
Miscellaneous

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Brand strategy and content management on Instagram: scheduling and message length as factors to improve engagement

Abstract

Companies use social media in their communication strategy to connect with their audiences via online brand communities and social media fan pages. In this context, the scientific community defines the term 'engagement' as the primary metric used to identify the degree to which brand and consumers are organically connected. This phenomenon gets measured by audience interactions with the brand content, which is the main factor stimulating participation and value perception in their relationship with the brand. Prior investigations show that the timing and duration of the messages published by the brand can predict the degree of social media engagement, however they do not provide the time and length patterns required for messages to increase engagement. For this purpose, we carried out a quantitative and descriptive content analysis of 14,067 Instagram posts from 14 Spanish brands across 10 industries. Findings allow us to conclude that brands are not fully optimising the scheduling of their timings during the working days and hours that drive the best level of interaction. Nonetheless, they do take advantage of the opportunity to publish longer messages to increase engagement. From a theoretical and practical point of view, this analysis contributes to the understanding of the content factors that stimulate fan page engagement and provides guidelines for brand managers to efficiently define the content marketing strategy on Instagram.

Keywords

Digital Marketing, brand communication, virtual communities, engagement, social media, Instagram.

1. Introduction

Digital culture has transformed social relationships in an ever-growing digital world, where social media as a communication channel has revolutionised the way people interact with each other and with brands (Acar & Puntoni, 2016). 2021 is an important year for social media, a total of 4.7 billion users connect to the Internet, where 4.3 billion are connected through social media, representing 55.1% of the world's population (We Are Social & Hootsuite, 2021) and where 57% of users follow their favourite brands on these platforms (Chen, 2021). This connection is increasingly drawing the attention of those in charge of communication who

identify the potential of these channels to create a stronger, more lasting relationship with their audiences, thus improving their brand strategy.

Social media is a private communication channel with the capacity to recreate a personal conversation with the audience. This interaction with brand audiences was named 'consumer engagement' (Brodie *et al.*, 2011). A way to increase this audience participation is to group them in the so-called 'virtual brand communities' in the form of fan pages (Brodie *et al.*, 2013), turning them into followers or fans of the brand and increasing their connection (Demmers, Weltevredena & van Dolen, 2020).

The latest scientific researches define 'consumer engagement' as the way to establish voluntary interactions with consumers (Hollebeek, Srivastava & Chen, 2019; Kumar *et al.*, 2019) and provide them with a value-laden experience (Hollebeek, Juric & Tang, 2017). Furthermore, these authors claim that having interesting content is what the audience perceives as valuable in their relationship with the brand (Demmers, Weltevredena & van Dolen, 2020). In line with that, Chauhan and Pillai (2013) highlight the fundamental role of content in social media to stimulate dialogue. As a consequence, the study of engagement with the brand content becomes a crucial parameter to evaluate brand performance in social media. An indicator of its relevance for academics and marketing professionals is its recent inclusion as a key research priority by the Marketing Science Institute for the period 2020-2022 (MSI, 2021).

Various studies about the engagement phenomenon reveal that brand content scheduling is considered its main driver, therefore it is a critical consideration in the content marketing strategy within social media (Shahbaznezhad, Dolan & Rashidirad, 2020). In addition, recent investigations on online advertising efficacy show that the time-of-day when the brand content is published can predict social media engagement (Kanuri, Chen & Sridhar, 2018).

Social media scheduling has not been systematically addressed in academic literature, which makes it urgent to understand the drivers of effective social media scheduling to justify a return on social media investments (Mochon *et al.*, 2017). On the other hand, numerous empiric works examine the influence of programmatic variables (Shahbaznezhad, Dolan & Rashidirad, 2020; De Vries, Gensler & Leeftang, 2012) and message length on engagement (Cuevas-Molano, Matosas-López & Bernal-Bravo, 2021). These studies confirm the existence of a positive correlation between both variables.

However, research over the scheduling and message length factors to improve engagement is limited in various aspects. Firstly, there are studies in advertising literature about these factors' impact on content engagement (Kanuri, Chen & Sridhar, 2018; Coelho, Oliveira & Almeida, 2016), but within the specific marketing literature the works covering the influence of these organic content factors over engagement are mostly limited to describing the frequency of their use in publications (Dolan *et al.*, 2019; Sabate *et al.*, 2014; De Vries, Gensler & Leeftang, 2012). Secondly, the need to investigate these content characteristics is urgent given the call by communication professionals for effective scheduling strategies that stimulate interaction (Collier, 2020). In third place, the knowledge provided by previous investigations is centered around engagement in a single industry and in social networks such as Facebook and Twitter (Dolan *et al.*, 2019; Sabate *et al.*, 2014), yet they do not analyse these factors specifically for Instagram, the worldwide leader in social media engagement. In fourth place, only a few exceptions provide data on the correlation between time-related patterns and interaction (Matosas-López & Cuevas-Molano, 2021) as well as descriptive information about the message extension to increase engagement (Sabate *et al.*, 2014).

The motivation behind this research is to address these knowledge gaps found in prior works and to shed new light on the programmatic factors and message extension to drive engagement, analysing 14 accounts distributed across 10 product categories and focusing on Instagram. In order to achieve this, the following objectives have been laid out:

- O1. To discover if programmatic factors and text message length have an influence over Instagram engagement.
- O2. To compare time-related patterns and extension of those messages achieving the highest interaction on Instagram.
- O3. To understand whether Spanish brands are utilising the analysed factors that drive engagement on Instagram efficiently.
- O4. To provide new knowledge for academics and professionals about the efficient management of the analysed brand content factors to optimise the social media marketing strategy.

To achieve these goals, we employed the sociopsychological approach of the Uses and Gratifications Theory (U&G) in order to understand people's motivations in the use of certain media to meet a specific need (Katz, 1959; Katz, Haas & Gurevitch, 1973). This movement is based on five assumptions: 1) use and selection of media is motivated towards an objective; 2) the individual is the one who takes the initiative in the selection and use of the medium with the aim of obtaining gratification; 3) the audience's communication behaviour is conditioned by different social factors; 4) the media compete with other mass communication alternatives in terms of selection, use and gratification; and 5) the audience is considered influential in its relationship with the media. Consequently, the underlying assumption of the U&G theory is that people are actively and freely involved in the use of media (Rubin, 1994). This theoretical approach is especially appropriate for this research on social media since these channels enhance consumer interaction (Ruggiero, 2000). This theory has been applied to the study of Internet media (Hollenbaugh, 2010), new communication tools (Cuesta-Cambra, Niño-González & de-Marchis, 2021), social media (Dolan *et al.*, 2016) and virtual brand communities on different social platforms such as Facebook and MySpace (Cvijikj & Michahelles, 2013; Bonds-Raacke & Raacke, 2010) or Twitter (Matosas-López & Cuevas-Molano, 2021) to discover the motivations that stimulate individuals to use these repeatedly as a communication media and to interact with the content.

The nature of social media networks in general and fan pages in particular fits perfectly with this theory's postulates since "users, having other possibilities, freely choose these media. They use them with the purpose of achieving gratification; they communicate conditioned by sociological aspects and enjoy an empowering position on the platform" (Matosas-López & Cuevas-Molano, 2021, p. 412). Therefore, the potential of social media to capture large audiences' attention as occurred with traditional media, makes this theoretical framework particularly suitable for studying audience behaviour.

Furthermore, in the U&G postulates, Cutler and Danowski (1980) categorise two types of gratification derived from media use: content gratification and media gratification. While in the former the public obtains satisfaction from the message value, in the latter the individual gains gratification by participating in the communicative experience within media. This work is based on the first typology, analysing user behaviour and the content factors that motivate and encourage their engagement.

Findings from previous research based on this theory highlight two main rewards for people using social media i.e., obtaining information and the social dimension (Bonds-Raacke & Raacke, 2010). In the context of brand fan pages, fans get information from their interactions with others. In addition, the need to interact is satisfied by using the functionalities provided on the platform to like, comment and share content. These actions of liking and commenting represent fan engagement with the brand's post. In other words, audience interactions help companies to achieve the goals of their content marketing strategy on social media.

For all the above, we relied on the theoretical foundations of U&G to answer the research questions about the possible impact of time patterns and length of brand messages on increasing fan engagement on Instagram.

2. Theoretical background

2.1. Definition of engagement in digital marketing

The theoretical origins of engagement are found in the relationship marketing domain (Vivek, Beatty & Morgan, 2012; Ashley *et al.*, 2011), which consists of a new transactional perspective that differs from traditional marketing in respect to managing relationships with consumers. This perspective considers the importance of establishing, maintaining and enduring value-laden interactive relationships with customers (Berry, 1995) and creating exchanges through a co-creation process (Grönroos, 1997; Prahalad & Ramaswamy, 2004). Likewise, interactive and cocreative experiences with other actors are interpreted as the act of engaging (Lusch, Vargo & Tanniru, 2010). A year later, the first definition of ‘consumer engagement’ (CE) emerged, coined by Brodie *et al.* (2011) who defined it as “a psychological state that occurs by virtue of interactive, cocreative customer experiences with a focal agent/object (e.g., a brand) in focal service relationships” (p. 260).

In the last two decades, ‘consumer/customer engagement’ has been the subject of a significant number of studies in the digital marketing literature. The most complete definitions describe it as a multidimensional concept. For example, Hollebeek (2011) stated that engagement goes beyond involvement, encompassing a proactive and interactive customer relationship with a specific object of engagement (e.g., a brand). This author also conceptualised the term ‘customer brand engagement’ (CBE) to designate “the level of a customer’s motivational, brand-related, and context-dependent state of mind characterised by specific levels of cognitive, emotional, and behavioral activity in brand interactions” (p. 565). The present work is based on the behavioral elements of engagement since it addresses consumers’ interactive experience with brands on Instagram fan pages.

Seeking engagement in consumer relationships have created the emergence of a new type of engagement marketing whose objective is to establish a level of consumer relationship as never achieved before in traditional marketing, with a marketing philosophy that implies listening to the consumer above all (Parreño, Muñoz & Medina, 2006). Along the same lines, most authors have described engagement as a motivational or psychological state for consumers which drives their interactions with the brand beyond the transaction or purchase (Pansari & Kumar, 2016; Harrigan *et al.*, 2017). Contemporary marketing has therefore evolved, and companies must not only meet the consumers’ needs, but must also focus on engaging and building relationships with them in every possible way.

Additionally, the arrival of social media and the development of virtual brand communities allow companies to change consumers from mere passive observers to active participants. In this environment, the brand community members interact with companies through their publications. That being the case, academics postulate that user engagement with content is an essential metric for evaluating brand and marketing strategy on social media. (Brodie *et al.*, 2013; Harrigan *et al.*, 2017). As a consequence, this study draws on the body of work on engagement within the digital marketing literature to investigate consumer behavior on recent Instagram fan pages.

2.2. Scheduling and length of the brand message

Scheduling social media posts is a key element of the digital marketing strategy because it can increase the company’s bottom line even without budget increases (Kanuri, Chen & Sridhar, 2018). In addition, recent studies have confirmed the existence of a positive correlation between scheduling and engagement of brand followers on Twitter and provide descriptive data on the time frames with more participation (Matosas-López & Cuevas-Molano, 2021). Shahbaznezhad, Dolan and Rashidirad (2020) confirmed this relationship of influence on Facebook and Instagram, however they did not provide information on the optimal time intervals to stimulate engagement.

On the other hand, previous studies carried out on Facebook showed that publications made on fan pages by the brand administrator are susceptible to getting “lost in the pile” without being seen because “Facebook profile walls are overloaded with content coming from multiple sources (e.g., posts from friends, other pages, etc.” (Cvijikj & Michahelles, 2013, p. 848). Thus, the importance of scheduling strategies that avoid these visibility problems is highlighted as it negatively affects user engagement.

Regarding the interaction patterns, existing studies on content marketing strategy in social media offer ambivalent results. For example, with respect to the daily schedule of posts, Matosas-López and Cuevas-Molano (2021), and Cvijikj and Michahelles (2013) agreed that the highest audience participation is found mid-week (Tuesday, Wednesday and Thursday). Meanwhile, De Vries, Gensler and Leeftang (2012) found that weekday postings decrease engagement. On the other hand, concerning the hourly intervals, Matosas-López and Cuevas-Molano (2021), and Kanuri, Chen and Sridhar (2018) found that the content published in the mornings (8:00 a.m.-1:00 p.m.) received more engagement. However, Cvijikj and Michahelles (2013) affirmed that the evening and night hours get more participation (16:00h-3.00h). We thereupon investigated whether the day and time of the brand’s post influences follower interaction on Instagram. To do this, we distinguished between the publications of the working days and hours and those outside of them. Based on this reasoning, we proposed the following research questions:

RQ1. Does brand content published on weekdays achieve greater engagement?

RQ2. Does content published during working hours get more engagement?

With regard to the post length, previous studies present different findings concerning the effect of the number of characters in the brand message on engagement. On one hand, advertising literature suggests that message length can affect the click-through rate and, consequently, advertising effectiveness (Baltas, 2003; Robinson, Wysocka & Hand, 2007). On the other hand, the most recent works confirm a positive correlation between text length and the number of fans’ comments (Cuevas-Molano, Matosas-López & Bernal-Bravo, 2021) and discover that message length increases the amount of user likes because “a longer text may suggest a post offering more detailed information” (Sabate *et al.*, 2014, p. 1008). This statement coincides with Daft and Lengel (1986) who postulated that the additional information helps to resolve ambiguities or reduce uncertainties.

On Instagram, the message length is not excessively restrictive, allowing up to 2,200 characters. However, no studies have been found that narrow down the specific message length ranges to improve engagement. Consequently, we shall pose the following research question:

RQ3. Do longer brand messages receive less engagement?

3. Methodology

3.1. Content analysis

In the last two decades, the content analysis method has been widely used to analyse brand messages aimed at wide audiences (Neuendorf, 2002), the most frequent units of analysis being publications on blogs, websites as well as social networks (Cuevas-Molano, Sánchez-Cid & Matosas-López, 2019). This methodology is suitable for objectively and exhaustively quantifying the cognitive consequences of communication on audience behavior through media (Krippendorff, 2013).

The present investigation is based on a previous work based on a content analysis in which the influence of 31 content factors (qualitative and quantitative) on engagement is

analysed through a *multiple linear regression econometric model* (Cuevas-Molano, Matosas-López & Bernal-Bravo, 2021). The results of this study do not provide information on the influence of scheduling on engagement. Nevertheless, the authors do confirm a positive correlation between the length of the brand message and engagement. Moreover, this work does not provide descriptive data on the optimal length and time intervals to increase engagement. As a result, to respond to that need and meet the research objectives we carried out an empirical study based on a quantitative, explanatory and descriptive content analysis of 14,067 brand publications, from 14 accounts of Spanish brands on Instagram during a two-year period (October 1, 2019 through October 31, 2021), thus extending the analysis period contemplated in previous research (Pérez-Curiel & García-Gordillo, 2020, Shahbaznezhad, Dolan & Rashidirad, 2020; Matosas-López & Cuevas-Molano, 2021). Finally, the focus of this research is transversal as it examines brands belonging to 10 different industries during a specific period.

3.2. Sample and data collection

The selection of the sample elements is logical, theoretical and was carried out by context, taking as a reference two rankings, that is, the list of the most popular Spanish brands on social media (IAB Spain, 2020a) and the list of companies with the highest advertising investment (Infoadex, 2020). Among the brands belonging to these rankings, the criteria applied to select the set of fan pages consisted of: 1) the official brand pages created by the companies; 2) the pages present in the IAB Spain ranking (2020a) in the category of brands with the highest engagement and popularity; 3) Spanish as the language used in communication; and 4) the selection of the industry as a consequence of the application of the previous criteria. The final sample was made up of the following fan pages: Caixa, DGT, El Corte Inglés, Garnier, Ikea, Lidl, Mapfre, Nautalia Viajes, Seat, ONCE, Orange, Repsol, Samsung and Vodafone.

Furthermore, the justification of the sample value of the selected brands and the scope considered in this research are threefold. First, taking into account the recommendations of previous works (Shahbaznezhad, Dolan & Rashidirad, 2020), we selected a sample of fourteen companies, belonging to 10 different industries (Cvijikj & Michahelles, 2013; De Vries, Gensler & Leeftang, 2012). Second, we analysed Spanish brand communities, considering that 52% of the Spanish population claim to follow their favorite brands on social media (IAB Spain, 2020b). Third, we selected Instagram because it represents 71% of the engagement rate of all social media networks combined, being the leader in this metric at a national (IAB Spain, 2020b, 2021) and international level (Li, 2020).

After selecting the sample of fourteen companies, the data analysed in this study was extracted from the public APIs of the fan pages on Instagram from which we collected all the content of the publications of the companies and the type of interaction from audience participation (likes and comments) (Cha *et al.*, 2010) using the Icarus[®] Analytics tool (2021). Additionally, we obtained the data related to the number of followers per brand through the Social Blade LLC platform (2021), which allowed us to retrieve this information retroactively. All the information was collected during the period from October 1st, 2019 to October 31st, 2021. Finally, all the data was analysed through the statistical program IBM SPSS Statistics (Version 27).

3.3. Variables

To answer the research questions and discover the possible correlation between the variables studied, we classified the content factors created by the brand, i.e., controlled by the company (independent variables) and the communication generated by the user or engagement, i.e., not controlled by the company (dependent variable) (Godes & Mayzlin, 2009). This

classification is in line with previous research on social media engagement (Shahbaznezhad, Dolan & Rashidirad, 2020; Cuevas-Molano, Matosas-López & Bernal-Bravo, 2021).

3.3.1. Independent Variables

Following the rules previously established, we analysed the day and the specific times at which publications obtain more engagement. To do this, we distinguished between messages published on weekdays and weekends (De Vries, Gensler & Leeflang, 2012) and during or outside working hours (Shahbaznezhad, Dolan & Rashidirad, 2020; Sabate *et al.*, 2014). Furthermore, we differentiated between ‘peak hours’ or maximum publication times and ‘low hours’ or minimum publication times of the companies (Cvijikj & Michahelles, 2013). The time-related aspects of each publication (N = 14,067) are coded through dichotomous variables or dummies (0,1). Therefore, messages published on business days are assigned the value 1 and 0 if otherwise. Regarding the time, a distinction is made between the publications posted during the traditional Spanish working day (9:00 a.m.-2:00 p.m. and 4:00 p.m.-6:00 p.m.), encoded with the value 1, and the hours outside of this, encoded as 0.

Finally, we analysed which message extension achieves the greatest participation, distinguishing between the different intervals applied by the brands examined. To collect the data related to this variable, we considered the same criteria as previous studies (Sabate *et al.*, 2014; De Vries, Gensler & Leeflang, 2012) and we quantified the number of characters in each publication, coding the information with a numerical value (Table 1).

Table 1: Description of the content factors (October 1, 2019-October 31, 2021).

No	Variable	Description	Coding and comments
<i>Independent Variables</i>			
1	Time of publication	Specific time	Nominal- dichotomous 0: non-working hours (0: 00-8:59, 14: 00-16:00 and 18: 00-2:59 on Monday-Friday and all hours on Saturday and Sunday) 1: Spanish working hours (9:00 a.m. to 2:00 p.m. and 4:00 p.m. to 6:00 p.m. Monday-Friday)
2	Day of publication	Date	Nominal- dichotomous 0: weekend days (from Friday at 6:00 p.m. to Sunday at 11:59 p.m.) 1: business days (Monday-Friday).
3	Message length	Extension	Numeric ≥ 0 . Number of characters of the brand publication.
<i>Dependent Variables</i>			
4	Interactions	Number of interactions	Numeric ≥ 0 . Number of interactions (likes and comments) received by the brand's publication
5	Followers	Number of followers	Numeric ≥ 0 . Number of users following the brand on the Instagram account
6	Engagement	Followers' participation	Rate Calculated through the formula: $Engagement = Interactions/Followers_a$

^a. Equation applied in the investigation of social media engagement within the scientific context and the professional practice.

Source: Own elaboration.

3.3.2. Dependent variables

To analyse the engagement of fan pages on Instagram, we started from the academic consensus on its interactive nature, which is measured through the interactions received by brand publications or posts (Shahbaznezhad, Dolan & Rashidirad, 2020; Sabate *et al.*, 2014; Cvijikj & Michahelles, 2013; De Vries, Gensler & Leeflang, 2012). Taking this specification into account, we analysed the sum of likes and comments that each publication receives based on the scheduling aspects and the length of the message text (Table 1).

3.4. Analysis

In order to establish which programmatic factors and message length get more engagement, we analysed the interactions received by each post (N = 14,067). Additionally, following scientific criteria and professional practice, we calculated this interaction based on the number of followers that each brand fan page had at that specific moment (De Vries, Gensler & Leeflang, 2012; Sabate *et al.*, 2014; Cvijikj & Michahelles, 2013) using the following formula:

$$\text{Engagement} = (\text{Interactions}/\text{Followers}) \text{ (IAB Spain 2020a, p. 8).}$$

According to this equation, the engagement or degree of audience participation depends on the community size or the number of brand followers. So, as the number of fans grows, if interactions do not grow proportionally, engagement will decrease. Therefore, it is important to point out that the marketing strategy of increasing the number of followers on social media does not contribute to increasing engagement if the factors that impact on it are not considered. For the econometric calculation that explains the possible influence relationship between the independent and dependent variables, the following Pearson linear correlation equation was applied:

$$r = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}$$

r = Product-moment coefficient of linear correlation

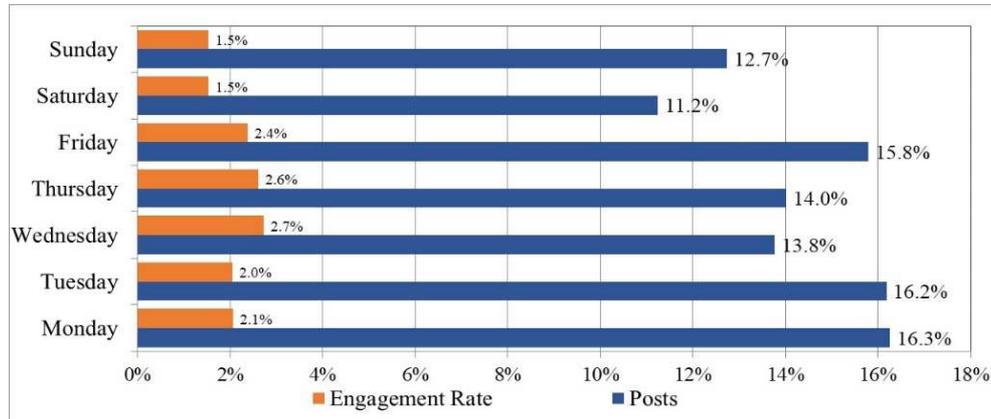
$$x = X - \bar{X} ; y = Y - \bar{Y}$$

4. Results

The results of the explanatory and descriptive quantitative analysis on the scheduling factors and message length to increase engagement conclude, in first place, that the econometric analysis carried out through the Pearson correlation equation between the independent variable 'day factor' and the dependent variable 'engagement' provides a correlation coefficient of $r_{xy} = 0.4$, with p-value < 0.001 , which confirms a significant and moderate positive relationship.

Once this influence relationship gets established, and to answer the first research question (RQ1), a second descriptive and comparative analysis is carried out between the number of posts published by brands each day of the week compared to days with the highest engagement rate. Figure 1 shows this comparison, observing how days achieving greater fan participation or engagement rate are Wednesdays (2.7%) and Thursdays (2.6%). These findings positively confirm the answer to RQ1, which asks whether the content published on working days achieves more engagement.

Figure 1: Comparison of publications versus cumulative engagement rate by days in percentages (October 1, 2019-October 31, 2021).



Source: Own elaboration.

Next, in order to discover if brands are optimising the use of the daily factor to increase their audience participation, we compare the days in which these brands publish more with the days that achieve the highest engagement rate. The findings of this comparison show that the bulk of publications are made at the beginning and end of the working week, mostly concentrating their publications on Mondays (16.3%), Tuesdays (16.2%) and Fridays (15.8%). This shows that, although companies are focusing their posts correctly during the working days to improve engagement, it is clear that the days with the highest publication activity do not completely coincide with the days in which the brand followers are more interactive.

This being said, after conducting an individual analysis of the companies examined, we find some examples of good practices in their content scheduling. This is the case of a series of brands that publish correctly on Wednesdays and Thursdays and even above the average for this day, highlighted in bold in Table 2, and they are: DGT, Ikea, Lidl, Mapfre, Nautalia, Repsol, Vodafone, ONCE, Orange and Seat.

Table 2: Publications for each brand by days in percentages (October 1, 2019-October 31, 2021).

Days/Brands	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
CaixaBank	20,1%	14,4%	14,1%	13,6%	17,7%	12,2%	7,9%	100,0%
dgtes	23,7%	24,7%	17,5%	8,2%	18,6%	4,1%	3,1%	100,0%
El Corte Ingles	16,0%	15,4%	13,1%	12,4%	14,9%	13,5%	14,7%	100,0%
Garnier	15,5%	14,4%	14,0%	13,3%	13,5%	14,2%	15,1%	100,0%
Ikea	15,1%	14,2%	15,3%	14,7%	17,6%	11,6%	11,5%	100,0%
lidlspana	15,8%	16,0%	15,2%	15,3%	12,2%	10,1%	15,4%	100,0%
mapfre_es	23,6%	13,9%	14,7%	13,5%	15,0%	9,8%	9,4%	100,0%
nautaliaviajes	17,2%	16,8%	19,7%	19,7%	13,1%	4,5%	9,0%	100,0%
once.es	22,5%	17,0%	14,2%	15,4%	14,2%	8,7%	7,9%	100,0%
OrangeESP	18,4%	16,9%	9,7%	14,6%	17,7%	11,9%	10,9%	100,0%
Repsol	16,2%	23,6%	15,4%	17,3%	21,3%	2,5%	3,8%	100,0%
Samsung España	11,9%	15,5%	8,8%	11,4%	19,9%	11,1%	21,4%	100,0%
seatesp	12,5%	15,6%	13,9%	15,3%	16,1%	12,8%	13,8%	100,0%
vodafone_es	14,8%	15,2%	14,9%	13,6%	14,3%	13,2%	14,0%	100,0%
Total	16,3%	16,2%	13,8%	14,0%	15,8%	11,2%	12,7%	100,0%
Average	17,4%	16,7%	14,3%	14,2%	16,1%	10,0%	11,3%	100,0%

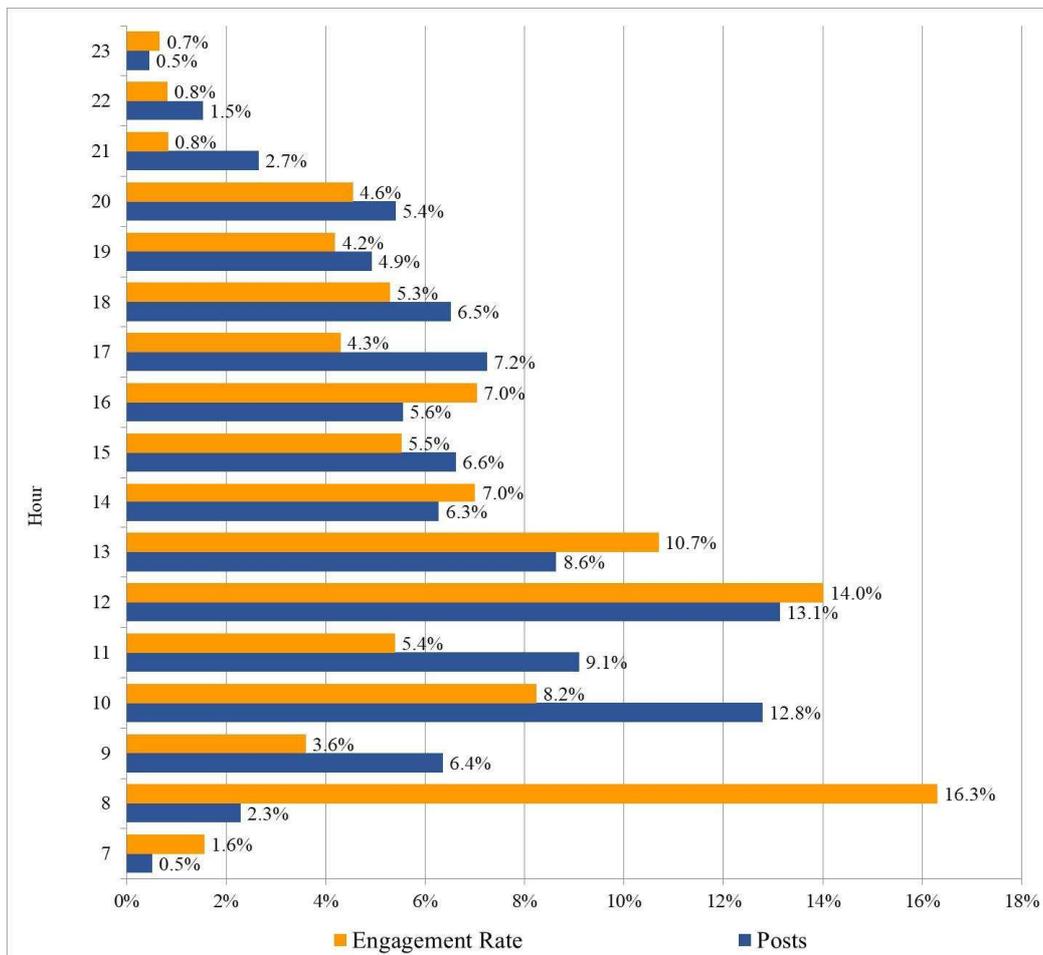
^aName of the user of the company profile on the brand page.

Source: Own elaboration.

Regarding the hourly factor, after applying the Pearson correlation equation, the result provides a coefficient $r_{xy} = 0.5$ (p -value < 0.001), which confirms a strong positive and significant influence relationship between the time-of-day factor and the engagement.

Applying the same procedure as the daily factor, to answer the second research question (RQ2) and examine whether selected brands are using the hourly factor correctly, we compare the percentage of publications made at different times versus the engagement rate achieved at all times. The results of this analysis are shown in Figure 2. The graph identifies those hours where publications reach the highest engagement, which are 8:00 a.m. (16.3%), 12:00 p.m. (14%) and 1:00 p.m. (10.7%). Consequently, RQ2 is also partially confirmed as it shows that contents published before (8:00 a.m.) and during the working day (12:00 p.m. and 1:00 p.m.) obtain greater engagement. However, we find that ‘peak hours’ where companies published the most are 12:00h (13.1%), 10:00h (12.8%) and 11:00h (9.1%), that is, they do not fully coincide with the ranges of maximum participation. Consequently, despite the high influence of the hourly factor on engagement, selected brands are not taking advantage of its potential to increase follower engagement.

Figure 2: Comparison of publications versus engagement rate by hour in percentages (October 1, 2019-October 31, 2021).



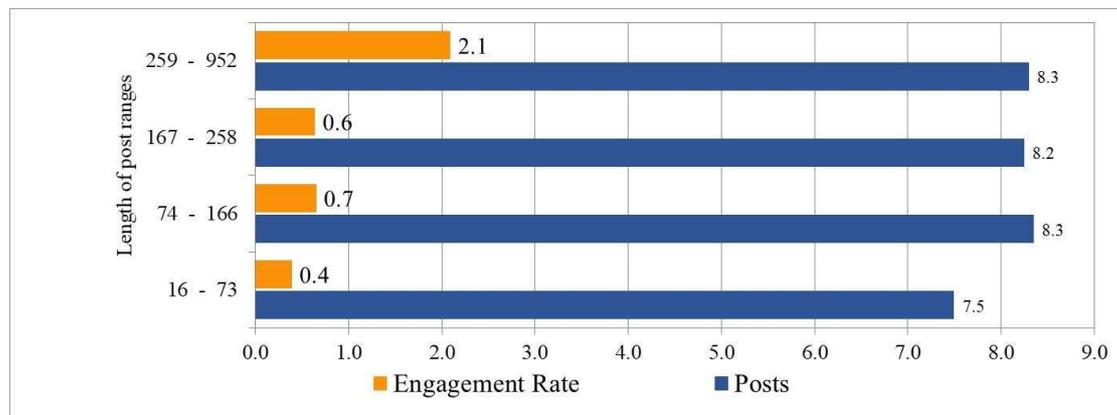
Source: Own elaboration.

Then, we individually analyse the posting hours applied by each brand. In this analysis we observe how Garnier, Nautalia and ONCE display at 8:00 in the morning (time of maximum participation) a number of publications greater than the average of brands. On the other hand, in the second hourly interval with the highest participation (12:00h) only Ikea, Mapfre and Vodafone publish above the average. Finally, almost half of the companies examined schedule their content prior to the first break of the working day (1:00 p.m.) –DGT, ONCE, Orange, Repsol, Seat and Vodafone.

Regarding publication length, after applying Pearson’s linear correlation equation, we obtain a correlation index $r_{xy} = 0.6$, whose p-value is <0.001 . This value confirms the existence of a significant and strong positive correlation between message length and engagement. Due to the high goodness of fit, we can confirm that as the message length increases, so does the engagement.

Hereafter, with the purpose of answering the third research question (RQ3), we try to identify which is the message extension that obtains the most engagement by going through the following phases. First, we calculate the average length across all publications ($N = 14,067$), which corresponds to 166 characters. Second, starting from this mean, we obtain 4 length intervals marked by the standard deviation of a set of values with respect to the mean, represented on the ordinate axis of Figure 3. Finally, the coordinate axis illustrates the comparison between the publication rate and the engagement rate achieved by each range.

Figure 3: Number of character intervals versus engagement rate (October 1, 2019- October 31, 2021).



Source: Own elaboration.

Results show that the 259–952 character interval is the one that achieves the highest engagement rate (2.1) and thus, a higher participation of brand followers. It is also shown how the longest messages, those greater than 73 characters, get more interaction and, in addition, are the most used range by the companies examined (Figure 3) due to which, in line with the results of the correlation analysis, it is not possible to answer affirmatively to RQ3, which questions whether brand messages with longer length receive less engagement. In addition, this analysis allows setting limit recommendations on the post’s extension to achieve more engagement. As a result, the longest messages which exceed 258 characters, are the ones with the highest degree of participation.

5. Discussion and conclusions

This study addresses the purpose of updating knowledge and providing a greater understanding of the efficient management of scheduling and the length of brand content messages to increase engagement within the digital marketing strategy and, to this end, a content analysis was carried out whose results invite reflection.

On the one hand, the results of the first econometric analysis show a positive influence of the following content factors on engagement: daily scheduling ($r_{xy} = 0.4$, p -value < 0.001), hourly scheduling ($r_{xy} = 0.5$, p -value < 0.001) and the length of the message ($r_{xy} = 0.6$, p -value < 0.001), being the latter the trait that presents the highest positive correlation on audience participation. Consequently, the data corroborates the robustness of the proposed analysis to identify the time-related factors (day and time) and the extension in the brand messages that stimulate engagement in social media.

On the other hand, these findings point to a series of useful guidelines for marketing managers to define their social media strategy and decide which content characteristics they should place in posts to improve engagement on Instagram.

5.1. Conclusion I. Posting times on Instagram influence engagement

The results of the first econometric analysis demonstrate a significant influence of the daily schedule of posts on engagement ($r_{xy} = 0.4$). Likewise, the second descriptive analysis confirms RQ₁ regarding the fact that the content that gets the most engagement publishes on working days (Wednesdays and Thursdays). These results coincide with the U&G theory foundations, which postulate that social factors can affect the individual's free choice to interact with media content. In addition, these findings coincide with the postulates of U&G by demonstrating how audience social factors determine their voluntary decision to interact with brands on social media sites, generating time intervals of maximum participation.

In addition, our findings are consistent with recent researches which have used this theoretical perspective and have confirmed how various content factors capture the public's interest and stimulate their interaction. Among these are the audience social factors, which selects certain time frames to interact (Matosas-López & Cuevas-Molano, 2021) and the content characteristics themselves, such as the message length, both influencing the free individual's decision to interact with the brand (Cvijikj & Michahelles, 2013).

Despite the answer to RQ₁ being affirmative, the daily scheduling strategy of the companies studied presents imbalances, as the days in which they publish the most (Monday, Tuesday and Friday) do not coincide with the days that get more followers' interaction. For this reason, it is concluded that these companies are not optimising the daily factor in their content scheduling to drive social media engagement. We would, therefore, be facing a scenario of poor management in the marketing strategy on Instagram. One reason for this contradiction could be a consequence of the beginning of the publication activity coinciding with the start of the working day. In any case, and considering the findings of this study, it is recommended that brand managers develop a scheduling template and previously plan their content to be published mid-week (Wednesday and Thursday).

Furthermore, with respect to the hourly factor, the econometric analysis results show a strong positive influence on engagement ($r_{xy} = 0.5$) and question RQ₂ is partially confirmed, as the hourly interval with the highest participation does not coincide with the working hours but corresponds to the hour prior to working hours (8:00 a.m.). However, the following hourly intervals with greater participation (12:00h and 13:00h) do take place during working hours.

The findings of this research regarding the time factor are in line with the results of studies carried out in similar environments, such as those conducted by Kanuri, Chen and Sridhar (2018) on Facebook, and by Matosas-López and Cuevas-Molano (2021) on Twitter, which revealed that users interact more with scheduled posts during working days and morning hours. On the contrary, our results differ from what is pointed out by Sabate *et al.*

(2014) and Cvijikj and Michahelles (2013) who advised managers to schedule content on Facebook during the evening hours. The reason for this difference may be due to the demarcation of the platform in each work. In this study we delimit the analysis of audience participation on Instagram, the global leader in engagement rate. In other words, this network achieves greater user participation than other social networks. As a consequence, the results of the present investigation could indicate that participation is influenced by the environment of the social media platform.

Regarding the use made of the timing factor by the selected brands, findings show that the time slots of maximum engagement partially coincide with the intervals of maximum publication of the companies, which are 12:00h, 10:00h and 11:00h (from high to low volume). It is relevant to note how the time at which brand followers are most active on Instagram (8:00 a.m.) does not coincide with the 'peak hour' or time of maximum publication activity (12:00 p.m.). One reason for this non-correspondence may be a consequence of the time required by marketing managers for the writing and subsequent publishing of brand posts. Consequently, it is concluded that the potential of the hourly factor is also scarcely used by the brands analysed in their strategy to increase engagement.

Another reason for the high participation in the aforementioned ranges may be due to their coincidence, within Spanish territory, with the working hours, which extend from 9:00 am to 2:00 pm and from 4:00 pm to 6:00 pm. Consequently, content managers on social networks must take into account that fans start the day by informing themselves and commenting on the most recent posts before starting work (8:00 a.m.) and interrupting the day for lunch (12:00h and 13:00h). Likewise, the high participation during working hours (12:00h and 13:00h) may be related to the device type that users employ to access Instagram, since during these hours they are probably connected with the brands through a desktop or laptop computer that facilitates the typing of comments and its interactivity.

For all the above, it is recommended that those responsible for content strategy schedule posts first thing in the day (8:00 a.m.) and prior to the first interruption of the working day (12:00 p.m. and 1:00 p.m.) to improve engagement on Instagram.

In this study, an analysis is also carried out to understand the temporary factors used by companies individually. This reveals the efficient management of both factors (time and day) by the brands DGT, ONCE, Mapfre, Vodafone, Ikea, Nautalia, Orange, Repsol and Seat. ONCE belongs to the industry with the highest engagement rates on Instagram according to the "VII Observatory of brands in social media" by IAB Spain (2019, p. 13). However, there is no evidence of a correlation between the presence of this brand in the observatory by the reputable Interactive Advertising Office (IAB Spain) and the effectiveness of their marketing and communication strategies on Instagram as DGT, Mapfre, Vodafone, Ikea, Nautalia, Orange, Repsol and Seat do not appear in this report as outstanding brands with prominent engagement rates and, nevertheless, they do efficiently apply their content scheduling, increasing follower participation. This analysis provides relevant information with management implications, because companies that use Instagram fan pages as a channel for their marketing and communication strategy must monitor users' behavior to discover content of specific interest to their own followers and build an efficient engagement strategy on this social network.

5.2. Conclusion II. The message length on Instagram is a driver of engagement

Regarding this factor, the first econometric analysis' results corroborate a strong positive influence relationship between message length and engagement ($r_{xy} = 0.6$). In parallel, the second descriptive analysis confirms RQ3, stating that longer content reaches greater audience participation. These results coincide with those obtained in other studies framed in the U&G theory, such as the works of Sabate *et al.* (2014), and Cuevas-Molano, Matos-López

and Bernal-Bravo (2021). The argumentation of these findings, as postulated by these authors, is that a more extensive publication provides a message with richer content.

Additionally, the time investment that users make to read longer content increases the time that user remains “engaged” with the brand. This new measure called ‘time spent’ currently acquires great relevance in professional research to evaluate the brand content effectiveness on social media (IAB Spain, 2020c, p. 18) for two reasons. In the first place, this metric is a fundamental driver to increase the publication visibility as the longer users spend with a piece of content, the more visibility the Instagram algorithm gives it. Second, this increased visibility gives the post a greater chance to engage. Therefore, brand managers on Instagram should not focus on the number of characters, as long as the richness of their content can facilitate a better understanding for the reader, thus positively influencing their interaction.

In summary, in accordance with the findings of the present study, we suggest that marketing managers increase their publications in the central part of the week, prior to working hours and with a longer message length, providing more information and rich content to engage their brand followers.

Our work has some limitations that offer promising avenues for future research. First, a fruitful analysis would be to investigate if our conclusions about user behaviour with brand content coincide with the experience and opinion of individuals through research via a qualitative methodological approach. Second, another recommended study would be to compare the empirical results obtained in different social networks and other content platforms (e.g., websites, webpages, blogs or wikis). Additionally, it would be worth applying this research to a new selection of brands, belonging to other countries and business industries.

To conclude, this study confirms the need to deepen and update the knowledge of which are the variables that affect the efficient content management on social media. Similarly, we hope that the research findings can serve as a helpful guide for managers to predict and improve engagement within the digital marketing strategy.

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