin[9] to identify emojis, and then the core functionality to tokenise the text of the tweets into words. Spacymoji bases its classification of emojis on the Emoji Python package[10], which in turn implements the classification from the Unicode standard. For practical reasons, we stored emojis in our tokenised corpus files using their

[4] https://www.w3.org/International/questions/qa-who-uses-unicode (accessed 12 November 2025)
[5] Twitter defined its own font specifically for consistent emoji presentation, which was in use on Twitter between 2014 and February 2023. https://github.com/twitter/twemoji (accessed 12 November 2025)
[6] https://unicode.org/emoji/charts/full-emoji-list.html (accessed 12 November 2025)
[7] https://emojipedia.org/ (accessed 12 November 2025)
[8] An alternative approach can be found in Collins and Platt (2025), where emojis are given the same status as punctuation and annotated with XML to allow processing with corpus tools which do not support emojis but do support XML.
[9] https://github.com/explosion/spacymoji (accessed 12 November 2025)
[10] https://github.com/carpedm20/emoji (accessed 12 November 2025)

'shortcode' format as provided by the Emoji package (e.g., :loudly_crying_face:, :red_heart:, :face_with_tears_of_joy:). The full corpus building and analysis process was as follows:

1. Use the Postman software[11] to search the Twitter API, using one of the query parameters *from:@usertag* or *to:@usertag* to find tweets sent FROM and TO the accounts. These results were stored in CSV format, excluding retweets.

2. Save the textual content of the tweets into plain text files, one tweet per line, creating separate files for tweets sent FROM and TO each company.

3. Process the plain text files using the spaCy pipeline described above to produce new plain text files with tokens separated by spaces and emoji characters converted to shortcodes (each emoji is a separate token).

4. Extract word frequency, collocation metrics and concordance lines from the tokenised files using a collection of Python scripts written specifically for this study.[12]

Our methods in this article build upon our experience of conducting an unpublished pilot study of emojis in 2018 using a randomly selected sample of 352 million tweets. There we found the most frequent emojis (collectively accounting for 25% of all emojis) to be Face with Tears of Joy, Red Heart, Loudly Crying Face, Smiling Face with Heart-Eyes and Fire. Our findings are mirrored in lists of frequent emojis on the Emojitracker website[13] (no longer updated) and in a 2021 report from the Unicode Consortium,[14] both of which include laughing faces, crying faces and hearts (sometimes in combination), as well as the thumbs up and folded hands gestures.

4. Findings and discussion

In exploring the use of emojis in the UCTC, we first examined their distribution across industries and across the tweets sent FROM and TO companies in each industry. Table 2 shows that, overall, more than a quarter (26.72%) of tweets FROM companies include at least one emoji. However, the proportion varies significantly across industries, with 41.70% of tweets by streaming companies but only 10.85% of airline tweets including an emoji. This reflects the findings of a previous study of British airlines (Lutzky, 2021), which also found companies in this industry to use relatively few emojis. Our analysis in this article explores the circumstances

[11] https://www.postman.com/ (accessed 2 April 2026)
[12] Available at https://github.com/rdues/UCTC-emojis
[13] https://emojitracker.com/twitter/ (accessed 12 November 2025)
[14] https://home.unicode.org/emoji/emoji-frequency/ (accessed 12 November 2025)

in which the airlines included in the UCTC do use emojis and how these differ from the other industries where emojis are more frequent.

Table 2. Emojis in tweets FROM companies in the UCTC

Industries	**Tweets**	**% with emojis**	**Tokens**	**% are emojis**
Airlines	461,550	10.85%	10,862,884	0.66%
Food & beverage	311,952	20.67%	7,033,106	1.30%
Streaming services	614,982	41.70%	14,144,851	1.86%
Total	**1,388,484**	**26.72%**	**32,040,841**	**1.33%**

Table 3 shows emoji use in tweets sent TO the companies in each industry. The first finding here is that, overall, emojis are almost half as frequent than in the tweets FROM the companies, with 14.91% of tweets containing at least one emoji compared with 26.72% in Table 2. Once again, emojis are least frequent for the airline industry. However, if we compare the final columns in Tables 2 and 3, we see that a larger proportion of tokens are emojis in the TO tweets (2.27%) than in the FROM tweets (1.33%). In other words, although fewer TO tweets contain emojis, more of the tokens within these tweets are emojis. This suggests that tweets sent TO companies tend to include more than one emoji, which is something we explore in our subsequent analyses.

Table 3. Emojis in tweets TO companies in the UCTC

Industries	**Tweets**	**% with emojis**	**Tokens**	**% are emojis**
Airlines	725,673	9.21%	16,373,618	0.76%
Food & beverage	867,463	17.73%	10,666,408	3.40%
Streaming services	1,429,852	16.10%	16,870,841	3.04%
Total	**3,022,988**	**14.91%**	**43,910,867**	**2.27%**

4.1 Airlines

Zooming in on US airlines' use of emojis, Figure 1 presents the top twenty emojis used by each airline, ranked according to frequency per million tokens. As can be seen in Figure 1, the Airplane emoji appears in the top five for all the airlines studied, which is perhaps unsurprising given that this emoji closely represents the services all the companies in this industry offer (which is not the case for the other two industries). More surprising is the prominence of heart emojis of various colours in the lists for all airlines. In fact, the colours used often match that

particular company's branding, with both Alaska and JetBlue using blue hearts, and Southwest, whose logo is actually a heart, frequently using heart emojis in the brand's colours of red, yellow and blue. In addition, various face emojis, which are conventionally frequent, are ranked highly for all airlines, and these are almost exclusively smiling and affectionate, conveying positive attitudes.

Alaska Air	American Air	Delta	JetBlue	Southwest	United
4,904.8	12.2	189.9	1,449.2	10,966.3	634.0
2,176.8	7.1	92.3	480.4	1,704.2	192.3
1,642.4	6.8	60.7	105.0	1,671.5	156.4
1,031.6	5.8	43.8	50.9	695.7	126.1
986.9	5.1	36.4	47.7	182.3	104.8
955.3	5.1	31.1	39.8	177.4	82.0
921.7	4.8	24.3	38.2	145.3	65.5
649.9	4.5	23.7	33.4	103.7	53.1
461.8	2.3	16.9	31.8	85.8	44.8
316.6	2.3	12.7	30.2	82.7	40.0
301.7	1.9	12.7	30.2	75.9	35.1
283.0	1.6	12.7	28.6	59.8	25.5
210.4	1.6	11.1	25.5	50.9	22.7
208.6	1.3	10.0	23.9	48.7	20.0
206.7	1.3	10.0	22.3	46.6	17.2
203.0	1.0	10.0	20.7	40.4	16.5
176.9	1.0	9.5	20.7	36.4	15.9
175.0	1.0	8.4	19.1	34.9	15.2
173.2	1.0	8.4	17.5	31.5	14.5
171.3	1.0	7.9	15.9	29.6	14.5

Figure 1. Top twenty emojis used by each airline (FROM tweets)

One example of a positive face emoji used frequently by all airlines is Smiling Face with Heart-Eyes. To explore the use of this emoji in more depth, we ran a collocational analysis, the results of which are also shown in Figure 2. Ordinarily, a collocational analysis shows the other words which co-occur frequently with a particular search term of interest within a fixed span of words to the left and right (typically 1-5 words in each direction). In our analysis, the search term is the Smiling Face with Heart-Eyes emoji and the collocational span is the whole tweet. Our rationale for using a wider span is that our pilot study demonstrated that emojis often appear at the end of a tweet but relate to every word in that tweet in a way that does not happen in a conventional collocational relationship between words which appear such a distance apart. The strength of association was measured using z-scores, retaining the top 20 collocates with a z-score of 2.0 or greater.[15] This process takes into account the (sub-)corpus frequencies of the emojis and words so that only collocations with a co-occurrence frequency greater than what would be expected by random chance are included in the analysis. Z-score has been used as an

[15] Raw results available at https://github.com/rdues/UCTC-emojis

association measure in numerous corpus studies for both ordering and filtering collocations, with Su et al. (2024) reporting that the measure performs well with small pools of collocation candidates, as is the case in this study.

Node	Company	Rank	Emoji Collocates	Word Collocates
😍	Alaska Air	3	😍✈️💙🥰😘 💚🙌🏔️😀🤩 👍🏈👀🎉🤗 😊❤️🌅😭😋	-maeghan katie -ronni love sharing vanessa beautiful -allison great -ariel thank amazing thanks view bobbi diana brandy -carrie -amber #iflyalaska
😍	American Air	6		dream love aadvantage
😍	Delta	6	😍	views beautiful just dream favorite perfect love
😍	JetBlue	9	💙	love
😍	Southwest	10	✈️💙💛❤️💌 😍🙄👀	-bella sharing hope view soon thanks again onboard share skies wow -jeni southwest thank choosing beautiful welcome such -ashley see
😍	United	8	😍	view boom looks new love hearts heart good day flights way

Figure 2. Top emoji and word collocates of Smiling Face with Heart-Eyes in tweets FROM airlines

Figure 2 includes words which collocate with the Smiling Face with Heart-Eyes emoji (column 5) but also other emojis which collocate with it (column 4). In both columns we find numerous examples of positive evaluators, including other smiling face and heart emojis, and words such as *beautiful*, *great*, *amazing* and *perfect*. In the rows for four of the airlines, the Heart-Eyes emoji collocates with itself, which happens when the author of a tweet includes several instances of the same emoji. This is demonstrated by Examples (1) to (3):

(1) Whoa!?!? That's crazy cool!! 😍😍😍😍 – Kitty [from Alaska]

(2) That view though! 😍😍 [from United]

(3) 😍😘😍😘😍Thank you so much for sharing this with us!! -Maeghan [from Alaska]

In all three of these examples, a member of staff at the airline is responding to a tweet from a customer and engaging with the content they posted. Reviewing these and other examples, we find that the response is often to a photograph posted by the customer of their view from a plane, which explains the frequent use of *thank(s)* and *sharing* in Figure 2, as well as the positive evaluators in both the Word Collocates and Emoji Collocates columns. The fact the customers

are sharing images of scenery also explains the appearance of words such as *view(s)* and emojis such as Snow-Capped Mountain and Sunrise. In (1) and (3) the staff member includes their name at the end of the tweet, and we see several other names as collocates in Figure 2, personalising the tweets and thus adding an element of CHV. The fact that most of the names are conventionally female is an area for further study.

Some of the high ranked emojis in Figure 1 are less clearly positive and require further analysis. These include Pensive Face (rank 16 for Alaska) and the Upside-Down Face (rank 14 for Southwest). The results of collocational analyses for both of these emojis appear in Figure 3. Pensive Face does not collocate significantly with any other emojis but its word collocates include items relating to expressions of empathy and the speech act of apology – *sorry (to) hear*, *apologize*, *unfortunately* – and to the common reason an apology is required in the airline context: *long flight delay(s)*. Example (4) is typical:

(4) 😔 Hi Casey, I'm so sorry to hear about your experience. Can you please DM us your confirmation code? –Ariel [from Alaska]

The Upside-Down Face emoji is highly ambiguous. According to Emojipedia, it is "used to convey irony, sarcasm, joking, or a sense of goofiness or silliness",[16] none of which would seem to be ideal responses in a webcare setting. The emoji collocates of Upside-Down Face in Figure 3 reflect the branding of tweets with coloured hearts by Southwest, as discussed above, but do little to help decode the meaning of the face. The word collocates suggest that Southwest staff, in particular Jeni, make frequent use of this emoji in responses which ask customers to *dm* (direct message) the company their *confirmation number*.

Node	Company	Rank	Emoji Collocates	Word Collocates
😔	Alaska Air	16		-allison sorry oh please delay dm flight -ariel ugh code confirmation long help times delays unfortunately hear apologize hi today
🙃	Southwest	14	💌💛💙❤️✈️ 😎👀🎧🧳	-jeni dm time hope wait check number 2021 hours departure confirmation get love customers daylight 7 23 saving november helps

Figure 3. Top emoji and word collocates of other face emojis in tweets FROM airlines

[16] https://emojipedia.org/upside-down-face (accessed 12 November 2025)

Example (5) explains the collocates relating to *daylight saving time* although, even with this additional context, it is not completely clear what the intended meaning of Upside-Down Face might be:

(5) It's due to Daylight Saving Time, Ant! Customers traveling on November 7, 2021 must wait to check in until 23 hours before your scheduled departure. Hope this helps! 🙃 - Jeni [from Southwest]

The analyses so far have shown that airlines use emojis when engaging with their customers for relationship management purposes, and when responding to them in a customer care context, for example apologising to complaining customers and answering questions about their bookings. These webcare goals are also reflected in some high-ranking emojis which are unique to a particular airline in Figure 1. These are exemplified in (6) to (8):

(6) Aw! You're making us blush over here, Betsy. Thank you for the kind words. Don't hesitate to DM your confirmation number if we can send some love your way! 💌 – Amanda [from Southwest]

(7) Interesting guesses! Want a hint? 🔎 (Also, don't forget to reply with the # if you want to enter the sweeps!) [from United]

(8) Our final Operation Fly Formula flights have arrived from London with 559,339 bottles of infant formula onboard, bringing the total to over 3.7 million🍼! [from United]

Example (6) includes an emoji used often by Southwest when asking customers to send them a direct message (DM) in a customer care context, for instance when confidential information such as a confirmation number needs to be shared (see also the discussion of the Upside-Down Face emoji above). Although this emoji is conventionally referred to as Love Letter and the example tweet does indeed use the phrase "send some love", the frequent use of this emoji also functions as a form of branding by Southwest, whose logo is a heart. Example (7) relates to a competition, or sweepstake, run by United where Twitter users were encouraged to guess the company's new routes for 2022, illustrating a further way in which the airline engaged in relationship management and encouraged user engagement. In addition to these uses, airline-

specific emojis also appear in tweets serving the webcare goal of reputation management. For instance, the Baby Bottle emoji in (8) was used frequently by United in 2022 when there was a shortage of infant formula in the US and the company used its planes to import the product from the UK as part of the government's Operation Fly Formula initiative. United's tweets about their contribution thus served as a form of public relations. In summary, while there are specific emojis that are favoured in tweets FROM each company, the top twenty lists (Figure 1) show many similarities across the different airlines, more so than for the other industries we will discuss later.

Turning to the top twenty emojis addressed TO each of the airlines (Figure 4), we see some similarities with the top emojis in tweets FROM airlines (Figure 1), including the frequent use of the Airplane and various heart emojis. However, there are noticeable differences in the highly ranked face emojis in Figure 4. For instance, the red Enraged Face (with and without swearing symbols) appears in the top five for all airlines, and is the most frequent emoji in tweets sent to both American and JetBlue.

Alaska Air	American Air	Delta	JetBlue	Southwest	United
780.3	362.5	374.0	415.3	735.1	471.8
635.8	248.7	330.1	246.0	591.8	386.5
506.8	223.7	281.5	235.0	435.0	228.6
358.8	217.0	272.3	207.3	354.2	224.6
304.3	194.3	263.0	203.6	294.3	198.1
245.1	171.4	209.6	145.3	279.2	197.2
243.9	155.9	160.2	116.8	267.4	195.9
221.4	134.6	135.1	114.6	210.2	189.3
185.9	91.4	114.1	110.2	190.3	145.0
184.7	80.6	108.3	108.8	157.6	137.5
169.3	80.0	106.6	106.6	157.4	133.5
167.0	69.2	104.7	96.3	129.7	125.6
146.8	66.7	99.2	89.1	128.6	113.2
138.5	66.5	93.4	83.9	127.8	105.2
130.2	65.4	92.3	81.0	122.9	103.0
127.9	64.5	90.3	69.3	112.4	96.0
125.5	61.3	86.7	68.6	111.9	77.4
123.1	54.4	83.1	65.7	108.2	75.6
117.2	54.1	74.9	63.5	93.1	74.7
108.9	51.0	72.9	63.5	91.5	74.3

Figure 4. Top twenty emojis addressed TO airlines

Figure 5 shows the results of a collocational analysis for Enraged Face (without swearing symbols), again including both word and emoji collocates. Enraged Face frequently collocates with itself and with the variant that includes swearing symbols, as well as with other sad and angry face emojis. The word collocates indicate that the reason for customers' anger is often that their *flight* is *delay(ed)* for *hours* or *cancel(l)ed*, and that their *phone* calls to *customer*

service are left on *hold*. The emoji is thus used by customers complaining to the airlines and venting their frustration, often because their service expectations have not been met.

Node	Company	Rank	Emoji Collocates	Word Collocates
😡	Alaska Air	6	😡🤬🤢😤😭	flight get customer hour vegas just now hours 10 back hold 3 layover change direct put san home wait
😡	American Air	1	😡🤬😤🤦👉😢✈️👎🤯😩😫🙌💩🙄😡😳😑💪🗑️🤔	flight now de que hours bag service worst flights delayed 2 get canceled days customer just another aa hour cancelled
😡	Delta	4	😡🤬😤👎😩🐝😭😠👏🙄😣💪🖕🥵😐😟☹️	flight time hours now customer hold service get delta delayed canceled 2 got just bag plane hour airport back even
😡	JetBlue	1	😡🤬🤔😤😠💪🙄🖕🤯👎😭	flight jetblue hours time fly just now website service 2 asked found love cancelled flights screen cats shots hates written
😡	Southwest	4	😡💩🤬⬇️👎😤😕😩🇺🇸😒😭😢💚🤔😳😠🤩🤡💀	flight now southwest flights hours get canceled cancelled time post delayed just hour hold stuck home another 2 phone still
😡	United	4	😡😇🤬😤😭😠🙄👇🙄😂	flight now worst united hours again get flights time delayed day fly missed just delay even service new hour next

Figure 5. Top emoji and word collocates of Enraged Face in tweets TO airlines

Several of the other emojis used frequently in tweets sent TO airlines (Figure 4) are also associated with negative emotions such as anger and sadness. These include Loudly Crying Face (ranked in the top five for five of the six airlines) and emojis depicting gestures of disapproval, such as Thumbs Down (rank 18 for American) and Middle Finger (rank 15 for Southwest). Other highly ranked emojis in Figure 4 convey negative sentiments in a less conventional way. An example is Clown Face, which is rank 14 for American, 18 for JetBlue, 13 for Southwest and 20 for United, and is illustrated by Examples (9) to (12).

(9) @AmericanAir You guys suck, should be imidiate refund, like wtf who wants a credit, you just guaranteed that the person you made mad will never fly with your airline again. 🤡🤡🤡🤡😆🤣😂

(10) @SouthwestAir You cancelled flight 1926 to New Orleans with no reason as to why and no options to rebook on any other flights. I'm missing a flight because of you :(😡😭🤡😒

(11) @AlaskaAir It's now 2023 and you 🤡 have no idea where my luggage is

(12) @SouthwestAir appears to be a literal 🤡 show these days!!!!

In all of these examples, the disgruntled customer is accusing the airline in question of being poorly run, referring to the company and its staff as clowns. This is made explicit in the final two examples, with (11) stating "you clowns have no idea where my luggage is" and (12) calling Southwest "a literal clown show". The replacement of a word in a tweet with an emoji representing that word is a phenomenon we also see with the Pile of Poo emoji, which appears amongst the top 20 emojis in tweets sent to American and Southwest. Examples (13) to (17) illustrate this:

(13) @AmericanAir 💩 company, hope you go bankrupt

(14) @SouthwestAir will you have your 💩 together by tomorrow for flight 3572 Denver —> Vegas or nahhh? I need to know if I should keep my rental and drive myself

(15) @AmericanAir Hahahaha this is the biggest 🐴💩 I've ever heard of in my life

(16) @SouthwestAir has gone from being a great airline to absolute dog 💩. It's unreal

(17) @AmericanAir the absolute worst customer service and did not receive any help for the situation I am in. Was basically told that I'm on my own. Absolute horror show of an airlines. 🍕💩

In all cases, the context of use makes it clear that the Pile of Poo emoji is intended to be read in a more explicit way as "shit". In (13) this is used as a modifier of the noun *company*, while in (14) it is used as part of the idiomatic phrase *have your shit together*. Examples (15) and (16) use the emoji as part of the negatively evaluative compounds *horse shit* and *dog shit* respectively, the former replacing both elements with emojis and the latter replacing only the second element. Example (17) is perhaps the most creative of all, using the Pizza and Pile of Poo emojis together to represent the phrase *piece of shit*. While exploring emojis in tweets TO airlines has revealed interesting insights into the emotions and speech acts conveyed in an industry's webcare interactions centring around customer care, the following discussions for

the food and beverage industry and streaming services will focus on companies' emoji use and the role of these pictographic features in their webcare interactions with stakeholders.

4.2 Food and Beverage

For the Food and Beverage (F&B) industry, we see some immediate similarities in companies' use of emojis compared to airlines. As Figure 7 shows, F&B companies also use variations of faces expressing positive emotions frequently, such as the Smiling Face with Heart-Eyes, Slightly Smiling Face and Star-Struck emojis. The Registered symbol, which was the top emoji for American Airlines, also features among the most frequent emojis for Subway and Taco Bell, as does the Trade Mark emoji. In addition, as for the airlines, heart emojis appear among the top ranks for the F&B companies, often in the brands' respective colours, such as blue for Pepsi, purple for Taco Bell, and both green and yellow for Subway. Branding also pertains to some of the emojis that are unique to the F&B industry. Thus, for Dr Pepper we find a Hot Pepper among its top five emojis, Burger King has the Crown as its most frequent emoji and the Hamburger at rank three, whereas the Taco emoji is one of the most frequently used by Taco Bell. Several of the emojis in Figure 3 are therefore related to the brands' identity and the products they sell (see also the French Fries emoji for Burger King and the Cup with Straw for Coca-Cola and Dr Pepper).

Coca-Cola	Dr Pepper	Pepsi	Burger King	McDonald's	Subway	Taco Bell
26,397.6	5,964.5	8,954.0	936.5	2,128.5	7,443.1	4,271.5
13,750.1	4,225.4	7,942.1	345.3	842.1	5,044.1	640.5
12,805.6	3,396.6	4,999.1	223.8	842.1	3,087.9	481.5
474.4	2,513.5	4,948.9	157.5	269.8	2,784.5	167.9
423.9	2,282.5	1,957.9	132.6	260.1	417.7	159.0
191.1	1,942.9	1,947.8	93.9	62.7	367.7	132.5
180.1	1,358.7	1,926.6	91.2	31.9	303.4	123.7
160.3	1,209.2	1,492.1	66.3	31.4	235.6	110.4
153.8	991.8	848.8	60.8	29.7	203.5	97.2
140.6	937.5	311.6	60.8	29.3	199.9	75.1
138.4	923.9	289.3	47.0	27.0	182.1	66.3
127.4	910.3	232.3	41.4	25.5	178.5	57.4
127.4	760.8	217.8	41.4	25.3	142.8	57.4
96.6	747.3	195.5	41.4	23.8	139.2	48.6
85.7	733.7	154.1	19.3	20.7	135.7	48.6
83.5	720.1	137.4	19.3	20.3	128.5	39.8
81.3	679.3	131.8	19.3	17.1	124.9	35.3
72.5	665.7	117.3	19.3	15.8	107.1	35.3
72.5	611.4	91.6	16.6	11.8	100.0	30.9
72.5	584.2	84.9	16.6	10.8	100.0	30.9

Figure 7. Top twenty emojis used by each F&B company (FROM tweets)

When taking a closer look at the collocates of these emojis (Figure 8), it turns out that they serve different webcare goals. The word collocates of Burger King's Crown and Hamburger emojis indicate that they often appear in customer care tweets, with collocates such as *assist*, *care*, *guest/s*, *thank*, *dm* and *contact* indicating that social media managers express gratitude for reaching out (see *letting* us *know*) and advise guests on how to get further assistance with their complaints and queries. In addition to collocating frequently with each other, these emojis also collocate with the Waving Hand emoji, which is reflected in word collocates such as *hey* and *hello* signalling a greeting, and emojis expressing different emotions, such as the Face Screaming in Fear and the heart emojis, which may express empathy with customers' negative service accounts and appreciation respectively.

Node	Company	Rank	Emoji Collocates	Word Collocates
👑	Burger King	1	👑👋🫵🍔😱❤️🦾😀🌎👀	assist further know rule hey letting care guest send royal specialists dm thank want please get treatment sure guests contact
🍔	Burger King	3	🍔🍟🥤🟧👋👑🅾️🧀📲⛔✨	burger 1/265 hey hello please care know contact guest assist team hear thank find bk get details asap letting dm
🌮	Taco Bell	6	🌮⚾™️®	taco bell series world rewards purchase win game get 2x points
😋	Coca-Cola	8	😋🥤🍓🍉✨💫	favorite new coca cola expression provoke debate welcome continue enjoy creations fans flavors know flavor space taste dream tastes daydreaming

Figure 8. Top emoji and word collocates of brand emojis in tweets FROM F&B companies

Examples (18) and (19) illustrate the use of some of the emoji and word collocates of Burger King's Crown and Hamburger emojis. They show that Burger King addresses customers personally in these customer care messages and closes their tweets with some of the brand's most frequent emojis (see Figure 7).

(18) Hi Ayushman! 👋 Thanks for letting us know! You can find the BK guest care team best equipped to **assist** you at URL 👑 [from Burger King]

(19) Hey Caro👋 We're so sorry to hear this and understand the gravity of this situation. Can you please provide the details of your experience and your contact info here at URL We'd like to get all the info so we can follow up ASAP. ✨🍔 [from Burger King]

On the other hand, Taco Bell's use of the Taco emoji and McDonald's Face Savoring Food emoji underline the marketing goal of webcare. Taco Bell has been a longstanding sponsor of the Major League Baseball (MLB) World Series™ and, as Figure 8 shows, its Taco emoji thus collocates with the Baseball and Trade Mark emojis, as well as word collocates such as *world*, *series* and *game*. In addition, the top word collocates reflect its rewards programme through which customers can get double points on each purchase on game day. Likewise, the Face Savoring Food emoji for McDonald's is used in tweets advertising new soda flavours, such as strawberry and melon, which appear among its emoji collocates. This is also underlined by its word collocates, including *flavor/s*, *creations* and *taste/s*.

The marketing goal of webcare is also reflected in emojis related to specific promotions. For example, the Cloud emoji appears in the top ten for Coca-Cola (Figure 7). This emoji is related to the brand's Creations marketing campaign, which saw the company introduce five limited editions drinks, including Coca-Cola Dreamworld,[17] a new flavour said to taste like dreams (Lewis, 2022). This is also indicated by the collocates of the Cloud emoji, which include the Cup with Straw emoji, the words *dream/s*, *dreamy*, and *flavors*, as well as the hashtags #cocacoladreamworld and #cocacolacreations. Likewise, the use of the Cookie emoji by Subway relates to the footlong cookies the company introduced on national cookie day 2023. The Shamrock emoji used by McDonald's relates to the mint-flavoured milkshake it introduced in the US on St. Patrick's Day as early as 1970.[18] It collocates with itself (signalling repeated use), the Green Heart emoji, and words such as *shamrock*, *shake*, *mint* and several positively evaluative adjectives, such as *delicious*. As Figure 7 shows, (new) flavours are also indicated through fruit emojis, such as Melon for Coca-Cola, Strawberry for Coca-Cola and Dr Pepper, and Cherries for Pepsi.

In addition to marketing, the use of emojis by the F&B companies studied is linked to the relationship management goal of webcare. Thus, several of the highly frequent emojis in Figure 7 appear in duplicate tweets addressed to many different customers (see Section 3), encouraging them to engage with a company's post or offer. This is illustrated in Example (20) by Coca-Cola. This tweet is introduced by the Police Car Light emoji to draw attention and invite users to join the interactive live stream advertised, which allowed them to participate in Coca-Cola's flavour creation. Likewise, Example (21) by Pepsi uses the Fire emoji and the

[17] https://www.coca-colacompany.com/content/dam/company/us/en/reports/coca-cola-business-sustainability-report-2022.pdf (accessed 12 November 2025)

[18] https://corporate.mcdonalds.com/corpmcd/our-stories/article/shamrock-10fun-facts.html (accessed 12 November 2025)

phrase *the day has arrived* to spark interest, encouraging users to reply to the tweet (see the Backhand Index Pointing Down emoji) and share their predictions for Pepsi's Super Bowl Halftime Show to win a prize. Example (22) illustrates the most frequent emoji for McDonald's, the Eyes emoji. It is used instead of the word *see* in a tweet as part of the McDonald's Hacks campaign, which invited customers to come up with their own burger creations. In a similar manner, Subway asks users to reply to their tweet in Example (23) to let them know which sub from a new football inspired menu they liked best.

(20) 🚨 It's game time🕹The Twitch Stream is LIVE. Join us now! #CocaColaCreations #CocaColaXMarshmello Reply #unsubscribe to opt-out [from Coca-Cola]

(21) The day has arrived🔥#PepsiHalftime is here. Want to try and #TakeHomeHalftime prizes live from the Show? Tweet your predictions below👇👇 [from Pepsi]

(22) u tried our #McDonaldsHacks. now the time has come for u to create and share ur own innovations. can't wait to 👀 what u come up with [from McDonald's]

(23) That's a wrap on the #SubwaySeriesMenu! Now that you've met all 12 subs from the rookie lineup, let us know your pick. Good luck! 🏈 [from Subway]

Overall, the study of the most frequent emojis used by the seven F&B companies has shown that they mainly reflect a focus on the webcare goals of relationship management and marketing in their corporate tweets. Burger King stands out as it also uses emojis in tweets that meet the webcare goal of customer care, similar to the findings discussed above for airlines.

4.3 Streaming Services

Here we turn our attention to the emojis used in tweets FROM the video streaming services, with the most frequent emojis for each service shown in Figure 9.

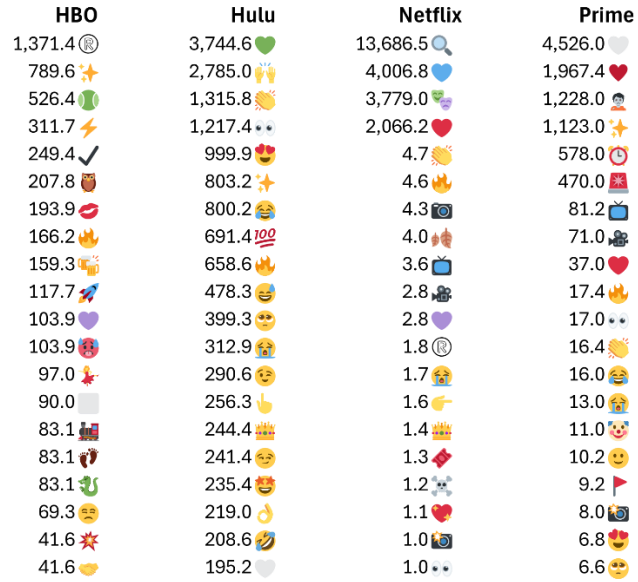


Figure 9. Top twenty emojis used by each streaming service (FROM tweets)

Repeating the patterns noted for the airlines and food and beverage companies, emojis relating to the sector as a whole are highly frequent. These include the Television and Movie Camera emojis, and also the somewhat related Camera and Camera with Flash, which are used frequently by Netflix and Prime. Also frequent in this industry are emojis that signal newness, which are often used in tweets notifying followers of new shows or content. These include the Alarm Clock, Police Car Light and Sparkles emojis, as in Examples (24) to (26), adding visual elements and colour to the tweet to draw attention.

(24) Do you know what time it is?! ⏰ #LizzosBigGrrrls is available NOW on Prime Video. Click below to watch. [from Prime Video]

(25) Some news. 🚨 Michaela Coel, John Turturro and Paul Dano will be joining Donald Glover & Maya Erskine in our ‘Mr. and Mrs. Smith’ series. Stay tuned. [from Prime Video]

(26) Great friendships never go out of style. ✨ And Just Like That... ✨ premieres December 9. Plans start at $9.99/mo. [from HBO]

The top ranked emojis stand out in Figure 9 as they have much higher relative frequency than others from the same streaming service. This is particularly noticeable for Netflix, where the top 4 emojis are more than 440 times more frequent than the emoji at rank 5. This is due to a

marketing campaign where tweets with the same content were addressed to individual users – our duplicate tweets (see Section 3) – resulting in such tweets, and the emojis contained within them, occurring many times in the corpus. This can be seen in Example (27), where the Magnifying Glass Tilted Left emoji is used in a tweet announcing a new film (*Enola Holmes 2*) which occurs 113,992 times in our corpus. The use of the emoji relates to multiple contextual elements sharing a common theme: the genre of the film (detective), the mention of a "sneak peak", and a puzzle for recipients to "[d]ecode your invitation" (which was described in an image attached to the tweet). Even though these tweets were posted 'en masse' by Netflix, they do contain an element of personalisation as each one was addressed to a subscribed follower, and they encourage followers to engage with the tweet to get more information about the film.

Other frequent emojis have a connection to the thematic content of specific shows running on the streaming services at the time of data collection. For example, the Owl, High Voltage (lightning bolt), and Clinking Beer Mugs (representing 'Butter Beer') emojis were used in the promotion of Harry Potter related content, such as the film *Fantastic Beasts: the Secrets of Dumbledore* which was airing on HBO. Similarly, the Crown emoji was used in the promotion of *Young Royals* on Netflix, and the Zombie emoji for *Hotel Transylvania 4* on Prime Video. However, this connection to theme is not always linked to specific shows as it is also present in tweets that engage with a genre more generally. This is shown in Example (28) where the Clown Face emoji is repeated multiple times, drawing on the association clowns have with horror movies (with several featuring a scary clown character) to emphasise the thematic content of the tweet (wanting to "watch a horror movie"). This also reveals a difference between posts FROM and TO the companies studied. In the Airlines sub-corpus, the Clown Face emoji was used as an insult in customer complaint tweets TO the companies, whereas for the streaming services it is used in tweets FROM the companies aiming to engage with their followers. In both cases, the emoji may help draw attention to the tweet, but with different purposes and sentiments.

(27) @USERHANDLE The game is afoot! Decode your invitation to the Ball below for an exclusive sneak peek at ENOLA HOLMES 2 available Nov. 4, only on Netflix🔍 #Holmesbury Reply #unsubscribe to opt-out [from Netflix]

(28) I wanna watch a horror movie, I won't have nightmares 🤡🤡🤡🤡🤡
🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡
🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡🤡 [from Prime Video]

Overall, HBO, Netflix and Prime mainly used Twitter to send notifications of new shows, episodes and events to their followers, focusing on marketing as their webcare goal, but the tweets FROM Hulu reveal an additional level of interaction. The frequently used Raising Hands, Clapping Hands, Hundred Points and Fire emojis occur in replies expressing agreement and/or excitement, as in Examples (29) to (31). It seems then that Hulu have chosen to take a more interactive and informal approach to their relationship management on Twitter.

(29) loving this energy 🙌 and 💯 agreed! [from Hulu]

(30) have never been more ready for anything in our lives 😍👏 [from Hulu]

(31) we're SO HYPED 🔥 [from Hulu]

5. Conclusion

In this article, we have explored the use of emojis in webcare communication, an area where they have not been studied extensively to date. In particular, we wanted to find out to what extent emoji use differs across webcare interactions in the three industries studied (airlines, food and beverage, and video streaming services) and how it relates to the organizational goals of webcare. On a methodological level, we aimed to show how corpus linguistic approaches can be adapted and expanded to study emojis, with a view to uncovering their interplay with surrounding text and other emojis. To this end, we analysed a 4.4-million-word corpus including tweets that were posted by and addressed to US companies from these three industries between September 2021 and February 2023, combining frequency with collocational analyses.

Our findings show that emoji use does indeed differ across industries, with least use by airlines and most by streaming services. The industries also differ with regard to the webcare goals they pursue. For airlines, a focus on customer care was identified, with both companies and customers using emojis in customer care interactions. In this context, the tweets addressed TO the airlines showed that customers use emojis for emphasis, to underline specific speech acts, such as complaints or requests. Airlines themselves, on the other hand, use emojis when expressing empathy and when telling customers what they need to do to get help, such as sending the company a direct message. At the same time, airlines use emojis when engaging with customer tweets about their travel experience or promoting corporate initiatives, and emojis thus also form part of messages serving the purpose of reputation and relationship management.

For the food and beverage industry and streaming services, the focus shifts to the webcare goals of relationship management and marketing. While specific companies, such as Burger King, were still found to use emojis in customer care, they mainly appear in tweets encouraging user engagement and advertising products and services. In these contexts, most food and beverage companies and streaming services regularly use duplicate tweets, addressing the same tweet text to many of their followers individually. While duplicate tweets, like retweets, would normally be excluded from corpus linguistic studies due to the risk of skewing results, we included them in our study to reveal the effect of duplicates on emoji frequency and collocates. Overall, our study has provided new insights into emojis in webcare interactions by relating them to the organizational goals of webcare and by demonstrating how their use varies across different industries. While previous research established the general benefits of using emojis in digital business communication, this study has shown that a nuanced approach to emojis in webcare is needed as they show variation depending on certain contextual factors, such as the webcare goal pursued or the industry in which a company operates. Future studies will be able to build on these insights to arrive at a more situated understanding of emoji use in webcare.

On a methodological level, this study has contributed to the expanding field of research aiming to integrate the study of visual elements into corpus linguistic analysis. It has illustrated how corpora can be built and processed to ensure that emojis can be analysed accurately using the common corpus linguistic methods of frequency analysis and collocation. To achieve this, we gave emojis equal status to words in the corpus, developing a processing pipeline in Python to integrate emoji identification into tokenisation and to allow emojis to be counted in the same way as words in the subsequent analysis. Another methodological innovation is our approach to analysing the collocates of an emoji, splitting these into the words that collocate with the emoji and the other emojis that collocate with it, taking the whole tweet as the collocational span. This allowed us to identify semantically-related emojis and emojis frequently repeated within a single tweet, and to disambiguate the function of specific emojis by referring to the words and other emojis with which they frequently co-occur. At present, there are few corpus tools capable of tokenising or analysing emojis. We are experimenting with this in a new browser-based tool as part of our WebCorp system[19] and, with an increasing number of corpus-based studies of emojis, we would like to see more corpus tools adapted to handle emojis in future.

[19] Available at https://www.webcorp.org.uk/wcx/tool

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