Speak to head and heart: The effects of linguistic features on B2B brand engagement on social media

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A B S T R A C T

Brand engagement on social media increasingly draws B2B brands' attention as it may produce positive WOM and bring branding and financial benefits. However, B2B marketers face challenges in creating compelling brand posts on social media. Beyond 'knowing what to post', what is even more challenging for B2B marketers is a lack of knowledge of 'knowing how to communicate', i.e., knowing how to design the non-informational cues in brand posts to stimulate brand engagement and generate social media WOM. This research makes initial attempts to address this gap by investigating the impacts of post language on B2B brand engagement on social media. Building on the model of B2B effective communication and theories in linguistics, we identify six linguistic features (i.e., post length, language complexity, visual complexity, emotional cues, interpersonal cues, and multimodal cues in rich media) that influence brand engagement, captured using Twitter likes and retweets. Through analyzing 229,272 tweets collected from 156 B2B brands in 10 industries, we found that, in general, linguistic features that facilitate the central or peripheral route processing will have positive effects, while those that hinder the processing will have negative impacts on brand engagement. This research contributes to our knowledge of B2B social media communication by revealing the power of brand language in driving brand engagement and introducing linguistics as a valuable conceptual lens for maximizing the benefits of B2B marketing content on social media. This research also highlights the interpretative nature of social media communication – B2B brands must go beyond the content purpose and strategy decisions to consider the specific language use and communication style of the message.

1. Introduction

Business-to-business (B2B) firms are increasingly embracing social media for their marketing activities. According to a recent report, social media has surpassed email, brand websites and blogs and become the top channel for marketing content distribution (Content Marketing Institute, 2021). As for paid content distribution, 83% of B2B marketers used social media advertising or promoted posts in 2020, rising from 60% in 2019 (Content Marketing Institute, 2021). It has been reported that 75% of B2B buyers and 84% of C-level or vice-president level buyers are influenced by social media when making purchasing decisions (Articulate, 2019). Social media word-of-mouth (WOM) is deemed important for B2B firms. Defined as "*informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services or their sellers*" (Berger, 2014, p. 261), WOM can evoke rational and emotional responses from the brand audience (Juntunen, Ismagilova, & Oikarinen, 2020; Leek, Canning, & Houghton, 2016; Swani, Milne, Brown, Assaf, & Donthu, 2017), and consequently increase brand equity, differentiate a brand from its competitors, create brand outcomes and monetary value, and impact B2B firms' stock performance (Bruhn, Schoenmueller, & Schäfer, 2012; Krings, Palmer, & Inversini, 2021; Liu, 2020; Lynch & De Chernatony, 2007; Pitt, Plangger, Botha, Kietzmann, & Pitt, 2019; Trusov, Bucklin, & Pauwels, 2009; Zhang & Du, 2020). However, while social media is increasingly adopted in industrial communications and branding activities, B2B firms continue to encounter problems in integrating social media into their marketing efforts (Järvinen & Taiminen, 2016), despite the fact that B2B brands' social media presence has a positive impact on all four brand

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relationship strength indicators - interactivity enhances perceived partner quality, while responsiveness positively influences commitment (Karampela, Ewelina, & McLean, 2020). Among these problems, a major difficulty lies in creating brand posts that stimulate brand engagement and generate social media WOM. In fact, brand post creation was reported to be the activity with which B2B marketers have most difficulty; regardless of company size and content marketing budget (Content Marketing Institute, 2021).

Underlying the challenges in B2B social media post creation is, firstly, the fact that extant literature and theories are mostly grounded in the B2C area (Kaplan & Haenlein, 2010), and secondly, the lack of clear and comprehensive knowledge of 'knowing how' rather than 'knowing what' (Leek, Houghton, & Canning, 2019; Nguyen, Yu, Melewar, & Chen, 2015). The limited research addressing B2B social media posts mainly focuses on the performance of the posts, such as WOM referrals, their subsequent brand outcomes (Bruhn et al., 2012; Pitt et al., 2019) and return-on-investment (Kumar & Mirchandani, 2012), and general management issues, such as multi-account/cross-platform management (Mehmet & Clarke, 2016; Zhang, Gosselt, & de Jong, 2020). With the exception of some recent research that considers B2B and B2C post comparison (Swani et al., 2017), the extant research focus has been on 'knowing what', i.e., understanding what informational contents (e.g., marketing themes/topics) to use in brand posts for particular B2B marketing purposes. There is a paucity of research on 'knowing how', i.e., knowing how to design the non-informational cues (e.g., language/ tone/media) in brand posts to stimulate brand engagement and generate social media WOM (Juntunen et al., 2020; Leek et al., 2019; Nguyen et al., 2015). However, 'knowing how' is undoubtedly important because non-informational cues can influence brand engagement by affecting both how the brand post is cognitively processed and the extent to which the audience is emotionally bonded to the brand (Juntunen et al., 2020; McShane, Pancer, & Poole, 2019).

In B2B marketing literature, there seems to be a debate on whether rational or emotional appeal works best in brand communication on social media (Cortez, Gilliland, & Johnston, 2020). One perspective argues that the online context is not effective for creating an emotional bond (Barari, Ross, Thaichon, & Surachartkumtonkun, 2020; Steinhoff, Arli, Weaven, & Kozlenkova, 2019), while another suggests that including emotional appeals in B2B social media communication is effective for creating positive brand attitudes and behavioural engagement (Sundström, Alm, Larsson, & Dahlin, 2021; Swani et al., 2017). Recent research suggests that both rational and emotional appeals are accessible and processable to social media users who view B2B brands' posts (Cortez et al., 2020). Depending on personal characteristics (e.g., expertise) and situational factors (e.g., business task involvement), stakeholders such as buyers, potential customers, professionals, partners on social media may respond to B2B brand posts differently through two information processing routes, i.e., central route or peripheral route. Whereas some stakeholders may focus on rational information contained in brand posts and engage with brands driven by utilitarian motives, others may engage in seeking emotional benefits that are usually related to their underlying needs for personal expression, social approval, and self-esteem (Cutler & Javalgi, 1993). Therefore, we argue that it is necessary to develop a strategy for simultaneously delivering both rational and emotional values through the brand post on social media.

Used appropriately, language can improve information quality for better cognitive processing and create socio-psychological meanings for interpersonal and emotional associations-building (Cortez et al., 2020; McShane et al., 2019; Zhang & Du, 2020). As such, in this paper, we aim to answer the following research question: how do linguistic features of B2B posts influence brand engagement on social media? We apply Cortez et al.'s (2020) B2B communication model and investigate the effects of linguistic features of B2B posts on brand engagement by considering their influence on central and peripheral information processing. The comprehensive B2B communication model (Cortez et al.,

2020) takes both rational and emotional appeals into account, thus providing a solid foundation for a systematic investigation of the effects of linguistic features. By investigating 229,272 tweets collected from 156 B2B brands in 10 industries, we empirically identify six linguistic dimensions, including post length, language complexity, visual complexity, emotional cues, interpersonal cues, and multimodal cues in rich media, that affect brand engagement on social media via either the central route or the peripheral route of information processing. In this way, we contribute to B2B brand post and engagement research by offering guidance on how to design engaging posts and communicate effectively on social media. Our findings also contribute to B2B marketing practice by providing many easy-to-implement tactics that can help B2B brands stimulate engagement and facilitate WOM on social media.

The remainder of the paper is structured as follows. Section 2 begins with a discussion of social media in B2B marketing and the importance of brand engagement, followed by a review of current research on B2B brand posts. We then identify research gaps, state our research position, and introduce our theoretical foundations. Sections 3 and 4 detail our hypothesis development and methodology. Our empirical results are then presented in Section 5, followed by an in-depth discussion of both theoretical and managerial implications of the research and the limitations of the present study and opportunities for future research in Section 6.

2. Theoretical background

2.1. B2B marketing and brand engagement on social media

Among various social media applications in B2B marketing, the most promising one appears to be branding through B2B content strategies (Brennan & Croft, 2012; Juntunen et al., 2020; Leek et al., 2016; Leek & Christodoulides, 2011; Swani, Brown, & Milne, 2014). Research has suggested that, in B2B social media content marketing, the most important activity is to increase brand engagement (Leek et al., 2019; McShane et al., 2019; Swani et al., 2017). In the digital age, multiple stakeholders (external and internal) may all participate in social media discussions, read brand posts, and become key influencers (Brennan & Croft, 2012; Huotari, Ulkuniemi, Saraniemi, & Mäläskä, 2015). Brands' success in getting various stakeholders involved and engaged on social media (e.g., liking and sharing brand posts) can drive positive WOM for the brand and, consequently, raise awareness, generate leads, and build trust and credibility for the brand (Alboqami et al., 2015; Leek et al., 2019; Lynch & De Chernatony, 2004; Swani et al., 2017; Trusov et al., 2009). This positive WOM has been proven to positively influence brand outcomes and financial outcomes in the B2B context (Liu, 2020; Pitt et al., 2019; Trusov et al., 2009). Furthermore, along with the stakeholders' engagement behaviours, much behavioural data is stored on social media, such as the number of views, liking, and shares, click-through rates, and comments. The exploitation of this behavioural data can generate business insights concerning many B2B marketing tasks such as product/service improvements and competitor benchmarking (Nam, Joshi, & Kannan, 2017; Quinton, 2013; Upreti et al., 2021). Hence, it is surely important for B2B brands to create compelling brand posts to better engage with a range of stakeholder groups on social media (Brennan & Croft, 2012; Swani et al., 2017).

2.2. B2B brand posts on social media

Thus far, research on brand posts on social media has mostly been in the B2C context (Huotari et al., 2015; Kaplan & Haenlein, 2010; Pitt et al., 2019), while some studies compare B2C and B2B brand posts as a focal point (Swani et al., 2014, 2017; Swani, Milne, & Brown, 2013). Only recently have scholars begun to specifically address the effectiveness of brand posts on social media within the B2B arena. This work concentrates on 'knowing what', namely, summarising major B2B

marketing themes/topics and corresponding informational contents of the brand post for better engaging with social media audiences (Juntunen et al., 2020; Leek et al., 2019; Sundström et al., 2021; Zhang et al., 2020). While there is no consistent and comprehensive summary regarding the effective factual information in the B2B brand post, a central underlying conclusion, however, appears to be that B2B branding lacks sufficient knowledge of how to create compelling social media posts to communicate with the audience (Swani et al., 2017).

Research suggests that, to maximise the WOM benefits of brand posts on social media, 'knowing how to design the messages' is equally important as 'knowing what messages to post' (Nguyen et al., 2015). For example, suitable post design and language use in a brand post can influence the message quality (e.g., informativeness, variety, interactivity) to affect the viewer's cognitive processing of the informational content (Zhang & Du, 2020); the specific features such as embedded links, media, and hashtag are suggested to influence message fluency and then brand engagement (McShane et al., 2019). Moreover, recent research recognises the co-existence of cognitive and emotional dimensions underlying the brand engagement concept (Money, 2004; Zhang & Du, 2020) and suggests the positive effect of emotional appeals on brand engagement (Leek et al., 2019; Pitt et al., 2019; Swani et al., 2017). Our review finds that research on 'what messages to post' has examined post content and developed appropriate post themes, topics, and marketing-related discourses to establish an emotional appeal (e.g., building trust, invoking empathy) (Juntunen et al., 2020; Sundström et al., 2021). Unfortunately, empirical evidence is currently scant regarding the effect of non-informational cues on emotional appeals (Swani et al., 2017). This is considered a major oversight, given that non-informational elements such as post-composition, language use, and communication style are useful in offering peripheral cues and creating new socio-psychological meanings for higher emotional involvement and engagement (Cortez et al., 2020).

Therefore, in this paper, we investigate the non-informational elements of B2B brand post composition and design from a linguistic perspective. We observe that some research has touched upon the influences of particular post elements on brand engagement based on a linguistic view, but this work referred to broad or vague umbrella terms such as message styles, message quality, post tactics, and post features (Juntunen et al., 2020; Leek et al., 2016, 2019; McShane et al., 2019; Pitt et al., 2019; Zhang & Du, 2020) and this work usually addresses the effect of linguistic features on either rational appeals or emotional appeals. As we argued, linguistic features have the potential for simultaneously enhancing both cognitive information processing and emotional response generation (Cortez et al., 2020; Mehmet & Clarke, 2016). Therefore, we contend that a systematic investigation of the impact of linguistic features on brand engagement in the B2B context by considering its influences on the communications of rational appeals and emotional appeals is warranted. This is especially important as we acknowledge increased attention to the discursive elements of B2B communications in enhancing band legitimacy (Gustafson & Pomirleanu, 2021). Moreover, we suggest that it would be most appropriate to apply linguistics theories to the dataset as the research aims to exploit language resources (Mehmet & Clarke, 2016). Next, we introduce our theoretical foundation, the comprehensive model of effective B2B communication (Cortez et al., 2020) and linguistics theories, including metafunction and multimodality (Halliday, 1976, 1978).

2.3. Two routes of information processing & linguistic metafunction and multimodality

Gilliland and Johnston (1997) provided the first comprehensive model of the effective B2B communication process; Cortez et al. (2020) revisited and refined the model by incorporating the influences caused by social media on industrial communication and the role of emotional appeals in branding. The effective B2B communication model is based on the Elaboration Likelihood Model (ELM), which involves all elements in information processing, such as cognition, affect, attention, and behavioural intention, but avoids a sequential ordering from attention to behaviour. It is, therefore, appropriate to apply this model to investigate B2B brand posts on social media because social media communication is regarded as a non-linear, co-creative process in which participants are deemed not always to be attentive (Mehmet & Clarke, 2016). The ELM is a "dual-process theory of attitude formation and change arguing that persuasion can act via a central or peripheral route and that personal attributes determine the relative effectiveness of these processes" (Angst & Agarwal, 2009, p. 341). Thus, depending on the personal attributes and situational factors such as individual expertise, involvement, and personality, a range of stakeholder groups and the individuals in each group may respond to the same social media message differently through the central route or the peripheral route (Cortez et al., 2020). Moreover, the social media environment makes the situational factors more complicated and leads to more dynamic individual motives for brand engagement, including information seeking, socialising with others, and satisfying socio-psychological needs such as self-assurance/ −achievement (Kaplan & Haenlein, 2010).

Therefore, both rational appeals (i.e., focusing on practical, functional, or utilitarian needs and emphasising informational features and tangible benefits) (Grigaliunaite & Pileliene, 2016) and emotional appeals (i.e., relating to emotions and feelings and attempting to stir up emotions to motivate purchase) (Swani et al., 2014) have possibilities to be accessed and processed by the social media users in B2B settings. Then, the effective communications of rational appeals through the central route and emotional appeals through the peripheral route could enhance brand values, build brand associations, and activate engagement behaviours (Cortez et al., 2020; Lynch & De Chernatony, 2007). By recognising the effectiveness of both central route and peripheral route processing, we argue that the real question for B2B marketers becomes how to design/communicate the brand messages in ways that both central and peripheral routes could be facilitated to increase brand engagement. In particular, we propose that the key to the answer lies in the linguistic features of the brand post.

Regarding the linguistics aspect, we refer to Halliday's (1976, 1978) theories on systemic functional linguistics and apply metafunction and multimodality concepts to build our analytical foundation. According to metafunction theory, text can be understood through three perspectives, ideational (including experiential and logical), interpersonal, and textual (Halliday, 1978). The ideational function of the text enables viewers to make sense of the social action, event, and activity from reading the text, and the interpersonal function allows viewers to enact the social relationships and feel the moods, emotions, and attitudes of others via the text. More importantly, the viewer's sensemaking of the ideational and interpersonal meanings is socially constructed and influenced by the textual function of the language (e.g., text composition, grammar use) (Mehmet & Clarke, 2016). Hence, linguistic features play an active role in building and construing the social reality experienced by the viewers (Halliday, 1978). By integrating metafunction theory with the effective B2B communication model, we suggest that proper use of textual metafunction in a B2B brand post might enable the brand's ideas in the post to be accurately processed and the brand-viewer social ties to be built and enhanced. Specifically, the textual metafunction influences the viewers' cognitive and peripheral processing routes. Textual metafunction denotes the mode/composition and linguistic components of the message, which exhibits multimodality. Multimodality is defined as communication that is not limited to written language but includes various modes and literacies such as images, videos, and kinetic movement; namely, everything from the inclusion of emoticons to the placement of images to the organisation of the message to the method of delivery thus createing meaning for ideational and interpersonal interpretation (Mehmet & Clarke, 2016). Multimodality provides flexibility for researchers with the ability to change and adapt depending on their specific purposes (Jewitt, 2009). In our research, the following multimodal elements are incorporated as they are deemed salient in social

media communications: post length, post structure, word use, social media special symbols (e.g., hyperlink, URL, emoji, at-mention), and rich media (e.g., gif, image and video). We aim to investigate the impact of linguistic features (the various modal elements) on brand engagement by treating the various modal elements as influencers that facilitate/hinder the central route or the peripheral route information processing.

3. Conceptual framework and hypotheses development

The conceptual framework that guides our hypotheses development is presented in Fig. 1. It depicts the effects of linguistic features, grouped into two categories based on whether they influence central or peripheral route processing on brand engagement. We argue that the linguistic features that facilitate the central or peripheral route processing will have positive effects, while those that hinder the processing will have negative impacts on brand engagement.

3.1. Central route processing influencer

3.1.1. Post length
Post length has been found to influence brand engagement on social media (Antoniadis, Paltsoglou, & Patoulidis, 2019; de Vries, Gensler, & Leeflang, 2012). In B2C literature, post length has either a positive effect (Antoniadis et al., 2019; Sabate, Berbegal-Mirabent, Cañabate, & Leberz, 2014), a negative effect (Lee, Hosanagar, & Nair, 2018; Schultz, 2017), or no significant effect (de Vries et al., 2012) on brand engagement. Despite the inconsistent findings, the well-developed underlying

logic is that greater post length leads to a higher level of post informativeness (amount of information contained in a message), which in turn influences brand followers' engagement behaviours (McShane et al., 2019; Schultz, 2017). Applying this logic to the present study, we argue that post length can influence brand engagement. In B2B social media marketing, information sharing has been found to play an important role in shaping brand engagement (Leek et al., 2019; Swani et al., 2017). Given the nature of business marketing, B2B stakeholders are usually actively seeking information about brands/products on social media (Cortez et al., 2020; Sundström et al., 2021). As such, brand posts that contain more information are more likely to fulfil business users' informational needs and if viewed as relevant, lead to enhanced engagement (Leek et al., 2019). Therefore, we hypothesise:

H1. Post length has a positive effect on brand engagement.

3.1.2. Language and visual complexity
Message complexity refers to the efforts needed to process and understand a message. At the linguistic level, complexity focuses more specifically on the "ease with which people are able to convert elements of the message into meaning" (McShane et al., 2019, p.7). Marketing research reveals that message complexity can significantly influence the persuasiveness of advertising (Cox & Cox, 1988; Davis, Horváth, Gretry, & Belei, 2019). Furthermore, this research indicates that marketing message persuasiveness can be maximized when message receivers can process and understand the message with ease, revealing that, when designing marketing messages, brands need to consider the match
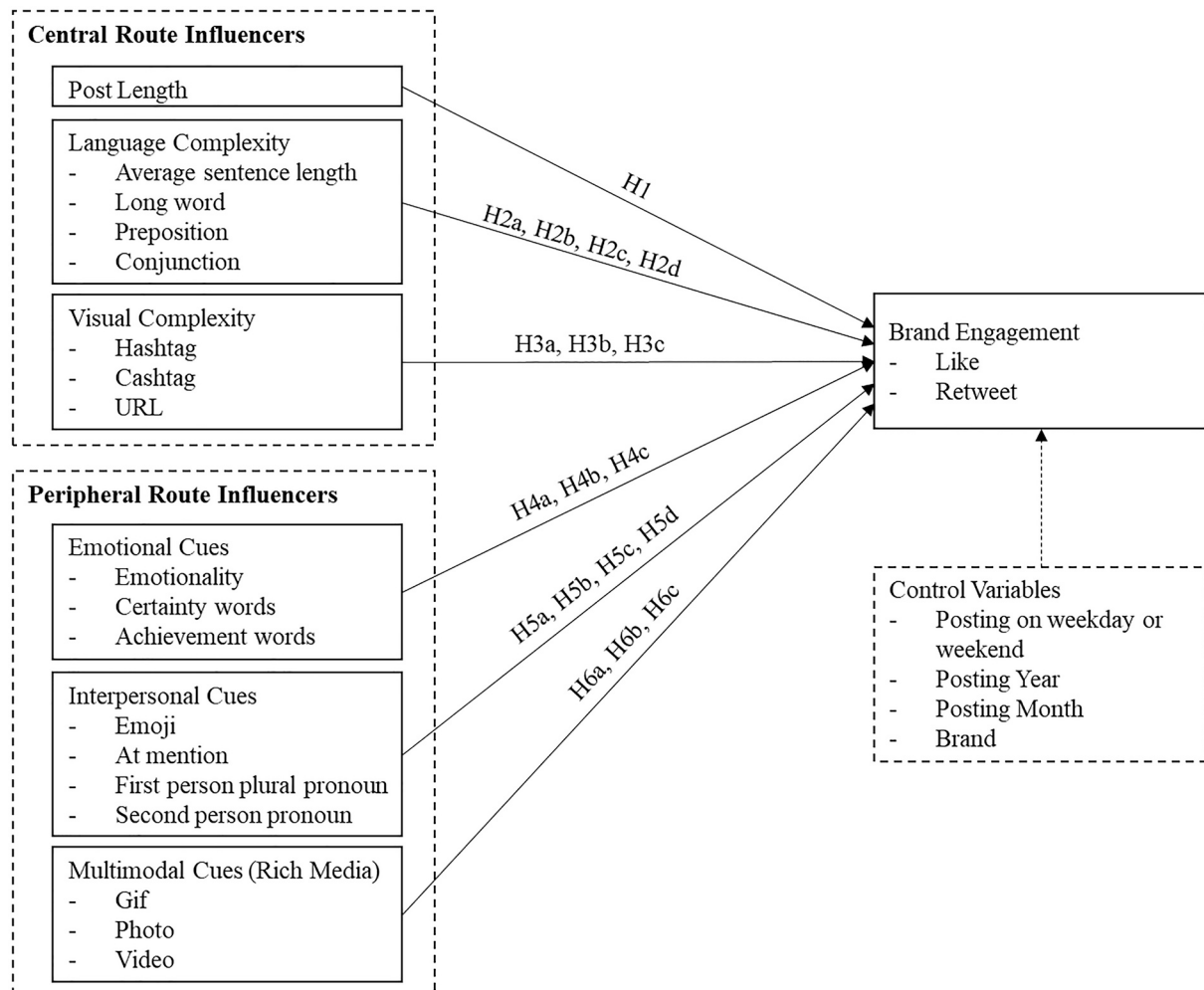

Fig. 1. Brand Engagement in B2B Social Media: A Conceptual Framework.

between the cognitive resource that is available to message receivers and the resource required to process the message (Anand & Sternthal, 1990; Burgers, Konijn, Steen, & Iepsma, 2015). On social media, users constantly face ubiquitous information overload (Rodriguez, Gummadi, & Schoelkopf, 2014). Using Twitter as an example, 500 million tweets are posted per day on average (Brandwatch, 2020), while users spend 6 min per day on Twitter (eMarketer, 2021) with an average session duration of 3.53 min (Statista, 2019). On Facebook, approximately 1500 eligible posts appear in a user's feed each day (Backstrom, 2013), while, on average, users only spend 34 min per day using the platform (Hootsuite, 2021). This tendency of exposure to vast amounts of information within such short durations demands social media users to optimise their cognitive resources (McShane et al., 2019). Consequently, social media users are likely to engage with brand posts that are easy-to-process (Davis et al., 2019). Research has also shown that cognitively busy individuals tend to perceive easy-to-process messages as more accurate and trustworthy (Alter & Oppenheimer, 2009). Both of these message features were preferred by B2B marketing stakeholders and positively related to the share of information (Chiu, Hsu, & Wang, 2006; Lau & Chin, 2003; Tsai & Men, 2013). Therefore, we argue that brand posts that are easy to process will generate more brand engagement.

At the linguistic level, many linguistic features have been found to be associated with the processing ease of a message. Sentence length (e.g., words per sentence) and word length (e.g., characters per word) have been identified and widely used as common indicators of message complexity (Davis et al., 2019). Research has shown that individuals need to consume more working memory load to process long sentences and long words (Mikk, 2008). As such, incorporating long sentences and words in brand posts will decrease the processing ease and require more cognitive resources to be employed (Khawaja, Chen, & Marcus, 2014). Except for long sentence and long words, style words such as prepositions and conjunctions are also indicative of more complex language (Tausczik & Pennebaker, 2010). Prepositions signal that more complex and concrete information about a topic is provided, and conjunctions integrate multiple complex ideas together and often introduce more complex sentence structures (Tausczik & Pennebaker, 2010). Research has also shown that prepositions and conjunctions reflect the cognitive complexity of a message (Buck, Minor, & Lysaker, 2015; Tausczik & Pennebaker, 2010). Thus, using prepositions and conjunctions will increase language complexity and necessitate that readers expend more effort to understand and interpret brand posts. Taken together, we hypothesise:

H2a. Average sentence length has a negative effect on brand engagement.

H2b. Long words have a negative effect on brand engagement.

H2c. Prepositions have a negative effect on brand engagement.

H2d. Conjunctions have a negative effect on brand engagement.

Except for traditional linguistic features, social media-specific features, such as hashtag (a metadata tag that is prefaced by the hash symbol, e.g., #TimeToAct), cashtag (a company ticker symbol that is prefaced by the U.S. dollar sign, e.g., $TSCO), and URL (a reference to a web resource, e.g., ibm.co/3jYd9IH), can also influence message processing ease. Social media platforms have created these specific features to help users deal with the vast amount of information. For example, hashtag and cashtag can help users search for posts under similar topics or related to the same company, track discussions, and distribute their messages in a more targeted way. URLs can provide the link to external resources that may provide users with more information. In being created to facilitate users searching, sharing, and engaging with information, these features have become central to social media communications (Davis et al., 2019; McShane et al., 2019). However, despite their convenience, incorporating these features in social media messages can increase the visual complexity, which disrupts the processing fluency

and makes it more difficult for readers to interpret the message (Alter & Oppenheimer, 2009; Davis et al., 2019; McShane et al., 2019). For instance, a tweet with these features (e.g., For #ValentinesDay, tell #IBM your #secretlovelanguage, but make it tech. https://ibm. co/1KiLeh7) will be more difficult for readers to process than a clean one (e.g., For Valentine's Day, tell IBM your secret love language, but make it tech.). Additionally, given the interactive nature of these features, when users click on these features, they will navigate away from the current message, which further decreases readers' likelihood of engaging with the message (de Vries et al., 2012; Schultz, 2017). Together, we argue that these social media-specific features will negatively influence brand engagement. Thus, we hypothesise:

H3a. Hashtag has a negative effect on brand engagement.

H3b. Cashtag has a negative effect on brand engagement.

H3c. URL has a negative effect on brand engagement.

3.2. Peripheral route processing influencer

3.2.1. Emotional cues

Emotional cues in brand communication affect how the communication is processed and influence the communication outcomes (Percy, 2012). On social media, emotionally charged brand messages were found to stimulate higher involvement and psychological arousal and enhance message receivers' participating and sharing behaviours (Berger & Milkman, 2012; Kim & Johnson, 2016). In B2B marketing, emotional communications provide peripheral cues that satisfy various stakeholders' divergent socio-psychological motives to build emotional associations and achieve emotional brand values, thus, potentially activating engagement intent and WOM behaviours (Cortez et al., 2020). Previous research found that emotional appeals increase B2B posts' popularity on social media (Leek et al., 2019; Swani et al., 2017). Furthermore, research has shown that the more emotional a tweet is, the more frequently and faster the tweet will be shared (Stieglitz & Dang-Xuan, 2013; Thelwall, Buckley, & Paltoglou, 2011). Thus, we argue that post emotionality (the extent to which a brand post is emotional) will positively affect brand engagement.

H4a. Emotionality has a positive effect on brand engagement.

B2B marketing literature has acknowledged the importance of adopting certain linguistic cues in communications to stress the psychological and emotional resonance between the buyer and the seller and to create strong emotional connections with the customer (Lynch & De Chernatony, 2007). As such, when communicating with stakeholders on social media, B2B brands should tweak their language to stress appropriate emotional brand values and socio-psychological values that match stakeholders' needs (Rich & Smith, 2000). One of the most important brand values in B2B relationships is trust (Morgan & Hunt, 1994), and recent research confirms that social media communication practices directly impact B2B customers' perceptions of trust (Rose, Fandel, Saraeva, & Dibley, 2021). Within the B2B context, while functional/rational brand values transferred and accumulated in actual purchase situations may still dominate the development of trust and commitment, research suggests that stakeholders on social media can be influenced by emotional brand values such as reassurance and security (Jussila, Kärkkäinen, & Aramo-Immonen, 2014) as the brand serves as a risk-reduction heuristic for B2B customers (Brown, Zablah, Bellenger, & Johnston, 2011). Research on general semantics and linguistics suggests that word use indicating certainty tends to endorse the brand and demonstrates resoluteness and confidence (Pitt et al., 2019), which leads to the message receiver's perceived expertise and credibility of the brand (Money, 2004) and a feeling of self-assurance (Zhang et al., 2020). Similarly, achievement words reinforce brands' capabilities and competence within specific areas and signals to message receivers the benefits of engaging with them (Leek et al., 2019). Moreover,

achievement words help fulfil brand followers' needs for self-actualisation and significantly relates to emotive resonance and deeper and more enduring customer relations (Ringsberg & Forquer Gupta, 2003). Hence, we hypothesise:

H4b. Certainty words have a positive effect on brand engagement.

H4c. Achievement words have a positive effect on brand engagement.

3.2.2. Interpersonal cues

In B2B marketing, building interpersonal relationships has been viewed as a central facet of brand communications (Leek et al., 2019) and managing these relationships using social media is increasingly seen as valuable (Cartwright, Davies, & Archer-Brown, 2021). The traditional approach to B2B marketing has highlighted the roles of personal relationships and interactions between sales representatives and customers (Huotari et al., 2015). This need to develop interpersonal relationships is enhanced by the very nature of social media, as one of the ideological and technological foundations of social media is networking (Kaplan & Haenlein, 2010). Because of its interactive nature, social media has been viewed as a communication channel where B2B brands specifically focus on developing, enhancing, and sustaining their interpersonal relationships with stakeholders (Cortez et al., 2020). Linguistic research has a long history of studying language's role in shaping relationships, and the findings from this research suggest that language can be used to improve relationships (Otterbacher et al., 2017). Some language features, when adopted properly, can soften hierarchical power relationships, reduce social distance, and convey closeness (Gretry, Horváth, Belei, & van Riel, 2017), thus facilitating an interpersonal relationship. We argue that adopting these linguistic features can help B2B brands develop interpersonal relationships with their stakeholders on social media.

Linguistic features, such as emojis, at mention, and personal pronouns, can be used to facilitate interpersonal communications. Emojis, when used in brand communications, can create a light mood by making the communications less serious and more friendly (Kaye, Wall, & Malone, 2016), conveying an attitude of welcoming conversational communication and informal interaction (Crystal, 2006). Furthermore, through conveying non-verbal cues that are normally absent in computer-mediated communications, emojis can help decrease the psychological distance and consequently increase the perceived intimacy (Derks, Bos, & Von Grumbkow, 2007). At mention makes a brand message more targeted to specific individuals or groups and transforms the message for the masses into direct communication. This direct communication assembles the traditional interpersonal communication (face-to-face or remotely via phone, email, or videoconference) that was the mainstay of interactive information exchange in business markets (Leek et al., 2019), thus is likely to be preferred by B2B stakeholders. Second person pronouns direct attention inward toward the person reading the brand messages. As such, using second-person pronouns increases self-referencing and perceived relevancy of the messages and conveys a feeling of personalisation. Research has shown that personalised brand message can increase customer involvement (Cruz, Leonhardt, & Pezzuti, 2017). Thus, using second-person pronouns is more likely to fulfil the interpersonal need of B2B stakeholders. First-person plural pronouns (e.g., we, us) can signal a sense of group identity (Tausczik & Pennebaker, 2010). When used in advertisements, first-person plural pronouns were found to enhance brand attitudes by creating a sense of closeness with the brand (Cruz et al., 2017). Despite the different mechanisms, a common argument that can be drawn from these findings is that these linguistic features all facilitate building an interpersonal relationship. Taken together, we argue that using these linguistic features in brand posts can facilitate relationship building with brand followers, thus enhancing their engagement. Thus, we hypothesise:

H5a. Use of emojis has a positive effect on brand engagement.

H5b. Use of at mentions has a positive effect on brand engagement.

H5c. First plural pronouns have a positive effect on brand engagement.

H5d. Second pronouns have a positive effect on brand engagement.

3.2.3. Multimodal cues (Rich Media)

Advertising has a long history of using vivid messages to influence stakeholders' attitudes toward brands. On social media, brands often create vivid posts by incorporating modal cues in rich media, such as photo, gif, and video, with the aim of enhancing the persuasiveness of their posts. Vividness refers to the extent to which a brand post stimulates different senses and can be achieved by including dynamic animations, colours, or pictures (de Vries et al., 2012; Steuer, 1992). According to Steuer (1992), vividness is based on its sensory breadth, i. e., the number of senses engaged. As such, text would be low in vividness, whereas photo and video would be high in vividness. Unlike simple text-only posts, brand posts presented in a multimodal format capture and stimulate multi-sensory interaction of sight, sound, and motion, thus, enable readers to have a more immersive experience with the content. Previous research suggests that a vividly presented message is inherently interesting, attention-getting, thought-provoking, image producing, emotionally arousing and easy upon which to elaborate (Kim, Kardes, & Herr, 1991; Sreejesh, Paul, Strong, & Pius, 2020). Moreover, vividly presented messages are suggested to reinforce the intimacy and authenticity of the communication (Mehmet & Clarke, 2016). Therefore, we argue that brand posts using modal cues in rich media can increase the post vividness and are, thus, preferred by brand followers on social media. Therefore, we hypothesise:

H6a. Use of gifs has a positive effect on brand engagement.

H6b. Use of photos has a positive effect on brand engagement.

H6c. Use of video has a positive effect on brand engagement.

4. Methodology

4.1. Data collection

Our data is drawn from Twitter. With 192 million monetisable daily active users (Twitter, 2021a), Twitter has become one of the most important social media platforms for B2B marketing (Leek et al., 2019; McShane et al., 2019; Pitt et al., 2019). According to the 2020 B2B Content Marketing Report, 82% of B2B content marketers used Twitter for content marketing in the last 12 months (Content Marketing Institute, 2021), making it the second most popular social media platform for B2B marketing. With its public nature, Twitter also provides a natural setting where brand engagement can be observed unobtrusively.

To create a dataset, we used the top 200 ranked B2B brands in the B2B Social Media Report as our sample (Brandwatch, 2015). These brands were identified and ranked based on the B2B social ranking index that evaluates their social media performance and have been used in other research as a pool of B2B brands (McShane et al., 2019; Pitt et al., 2019). Facepager, a free, open-source software developed for fetching publicly available data on various social media platforms such as Facebook, Twitter, Reddit, and YouTube, was used to capture the most recent tweets from these brands (Jünger & Keyling, 2019). Employing Twitter application program interface (API), Facepager allows us to collect the full tweets, the number of likes and retweets, date and time of the tweets, media types and other specific elements incorporated in the tweets, such as hashtag, cashtag, user mentions, and URLs (Jünger & Keyling, 2019). Data collection was conducted in late January 2021. For each brand, we scraped the most recent 3200 tweets as this represents the maximum number of historical tweets that can be accessed via the public Twitter API. When scraping the data, we excluded brand replies (i.e., brand responses to other Twitter users) because these tweets are

invisible to brand followers unless they also follow the other Twitter users mentioned. For brands with multiple official Twitter accounts, we scraped tweets from the account with the highest number of followers. We excluded tweets posted after December 31, 2020, to filter out the potential changes in brand engagement after data being recorded. We then removed retweets as they are not originally posted by brands and tweets that are not in English. Since some brands do not have Twitter accounts or have closed their Twitter accounts because of being merged or acquired, our final sample included 229,727 tweets from 156 brands that represent 10 industries, namely, aerospace, agriculture & food production, business software, chemical, construction, energy, heavy industry, industrial technology, medical & pharmaceutical, and military defense (see Appendix A for sample description).

4.2. Measurement

4.2.1. Dependent variables

In Table 1, we report the measurements and descriptive statistics of our variables. To measure brand engagement, we used two common social media metrics, namely, likes and retweets. On Twitter, liking and retweeting brand posts are the most common engagement behaviours that brand followers can perform. As such, likes and retweets have become the prevalent metrics and objectives in social media marketing

Table 1
Variables, measurements, and descriptive statistics.

Variable	Description	Mean	SD	Min	Max
Dependent Variables					
Like	Number of likes	22.76	372.70	0	134,717
Retweet	Number of retweets	6.34	91.16	0	36,525
Independent Variables					
Post length	Total number of words	23.10	9.87	1	58
Average sentence length	Average number of words per sentence	12.37	6.01	1	53
Long word	Percent of words with 6 or more letters	36.07	12.90	0	100
Preposition	Percent of prepositions	13.52	6.22	0	60
Conjunction	Percent of conjunctions	3.16	3.72	0	50
Hashtag	Number of hashtags	1.40	1.36	0	13
Cashtag	Number of cashtags	0.02	0.19	0	4
URL	Number of URLs	0.68	0.49	0	4
Emotionality	Sentiment strength of the tweet	0.88	0.98	0	7
Certainty	Percent of certainty words	0.81	2.12	0	100
Achievement	Percent of achievement words	3.04	4.20	0	100
Emoji	Tweet contains emoji	0.07	0.25	0	1
At mention	Number of at mentions	0.47	0.82	0	17
First-person plural pronoun	Percent of first plural pronouns	2.81	3.84	0	50
Second-person pronoun	Percent of second pronouns	1.16	2.79	0	50
Gif	Tweet includes a gif	0.02	0.13	0	1
Photo	Tweet includes photo	0.55	0.50	0	1
Video	Tweet includes video	0.08	0.28	0	1
Control Variables					
Weekend	Tweet was posted on weekend	0.09	0.29	0	1
Posting Year (11)	Dummy variables for Year the tweet was posted	–	–	–	–
Posting Month (11)	Dummy variables for Month the tweet was posted	–	–	–	–
Brand (155)	Dummy variables for brands	–	–	–	–

and have been widely used as the measurements of brand engagement in previous research (Davis et al., 2019; Leek et al., 2019; McShane et al., 2019). On Twitter, "like" represents the lowest engagement behaviour as it requires only a single click on the liking button, which is virtually effortless, instantaneous, and reflexive (Labrecque, Swani, & Stephen, 2020; Leek et al., 2019). The like action mainly symbolises support for the brand or indicates that the brand tweet has been seen and positively received (Leek et al., 2019; Swani & Labrecque, 2020). Retweet allows users to spread brand tweets publicly to their own networks. Before retweeting, users have the option to add their own comments and/or media; and to do so, users usually need to read and process the brand tweets well. As such, retweet is reflective and requires more cognitive resources (Labrecque et al., 2020; Leek et al., 2019; Swani & Labrecque, 2020). Although retweeting can be performed through clicking a few share buttons, the retweeted brand post will appear in a user's followers' timelines and can be seen by all of the user's personal relationships, allowing a higher visibility of one's activities to others (Labrecque et al., 2020; Leek et al., 2019; Swani & Labrecque, 2020). As such, retweeting a brand post shows a form of brand identification and strong brand endorsement and represents the highest engagement behaviour (Labrecque et al., 2020; Leek et al., 2019). In this paper, we followed previous research (Davis et al., 2019; Leek et al., 2019; McShane et al., 2019) and measured brand engagement using like and retweet counts the tweets received to address both lowest and highest brand engagement behaviours.

4.2.2. Independent variables

To measure the linguistic variables for our large dataset, we used the 2015 Linguistic Inquiry and Word Count (LIWC). LIWC is computational linguistic software that has been widely adopted in social research (Pennebaker, Boyd, Jordan, & Blackburn, 2015). It can be used to measure the linguistic style of text by assessing approximately 90 predefined linguistic categories, including general descriptors (total word count, words per sentence, etc.), style words (e.g., pronouns, articles, auxiliary verbs, preposition, conjunction, etc.), words tapping psychological constructs (e.g., affect, cognition, biological processes, drives, etc.), personal concern categories (e.g., work, home, leisure activities, etc.), informal language markers (e.g., fillers, assent, swear words, etc.), and punctuation categories (e.g., periods, exclamation, ellipsis, etc.) (Pennebaker et al., 2015).

In the present study, we used LIWC to measure the linguistic variables, namely, *post length* (i.e., total word count), *average sentence length* (i.e., word count per sentence), *long word* (i.e., word with six or more letters), *preposition*, *conjunction*, *certainty*, *achievement*, *first-person plural pronoun*, and *second-person pronoun*. These variables were expressed as the percentage of total words except for *post length* and *average sentence length*.

For emotionality, we measured the level of sentiment using SentiStrength (Thelwall, Buckley, & Paltoglou, 2012). SentiStrength is a sentiment analysis tool that can be used to classify emotions in short informal messages like tweets. It has been proven to provide a higher accuracy rate than standard machine learning approaches (Thelwall et al., 2012). For each text analysed, SentiStrength can report a positive sentiment score on a scale of 1 (neutral) to 5 (strongly positive) and a negative sentiment score on a scale of −1 (neutral) to −5 (strongly negative). To measure the emotionality (the total amount of sentiment) of tweets, we followed Stieglitz and Dang-Xuan (2013) and used the following calculated score:

$$\text{emotionality} = (\text{positive sentiment score}-\text{negative sentiment score}) - 2$$

This score, which ranges from 0 to 8, captures the degree of emotionality because both positive and negative sentiments are included. In the formula, 2 was subtracted to avoid confusion where a positive number, i.e., 2, indicates no sentiment in the case of the score ranging from 2 to 10.

Other internet linguistic symbols (hashtag, cashtag, url, and at

mention) were measured using the count of each symbol incorporated in tweets. Regarding the visual elements (emoji, gif, photo, video), we created separate dummy variables to indicate whether each of these elements was contained in one tweet.

4.2.3. Control variables

We included a series of control variables to account for their potential influence. Research has shown that social media users' activity level is different between weekdays and weekend (Wagner, Baccarella, & Voigt, 2017), which implies that people may engage with brands at different levels on the weekend versus weekdays. Recent research revealed that brand tweets posted during weekends generate higher engagement than those posted during weekdays (McShane et al., 2019). Thus, we included a dummy variable that indicates whether a tweet was posted on the weekend to control for this effect. In the present study, we collected tweets from 156 different brands. Previous research has identified brand as an important factor that influences brand engagement. Brand characteristics such as brand reputation and brand equity can strongly influence brand engagement on social media (Van Doorn et al., 2010). To rule out the potential influences, we created and included dummy controls for brands by which the tweets were posted. This also helps rule out the potential influences of the unique brand audience profiles and inherently controls for the effects of industry and brand follower size. Lastly, we included dummy controls for the years and months when the tweets were posted to minimise other potential influences raised by posting time and historical Twitter updates. Since Twitter does not allow access to brands' historical follower size data, these dummy variables of posting time (year and month), together with brand dummy variables, help minimise the potential influences of historical brand follower size changes.

4.3. Analysis method

To test our hypotheses, we ran multiple linear regressions to estimate the effects of various post characteristics on brand engagement. The dependent variables are the numbers of likes and retweets. Given that the dependent variables are positively skewed, we followed previous research (McShane et al., 2019; Schultz, 2017) and used the natural logarithmic transformation of like and retweet counts, i.e., Ln(Like+1), Ln(Retweet+1), as our dependent variables. Here, 1 was added to avoid taking logs of zero. The statistical analysis was performed using IBM SPSS Statistics Version 26. SPSS is a statistical software that has been widely used in social science research, thus provides a solid tool for current data analysis. In the next section, we report the statistical analysis results.

5. Results

The standardised estimation results are presented in Table 2. As a whole, the model for like is significant (F = 2493.01, $p < 0.001$) and explains the variance of the dependent variable well (R^2 = 68%, Adj. R^2 = 68%). Similarly, the model for retweet is significant (F = 1228.82, $p < 0.001$) and explains the variance of the dependent variable well (R^2 = 51%, Adj. R^2 = 51%). Compared to previous research (i.e., McShane et al., 2019), the current model provides more explanatory power for both like and retweet. One potential explanation is that, while McShane et al. (2019) focused on the central route processing and mainly examined brand engagement from the perspective of information processing fluency, the current model considered the central route and peripheral route processing simultaneously.

Regarding the effects of central route influencers, we found that linguistic features that facilitate the central route processing positively influence brand engagement, while those that hinder the central route processing negatively affect brand engagement. As we expected, tweets with more words tend to receive more likes and retweets, supporting H1. Furthermore, tweets with shorter sentences (i.e., lower average sentence

Table 2

Standardised estimation results for brand engagement.

		Ln Like	Ln Retweet
Post Length	Total word count	0.028***	0.037***
Language Complexity	Average sentence length	−0.004**	−0.004*
	Long word	−0.006***	−0.006***
	Preposition	0.001	−0.006***
	Conjunction	−0.006***	−0.005**
Visual Complexity	Hashtag	−0.015***	0.000
	Cashtag	−0.022***	−0.021***
	URL	−0.068***	−0.018***
Emotional Cues	Emotionality	0.019***	0.010***
	Certainty	0.016***	0.016***
	Achievement	0.016***	0.008***
Interpersonal Cues	Emoji	0.019***	0.015***
	At mention	0.038***	0.035***
	First plural pronoun	0.031***	0.014***
	Second pronoun	−0.025***	−0.016***
Multimodal Cues (Rich Media)	Gif	0.022***	0.027***
	Photo	0.077***	0.057***
	Video	0.097***	0.099***
Control Variables	Weekday vs. Weekend	0.019***	0.012***
	Posting Year (11)	X	X
	Posting Month (11)	X	X
	Brand (155)	X	X
Unstandardized Constant		3.29	2.10
N		229,727	229,727
F-Value		2493.01***	1228.82***
R2		0.68	0.51
Adjusted R2		0.68	0.51

  * $p < 0.05$.
  ** $p < 0.01$.
  *** $p < 0.001$.

length) and less long words (i.e., words with six or more characters) are liked and retweeted more frequently, supporting H2a and H2b. Regarding the effects of prepositions and conjunctions, we found them to both have negative effects on brand engagement, except for preposition on the number of likes. Thus, H2c is only partially supported and H2d is supported. Despite of being complex, prepositions can increase the concreteness of the posts by providing more contextualised and detailed information (Larrimore, Jiang, Larrimore, Markowitz, & Gorski, 2011). Compared to retweeting, liking behaviour is less cognitively loaded and mainly reflects the brand endorsement expressed by social media followers, thus is less utilised in the central route processing (Sabate et al., 2014). Consequently, the negative effects of a specific linguistic feature on liking behaviour via central route processing are more easily negated by its positive effects. As such, while the use of prepositions negatively influences brand engagement via increased language complexity, this effect is likely countered by the increased post concreteness at the same time. Similar to linguistic features that increase language complexity, the social media-specific features that increase visual complexity also have negative effects on brand engagement. More specifically, the more cashtags and URLs a tweet contained, the less it was liked and retweeted. Thus, H3b and H3c are supported. With regards to hashtags, we found it negatively influences the number of likes but not retweets. Thus, H3a is partially supported. One possible explanation is that hashtag, as a linguistic feature in social media communications, may affect engagement behaviours differently and through different mechanisms because of the new psychological meanings socially constructed through its use on social media (Halliday, 1978; Crystal, 2011). For example, by sharing a hashtag (e.g., "#climatecrisis" and "#InventorsDay"), the viewer acknowledges the ideological values expressed by the hashtag and is willing to be self-identified and socially presented as a member of the community. Hence, while hashtag may increase the visual complexity to discourage engagement behaviour (liking), it may make the shared values salient and initiate emotional contacts between the brand and the viewer to encourage sharing (Sundström et al., 2021).

In terms of the effects of peripheral route influencers, we found that brand tweet features that facilitate peripheral route processing generally enhance brand engagement. As we expected, tweets with more emotional communications received more likes and retweets. Specifically, we found that emotionality, certainty words and achievement words all have positive effects on brand engagement, supporting H4a, H4b, and H4c. Regarding the interpersonal linguistic cues, we found that incorporating emojis, at mentions, and first-person plural pronouns in tweets enhance brand engagement, supporting H5a, H5b, H5c. Additionally, we found that the more second-person pronouns a tweet contained, the less it was liked and shared. Thus, H5d is not supported. Despite second-person pronouns promoting self-referencing and creating a conversational atmosphere, research has shown that the use of second-person pronouns predicts low-quality relationships (Tauszik & Pennebaker, 2010). Second-person pronouns can reflect the position in a social hierarchy; those higher in the social hierarchy use second-person pronouns at a greater frequency (Kacewicz, Pennebaker, Davis, Jeon, & Graesser, 2014). Thus, using second-person pronouns in brand tweets may communicate a sense of unequal social position, which might not be preferred by B2B brand audiences. As a result, the use of second-person pronouns can discourage brand engagement. Furthermore, we found that tweets that contained rich-media modalities (gif, photo and video) were liked and retweeted more frequently, supporting H6a, H6b and H6c.

6. Discussion

In this paper, we found that linguistic features of brand posts impact brand engagement on social media via either the central route or the peripheral route of information processing. Thus far, research on brand social media posts has mostly focused on B2C contexts (Kaplan & Haenlein, 2010), with limited research comparing B2C and B2B brand posts as a focus (Swani et al., 2017). Very little research has addressed B2B brand posts specifically, focusing on the performance and strategic management issues (Liu, 2020; Zhang et al., 2020) or concentrating on 'what messages to post' – the informational content of the brand post (Juntunen et al., 2020). Notwithstanding these few studies, the question of 'how to design the post' has not yet been separately examined in detail. Therefore, our research contributes to B2B social media content marketing and brand engagement literature by unveiling how B2B brands can enhance brand engagement on social media through adopting the proper linguistic features.

B2B brands can benefit from the enhanced brand engagement in several ways. Through enhancing brand engagement, B2B brands can reinforce their relationships with customers and other stakeholders, which has been identified as B2B companies' primary goal of adopting social media (Agnihotri, 2020; Cartwright, Davies, & Archer-Brown, 2021). On social media, liking a brand post represents a positive attitude and acknowledgement toward the content and conveys one's relationship with the brand itself (Labrecque et al., 2020; Swani & Labrecque, 2020). It has been found to be primarily driven by customers' motive to maintain the brand-relationship connection (Dhaoui & Webster, 2021; Labrecque et al., 2020; Swani & Labrecque, 2020). As such, through posting contents that stimulate liking behaviour, B2B brands can better address stakeholders' needs to connect with brand and facilitate the process of establishing sustained long-term relationships with customers and stakeholders (Agnihotri, 2020). Different from liking, sharing a brand post allows users to take partial or full ownership of the contents and spread the contents to their own networks. Research has found that sharing behaviour is predominantly driven by self-representation (Labrecque et al., 2020; Swani & Labrecque, 2020). B2B research has indicated that emotional bonds between B2B brands and customers are likely to be developed if brand communications convey the shared values and reflect customers' extended self (Sundström et al., 2021). Therefore, through posting contents that stimulate sharing behaviour, B2B brands can address stakeholders' self-

representation needs and further facilitate a mutual-trust relationship. Therefore, enhancing brand engagement behaviours such as liking and sharing on social media enables B2B brands to develop long-term relationships and build stronger loyalty with the stakeholders, which increase customer considerations when future business opportunities arise (Cartwright, Liu, & Raddats, 2021; Tiwary, Kumar, Sarraf, Kumar, & Rana, 2021).

Additionally, enhancing brand engagement will improve B2B brands' social media presence and help them expand the business community. On Twitter, liking and retweeting both help the spread of brand posts. When a user retweets a brand tweet, the brand tweet will appear in all the user's followers' timelines with a retweet icon and the user's handle (Twitter, 2021b). When a user likes a brand tweet, the brand tweet liked also has a possibility of appearing in the user's followers' timeline (Twitter, 2021b). As such, increasing liking and sharing behaviours enables B2B brands to disseminate information to stakeholders who are otherwise outside of the brands' own network, largely expanding the brand audience network (Leek et al., 2019; Swani et al., 2013). According to a recent report, Twitter users have 707 followers on average (Brandwatch, 2020). This means that a single retweet could spread a brand post to over 700 additional users, not accounting for the potential multiplier effect that is likely to occur if any of these 700 users retweet again and shared the brand post with their networks. Today, the customer experience in B2B firms is fundamentally different. Customers seek information about vendors when they perceive they need it, and very often, the customers are embedded in various social networks and both gain information from these networks and are influenced by them (Articulate, 2019; Cortez et al., 2020). Therefore, through enhancing brand engagement on social media, B2B brands can reach more audiences, thus create brand awareness, and may generate referrals later on (Luo, Toth, Liu, & Yuan, 2021).

6.1. Theoretical implications

The findings of this research have a few theoretical implications. Firstly, the present study integrates linguistic theories with a B2B communication model (dual routes for information processing) and empirically tests the influence of linguistic features on brand engagement. Our research underscores the importance of treating brand social media posts as exhibiting linguistic multimodality (Halliday, 1976; Jewitt, 2009; Mehmet & Clarke, 2016) and suggests that the various modal elements in brand posts impact the audiences' information processing routes and subsequently, their liking and sharing behaviours. Furthermore, our analysis bridges linguistic theories with B2B communication research and suggests their mutual affinity. Being multimodal, linguistic features of the brand social media post help audiences interpret the informational/functional message through the central processing route and fulfil the interpersonal and emotional meanings through the peripheral route (Cortez et al., 2020; Halliday, 1976, 1978). Hence, it is undoubtedly essential to examine the various modalities in the brand social media post and build knowledge of how these linguistic components influence the central/peripheral information processing routes in predicting brand engagement.

Our results support that appropriate design and use of linguistic features facilitate the central route processing to increase brand engagement. More specifically, brand posts presented in greater length (indicating higher informativeness) and with lower language/visual complexity have a higher level of engagement. There is no doubt that stakeholders are likely to hold a utilitarian motive for professional/functional information and rational appeals. By filling a brand post with high informativeness and, at the same time, presenting it in a simple and easy-to-understand mode, brands could enhance the central route processing to increase stakeholders' perceived usefulness of the post and perceived ease of use, which in turn, leads to a positive attitude toward the brand, and then engagement and WOM behaviours.

Our research also supports that linguistic features can facilitate

peripheral processing to build an emotional and personal connection between the viewer and the brand to increase brand engagement (Cortez et al., 2020; Swani et al., 2014). Specifically, adding emotional cues, interpersonal cues, and multimodal cues in rich media increases brand liking and sharing. The implication for B2B marketing is that it emphasises that B2B brand posts are likely to be read by various stakeholders situated in various settings and holding dynamic motives such as socialising, experiencing, and self-expression (Belk, 2013; Kaplan & Haenlein, 2010). Such interpersonal situations (e.g., friends) are more likely to activate peripheral route information processing, and viewers tend to privilege subjective cues to generate emotional responses and association with the brand (Cortez et al., 2020). Hence, our results support literature and theory recognising the power of emotional appeals in increasing brand equity (Lynch & De Chernatony, 2004) and contributes to the literature by revealing the role of linguistic features in delivering emotional appeals. Previous research focuses on informational content (themes/topics), which polarises the advertising appeal to be either rational or emotional. Our findings further illustrate that B2B firms could actually deliver emotional appeals through linguistic features regardless of the factual informational content being either rational or emotional because the message receiver is influenced by the emotion, mood, and attitudes expressed by the message no matter its subject matter (Mehmet & Clarke, 2016). It further suggests that B2B marketing tasks that fit social media content are expandable. Tasks like direct selling and promotion that are suggested to be avoided in social media might become promising by utilising a viewer preferred post design. For example, images and emojis might be effective in conveying commercial messages because they create authenticity and are not treated as advertisements (Mehmet & Clarke, 2016).

Research suggests that linguistic differences can be used to assess individual differences in personality, translating their internal thoughts and psychology (Pennebaker & King, 1999; Tausczik & Pennebaker, 2010). Even in the B2B marketing context, brands have the need and potential for differentiation by establishing a unique and consistent identity (Michaelidou, Siamagka, & Christodoulides, 2011). The first task, then, is to determine which language style and verbal tone are preferred by social media users. In this aspect, our findings have implications by suggesting an authentic friend-like voice (by adding interpersonal indicators and emotionality) in B2B social media communications (Huotari et al., 2015). Further, our research suggests that a friend speaking with certainty and achievement is more likely to be liked and engaged with by the viewers. Because language that shows certainty endorses the speaker (Pitt et al., 2019) and serves as a risk-reduction heuristic for B2B stakeholders, emotional brand values like trust and security could be built (Lynch & De Chernatony, 2004; Money, 2004), which is the key success factor in B2B marketing (Morgan & Hunt, 1994). It reminds us that, although B2B branding calls for emotional bonding and interpersonal connection, it still needs to consider individuals' risk-related concerns from a business perspective. For example, for B2B content that aims to build emotional ties with stakeholders by disclosing company/product weaknesses and calling for solutions (Sundström et al., 2021), a friend-like verbal tone is suggested. However, a voice that speaks with certainty and shows achievement goals may help increase the communication effectiveness by diluting stakeholders' risk-related concerns and doubts about the company's capability and competence (Leek et al., 2019).

6.2. Managerial implications

Our research has implications for B2B marketing practice as it motivates B2B marketers to become more active in updating and replenishing social media messages. As social media has inevitably permeated our social life, contemporary B2B relationships no longer only operate in a small offline network or solely rely upon face-to-face meetings at conferences or trade shows (Sundström et al., 2021). Through their social media presence, B2B companies are connecting to a worldwide

market and people who may be interested in brand/product/service information. Hence, staying active in creating and updating social media posts is critical.

Our research offers guidance for B2B content marketers regarding their social media content creation. Specific suggestions are provided regarding the language use of brand posts to increase brand engagement and WOM behaviours. First, we suggest B2B marketers write longer but less-complex posts to maximise the informativeness of the post while simultaneously decreasing the required cognitive load for processing (e. g., write shorter sentences, use simple words, use fewer preposition and conjunction words). In addition, the social media-specific features (hashtag, cashtag, URL) increase the visual complexity of the text and the viewer's cognitive processing load and lead to decreased engagement and WOM (liking and sharing). However, the use of social media features (e.g., hashtag, at-mention, emoji) may also relate to emotional appeals and responses due to the socio-psychological meanings embedded in specific social media behaviours (e.g., sharing). For example, the share of a hashtag (e.g., "#climatecrisis" and "#InventorsDay") may indicate that the viewer acknowledges the ideological values embedded in the hashtag and is willing to be self-identified and socially presented as a member of the community. Hence, B2B content marketers may need to develop a comprehensive knowledge of the social media language and features and then make trade-offs regarding their impact on the audience's cognitive processing and emotional bonding.

We provide particular guidance regarding the emotional bonding between B2B brands and the audience. We suggest that B2B marketers could include more emotional words, add rich media (e.g., gif, image, and video), and use emojis, at-mention, and first plural pronouns (e.g., 'we' and 'us') in social media posts, to provide more emotional and interpersonal cues for the audience situated in low business task involvement and high personal/informal settings (Cortez et al., 2020). Swani et al. (2017) have made suggestions for B2B content creation, such as incorporating corporate brand names. Our research provides further insights by suggesting that, while B2B brands include corporate brand names in their posts, they may not rule out the use of "we" and "us" because these pronouns indicate an authentic friend-like conversational tone that builds an interpersonal and informal conversation environment to fit social media users' socio-psychological needs. Moreover, the informal and interpersonal interaction can be enhanced by including emojis and at-mention in B2B brand posts because these social media features help decrease the social distance between the brand and the audience and provide insights into the emotional positions held by the brand (Mehmet & Clarke, 2016). Importantly, while constructing an authentic friend-like communication environment, the brand is suggested to speak as a friend that is self-assured and achievement-focused to fit the ingrained need for trust and security in the B2B relationship and the shared value for self-achievement on social media.

6.3. Limitations and further research

The present study investigates the effects of post linguistic features on B2B brand engagement on social media. While this paper presents many novel findings, it also reveals various research opportunities for future research. The present study mainly addresses the exposure of linguistic features in the B2B brand social media post. It would be interesting to further examine the effectiveness of more specific post designs, such as the placement of social media-specific features (e.g., emojis, hashtags, at mentions, URLs) in the text and the visual grammar of the images, gifs, and videos. Revealing these effects not only enables a deeper understanding of how the two information processing routes function in B2B brand communication but also provides further guidance on tactics that B2B marketers can employ to increase brand engagement on social media. Additionally, the present study was conducted based on Twitter as it has become one of the most adopted social media platforms for B2B marketing. Recent research suggests that

different social media platforms are preferred by people with different personalities (Hughes, Rowe, Batey, & Lee, 2012). As a result, users' activities and even language preferences can vary across different social media platforms (Adamopoulos, Ghose, & Todri, 2018; Oz, Zheng, & Chen, 2018; Schweidel & Moe, 2014). Therefore, it would be interesting to examine whether brand language influences brand engagement on other social media platforms, such as LinkedIn and Facebook, differently from Twitter. Such investigation is undoubtedly meaningful for guiding the B2B brand's multi/cross platforms strategy. In the present study, we focus on two common brand engagement behaviours, namely, liking and retweeting, because of Twitter API's limitation on data access. While this operationalization covers both the low and high engagement behaviours on Twitter, it would be interesting for future research to

expand the metrics to include other engagement behaviours, such as replies, mentions, link clicks, links back, and favorites on the page. Such investigation will provide guidance for B2B marketer to better manage brand engagement behaviours in a targeted manner. Finally, the present study mainly addresses the daily communication between B2B brands and their social media followers as this has become the core activities performed by social media marketers. It would be interesting for future research to examine the brand engagement behaviours during extensive marketing campaigns and investigate how brand engagement behaviours on social media influence other conversion metrics, such as email sign-up, whitepaper download, and quote request. Such investigation will provide further guidance on B2B marketing's omnichannel strategy design.

Appendix A. Sample description

Brand	Industry	Twitter Handle	Followers	Following	Listed Count	Favorites	Statuses
Alcoa	Aerospace	@Alcoa	27,542	5176	664	3041	6660
Chemring	Aerospace	@Chemring_Group	1187	101	43	22	514
Cobham plc	Aerospace	@Cobham_plc	7577	806	0	929	2369
Collins Aerospace	Aerospace	@CollinsAero	42,592	1382	790	8310	9622
GKN plc	Aerospace	@GKN_plc	3519	159	60	148	568
Martin-Baker	Aerospace	@MB_EjectEject	8137	391	96	836	1108
Orbital ATK	Aerospace	@OrbitalATK	108,652	462	1983	2149	7429
Parker Hannifin	Aerospace	@ParkerHannifin	16,556	4525	481	4379	19,488
Rolls-Royce	Aerospace	@RollsRoyce	322,824	417	1336	428	3243
Spirit AeroSystems	Aerospace	@SpiritAero	9668	337	229	1632	2647
Textron Inc.	Aerospace	@Textron	10,228	113	215	1572	5045
The Boeing Company	Aerospace	@Boeing	604,323	236	4427	792	5368
United Technologies	Aerospace	@UTC	45,331	753	685	4015	7200
ABP Foods	Agriculture & Food Production	@AbpFoods	975	116	3	694	414
Brakes UK	Agriculture & Food Production	@Brakes_Food	10,711	2608	104	4000	8525
Cargill	Agriculture & Food Production	@Cargill	57,012	261	933	1940	7551
Cranswick Plc	Agriculture & Food Production	@CranswickPlc	1865	688	17	804	861
Frontier Agriculture	Agriculture & Food Production	@FrontierAg	12,479	2964	115	2006	10,098
Glanbia plc	Agriculture & Food Production	@GlanbiaPlc	5213	651	57	1693	499
IFF	Agriculture & Food Production	@IFF	5805	2460	93	2444	2599
Kerry Taste & Nutrition	Agriculture & Food Production	@WeAreKerry	2607	3976	30	804	1685
Meadow Foods	Agriculture & Food Production	@Meadow_Foods	2783	1236	25	263	1542
Moy Park	Agriculture & Food Production	@MoyPark	6589	504	33	2672	3640
Openfield	Agriculture & Food Production	@OpenfieldTM	6830	1780	62	4158	12,044
Smithfield Foods	Agriculture & Food Production	@SmithfieldFoods	14,291	379	308	2116	7695
Southern Glazer's	Agriculture & Food Production	@SGWineSpirits	3337	1056	28	1291	2281
The Mosaic Company	Agriculture & Food Production	@MosaicCompany	8170	648	160	4	3387
The Scoular Company	Agriculture & Food Production	@TheScoularCo	436	50	9	70	116
Top Fruit	Agriculture & Food Production	@topfruitbytes	3603	3359	16	193	3201
US Foods	Agriculture & Food Production	@USFoods	17,664	2939	278	4254	11,275
Avena Foods Limited	Business Software	@AvenaFoods	742	679	15	618	340
Capita	Business Software	@CapitaPlc	6163	1307	129	2977	6654
Cisco	Business Software	@Cisco	713,167	2911	8436	9259	19,407
Dell EMC	Business Software	@DellEMC	143,201	3862	2608	5536	24,570
Fidessa	Business Software	@Fidessa	5506	1922	147	121	2250
IBM	Business Software	@IBM	610,272	6008	6003	22,037	18,304
Intel	Business Software	@intel	4,873,838	1371	13,681	9650	15,914
Micro Focus	Business Software	@MicroFocus	40,026	1528	1356	4506	30,844
MISys Software	Business Software	@misyssoftware	571	460	25	148	823
NetApp	Business Software	@NetApp	129,620	3889	1944	12,521	22,818
Oracle	Business Software	@Oracle	777,554	984	7123	12,182	21,740
Sage Canada	Business Software	@Sage_Canada	657	114	22	68	311
Salesforce	Business Software	@salesforce	531,243	151,785	7272	21,671	63,868
SAS Software	Business Software	@SASsoftware	62,298	608	1780	23,048	46,353
Schneider Electric	Business Software	@SchneiderElec	59,646	2941	910	16,342	12,115
Sophos	Business Software	@Sophos	31,390	302	845	13,785	21,006
Symantec	Business Software	@symantec	205,164	3444	3990	32,260	25,697
Ve Global	Business Software	@Ve_HeadQuarters	4866	3253	852	5361	23,713
VMware	Business Software	@VMware	322,803	626	4744	46,587	43,436
Air Products	Chemical	@airproducts	11,380	551	225	278	3808
Celanese	Chemical	@celanese	3891	162	124	625	4962
Dow	Chemical	@DowNewsroom	70,982	1947	993	6949	14,933
DuPont	Chemical	@DuPont_News	66,690	229	1158	650	23,762
Eastman Chemical Co.	Chemical	@EastmanChemCo	9042	504	185	1061	1691
F. Ball and Co. Ltd.	Chemical	@FBallUK	8008	3637	45	5181	13,230
GRI Club Global	Chemical	@GRIClubGlobal	3627	392	64	79	1520

(continued)

Brand	Industry	Twitter Handle	Followers	Following	Listed Count	Favorites	Statuses
Huntsman	Chemical	@Huntsman_Corp	4721	2009	94	300	2780
INEOS	Chemical	@INEOS	19,485	639	207	3042	4852
LyondellBasell	Chemical	@LyondellBasell	10,149	1763	180	1438	1762
Nova Laboratories	Chemical	@NovaLabsUK	163	265	2	211	531
PPG	Chemical	@PPG	26,489	1019	420	4868	5999
Tennant Company	Chemical	@TennantCompany	1967	74	34	138	333
Tor Coatings	Chemical	@TorCoatings	1486	1375	22	248	365
Balfour Beatty	Construction	@balfourbeatty	69,025	949	570	1317	3968
BAM Nuttall	Construction	@BAMNuttall	27,430	615	189	2958	5128
Bechtel Corporation	Construction	@Bechtel	46,835	790	620	2927	7841
Carillion Canada	Construction	@CarillionCanada	728	202	13	75	880
Clark Construction Group	Construction	@ClarkBuilds	24,296	764	307	1443	3487
Fluor Corporation	Construction	@FluorCorp	16,295	678	263	1739	4608
Galliford Try	Construction	@gallifordtry	12,970	61	147	74	811
Gilbane Building Co	Construction	@GilbaneBuilding	25,181	2037	412	951	10,726
Interserve	Construction	@interserve	26,846	278	259	2180	5914
Jacobs	Construction	@JacobsConnects	38,645	784	748	2356	14,563
KBR	Construction	@KBRincorporated	5767	494	73	453	1801
Kier Group plc	Construction	@kiergroup	67,845	602	529	361	7042
Kiewit	Construction	@kiewit	12,950	101	170	579	2778
Laing O'Rourke	Construction	@Laing_ORourke	50,850	1560	383	853	4122
Mitie	Construction	@mitie	21,089	5350	238	2706	8811
Morgan Sindall Group	Construction	@morgansindall	43,993	231	352	704	4020
PCLConstruction	Construction	@PCLConstruction	24,745	2142	266	4570	7727
Turner Construction	Construction	@turner_talk	21,076	188	246	1650	2898
Afren Legal Action Group	Energy	@saveafrenALAG	967	4854	24	4267	14,985
BG Group	Energy	@BGGroup	18,665	206	276	130	1289
bp	Energy	@bp_plc	102,796	301	958	6471	15,210
Centrica Careers	Energy	@CentricaCareers	720	229	21	315	31,396
Chevron	Energy	@Chevron	374,244	262	2685	475	15,956
ConocoPhillips	Energy	@conocophillips	165,144	212	1320	2297	4986
Enterprise Products	Energy	@EProd_Careers	848	61	119	11	297
Eximius Group	Energy	@Eximius_Group	606	1915	36	624	1801
ExxonMobil	Energy	@exxonmobil	325,215	278	2520	361	7076
Hess Corporation	Energy	@HessCorporation	8326	472	203	422	1334
Marathon Petroleum	Energy	@MarathonPetroCo	8003	419	157	1102	1749
Petrofac	Energy	@PetrofacGroup	2681	100	14	424	737
Premier Oil plc	Energy	@PremierOilplc	5815	115	69	1	568
Sunoco Racing	Energy	@SunocoRacing	53,287	475	457	7069	17,577
Tullow Oil plc	Energy	@TullowOilplc	24,087	930	250	33	1109
Valero Energy	Energy	@ValeroEnergy	8339	95	102	820	828
@aggreko	Heavy Industry	@Aggreko	5918	574	155	2095	5823
Aptiv	Heavy Industry	@Aptiv	17,016	531	340	3118	5204
BorgWarner	Heavy Industry	@BorgWarner	4574	700	60	1383	1976
CaterpillarInc	Heavy Industry	@CaterpillarInc	137,989	243	1423	1272	12,417
Cosworth	Heavy Industry	@Cosworth	15,764	346	564	2075	2957
Cummins Inc.	Heavy Industry	@Cummins	123,884	474	495	3212	3871
Dana Incorporated	Heavy Industry	@DanaInc_	2925	270	92	213	1555
J.B. Hunt 360	Heavy Industry	@jbhunt360	2026	314	56	834	1861
JCB	Heavy Industry	@JCBmachines	31,962	835	159	7589	5743
John Deere	Heavy Industry	@JohnDeere	193,291	223	1297	6059	11,143
Johnson Controls	Heavy Industry	@johnsoncontrols	27,842	622	411	599	3627
Lear Corporation	Heavy Industry	@LearCorporation	3837	608	93	4061	2337
Plaxton	Heavy Industry	@Plaxtoncoach	2410	727	9	376	499
Speedy Services	Heavy Industry	@wearespeedy	8072	3789	111	2459	14,391
Visteon Corporation	Heavy Industry	@Visteon	3519	193	126	336	3059
ZF Group	Heavy Industry	@ZF_Group	8406	1263	171	2757	4382
2 M Automation	Industrial Technology	@2M_Automation	120	19	5	50	283
Autonomous Solutions	Industrial Technology	@ASIRobots	1349	228	44	127	767
Emerson	Industrial Technology	@Emerson_News	18,917	731	368	739	3132
Energid	Industrial Technology	@energid	635	225	43	123	388
Flowserve	Industrial Technology	@Flowserve	5481	126	95	409	1536
IMI (now REQ)	Industrial Technology	@iMarketingInc	6365	2147	292	4980	4096
Mechatronic Solutions	Industrial Technology	@MechatronicSol	69	24	0	10	108
MKS Instruments	Industrial Technology	@mksinstruments	878	51	23	39	449
NI (National Instruments)	Industrial Technology	@NIglobal	27,165	2948	543	9318	8107
Rockwell Automation	Industrial Technology	@ROKAutomation	39,200	2372	709	11,432	10,230
Sewtec Automation	Industrial Technology	@Sewtec	333	246	1	190	367
SPX FLOW	Industrial Technology	@SPXFLOW	1640	793	48	558	1999
AbbVie	Medical & Pharmaceutical	@abbvie	68,197	498	960	1888	6596
Amgen	Medical & Pharmaceutical	@Amgen	96,118	350	1575	1456	9895
AstraZeneca	Medical & Pharmaceutical	@AstraZeneca	229,845	1690	2387	3794	7377
Baxter International	Medical & Pharmaceutical	@baxter_intl	14,786	2	531	43	1862
Biogen	Medical & Pharmaceutical	@biogen	36,243	252	555	923	4857
Bristol Myers Squibb	Medical & Pharmaceutical	@bmsnews	148,807	1114	1768	1115	7421
Eli Lilly and Company	Medical & Pharmaceutical	@LillyPad	126,705	1344	1463	2026	21,347

(continued)

Brand	Industry	Twitter Handle	Followers	Following	Listed Count	Favorites	Statuses
FrontierMedicalGroup	Medical & Pharmaceutical	@FMG_Group	1364	1525	41	1030	4496
GE Healthcare	Medical & Pharmaceutical	@GEHealthcare	112,641	3175	2220	6900	26,558
Genentech	Medical & Pharmaceutical	@genentech	118,260	240	1707	1218	7035
Gilead Sciences	Medical & Pharmaceutical	@GileadSciences	65,857	206	830	969	3451
GSK	Medical & Pharmaceutical	@GSK	215,856	713	2108	1759	12,091
Merck	Medical & Pharmaceutical	@Merck	201,762	1000	2041	2072	8604
Pfizer Inc.	Medical & Pharmaceutical	@pfizer	369,255	2373	3619	525	9859
Renovo.auto	Medical & Pharmaceutical	@renovo_auto	2035	542	66	669	204
Takeda	Medical & Pharmaceutical	@TakedaPharma	20,933	268	302	661	2469
Vectura Group	Medical & Pharmaceutical	@VecturaGroup	511	749	3	297	716
BAE Systems	Military Defense	@BAESystemsplc	102,676	639	977	2097	5289
Control Risks	Military Defense	@Control_Risks	16,411	767	394	555	5010
General Dynamics Corporation	Military Defense	@generaldynamics	2738	251	80	2559	1217
Honeywell	Military Defense	@honeywell	58,498	324	688	4738	3369
L3Harris	Military Defense	@L3HarrisTech	16,379	840	447	1520	7798
Lockheed Martin	Military Defense	@LockheedMartin	444,934	374	4679	8245	16,719
ManTech	Military Defense	@ManTech	3648	367	119	282	2055
Northrop Grumman	Military Defense	@northropgrumman	226,348	663	2586	3522	12,988
Oshkosh Corporation	Military Defense	@oshkoshcorp	918	47	15	318	534
QinetiQ Group	Military Defense	@QinetiQ	10,963	794	238	1171	4421
Raytheon Technologies	Military Defense	@RaytheonTech	185,317	273	2439	4633	20,720
SAIC	Military Defense	@SAICinc	13,004	1695	414	5272	6591
Serco Group	Military Defense	@SercoGroup	5460	284	46	596	2216
Supacat	Military Defense	@SupacatLtd	1095	594	6	1758	383

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