

RESEARCH ARTICLE

Higher Education Quarterly WILEY

Does universities' posting strategy influence their social media engagement? An analysis of the top-ranked higher education institutions in different countries

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Funding information

Ministerio de Ciencia e Innovación, Grant/Award Number: PID2019-106053GB-I00

Abstract

To ensure the widespread dissemination of information and to foster interaction and dialogue with users, higher education institutions need to develop an active profile on the social networks. This paper analyses the influence of universities' posting strategy on their followers' engagement (reaction, virality and conversation) by measuring the level of activity and type of presence on their social networks. A content analysis was conducted to analyse 90,000 posts by 70 universities from Europe, the United States and Latin America on their institutional profiles on Twitter, Facebook and LinkedIn. The universities' posting activity on their social media is moderate (with an overall mean of 7.04 posts per day), but the interaction rate is very low (0.237), far below the recommended levels of engagement. Notably, increased activity by universities on social networks does not lead to greater engagement but points to an inverse relationship between the two. Our findings also indicate that university-created content (UCC) achieves a higher level of engagement ($\bar{x}=169.41$) than university-shared content (USC) ($\bar{x}=126.18$). This study explores the effect of universities' posting strategy dimensions on their follower's interaction.

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1 | INTRODUCTION

Social media are digital platforms and technologies that facilitate information exchange, content sharing and community building between online users (Kaplan & Haenlein, 2010). These online platforms, known as social networking sites, microblogging, photo-sharing platforms, video-sharing platforms, online forums and messaging apps, play a predominant role in the way in which organisations communicate with their publics, as they are optimal spaces for connection between digital users (van Wissen, 2017). Their ability to establish instant and borderless communication, generate visibility and develop effective relationships favours their adoption in organisational communications strategies. Social networks are also encouraged to communicate with greater proximity, ease and fluency (Capriotti, Zeler, & Camilleri, 2021). To do so, an active profile must be developed to ensure the widespread dissemination of information and to foster interaction and dialogue with the public (Capriotti & Zeler, 2020).

Previous research finds a direct relationship between the bases of communication management on social networks and the principles of dialogic communication (Kim et al., 2014; van Wissen, 2017; Wang & Yang, 2020). Through dialogue and interaction, organisations can find out users' opinions and feelings, promote their activities and increase their reputation (Fuertes-Callén et al., 2014). Engagement is a strong link between the academic community and the audiences on social networks (Sharma et al., 2022). As engagement on social networks significantly affects relationships between organisations and their stakeholders, Brubaker and Wilson (2018) conclude that organisations' posts need to be sufficiently visually appealing as to generate likes from users, promote the sharing of their content or invite them to comment or to strike up conversations. Likes, shares and comments are drivers of social media engagement (Eger et al., 2019; Lappas et al., 2022; Swani & Labrecque, 2020).

Social media have led universities to enlist new tools to help them manage their institutional communication (Aguilera Moyano et al., 2010; Hemsley-Brown & Oplatka, 2006). Social networks promote dialogue and interaction with students, professors, staff and community (Gori et al., 2020), fostering strong relationships between them (Kimmons et al., 2017). Various studies show that online tools are achieving greater weight in universities' institutional communication (Bonilla Quijada et al., 2022; Brech et al., 2017; Guzmán Duque & Del Moral, 2013; Peruta & Shields, 2016; Tomyuk et al., 2022), although they still lag behind the more traditional channels (Rutter et al., 2017). Nevertheless, the recent literature indicates that the Covid-19 pandemic has led to a shift in universities' institutional communication with their publics, significantly increasing the use of social media as a communication tool (Rafiq et al., 2021; Sharma et al., 2022).

Authors such Oliveira et al. (2022) conducted an extensive bibliometric review and pointed out that the analysis of digital communication tools is one of the issues of institutional communication most studied by universities. In addition, another review of the literature (with a temporal analysis over 30 years) on universities' digital communication (Zeler et al., 2023) pointed out that the posting strategy implemented by institutions with their followers on social networks remains an understudied topic. Far from conducting studies on their posting strategies on social networks, scholars have focused on recognising the main communication resources and content. But the analysis of the different aspects in isolation does not allow studying the strategies developed by universities on their social networks. The literature review also indicates that most studies investigate a single social network (Arevalo et al., 2018; Fährnrich et al., 2020; Kimmons et al., 2017; Peruta & Shields, 2016) and focus on small samples of universities (Alonso-Flores et al., 2020) and countries (Eger et al., 2020).

The aim of the present study is to examine the influence of universities' social network posting strategy on engagement by their publics (reaction, virality and conversation) by measuring their level of activity and type of presence on three social networks (Facebook, LinkedIn and Twitter). This research will contribute to determining which social media posting strategy dimensions affect their followers' interactions. It enriches the field of institutional communication by deepening the knowledge of the strategic management of social media and by integrating the key dimensions (since they have usually been studied separately). This will also enable practitioners to

improve their digital communication to boost the reach of their posts and encourage interaction with their users on social media.

2 | LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Digital platforms are playing an increasingly preponderant role in universities' institutional communication (Cancelo Sanmartín & Almansa Martínez, 2013). Social networks enable higher education institutions to connect with their publics, extend their reach and prove their value to society (Aguilera Moyano et al., 2010; Brech et al., 2017; Kimmons et al., 2017; Peruta & Shields, 2016). They enable organisations to understand their stakeholders better, learn about users' opinions and feelings, promote their activities and enhance their reputation (Fuertes-Callén et al., 2014). They also enable users to talk directly to the institutions in an easier, more direct and fluid manner (Capriotti, Zeler, & Camilleri, 2021).

Thus, universities must develop strategies in the digital field that foster good institutional visibility as well as dialogue and interaction with their followers. They can adopt a proactive presence on their digital platforms by properly managing two key aspects or components of their posting strategy: the frequency and intensity of the **activity** in which they engage on social networks and the type of **presence** they adopt in each case. Thus, the chosen type of presence and the level of activity undertaken will enable defining universities' posting strategies, which, in turn, may, or may not, influence the degree of engagement they achieve with their target audiences (Capriotti, Zeler, & Camilleri, 2021). This paper assesses the mediation/moderation effects of the two main dimensions of institutions' posting strategy (activity and presence) on users' engagement levels on social media platforms (Figure 1).

2.1 | Activity

Activity is the proactive, continuous use of social networks that enables information-sharing and encourages interaction between an organisation and its users (Brubaker & Wilson, 2018). Several authors have investigated universities' activity on social networks (Fährnich et al., 2020; Gori et al., 2020; Guzmán Duque & Del Moral, 2013; Peruta & Shields, 2016). These studies show that universities implement very different posting strategies and detect important differences in levels of activity (Guzmán Duque & Del Moral, 2013; Peruta & Shields, 2016).

Ideal posting frequency must be taken into account (Capriotti & Zeler, 2020). There is, however, little consensus on this point. Therefore, in the present study, a position is assumed based on studies conducted on posting frequency on the three social networks under study (McLachlan, 2021; Newberry, 2021; Williams, 2020). The aforementioned authors suggest that the ideal frequencies would be: Facebook (between 1 and 2 posts per day), Twitter (between 3 and 5 tweets per day) and LinkedIn (between 0.5 and 1 post per day).

Various authors (Brubaker & Wilson, 2018; Capriotti, Zeler, & Camilleri, 2021; Simancas-González & García-López, 2017) suggest that an active presence on social media is a key factor for successful interaction with users since it increases the chances of engaging in dialogue. It is, therefore, proposed that a higher level of activity will have a positive impact on the level of engagement. Thus, a primary research question can be formulated as follows: *Does the level of activity influence universities' engagement on social networks?* This question aims to analyse the statistically significant differences between regions and social networks, leading to the formulation of a first hypothesis (Figure 1):

H_1 —A higher level of activity will have a positive impact on the level of engagement on social networks.

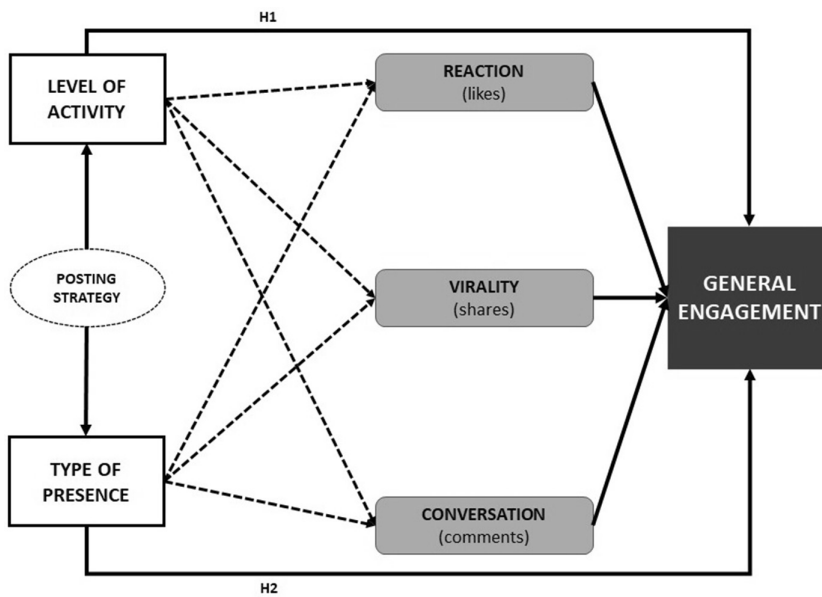


FIGURE 1 The influence of posting strategy on engagement.

2.2 | Presence

Presence refers to determining the type of posting that should be promoted on each platform. Having suitable profiles on social networks that best adapt to their communication needs (Kemp, 2022) enables organisations to present and disseminate their own public identity more effectively (Cho et al., 2014).

Several authors have studied the digital presence of universities on social networks (Brech et al., 2017; Cancelo Sanmartín & Almansa Martínez, 2013; Guzmán Duque & Del Moral, 2013; Peruta & Shields, 2016; Sharma et al., 2022) and have concluded that institutions use digital platforms proactively to present their content. In addition to the institutional profile, some studies not only yield profiles linked to the various activities and specific areas of universities (i.e. faculties, departments, master's degrees, sport, university libraries and vice-rectors' offices, etc.) (Brech et al., 2017; Cancelo Sanmartín & Almansa Martínez, 2013), but these authors also find the profiles of universities' leaders and administrators (Sharma et al., 2022). This suggests that higher education centres are harnessing the advantages provided by social networks to build an institutional digital presence from a global perspective.

The literature identifies firm-created content as one of the social media communication tools that involves an organisation's effort to design customer-oriented content (Ibrahim et al., 2022). Some studies (Capriotti & Zeler, 2020; Guzmán Duque & Del Moral, 2013; Martínez-Cardama & Pacios, 2020) recognise two main types of university presence on social networks: (a) *university-created content (UCC)*, in which the institution creates and disseminates its content on its profiles and (b) *university-shared content (USC)*, in which the institution shares content from other users on its profiles (with or without adding any further customised information).

Enjoying an acceptable presence on social networks enables an institution to present its attributes, activities and idiosyncrasies while giving users the option of sharing them and/or commenting on them, thus increasing exposure and institutional reach (Fähnrich et al., 2020; Simancas-González & García-López, 2017). Thus, we propose that UCC type of presence will have a more positive impact on the level of engagement. Accordingly, a second research question can be formulated: *Does the type of presence influence the engagement achieved by universities on their social networks?* This question aims to study the statistically significant differences between regions and social networks, leading to the formulation of a second hypothesis (Figure 1):

H₂ = Higher dissemination of university-created content (UCC) will have a positive impact on the level of engagement on social networks.

2.3 | Engagement

Engagement on social networks significantly affects relationships between organisations and their stakeholders. For engagement to take place, the organisation's presence and activity on digital platforms need to be good enough to generate *likes* from users, foster the *sharing* of its content or elicit *comments* to strike up conversations (Brubaker & Wilson, 2018). Interaction by universities on social networks has been studied by various authors (Atarama-Rojas & Vega-Foelsche, 2020; Eger et al., 2019; Fährnrich et al., 2020; Gori et al., 2020).

Engagement is determined by measuring the various forms of interaction between organisations and users: *likes*, *shares* and *comments*, each of which can be considered to constitute a direct manifestation of 'social media engagement' by users with institutional posts (Ballesteros, 2018; Fährnrich et al., 2020).

Likes suggest that people are—in some way—reacting to the posted content, albeit in a basic or minimal manner (Abitbol & Lee, 2017; Cho et al., 2014; Lappas et al., 2022). Awarding a *like* is considered to constitute affectively driven behaviour (Eger et al., 2019). *Likes* on social media networks would symbolise support for the organisation's content (Swani & Labrecque, 2020) and clearly denote the online user's *reaction* to the posted content (Anderson et al., 2016; Macnamara, 2014).

Shares enable followers (or third parties in general) to become volunteer spokespersons since they promote the organisation's content (Abitbol & Lee, 2017; Cho et al., 2014). They can be regarded as constituting affective or cognitive behaviour or a combination of the two (Eger et al., 2019). *Shares* boost visibility by enabling users to share content at the click of a button (Swani & Labrecque, 2020). They show the *virality* achieved on social networks by the digital content of the institutional communication (Anderson et al., 2016; Macnamara, 2014).

Comments are the most direct form of online user interaction and dialogue on social networks (Abitbol & Lee, 2017) as they enable two-way communication (Lappas et al., 2022; Swani & Labrecque, 2020). While comments and shares can be considered a more reliable source for measuring engagement (Chugh et al., 2019), comments are particularly employed by social media users to reply to organisations and make their opinions public (Lappas et al., 2022). **Conversation** on social networks is usually manifested in *comments* (Anderson et al., 2016; Macnamara, 2014; Romenti et al., 2016) by means of which the organisation and its users can engage in direct dialogue.

Taken together, these three forms of interaction represent an institution's **General Engagement** on its social networks (Ballesteros, 2018; Capriotti & Zeler, 2020; Voorveld et al., 2018). Some studies point to significant differences in the recommended or acceptable levels of engagement on social networks (Adobe Express, 2022; Martinez, 2022). There is a certain consensus that optimal engagement would be equal to or greater than 1% on Facebook, equal to or greater than 0.5% on Twitter and equal to or greater 2% on LinkedIn. However, the mean of engagement on social networks is actually well below these figures. On Facebook the general mean is between 0.06% and 0.18%, on Twitter from 0.04% to 0.07%, and on LinkedIn between 0.25% and 0.5% (Adobe Express, 2022; Dixon, 2022; Feehan, 2022; Martinez, 2022). Measuring and evaluating the level of engagement will help to properly manage posts on social networks and elicit a higher degree of participation from the target audience.

Based on these three types of interactions (likes, shares and comments), the **Level of Engagement** (the degree to which users interact on social networks) could be obtained, combining the engagement of the universities' posts with the volume of posts published (interactions per post) in relation to the number of followers of each institution (Abitbol & Lee, 2017; Ballesteros, 2018; Capriotti & Zeler, 2020; Cho et al., 2014). Therefore, four rates of engagement could be identified: *reaction rate* (RR, related to *likes*), *virality rate* (VR, related to *shares*), *conversation rate* (CR, related to *comments*) and *general engagement rate* (GER, involving all three prior rates) (Capriotti & Zeler, 2020;

Capriotti, Zeler, & Oliveira, 2021). Then, a third research question could be established: *What Level of Engagement do universities' posts generate on their social networks?*

3 | METHOD

A content analysis was conducted to answer these questions. This technique enables the researchers to dissect the messages, identify certain aspects of the content of a text and quantify the frequency with which they occur (Gheyle & Thomas, 2017). Universities' posts on their institutional social network profiles were studied, and information on the number and type of posts and the number of followers and interactions on each social network was collected.

The sample includes seventy universities that were selected based on their position in the three most prestigious international rankings: *ARWU Ranking of World Universities*, *The Times Higher Education Rankings* and the *QS World University Rankings*. Universities from three large geographical areas were chosen to make the sample more representative: Twenty from Europe (because it is a clear international benchmark), twenty-five from the United States (due to the number and importance of the country's universities in the rankings and its geographical dimension), and twenty-five from Latin America (due to the high level of university development in the region). All the universities from the United States and Europe were among the top 100 entities in the aforementioned rankings. The Latin American universities, while not ranked in the top 100 positions, were selected based on their general location in global rankings and by region. Geographic diversity was prioritised in the case of Latin America and Europe to represent as many countries from each region as possible in the sample (Appendix 1).

The social networks selected for analysis are three of the most important at the present time: Facebook is the social network with the highest number of active monthly users worldwide—2.91 billion users (Kemp, 2022), Twitter is deemed to be one of the main platforms for disseminating information—436 million users (Kemp, 2022) and LinkedIn, with 900 million users, is the largest social network devoted entirely to professional activity (LinkedIn, n.d.). The universities' official institutional profiles were identified, and any that could not be located or verified were discarded.

The units of analysis were the posts published by the selected universities on their institutional Facebook, Twitter and LinkedIn accounts. All posts during a six-month period in 2021 were recorded: three months in the first semester (13 weeks, 91 days) and three months in the second semester (13 weeks, 92 days). All posts uploaded by the universities were recorded: the final sample consisted of 90,241 posts (27,356 from Facebook, 9439 from LinkedIn and 53,446 from Twitter). The posts were manually searched and collected by a team of three people (a supervisor and two technicians) who, on a weekly basis, checked the profiles on each social network and copied and pasted the link in an Excel sheet.

Three categories were defined for this study: Level of Activity, Type of Presence and Level of Engagement. These categories have been tested in prior studies (Capriotti & Ruesja, 2018; Capriotti & Zeler, 2020).

Level of Activity determines the intensity or frequency of posts by the institutions on their social networks (Capriotti & Zeler, 2020; McLachlan, 2021; Williams, 2020). Thus, the total volume of the universities' posts during the period under study was analysed to obtain the mean daily posting rate of each one.

An equivalence table was developed (from 0 to 5 points at intervals of 0.05 points for LinkedIn, 0.1 points for Facebook and 0.2 points for Twitter, rounded up to the nearest whole number) since each social network has a specific recommended posting frequency according to the authors (Adobe Express, 2022; Dixon, 2022; Feehan, 2022; Martinez, 2022). This harmonises the frequency values and thus enables comparing universities' level of activity on their social networks.

Based on the mean frequencies recommended by the authors (Feehan, 2022; McLachlan, 2021; Newberry, 2021; Williams, 2020), three general activity levels were established: 'low' (when the daily mean is

below the recommended level), 'medium' (when the daily mean reaches the suggested frequency), and 'high' (when the mean number of posts exceeds the recommended level).

Type of Presence establishes the type of posts that the institutions upload to their social networks to distinguish their own content from content they share (Capriotti, Zeler, & Camilleri, 2021; Cho et al., 2014). Two options were identified to do so: *university-created content* (UCC) and *university-shared content* (USC). The latter may be shared directly (USC) or after adding a certain amount of in-house content (*university-hybrid content*—UHC).

Due to the internal regime of each social network and the information publicly available at the time the research data was collected, it was not possible to determine the number of interactions obtained by USC (because the platform attributed these interactions to the original post). For this reason, when relating type of presence to engagement, USC was discarded and only UCC and UHC were considered since only they clearly enabled the researchers to identify some degree of interaction with the posts (likes, shares and comments).

Level of Engagement establishes the degree to which users interact on social networks (Abitbol & Lee, 2017; Ballesteros, 2018; Capriotti & Zeler, 2020; Cho et al., 2014). The total series of interactions (likes, shares and comments) obtained by the universities was then analysed and related to the number of posts they published and their volume of followers. This enabled the researchers to obtain homogeneous results, avoiding deviation due to the effect of over-representation of the volume of activity and the number of followers.

Thus, four standardised indicators (engagement rates) were created that will enable assessing the engagement of the universities' posts and the (possible) influence that their activity and presence could have on engagement: *reaction rate* (RR), *virality rate* (VR), *conversation rate* (CR) and *general engagement rate* (GER), (Capriotti & Zeler, 2020; Capriotti, Zeler, & Oliveira, 2021). They are measured as follows:

- **Reaction Rate (RR):** the total number of *likes* divided by the total number of posts divided by the number of followers and multiplied by 1000.
- **Virality Rate (VR):** the total number of *shares* divided by the total number of posts divided by the number of followers and multiplied by 1000.
- **Conversation Rate (CR):** the total number of *comments* divided by the total number of posts divided by the number of followers and multiplied by 1000.
- **General Engagement Rate (GER):** the sum of the above three rates.

The information was harvested using the platform and massive data collection system of the media analysis company Noticias Perú (www.noticiasperu.pe) by a team of three people (a supervisor and two technicians) who searched for and collected the posts. An analysis team of three (a supervisor and two trained analysts) was set up to extract the information systematically and objectively.

The two analysts performed a test using a random procedure on a sample of 300 posts to assess the intercoder reliability and agreement of the method. This sample is highly suitable for properly assessing agreement and reliability between two analysts (Lombard et al., 2002).

The percentage of calculation agreement between the two analysts is determined using 2×2 contingency tables and a confidence interval of 95% as the bases for the statistical analysis to find out if they obtain similar results. Cohen's kappa coefficient (*k*) is also calculated to assess the reliability of the categorical variables. The measurement ranges proposed by Landis and Koch (1977) were used to interpret the results. The equivalent percentages are applied to assess the level of agreement.

Agreement of 99% was obtained for the '*Type of presence*' parameter (Kappa value of 0.99), 97% (Kappa value of 0.96) for the '*Level of Activity*' and 91% (Kappa value of 0.83) for the '*Level of Engagement*', proving a high degree of agreement in the tool's criteria. Consequently, the measurement can be considered valid.

Content analysis was first conducted to obtain raw data from the collected posts, and it was entered in an Excel sheet. Subsequently, it was coded and input into the IBM SPSS Statistics 25 statistical program for analysis and statistical processing by the research team. The statistical tests used in the analysis are non-parametric: in the case of correlations, Spearman's Rho test was applied. The Kruskal-Wallis H test was chosen to contrast means and ranges.

4 | RESULTS

The seventy universities analysed generated 90,241 social network posts in the period under study with an overall mean of 7.04 posts per day, which, however, are unevenly distributed by region and network.

There are some statistically significant differences by region. Latin American institutions (48.7% of all posts and 9.61 posts/day) are clearly the most active, followed by North American universities (27.4% of the total and 6.76 posts/day) and finally European institutions (23.9% of the posts and only 4.71 posts/day).

Statistically significant differences were also observed by social network. The most used platform is Twitter (59.2% of all posts and 4.17 posts/day) followed by Facebook (with 30.3% of the posts and 2.14 posts/day), while LinkedIn (10.5% of all posts and 0.74 post/day) lags a considerable way behind the other two.

4.1 | Universities' level of engagement

The 75,404 UCC and UHC generated total interaction (the sum of likes, shares and comments) of 12,681,800 hits, with a mean of 168.2 interactions/post (USC was not studied since interactions could not be attributed to them).

Reaction (likes), accounting for 84.8% ($n = 10,749,721$) of the total, is the main type of interaction of the three that can be generated. It is followed at a great distance by *virality* (shares) (11.8%, $n = 1,494,721$) and *conversation* (comments) (3.4%, $n = 437,364$).

By social network, Facebook (7,419,763; 58.5%) accounts for the majority of interactions, followed by LinkedIn (3,032,683; 23.9%), which only just exceeds a fifth of all the interactions, while Twitter (2,229,354; 17.6%) brings up the rear.

Latin America (with 6,447,450; 50.9%) leads the field by region regarding the number of interactions, while the United States (3,755,780; 29.6%), with almost one-third of the total volume, is a distant second and Europe (2,478,570; 19.5%) comes last.

With the sole exception of the reaction rate of Latin American universities, analysis by social network in each region (Table 1) shows an association and statistically significant differences between posts published by the universities and the engagement rates they generate.

Latin America is the clear leader on Facebook with a high mean of posts per day (3.91) and a high overall engagement rate (1.151), while Europe and the United States obtain far more modest results: both regions yield the same mean of posts (1.15 and 1.15) and a fairly similar engagement rate (0.720 and 0.863).

Latin America also achieves the highest daily mean (5.09) on Twitter, but its engagement rate (0.636) is quite similar to that of Europe (0.540), which, however, records almost half the posts. The United States universities issue a high mean of posts (4.83, very close to Latin America), but their engagement rate is by far the lowest of all three regions (0.197).

The mean of posts on LinkedIn is quite similar in all three regions (EUR=0.82; USA=0.79; LAT=0.61). The interaction rate, however, is very different: it is highest in Europe (1.448), scores a good mean in the United States (1.049) and is poor in Latin America (0.655).

TABLE 1 Comparative analysis of mean activity and engagement rates by region and social network.

	Posts	Typical deviation				
Region	\bar{x} /daily	σ	RR rate	VR rate	CR rate	GER rate
EUR						
Twitter	2.73	2.108	0.411	0.113	0.016	0.540
Facebook	1.15	0.825	0.629	0.055	0.036	0.720
LinkedIn	0.82	0.754	1.428	0.001	0.02	1.448
H (sig)	0.00		0.001	0.001	0.008	0.003
USA						
Twitter	4.83	3.472	0.16	0.033	0.004	0.197
Facebook	1.15	0.528	0.751	0.061	0.051	0.863
LinkedIn	0.79	0.593	1.018	0	0.031	1.049
H (sig)	0.00		0.001	0.001	0.001	0.001
LAT						
Twitter	5.09	4.954	0.483	0.143	0.01	0.636
Facebook	3.91	3.915	0.883	0.225	0.043	1.151
LinkedIn	0.61	0.669	0.637	0	0.018	0.655
H (sig)	0.00		0.57	0.001	0.001	0.026

Note: *H* = Kruskal–Wallis *H* test Sig. .05. Reaction Rate (RR) = Likes/Followers/Posts*1000; Virality Rate (VR) = Shares/Followers/Posts*1000; Conversation Rate (CR) = Comments/Followers/Posts*1000; General Engagement Rate (GER) = \sum likes, shares, comments/ \sum followers/ \sum posts*1000. Italics refers to the significance of the results (not the results themselves).

4.2 | Influence of the level of activity on the level of engagement

A series of significant outcomes were observed at both the general social network level and in the regions under study to find out if the universities' level of activity on social networks influences the engagement rates generated by their posts.

By social network (Table 2), it can be clearly seen that universities with a lower level of activity manage to generate higher interaction rates. A moderate increase in interaction rates is observed on all three social networks in universities with a moderate level of activity compared to those with a high level. However, there is a very significant increase in engagement rates (in many cases double or triple) among low-engagement institutions compared to medium- and high-activity universities.

By region, the correlation analysis between the activity level and the interaction rates through social networks (Table 3) enables us to observe several important aspects that must be taken into consideration. The most significant is the largely negative correlation between two activity levels (medium and high) and the various engagement rates on Twitter and Facebook, while on LinkedIn the association is somewhat more positive.

In Europe, the high negative correlation on Facebook ($r_s = -.846$; sig. .01 bilateral) that occurs between the level of activity and the overall interaction rates obtained stands out. This means that the engagement rate drops when more posts are uploaded to the platform. A similar trend is detected on Twitter, although in this case, the association is weaker.

In the United States, a moderately negative association is also observed on Twitter for all engagement rates, especially the virality rate ($r_s = -.722$; sig. .01 bilateral), in which a high, inverse correlation can be observed rather than a moderate one in the opposite direction.

TABLE 2 Level of engagement by level of activity on social media.

Social media	Universities No.	Level of activity		RR rate	VR rate	CR rate	GER rate
		Level	Media posts/day				
TOTAL	70	Medium	7.04	0.199	0.030	0.008	0.237
	23	High	13.34	0.112	0.018	0.004	0.134
	21	Medium	6.00	0.125	0.012	0.005	0.142
	26	Low	2.32	0.335	0.057	0.013	0.405
Twitter	70	Medium	4.17	0.365	0.101	0.010	0.476
	23	High	8.33	0.152	0.046	0.004	0.202
	14	Medium	3.70	0.241	0.056	0.006	0.303
	33	Low	1.47	0.566	0.159	0.016	0.741
Facebook	70	Medium	2.14	0.755	0.117	0.043	0.915
	20	High	5.01	0.460	0.086	0.025	0.571
	25	Medium	1.36	0.789	0.111	0.039	0.939
	25	Low	0.60	0.956	0.149	0.061	1.166
LinkedIn	70	Medium	0.90	1.043	0.00040	0.023	1.066
	21	High	1.57	0.770	0.00044	0.018	0.789
	18	Medium	0.74	0.826	0.00020	0.024	0.851
	18	Low	0.29	1.638	0.00081	0.041	1.679
	13	Inactive	0.00				

In Latin America, universities' activity level on Twitter also displays a moderate, negative association between the reaction rate and the general engagement rate. On LinkedIn, however, the association becomes positive and there is a moderate correlation in all cases that suggests that an increase in posts may be related to higher engagement rates.

4.3 | Influence of type of presence on level of engagement

With respect to the type of presence, UCC predominates over sharing by a large margin whereas there are no statistically significant differences in the results by network or region (Table 4). Of the 90,241 posts, 81.2% are UCC, and of the 18.8% of USC, 2.4% are UHC. No notable differences are observed in distribution by region.

Of the total of 12,681,800 interactions, 97.9% involved UCC and only 2.1% UHC. USC was discarded from the analysis because it failed to record any interaction.

To determine the existence of statistically significant homogeneity between interaction level and type of presence, the mean contrast analysis at the between-group level (Table 4) clearly confirms that UCC produces more interactions than USC, with a mean of 169.41 per post. This figure is much higher than the mean of interactions produced by UHC, which stands at 126.18.

The similarities and differences between the two types of posts were also analysed by region and social network based on the mean values observed for reaction, virality, conversation and general engagement rates (Table 5).

Broadly speaking, the *general engagement rate* shows statistically significant differences by type of post across the three regions. The rate is higher for UCC in both the European and in the Latin American universities, but

TABLE 3 Analysis of the correlation between level of activity and interaction rates by social network and region.

	RR rate	VR rate	CR rate	GER rate
	R	R	R	R
<i>EUR</i>				
Twitter	-.568**	-.507**	-.563**	-.561**
Facebook	-.859**	-.748**	-.709**	-.846**
LinkedIn	-0.177	0.263	0.003	-0.179
<i>USA</i>				
Twitter	-.557*	-.722**	-.669**	-.605**
Facebook	0.024	-0.116	-0.093	-0.018
LinkedIn	-0.331	0.319	-0.209	-0.334
<i>LAT</i>				
Twitter	-.460*	-0.372	-0.337	-.452*
Facebook	-0.388	-0.315	-0.271	-0.389
LinkedIn	.567**	.677**	.554**	-.561**
<i>EUR</i>				
R (next)	-.596**	0.205	-.477**	-.584**
<i>USA</i>				
R (next)	-.646**	.293*	-.617**	-.644**
<i>LAT</i>				
R (next)	-0.052	.426**	0.054	-0.018
<i>Twitter</i>				
R (next)	-.516**	-.507**	-.515**	-.530**
<i>Facebook</i>				
R (next)	-.434**	-0.041	-.316**	-.377**
<i>LinkedIn</i>				
R (next)	0.109	.409**	0.168	0.104

Note: R = Spearman's Rho test.

*Sig. .05 (bilateral); **Sig. .01 (bilateral).

TABLE 4 Contrast of the between-group mean of total interaction by type of presence.

Presence	\bar{x}	σ	N total interaction	Sig.	1 - β	Effect size
UCC	169.41	343.823	12,410,755	.001**	0.99	d = 0.12
UHC	126.18	300.803	271,045			
USC***	0.00	0.00				

Mann-Whitney U test/Effect size: d = 0.20 (small); 0.50 (medium); 0.80 (large); *No interaction by university-shared content presence was recorded.

this effect is reversed in the North American universities where UHC (\bar{x} = 1010; σ = 2456) obtains greater interaction than its UCC counterpart. Something similar occurs with respect to the *reaction rate* (\bar{x} = .901; σ = 2.179). Differences in *virality rates* are only observed in North American and Latin American universities and, again, UHC

obtains higher virality in North American institutions ($\bar{x}=.103$; $\sigma=.739$). Finally, there are significant differences between European and Latin American universities with respect to the *conversation rate*, but in this case, it is UCC that records the highest rates.

The effect observed differs marginally between social networks (Table 5). On Twitter, higher interaction rates are obtained for UHC in North American universities and for UCC in European and Latin American universities. The aforesaid effect on North American institutions is even more pronounced on Facebook. The result for UHC is marginally higher for all rates among European institutions, although the differences are not statistically significant, while UCC continues to obtain higher interaction rates in Latin America. Significant differences are observed on LinkedIn for European and Latin American universities where UCC records higher interaction rates. In US institutions, UHC continues to record higher engagement rates.

5 | DISCUSSION

In this article, we have studied followers' interactions with posts by universities in Europe, the United States and Latin America on Twitter, Facebook and LinkedIn to try to understand users' behaviour. The data obtained enables us to broach certain topics.

Concerning their Level of Engagement, universities' general activity level (mean of daily posts) on their social media could be considered *moderate* (approximately seven posts per day) and barely adequate based on recommendations by the experts (Feehan, 2022; McLachlan, 2021; Newberry, 2021; Williams, 2020). However, the interaction rate is *very low* both overall and by social network and region, far below the levels of engagement recommended in the studies we analysed (Adobe Express, 2022; Feehan, 2022; Martinez, 2022). This would be in line with the results obtained in other studies (Fähnrich et al., 2020; Gori et al., 2020) that also remark on the low level of interaction obtained by university posts.

The differences with respect to social networks, however, enable us to draw some important considerations (Table 6). On the one hand, LinkedIn only generated 12.4% of the posts but elicited 23.9% of the interactions, with a mean of 325.11 interactions/post. Moreover, similar results were achieved on Facebook, which scored a higher proportion (35.9% of posts and 58.5% of interactions) but a lower mean of interactions per post (273.66 interactions/post). Twitter, in stark contrast, accounted for 51.5% of the total posts but only 17.6% of the interactions. These data enable us to reflect on the particularities of how each social network is used and how this can condition the results. LinkedIn is designed to inform its users about professional activities and establish work-related contact networks (Arevalo et al., 2018; IAB Spain and ELOGIA, 2022) by means of which it stimulates information exchange and person-to-person interaction. Facebook prioritises sharing content and narratives related to personal values and activities (Capriotti & Zeler, 2020; IAB Spain and ELOGIA, 2022) that foster interaction with the community. Twitter, on the other hand, is characterised by intense dissemination of information and *retweeting* (people sharing each other's content) (Capriotti & Ruesja, 2018; IAB Spain and ELOGIA, 2022; Kimmons et al., 2017) and, therefore, basically fosters a one-way informative stream, mainly about current affairs.

Some differences can be observed concerning the regions (Table 6), although they are moderate. The North American universities obtained better results than those in other regions: they issued 24.7% of the posts and obtained 29.6% of all interactions with a mean of 201.55 interactions/post. Latin America made 53.4% of the posts but yielded 50.9% of the interactions and ended up with a mean of 160.34 interactions/post. And the European universities generated 21.9% of the posts and yielded only 19.5% of the interactions, obtaining a mean of 149.65 interactions/post.

Figure 2 shows the general orientation of the results concerning the influence of the level of activity on the level of engagement. A bivariate correlation analysis using Spearman's Rho test between the number of posts and the overall interaction rate shows that the correlation is significant at the two-tailed .001 level with a low-moderate correlation coefficient (−.373): the level of engagement decreases as the level of activity increases.

TABLE 5 Mean contrast analysis of type of presence and engagement rates by region and social network.

Social media	Region	Type	RR rate			VR rate			CR rate			GER rate		
			\bar{x}	σ	U	\bar{x}	σ	U	\bar{x}	σ	U	\bar{x}	σ	U
Twitter	EUR	UCC	.465	5.844	.004	.137	1.024	.001	.018	.150	.001	.620	6.889	.001
		UHC	.294	.574		.076	.166		.007	.022		.377	.723	
	USA	UCC	.195	.599	.001	.039	.098	.002	.005	.025	.063	.238	0.689	.001
		UHC	.534	1.147		.052	.099		.005	.010		.591	1.43	
	LAT	UCC	.272	1.701	.001	.089	.629	.001	.006	.064	.917	.367	2.324	.001
		UHC	.188	.853		.049	.188		.008	.091		.245	1.052	
Facebook	EUR	UCC	.393	.957	.363	.033	.127	.112	.022	.134	.219	.448	1.117	.348
		UHC	.462	1.316		.034	.102		.025	.100		.521	1.450	
	USA	UCC	.709	1.475	.001	.056	.202	.001	.042	.178	.001	.807	1.691	.001
		UHC	2.384	4.040		.235	.515		.110	.203		.730	4.628	
	LAT	UCC	.576	2.442	.001	.134	.891	.001	.029	.186	.001	.740	3.179	.001
		UHC	.153	.387		.022	.047		.006	.040		.181	.448	
LinkedIn	EUR	UCC	.909	2.959	.001	.0004	.008	.408	.019	.070	.001	.928	2.996	.001
		UHC	.492	1.195					.011	.029		.503	1.221	
	USA	UCC	.898	2.100	.458	.0001	.003	.766	.027	.108	.798	.925	2.170	.455
		UHC	1.479	2.934					.052	.102		1.531	3.036	
	LAT	UCC	.702	1.482	.001	.001	.018	.612	.019	.054	.001	.723	1.523	.001
		UHC	.138	.298		.0001	.0005		.001	.004		.139	.301	
Total	EUR	UCC	.543	4.210	.001	.072	.694	.900	.019	.131	.001	.634	4.886	.001
		UHC	.352	.861		.058	.146		.011	.048		.421	.973	
	USA	UCC	.421	1.221	.001	.037	.124	.001	.017	.098	.217	.474	1.330	.001
		UHC	.901	2.179		.084	.246		.025	.097		1.010	2.456	
	LAT	UCC	.436	2.055	.001	.103	.739	.001	.017	.133	.001	.556	2.701	.001
		UHC	.171	.679		.035	.143		.007	.072		.214	.830	

Note: Reaction Rate (RR)= Likes/Followers/Posts*1000; Virality Rate (VR)=Shares/Followers/Posts*1000; Conversation Rate (CR)=Comments/Followers/Posts*1000; General Engagement Rate (GER)= \sum likes, shares, comments/ \sum followers/ \sum posts*1000. H= Kruskal-Wallis H test Sig .05.

TABLE 6 Comparison of between-group total interaction means by region and social network.

	Posts	Interaction	Interaction/post			
Region	%	%	\bar{x}	Sig.	1- β	Effect size
EUR	21.9	19.5	149.65	0.001*	1	$f=0.04$
USA	24.7	29.6	201.56			
LAT	53.4	50.9	160.34			
TOTAL	100	100	168.18			
TWT	51.7	17.6	57.21	0.001*	1	$f=0.28$
FBK	35.9	58.5	273.66			
LKN	12.4	23.9	325.11			

*Kruskal-Wallis *H* test/Effect size: $f=.10$ (small); $.25$ (medium); $.40$ (large).

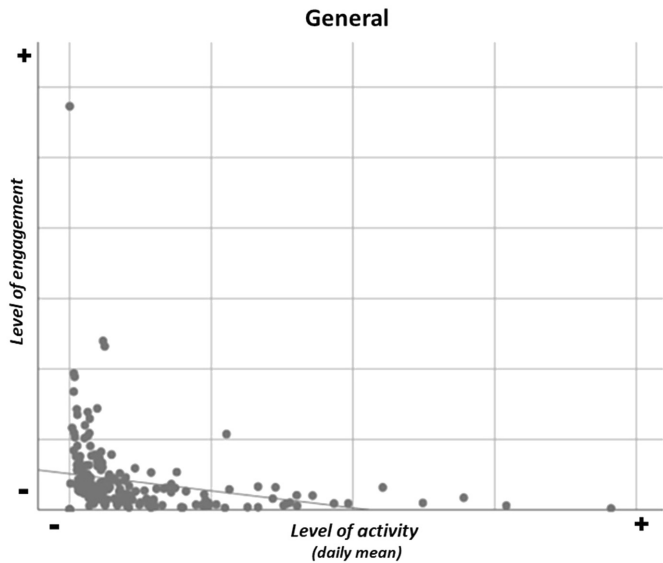


FIGURE 2 Level of engagement by level of activity.

These results confirm the conclusions obtained in other research (Fähnrich et al., 2020; Gori et al., 2020; Zamora & Battung, 2020), which also observe that a lower level of activity by universities on social networks is associated with a higher level of engagement in their posts.

It can also be seen through a moderate association on the social networks (Figure 3) that universities that have a lower level of activity (mean of daily posts) on Twitter and Facebook also manage to generate a higher level of engagement (general engagement rate), whereas LinkedIn does not show such a direct and clear relationship and there are no statistically significant differences.

Consequently, these results verify that by increasing their level of activity on social networks, universities do not achieve greater engagement by their followers, rather there is an inverse relationship between the two. In view of this, Hypothesis 1 would be refuted (H_1 =A higher level of activity will have a positive impact on the level of engagement on social networks). These results are in line with other recent studies (Brubaker & Wilson, 2018; Gori et al., 2020; Zamora & Battung, 2020).

Concerning the influence of the type of presence on the level of engagement, the general results (Figure 4) indicate that UCC achieves a higher level of engagement than USC, although the influence is only moderate (UCC

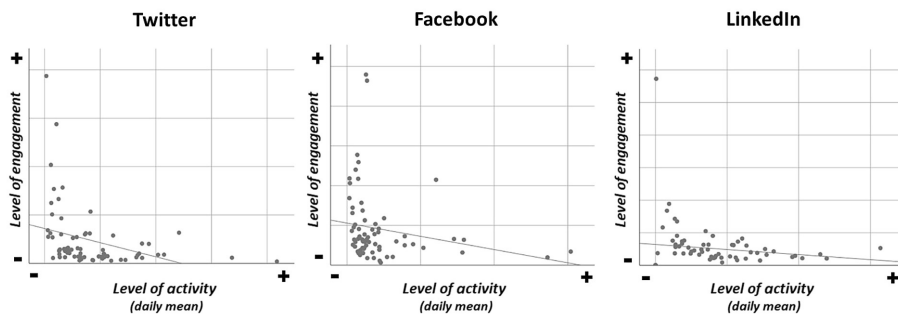


FIGURE 3 Level of engagement by level of activity by social network.

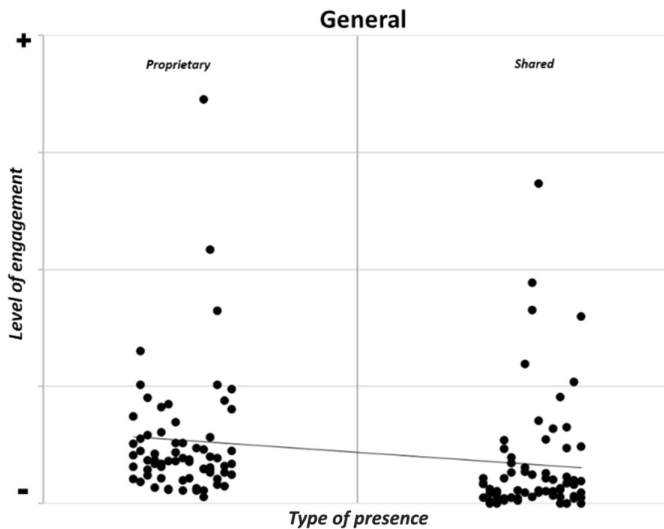


FIGURE 4 Level of engagement by type of presence.

produces 169 interactions/post compared to 126 for UHC). The better rates of UCC obtained are in line with other studies (Arevalo et al., 2018; Brech et al., 2017; Peruta & Shields, 2016).

It can also be seen (Figure 5) that UCC obtains higher levels of engagement than USC on all three social networks. The differences, however, are moderate on Twitter and Facebook and much stronger on LinkedIn. Although universities recognise the potential of LinkedIn, suitable strategies to generate connection and collaboration with stakeholders are still lacking (Arevalo et al., 2018).

By region, broadly speaking, there are clear statistically significant differences: in European and Latin American universities the level of engagement is higher for UCC, but in North America it is UHC that achieves a higher degree of interaction. There are also differences between regions on the basis of social networks. North American universities obtain higher interaction rates with USC on all the three social networks. Latin American institutions obtain a higher level of engagement with their UCC across all three social networks. However, the behaviour is more diverse in Europe: UCC elicits more interaction on Twitter and LinkedIn, while USC yields better engagement results on Facebook.

The data, therefore, enable us to conclude that the type of presence universities transmit on their social networks influences their followers' engagement since UCC generates a higher level of interaction than USC. However, there are significant differences between regions and social networks. For these reasons, Hypothesis 2 could only be partially confirmed (H_2 = Higher dissemination of university-created content (UCC) will have a positive

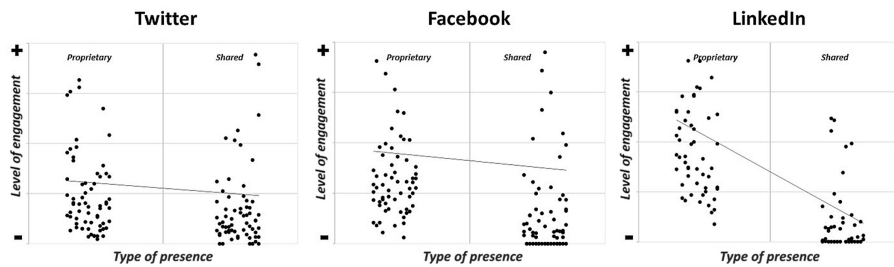


FIGURE 5 Level of engagement by type of presence on social networks.

impact on the level of engagement on social networks). These results reinforce the conclusions of other studies (Brech et al., 2017; Cancelo Sanmartín & Almansa Martínez, 2013; Guzmán Duque & Del Moral, 2013; Peruta & Shields, 2016), which indicate that information disseminated by universities on social networks about their core activities achieves a higher level of engagement than posts on general topics related to the university's environment.

The outcomes of this research could have clear practical and managerial implications since they can provide practitioners with relevant results that will help them to manage the active presence (or posting strategy) of social media strategic communication. Thus, this study offers communication practitioners some key findings for carrying out their posting strategy for their social networks:

- Our results show that the best presence (combination of posts) should be with a clear majority of UCC posts. An effective strategy for generating engagement on social media is for universities to implement the 4-1-1 rule (Beese, 2019): four posts by the university with significant topics for its followers (UCC), one post by the university of its own interest (UCC) and one post sharing information of other accounts (USC). Therefore, a good combination of posts is around 85% UCC and 15% USC, although these proportions should be slightly modified for each platform.
- Moreover, our findings also suggest that universities should have a more passive profile on social media, with a total mean of 2–3 posts per day (around 1–2 tweets/day on Twitter, 0.5–1 posts/day on Facebook and 0.25–0.5 posts/day on LinkedIn). However, the posts should be significant and engage their followers.

6 | CONCLUSIONS

The above results and reflections enable us to draw some important conclusions concerning the impact of universities' posting strategy on the level of user engagement.

The low interaction results they obtained lead us to ponder the reasons why universities' followers are somewhat passive on social networks. The differences between the regions in terms of engagement are moderate rather than substantial, so it could be said that universities, in general, are not properly analysing the particular characteristics of followers or perhaps they are not responding to users' interests, disseminating information that lacks relevance to them. We have also noted that the idiosyncrasies of each social network play an important part in posting strategy. LinkedIn and Facebook seek to promote interaction through their predominantly relational and interactive nature, while Twitter tends to promote the dissemination of information with a more unidirectional approach.

Two important ideas can be brought to bear concerning the key aspects of posting strategy (level of activity and type of presence).

On the one hand, we can conclude that a higher level of activity by universities on social networks does not necessarily lead to a higher level of user engagement (H_1): the lower the volume of posts, the higher the

interaction rates with certain slight nuances between the different social networks (more pronounced on Twitter and Facebook and more moderate on LinkedIn) and no significant differences are found between the regions. Consequently, future research could investigate whether this relationship also holds for different sectors (only higher education institutions were analysed) and for other social networks (three social networks were studied).

Moreover, as a general rule, the type of presence affects the users' level of engagement (H_2) on all three social networks: UCC yields better interaction results than USC. Therefore, universities would seem to be focusing their posting strategy on their UCC and wasting the opportunity to promote engagement by sharing posts by other users. However, these results are not fully conclusive since there are some significant variations by regions and social networks (such as in the United States and on Facebook). It would, therefore, be advisable to perform further studies to verify or reject the results presented above.

This article enables us to recognise the key dimensions of posting strategy and assess whether it influences the level of engagement. This will enable other researchers to use the method to develop their projects on these subjects since it will be important to assess the results in other types of organisations and social networks to consolidate this area of knowledge.

This study's main limitations are that it analyses only one sector and a certain type of institution (universities) on specific social networks (Facebook, Twitter and LinkedIn). In addition, other aspects that may influence or be relevant to interaction are not studied or taken into account in this work, such as the communication resources used in social media posts by higher education institutions or the types of post content (Fährnich et al., 2020; Peruta & Shields, 2016). Thus, future research could be complemented to assess how other aspects influence engagement. It would be interesting to find out how the type of content affects these factors since it is difficult to get users sufficiently involved to interact if the content fails to include participation strategies (Brubaker & Wilson, 2018). Using attractive resources for users would also arouse more engagement (Fährnich et al., 2020; Peruta & Shields, 2016). This points to the option of studying and analysing the types of resources applied in the institutions' posts. Another aspect to assess would be the influence of universities' popularity or reputation (Harvard, Oxford, etc.) on the interactions they elicit. Finally, it would be interesting to apply this method to other increasingly consolidated social networks (i.e. Instagram or TikTok).

AUTHOR CONTRIBUTIONS

Paul Capriotti: Conceptualization; Methodology; Writing - original draft; Writing - review & editing; Supervision; Funding acquisition; Project administration; Validation. **Rodolfo Martínez-Gras:** Methodology; Software; Formal analysis; Visualization; Writing - original draft. **Ileana Zeler:** Investigation; Conceptualization; Data curation; Resources; Writing - original draft; Writing - review & editing.

ACKNOWLEDGEMENTS

This article is part of the competitive R&D&I project on 'La Comunicación Institucional Digital 2.0 de las Universidades' (Digital Institutional Communication 2.0 of Universities) (PID2019-106053GB-I00), funded by the Spanish Ministry of Science and Innovation.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known conflict of interest or personal relationships that could appear to influence the work reported in this paper.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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REFERENCES

- Abitbol, A., & Lee, S. Y. (2017). Messages on CSR-dedicated Facebook pages: What works and what doesn't. *Public Relations Review*, 43(4), 796–808. <https://doi.org/10.1016/j.pubrev.2017.05.002>
- Adobe Express. (2022). Your guide to social media engagement rates. Learn target engagement rates for Facebook, LinkedIn, Instagram, and Twitter. [www.adobe.com. https://www.adobe.com/express/learn/blog/what-is-a-good-social-media-engagement-rate#what-is-a-good-social-media-engagement-rate](https://www.adobe.com/express/learn/blog/what-is-a-good-social-media-engagement-rate#what-is-a-good-social-media-engagement-rate)
- Aguilera Moyano, M., Fariás Batlle, P., & Baraybar Fernández, A. (2010). La Comunicación Universitaria. Modelos, Tendencias y Herramientas Para Una Nueva Relación Con Sus Públicos. *ICONO14*, 8(2), 90–124.
- Alonso-Flores, F.-J., De-Filippo, D., Serrano-López, A.-E., & Moreno-Castro, C. (2020). Contribución de La Comunicación Institucional de La Investigación a Su Impacto y Visibilidad. Caso de La Universidad Carlos III de Madrid. *El Profesional de La Información* (Nº 741657), 1–13. <https://doi.org/10.3145/epi.2020.nov.33>
- Anderson, B. D., Swenson, R., & Gilkerson, N. D. (2016). Understanding dialogue and engagement through communication experts' use of interactive writing to build relationships. *International Journal of Communication*, 10, 24.
- Arevalo, R. M., Bon, M. V. P., & Pizarro, S. K. L. (2018). Comunicación Digital Integral En Las Instituciones Educativas Con El Uso de LinkedIn: Estudio Comparativo América Latina-Europa. *Revista Latinoamericana de Ciencias de La Comunicación*, 14(27), 233–245.
- Atarama-Rojas, T., & Vega-Foelsche, D. (2020). Comunicación Corporativa y Branded Content En Facebook: Un Estudio de Las Cuentas Oficiales de Las Universidades Peruanas. *Revista de Comunicación*, 19(1), 37–53. <https://doi.org/10.26441/rc19.1-2020-a3>
- Ballesteros, H. C. A. (2018). El Índice de Engagement En Redes Sociales, Una Medición Emergente En La Comunicación Académica y Organizacional. *Razón y Palabra*, 29(3), 96–124.
- Beese, N. (2019). Marketing the library using social media platforms: The experience of the University Library Bochum, Germany. *International Information and Library Review*, 51(1), 36–41. <https://doi.org/10.1080/10572317.2019.1568778>
- Brech, F. M., Messer, U., Vander Schee, B. A., Rauschnabel, P. A., & Ivens, B. S. (2017). Engaging fans and the community in social media: Interaction with institutions of higher education on Facebook. *Journal of Marketing for Higher Education*, 27(1), 112–130. <https://doi.org/10.1080/08841241.2016.1219803>
- Brubaker, P. J., & Wilson, C. (2018). Let's give them something to talk about: Global brands' use of visual content to drive engagement and build relationships. *Public Relations Review*, 44(3), 342–352. <https://doi.org/10.1016/j.pubrev.2018.04.010>
- Cancelo Sanmartín, M., & Almansa Martínez, A. (2013). Estrategias Comunicativas En Redes Sociales. Estudio Comparativo Entre Las Universidades de España y México. *Historia y Comunicación Social*, 18(Diciembre), 423–435. https://doi.org/10.5209/rev_HICS.2013.v18.44339
- Capriotti, P., & Ruesja, L. (2018). How CEOs use twitter: A comparative analysis of global and Latin American companies. *International Journal of Information Management*, 39, 242–248. <https://doi.org/10.1016/j.ijinfomgt.2018.01.003>
- Capriotti, P., & Zeler, I. (2020). Comparing Facebook as an interactive communication tool for companies in LatAm and worldwide. *Communications Society*, 33(3), 119–136. <https://doi.org/10.15581/003.33.3.119-136>
- Capriotti, P., Zeler, I., & Camilleri, M. A. (2021). Corporate communication through social networks: The identification of the key dimensions for dialogic communication. In M. A. Camilleri (Ed.), *Strategic corporate communication in the digital age* (pp. 33–51). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-80071-264-520211003>
- Capriotti, P., Zeler, I., & Oliveira, A. (2021). Assessing dialogic features of corporate pages on Facebook in Latin American companies. *Corporate Communications: An International Journal*, 26(5), 16–30. <https://doi.org/10.1108/CCIJ-10-2020-0149>
- Cho, M., Schweickart, T., & Haase, A. (2014). Public engagement with nonprofit organizations on Facebook. *Public Relations Review*, 40(3), 565–567. <https://doi.org/10.1016/j.pubrev.2014.01.008>
- Chugh, R., Patel, S. B., Patel, N., & Ruhi, U. (2019). Likes, comments and shares on social media: Exploring user engagement with a state tourism Facebook page. *International Journal of Web Based Communities*, 15(2), 104–112. <https://doi.org/10.1504/IJWBC.2019.101041>
- Dixon, S. (2022). Average engagement rate per posts on social media in 2020 and 2021. Statista. <https://www.statista.com/statistics/1274133/engagement-rate-per-post-social-media/>

- Eger, L., Egerova, D., & Kryston, M. (2019). Facebook and public relations in higher education. A case study of selected faculties from The Czech Republic and Slovakia. *Romanian Journal of Communication and Public Relations*, 21(1), 7–30. <https://doi.org/10.21018/rjcp.2019.1.268>
- Eger, L., Egerová, D., Tomczyk, L., Krystoň, M., & Czeglédi, C. (2020). Facebook for public relations in the higher education field: A study from four countries Czechia, Slovakia, Poland and Hungary. *Journal of Marketing for Higher Education*, 31(2), 240–260. <https://doi.org/10.1080/08841241.2020.1781737>
- Fährnich, B., Vogelgesang, J., & Scharkow, M. (2020). Evaluating universities' strategic online communication: How do Shanghai ranking's top 50 universities grow stakeholder engagement with Facebook posts? *Journal of Communication Management*, 24(3), 265–283. <https://doi.org/10.1108/JCOM-06-2019-0090>
- Feehan, B. (2022). 2022 Social Media Industry Benchmark Report. *RivalIQ*. <https://www.rivaliq.com/blog/social-media-industry-benchmark-report/>
- Fuertes-Callén, Y., Cuellar-Fernández, B., & Pelayo-Velázquez, M. (2014). Determinants of online corporate reporting in three Latin American markets. *Online Information Review*, 38(6), 806–831. <https://doi.org/10.1108/OIR-10-2013-0240>
- Gheyle, N., & Thomas, J. (2017, December). Content analysis: A short overview. *Internal Research Note*. <https://doi.org/10.13140/RG.2.2.33689.31841>
- Gori, E., Romolini, A., Fissi, S., & Contri, M. (2020). Toward the dissemination of sustainability issues through social media in the higher education sector: Evidence from an Italian case. *Sustainability*, 12(11), 4658. <https://doi.org/10.3390/su12114658>
- Guzmán Duque, A. P., & Del Moral, M. E. (2013). Twitter's contribution to improving strategic communication in Latin American universities. *RUSC. Universities and Knowledge Society Journal*, 10(2), 236. <https://doi.org/10.7238/rusc.v10i2.1744>
- Hemsley-Brown, J., & Oplatka, I. (2006). Universities in a competitive global marketplace: A systematic review of the literature on higher education marketing. *International Journal of Public Sector Management*, 19(4), 316–338. <https://doi.org/10.1108/09513550610669176>
- IAB Spain, and ELOGIA. (2022). *Estudio de Redes Sociales 2022*. <https://iabspain.es/estudio/estudio-de-redes-sociales-2022/>
- Ibrahim, B., Aljarah, A., Hayat, D. T., & Lahuerta-Otero, E. (2022). Like, comment and share: Examining the effect of firm-created content and user-generated content on consumer engagement. *Leisure/Loisir*, 46(4), 599–622. <https://doi.org/10.1080/14927713.2022.2054458>
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59–68. <https://doi.org/10.1016/j.bushor.2009.09.003>
- Kemp, S. (2022). *Digital 2022: Global overview report*. We Are Social. <https://wearesocial.com/cn/wp-content/uploads/sites/8/2022/01/DataReportal-GDR002-20220126-Digital-2022-Global-Overview-Report-Essentials-v02.pdf>
- Kim, D., Kim, J. H., & Nam, Y. (2014). How does industry use social networking sites? An analysis of corporate dialogic uses of Facebook, Twitter, YouTube, and LinkedIn by industry type. *Quality and Quantity*, 48(5), 2605–2614. <https://doi.org/10.1007/s11135-013-9910-9>
- Kimmons, R., Veletsianos, G., & Woodward, S. (2017). Institutional uses of Twitter in U.S. higher education. *Innovative Higher Education*, 42(2), 97–111. <https://doi.org/10.1007/s10755-016-9375-6>
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical. *Biometrics*, 33(1), 159–174. <https://doi.org/10.2307/2529310>
- Lappas, G., Triantafillidou, A., & Kani, A. (2022). Harnessing the power of dialogue: Examining the impact of Facebook content on citizens' engagement. *Local Government Studies*, 48(1), 87–106. <https://doi.org/10.1080/03003930.2020.1870958>
- LinkedIn. (n.d.). *About LinkedIn*. LinkedIn. <https://about.linkedin.com/>
- Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research*, 28(4), 587–604. <https://doi.org/10.1093/hcr/28.4.587>
- Macnamara, J. (2014). Emerging international standards for measurement and evaluation of public relations: A critical analysis. *Public Relations Inquiry*, 3(1), 7–29. <https://doi.org/10.1177/2046147X14521199>
- Martinez, C. (2022). What is a good engagement rate for the different social networks? *Cyberclick Agent S.L.* <https://www.cyberclick.net/numericalblog/what-is-a-good-engagement-rate-for-the-different-social-networks>
- Martínez-Cardama, S., & Pacios, A. R. (2020). Twitter communication of university libraries in the face of Covid-19. *Profesional de La Informacion*, 29(6), 1–15. <https://doi.org/10.3145/epi.2020.nov.18>
- McLachlan, S. (2021). How often to post to social media in 2021. *Hootsuite*. <https://blog.hootsuite.com/how-often-to-post-on-social-media/>

- Newberry, C. (2021). 38 LinkedIn statistics marketers should know in 2021. *Hootsuite*. <https://blog.hootsuite.com/linkedin-statistics-business/>
- Oliveira, A., Capriotti, P., & Zeler, I. (2022). El Estado de La Cuestión de La Investigación Sobre La Comunicación Digital de Las Universidades. *Redmarka, Revista de Marketing Aplicado*, 26(2), 1–18. <https://doi.org/10.17979/redma.2022.26.2.9240>
- Peruta, A., & Shields, A. B. (2016). Social media in higher education: Understanding how colleges and universities use Facebook. *Journal of Marketing for Higher Education*, 27(1), 1–13. <https://doi.org/10.1080/08841241.2016.1212451>
- Bonilla Quijada, M. d. R., Muñoz, E. P., Corrons, A., & Olmo-Arriaga, J. L. (2022). Engaging students through social media. Findings for the top five universities in the world. *Journal of Marketing for Higher Education*, 32(2), 197–214. <https://doi.org/10.1080/08841241.2020.1841069>
- Rafiq, M., Batool, S. H., Ali, A. F., & Ullah, M. (2021). University libraries response to COVID-19 pandemic: A developing country perspective. *Journal of Academic Librarianship*, 47(1), 102280. <https://doi.org/10.1016/j.acalib.2020.102280>
- Romenti, S., Valentini, C., Murtarelli, G., & Meggiorin, K. (2016). Measuring online dialogic conversations' quality: A scale development. *Journal of Communication Management*, 20(4), 328–346. <https://doi.org/10.1108/JCOM-11-2015-0090>
- Rutter, R., Lettice, F., & Nadeau, J. (2017). Brand personality in higher education: Anthropomorphized university marketing communications. *Journal of Marketing for Higher Education*, 27(1), 19–39. <https://doi.org/10.1080/08841241.2016.1213346>
- Sharma, H., Jain, V., & Mogaji, E. (2022). Usage of social media channels by higher education leaders. *SSRN Electronic Journal*, 2022(1), 1–10. <https://doi.org/10.2139/ssrn.4025759>
- Simancas-González, E., & García-López, M. (2017). Gestión de La Comunicación En Las Universidades Públicas Españolas. *Profesional de La Informacion*, 26(4), 735–744. <https://doi.org/10.3145/epi.2017.jul.17>
- Swani, K., & Labrecque, L. I. (2020). Like, comment, or share? Self-presentation vs. brand relationships as drivers of social media engagement choices. *Marketing Letters*, 31(2–3), 279–298. <https://doi.org/10.1007/s11002-020-09518-8>
- Tomyuk, O. N., Diachkova, A. V., & Novgorodtseva, A. N. (2022). Global trends in digital transformation and media positioning of universities in social networks. *Digital Sociology*, 5(1), 64–75. <https://doi.org/10.26425/2658-347x-2022-5-1-64-75>
- van Wissen, N. (2017). Building stakeholder relations online: How nonprofit organizations use dialogic and relational maintenance strategies on Facebook. *Communication Management Review*, 2(April), 54–74. <https://doi.org/10.22522/cmr20170119>
- Voorveld, H. A. M., van Noort, G., Muntinga, D. G., & Bronner, F. (2018). Engagement with social media and social media advertising: The differentiating role of platform type. *Journal of Advertising*, 47(1), 38–54. <https://doi.org/10.1080/00913367.2017.1405754>
- Wang, Y., & Yang, Y. (2020). Dialogic communication on social media: How organizations use twitter to build dialogic relationships with their publics. *Computers in Human Behavior*, 104, 106–183. <https://doi.org/10.1016/j.chb.2019.106183>
- Williams, H. (2020). How often should you post on social media? *Meltwater*. <https://www.meltwater.com/en/blog/how-often-should-you-post-on-social-media>
- Zamora, J. M., & Battung, G. (2020). Organizational communication practices of a state university in post international organization for standardization certification. *Journal of Critical Reviews*, 7(11), 120–122. <https://doi.org/10.31838/jcr.07.11.18>
- Zeler, I., Capriotti, P., & Oliveira, A. (2023). 30 Años de Producción Científica Sobre Comunicación Institucional de Las Universidades: Evolución Histórica Del 1990 Al 2020. *Estudios Sobre El Mensaje Periodístico*, 29(1), 235–246. <https://doi.org/10.5209/esmp.80639>

How to cite this article: Capriotti, P., Martínez-Gras, R., & Zeler, I. (2023). Does universities' posting strategy influence their social media engagement? An analysis of the top-ranked higher education institutions in different countries. *Higher Education Quarterly*, 00, 1–21. <https://doi.org/10.1111/hequ.12439>

APPENDIX 1

Sample of Universities

Europe	United States	Latin America
University of Oxford	Harvard University	Universidad de Buenos Aires
University of Cambridge	Stanford University	Universidad Nacional de Córdoba
University College London	MIT (Massachusetts Institute of Technology)	Universidad Nacional de La Plata
Imperial College London	Princeton University	Universidad Austral
University of Edinburgh	Columbia University	Universidad de Sao Paulo
University of Manchester	California Institute of Technology (Caltech)	Universidad de Campinas
King's College London	University of Chicago	Universidad Federal de Rio de Janeiro
University of Bristol	Yale University	Universidad Federal de Minas Gerais
London School of Economics and PS	John Hopkins University	Universidad Católica de Rio de Janeiro
University of Warwick	University of Pennsylvania	Universidad Católica de Rio Grande do Sul
Sorbonne University	University of Michigan—Ann Arbor	Universidad de Chile
Paris Science et Lettres—PSL	University of North Carolina—Chapel Hill	Pontificia Universidad Católica de Chile
Paris Saclay	University of California—Berkeley	Universidad de Concepción
Heidelberg University	University of Washington—Seattle	Universidad de Santiago de Chile
University of Munich (LMU)	Purdue University—West Lafayette	Universidad Nacional de Colombia
Technical University of Munich	University of Illinois—Urbana Champaign	Universidad de Antioquia
Swiss Federal Institute of Technology Zurich	University of Texas—Austin	Pontificia Universidad Javeriana
University of Zurich	University of Wisconsin—Madison	Universidad de Los Andes (Colombia)
Swiss Federal Institute of Technology Lausanne	University of Maryland—College Park	Universidad Nacional Autónoma de México
Utrecht University	University of Minnesota—Twin Cities	Universidad Autónoma Metropolitana
University of Amsterdam		Benemérita Universidad Autónoma de Puebla
Karolinska Institute		TEC de Monterrey
University of Oslo		Universidad Nacional Mayor de San Marcos
University of Helsinki		Universidad San Francisco de Quito
University of Copenhagen		Universidad de la República