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*Papers*

# HIT THE LIKE BUTTON! Engagement in posts with digital influencers on the Instagram of Brazilian DMOs

## DEIXE SEU LIKE! O Engajamento nas Publicações com Digital Influencers no Instagram das DMOs Brasileiras

## ¡DALE LIKE! Participación de influenciadores digitales en publicaciones de Instagram de DMO brasileñas

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**Keywords:**

DMO.
Digital Marketing.
Instagram.
Digital Influencers.
Data mining.

**Abstract**

In a context of increasing competition between tourist destinations, DMOs face the challenge of positioning them attractively. To this end, these organizations can make use of various communication marketing strategies, including social media, platforms whose effectiveness is measured through engagement. From these channels originate digital influencers, which in recent years have gained greater academic and marketing prominence. Given this theoretical foundation, this research aimed to measure the degree of engagement with publications with influencers on Instagram of Brazilian DMOs, carried out between December 2017 and December 2018. To achieve the necessary results to solve the proposed problem, the data mining technique was used in a sample of 11 Instagram accounts from Brazilian state DMOs, selected after a filtering process. The collected data were treated from a quantitative descriptive approach, having as parameter three main indicators, as follows: (1) total publications, (2) likes and (3) comments. All these indexes were defined based on the literature on engagement. In addition, a t-test was performed between paired samples to verify if there was a significative difference on the means. In general, the results indicated that posts with digital influencers have better results, given the proposed time frame, especially when compared with the indexes of general posts. However, inferential statistics indicated that the differences between means were not relevant. In such a way, the strategy of endorsement by influencers does not seem to produce relevant effects on user interaction with the accounts of Brazilian DMOs. The innovative character of this research stems from the use of the data mining technique to deliver accurate results as to the effectiveness of a rising social media strategy, providing managers with a solid framework for analysis and fostering the field of discussion.

**Palavras-chave:**

DMO.
Marketing digital.
Instagram.
Influenciador digital.
Mineração de dados.

**Resumo**

Em um cenário de expansão da competição entre destinos turísticos, as DMOs se veem frente ao desafio de posicioná-los de maneira atrativa. Para tanto, estas organizações podem fazer uso das mais variadas estratégias de marketing comunicacional, dentre as quais estão as mídias sociais, plataformas cuja mensuração da efetividade se dá através do engajamento. Destes canais, originam-se os influenciadores digitais, que, nos últimos anos, têm ganhado maior destaque acadêmico e mercadológico. Em face a esta fundamentação

teórica, esta pesquisa teve como propósito mensurar o grau de engajamento nas publicações com digital influencers no Instagram das DMOs brasileiras, com recorte temporal entre dezembro/17 e dezembro/18. Para alcançar os resultados necessários para se responder o problema que foi proposto, a técnica de mineração de dados foi utilizada em uma amostra de 11 perfis do Instagram de DMOs estaduais brasileiras, selecionadas após um processo de filtragem. Os dados coletados foram tratados a partir de uma abordagem quantitativa descritiva, tendo como parâmetro três indicadores principais, a saber: (1) total de publicações, (2) média de curtidas e (3) médias de comentários. Todos estes índices foram definidos após a consulta da literatura sobre engajamento. Em adição, foi realizado o teste T entre amostras pareadas a fim de verificar se houve diferença significativa entre as médias. Em geral, os resultados indicaram que as postagens com influenciadores digitais possuem melhores resultados, dado o recorte temporal proposto, sobretudo quando estes são comparados com os índices das postagens gerais. Contudo, as estatísticas inferenciais indicaram que as diferenças entre médias não foram relevantes. De tal modo, a estratégia de endosso dos influenciadores não parece produzir efeitos relevantes sobre a interação dos usuários nos perfis das DMOs brasileiras. O caráter inovador desta investigação decorre da utilização da técnica de mineração de dados para apresentar resultados precisos quanto à efetividade de uma estratégia de mídia social que está em ascensão, oferecendo uma estrutura sólida de análise aos gestores e fomentando o campo de discussão.

**Palabras clave:**

DMO.
Marketing digital.
Instagram.
Influencers digitales.
Minería de datos.

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**Resumen**

En un escenario de expansión de la competencia entre destinos turísticos, DMOs enfrentan el desafío de posicionarlos de manera atractiva. Con este fin, estas organizaciones pueden hacer uso de diversas estrategias de marketing de comunicación, incluidas las redes sociales, plataformas cuya efectividad se mide a través del compromiso. De estos canales se originan los influencers digitales, que en los últimos años han ganado mayor protagonismo académico y de marketing. Dada esta base teórica, esta investigación tuvo como objetivo medir el grado de participación en publicaciones con personas influyentes digitales en Instagram de DMOs brasileños, entre diciembre de 2017 y diciembre de 2018. Para lograr los resultados necesarios para resolver el problema propuesto, la técnica de minería de datos se utilizó en una muestra de 11 perfiles de Instagram de DMOs estatales brasileños, seleccionados después de un proceso de filtrado. Los datos recopilados se trataron desde un enfoque descriptivo cuantitativo, teniendo como parámetro tres indicadores principales, como sigue: (1) publicaciones totales, (2) me gusta y (3) comentarios. Todos estos índices se definieron después de consultar la literatura de compromiso. Además, la prueba T se realizó entre muestras pareadas para verificar si había una diferencia significativa entre las medias. En general, los resultados indicaron que las publicaciones con influencers digitales tienen mejores resultados, dado el marco de tiempo propuesto, especialmente en comparación con los índices de publicaciones generales. Sin embargo, las estadísticas inferenciales indicaron que las diferencias entre medias no eran relevantes. De esta manera, la estrategia de aprobación por parte de los influenciadores no parece producir efectos relevantes sobre la interacción del usuario en los perfiles de las DMOs brasileñas. El carácter innovador de esta investigación se deriva del uso de la técnica de minería de datos para entregar resultados precisos en cuanto a la efectividad de una estrategia de redes sociales en ascenso, proporcionando a los gerentes un marco sólido para el análisis y fomentando el campo de discusión.

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## 1 INTRODUCTION

In order to guarantee the competitive advantage of tourist destinations, some organisational tools are created by the State (Santana *et al.*, 2017). These institutions are often referred to as Destination Management Organisation - DMOs (Sainaghi, 2006; Ritchie & Crouch, 2010). Considering that tourist destinations correspond not only to the national level, but also to the state or local level, the area of activity of these organisations varies according to each organisational structure. One of the main responsibilities of these institutions is the coordination of marketing strategies, aiming to positively position them among actual and potential visitors (Volgger & Pechlaner, 2014).

As in a traditional administrative structure, organisations that manage tourist destinations can also use tools to consolidate marketing strategies. However, its effectiveness is usually dynamic, especially after the expansion of the Web 2.0 (Xiang & Gretzel, 2010). Since marketing resources have been associated with digital platforms, some traditional strategies have been replaced by resources linked to the Internet, for example

social media (Kietzmann, Hermkens, McCarthy & Silvestre, 2011). Thus, it is noted that more and more tourist destinations have been associated with these media (Hays, Page & Buhalis, 2013).

This transition from traditional marketing to online tools has promoted transformations in the communication between companies and consumers (Latorre-Martínez *et al.*, 2014), a fact that was no different in tourism. Marketing strategies, previously unidirectional, were supported by the Web 2.0 and transformed into channels in which there are several possibilities for content production, distribution and sharing (Uşaklı, Koç, & Sönmez, 2017). In these cases, not only companies, but also consumers, may be responsible for disseminating information about products. Regarding tourist destinations, this data generated by users has been used, according to Xiang, Wang, O'Leary and Fesenmaier (2014), as the primary source of information, even overlapping the information officially disclosed directly by the DMOs.

Amid this co-production of content and dissemination of multidirectional information, some users stand out for their attractiveness and popularity on social media (Almeida, Coelho, Camilo-Junior, & de Godoy, 2018). Due to the power of persuasion over the information they disseminate, companies have used these endorsers as a marketing strategy (Cha, Haddadi, Benevenuto, & Gummadi, 2010). Widely known as digital influencers, the role of these endorsers is, above all, to form, or modify, the opinion of individuals (Araujo, Neijens, & Vliegenthart, 2017).

In sum, DMOs are primarily responsible for managing destination marketing (Ritchie & Crouch, 2010; Volgger & Pechlaner, 2014). At the same time, promotion strategies have migrated to the digital world, on which social media is based (Hays *et al.*, 2013). These, in turn, are especially fostered by user-generated content, a context in which digital influencers emerged (Araujo *et al.*, 2017; de Almeida *et al.*, 2018). Following this reasoning, it is possible that, while using digital media as a marketing strategy, DMOs can make use of these influential personalities as endorsers of destinations.

Although the national literature has drawn attention to the relevance of posts with digital influencers on user engagement (Almeida, Coelho, Camilo-Junior & Godoy, 2017), a recent study by Barreiro, Dinis and Breda (2019) points out that this strategy does not seem like it is being valued. Andrade *et al.* (2018), however, argue that the endorsement of these individuals has an important effect on the choice of Brazilian tourist destinations. Still, these research papers have not yet set out to investigate the effectiveness of this strategy for Brazilian DMOs through data mining. Given that, this investigation was developed to measure the engagement of posts with digital influencers on the Instagram of Brazilian DMOs.

## 2 THEORETICAL FRAMEWORK

### 2.1 Destination Management Organisations

In a context of diversity of tourist destinations, the existence of an institution for the management of such destinations is essential (Mihalic, 2000; Santana *et al.*, 2017). Widely known in the literature as the Destination Management Organisation (DMOs), these organisations were conceived with the purpose of promoting the competitive potential of places (Presenza *et al.*, 2005). To do so, they usually create their own identity for destinations and disseminate it among potential travellers (Sainaghi, 2006). Although its initial assignment was to strengthen competitive advantage, it was also noted the importance of managing and controlling the quality of locations, seeking to ensure it in the long term (Mazaro & Varzin, 2008; Mihalic, 2000).

Since these organisations are responsible for the management processes of a destination, their work structure is similar to the one of traditional corporations. Thus, they must act strategically in order to guarantee the interests of destinations (Sainaghi, 2006). However, in these cases there are some peculiarities. The main one is related to the number of stakeholders interested and directly involved in the productive system of the destinations. Since destinations are constituted, above all, by the set of needs of citizens, residents, and entrepreneurs, DMOs must be able to guarantee the combination of interests between the different parties (Paskaleva-Shapira, 2007; Borzyszkowski & Marczak, 2015; Volgger & Pechlaner, 2014).

Generally, DMOs operate at three main levels of geographic coverage. According to the World Tourism Organisation - UNWTO (UNWTO, 2007), organisations are divided into national, regional (or state) and local,

depending on the normative structure of the destinations. According to Santana *et al.* (2017), the management model adopted by the localities can be public, private, or mixed (shared responsibility between the public and private sectors). In any case, these institutions are, in general, responsible for some primary tasks. According to Paskaleva-Shapira (2007), these activities are concentrated on two central axes: internal development, directed at the supply, and external marketing, targeted at visitors.

When presenting a model of competitiveness for destinations, Ritchie & Crouch (2010) discussed a series of basic functions for these organisations. Among them are the guarantee of responsible management focused on well-being, the development of human resources and care for non-renewable resources that can be damaged by tourism. However, not only Ritchie & Crouch (2010), but also Mazaro & Varzin (2008), Presenza *et al.* (2005) and Volgger & Pechlaner (2014), were some of the scholars who pointed to destination marketing as, even today, the main task performed by DMOs. Therefore, it reflects the importance of these organisations as destinations promoters.

## 2.2 Social Media and Engagement

After the merger of marketing with digital resources, users became content producers and distributors (Xiang & Gretzel, 2010), significantly increasing the production of information about goods and services (Ye, Law, Gu & Chen, 2011). In this context, social media, especially known for being multidirectional, have gained popularity (Latorre-Martínez *et al.*, 2014). Presented in various formats, each one of them serves more adequately some types of functionality (Kietzmann *et al.*, 2011). Among the options available are social networks, websites, blogs, discussion forums and sites for sharing audiovisual content (Xiang & Gretzel, 2010). Due to the non-dependence of organisations to acquire knowledge about products in these channels (Wang, Yu & Wei, 2012), users are usually aware of more access to information.

This holding of information can, in some cases, influence the intention to purchase products (Tajvidi & Karami, 2017; Alalwan, 2018). It is not by chance that customers often use the opinions of other users in these channels to act (Latorre-Martínez *et al.*, 2014). Opinions, in turn, can be either favourable or unfavourable to goods and services. There is, therefore, no doubt about the need for organisations to adapt to these platforms. Although some companies still refuse them, Mangold & Faulds (2009) already warned not only about adaptation, but also the need for identifying consumer behaviour in these channels.

According to the above-mentioned authors, the adaption must be carried out in an attempt to engage and influence users' attitudes, due to the lack of control of the content produced. Kietzmann et. al. (2011) added the need to use metrics for monitoring online reputation. When considering the global reach of these channels, performance control seems to be an important resource for the performance of institutions (Uşaklı *et al.*, 2017). With regards to the hospitality industry, particularly, where tourism is included, the scientific debate on its relationship with social media is not uncommon (Cornellia, Putra, Priyambodo & Widyaningsih, 2017; Xiang & Gretzel, 2010; Xiang *et al.*, 2014).

A few years ago, Xiang & Gretzel (2010), for example, gave the first signs that traditional sources of tourism information, for example travel agencies, would lose space for these platforms in travel planning. According to Xiang *et al.* (2014), this is because travellers have sought feedback and reviews from other users, in an attempt to clarify their impressions about tourist products. Social media are used by tourist consumers as sources of information and decision factors about destinations (Xiang *et al.*, 2014).

Due to the intangible nature of the locations, elements such as photos and videos shared on these channels provide important clues for forming the opinion of potential travellers (Latorre-Martínez *et al.*, 2014). In addition, the content produced by tourists after travel experiences, in the form of comments, for example, offers support for consumer choice (Baka, 2016; Ukpabi & Karjaluoto, 2018). Thus, some DMOs have used these platforms (Mariani, Felice & Mura, 2016; Uşaklı *et al.*, 2017) to engage with their actual and potential users.

At a strategic level, this involvement is measured using metrics, based on indicators linked to social media (Kietzmann *et al.*, 2011; Michopoulou & Moisa, 2019). These forms of measurement, according to the authors, reflect the engagement of consumers with organisations through virtual platforms. From a theoretical point of view, engagement is usually discussed as a multidimensional concept, in which cognitive, affective,

and behavioural components are inserted (Jaakkola & Alexander, 2014). In this research, specifically, the emphasis will be placed on the behavioural perspective of the construct, aligning it with the digital world.

Online behavioural engagement has been studied in recent years. In general, it indicates the level of interactivity of users with brands, accessed through social media (Harrigan *et al.*, 2017). Depending on the features offered by these platforms (Kietzmann *et al.*, 2011), the requirements for measuring behavioural engagement can vary. However, according to Jakkola & Alexander (2014), they usually concern the number of followers, number of posts and total comments, likes and shares of the publications. These actions, according to Gómez, Lopez & Molina (2019), reflect the proactive and interactive relationship between customers and organisations.

Although there are practical tools that indicate the degree of involvement of individuals with these platforms, in some cases, according to Takahashi, Fujimoto & Yamasaki (2003) and Khan (2017), it is not possible to fully assess it. Still according to the authors, one of the reasons why this occurs is related to the fact that certain subjects, even if they are users, are passive content consumers, without evident behavioural interaction. Therefore, this audience, in particular, does not produce numerical results. However, these indicators are of high importance, since, according to Michopoulou & Moisa (2019), they help organisations to understand the return on investment in actions linked to social media.

### 2.3 Digital Influencers

On online platforms, a person can be a consumer of data provided by others, while also producing content for their own profile. As such, there is a hybridization of roles between supply and demand, production, consumption, and data distribution, so that the consumer becomes a co-producer (Lipovetsky & Serroy, 2015). On social networks, users display their information as well as their preferences. In addition, they are explicitly connected to their friends and, in doing so, reveal their likely communication patterns. The essential idea is that, by understanding the structure of social media, individual consumers can help implement effective viral marketing strategies, as consumers are also disseminators of their experiences with the service (Katona, Zubcsek, & Sarvary, 2011; Xiang, Wang, O'Leary & Fesenmaier, 2014).

For the creators of the two-step flow theory, Katz & Lazarsfeld (1955), certain people recognised as opinion makers increase their influence when interpreting the information they receive from the media and express it. The fact that mass media messages do not always directly affect the target audience, which is increasingly dispersed, organised in small communities on virtual social networks, makes opinion leaders increasingly important (de Almeida *et al.*, 2018). As such, digital influencers are like offline opinion leaders considered in two-step flow theory. These endorsers can mediate messages and affect communities in the digital environment, so that messages can be disseminated quickly and easily with a potential viral effect (Uzunoglu & Kip, 2014). It is not by chance that they play an important role in the dissemination of goods and services (Teodoro, Alturas & Pinheiro, 2019).

According to Araújo *et al.* (2017), digital influencers are users with above-average ability to influence other members of one or more networks. These endorsers can be characterised as profiles of news, celebrities, or public figures in general, responsible for selecting content to recommend to their followers (Cha *et al.*, 2010). In addition, they can also be defined as subjects that influence many users because they are regularly seeking information and sharing their ideas and recommendations with other users (Mariano, Anjos, Silva, & Santos, 2017). Davies & Oliva (2019), in turn, still add that the success of digital influencers occurs by producing different and attractive content for their audiences.

Companies that consider the Internet as a strategic communication tool have also recognised the power of influential members of that platform, that is, the digital influencers who often share their experiences with brands. These influencers affect the opinions of communities whose members are gathered around similar interests (Uzunoglu & Kip, 2014). The assessment and information of these individuals can also be disseminated quickly and easily with a potentially persuasive effect (Taufique & Shahriar, 2013). Consequently, companies, which is no different when it comes to DMOs, get involved with these endorsers to obtain an authentic and reliable presence among online communities (Uzunoglu & Kip, 2014).

## 3 RESEARCH METHOD

This study was conducted with a quantitative and descriptive approach (Moital, 2015). Following this methodological approach, the following topics will present the population and sample covered by this study, followed by the data collection and analysis procedures.

### 3.1 Population and sample

The population that represents the phenomenon to be investigated by this study is made up of DMOs in the Brazilian territory. Due to the inability to investigate all these organisations, considering their different levels (national, state, and municipal) (UNWTO, 2007), the population was investigated from a sample cut. The sampling method used is non-probability, given the inexistence of a sampling frame that presents all the sample units of the study (Babbie, 1999). However, to guarantee the validity of the sampling process, the judgment technique, already known and legitimised by the scientific community, was used (Babbie, 1999; Malhotra, 2006).

In this case, the sample must be selected based on previously defined criteria, delimited according to attributes deemed as important and consistent with the research topic. Strictly speaking, the criteria defined were: the choice of the sample (DMOs who participated in the research); and the social network used. The sample consisted of state DMOs in the Brazilian territory (Santana *et al.*, 2017). For sample selection, a tapering process was followed. In an initial search on Instagram of Brazilian tourist destinations, it was noted that DMOs at the municipal level have less presence on Instagram, a fact that would make the study difficult. This, therefore, was responsible for the exclusion of these institutions from the sample. However, in December 2018, of the 26 Brazilian state DMOs, only 18 had an official government profile linked to the studied platform. However, only 11 of these used these channels for tourism and non-institutional purposes. These, therefore, were judged to be relevant to be analysed, namely: Alagoas (@turismoalagoas); Amazonas (@visitamazonas); Ceará (descubraceara); Espírito Santo (@descubraespiritosanto); Goiás (@goiasturismo); Minas Gerais (@visiteminasgerais); Pará (@visitpara); Paraíba (@destinoparaiba); Pernambuco (@descubrapernambuco); Rio Grande do Norte (@tudocomecaaquirn), and São Paulo (@saopauloturismo).

Due to the adherence of these institutions to the Instagram platform, the social media selected for this study, it was chosen due to its expansion in terms of active users in recent years, in addition to the high number of digital influencers present in this medium (Sheldon, Rauschnabel, Antony, & Car, 2017). In addition, it is clear that images and videos, Instagram's main resources, are being used favourably by travellers in their travel planning process (Xiang *et al.*, 2014).

### 3.2 Data collection procedures

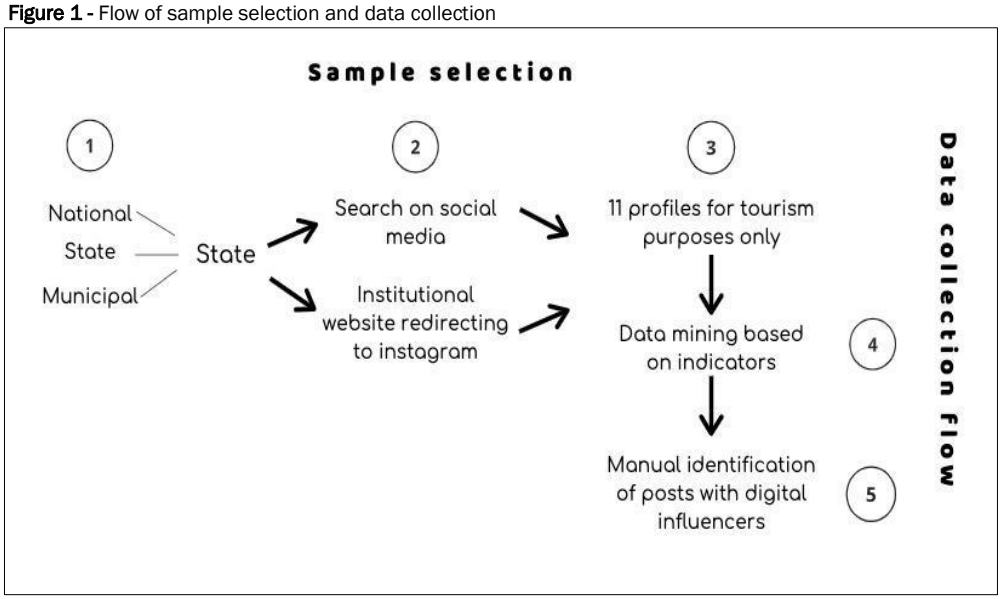
The present study consisted of three data collection phases. The first phase corresponded to the search for the Instagram profiles of the selected destinations. This phase took place during searches carried out on government websites, through which we searched for redirection icons for the investigated social network. Following this procedure, some institutional profiles with official links to DMOs were identified. However, as not all were found through this process, yet another form of identification was used. This, in turn, came from the social network itself. In the search tab, the destination name was entered. Among the results found, each of the profiles was individually investigated to find, in the description of the biography, which corresponded to a government profile.

Then, the second phase corresponds to data mining. This research strategy is considered adequate for the present study, since it uses data that are imported from the social network investigated here (Han, Kamber, & Pei, 2011; Shu, Sliva, Wang, Tan, & Liu, 2017). Therefore, data were extracted and the general outline for each profile was constructed. Thus, some indicators were used, among which are the average likes and comments of the publications and the number of followers. For the mining process, the data were extracted using a program that accesses the information through the Instagram profile link of each DMO, thus having access to the number of likes, comments, and followers of the posts. All these collections were performed

considering the period between December 2017 and December 2018, the complete database is available at: https://data.mendeley.com/datasets/7kzpn3bsb3/3.

Finally, the third phase was the manual identification of publications with digital influencers. Hence, it was intended to compare, based on the indicators, the engagement in the regular posts of the DMOs with those that use digital influencers. To identify these posts, some criteria were used as parameters. At first, the digital influencer should not only be present in the publication, but also tagged by the institutional profile. This happened because, in the sequence, the researchers consulted the tagged profiles that for this research are considered digital influencers – those that have ten thousand followers or more. Figure 1 was prepared to summarise the steps followed in the selection of the sample and data collection.

**Figure 1 -** Flow of sample selection and data collection




**Source:** The authors (2020)

### 3.3 Data analysis procedures

In the extraction of results, quantitative descriptive analyses were performed, at first, based on data mining. The data found in the DMOs Instagram profiles were inferred based on three perspectives: (1) analysis of the scenario of general posts, (2) analysis of the scenario of posts with digital influencers and (3) comparative analysis between both scenarios.

For the treatment of raw data, each scenario was analysed according to the indicators. In summary, the studies by Jakkola & Alexander (2014) and Gómez, Lopez, & Molina (2019) were considered when establishing the users' likes and comments in the posts as indicative variables of engagement. In scenarios 1 and 2, these indicators were measured from the total number of likes/comments per month divided by the total number of publications per month, resulting in quotients called "monthly average likes per post" and "monthly average comments per post".

Scenario 3, in turn, was calculated based on three procedures. The first consisted of excluding months that had no activity from the sample. The second step was based on the following calculation: total number of likes/comments (X) divided by the total number of posts (Y), which equals the monthly average of likes/comments (MLC) per publication (X / Y = MLC). This, in turn, was performed for each DMO. For the third step, a sum of monthly averages (MLC) was performed divided by the number of months with activity (Z), which results in the overall average of likes/comments (MG) per post (∑MLC / Z = MG). Finally, these means were compared with the general scenario and the scenario with digital influencers in order to verify if there was a difference between them.

In addition to descriptive statistics, paired-sample t-test was performed. The intention, in this case, was to verify if the possible difference between means occurred in a statistically significant way, considering sig ≤

0.05. In this case, H0 considered that the means were similar in both scenarios, while H1 assumed a difference between means. For that, the Statistical Package for the Social Sciences (SPSS) was the software used. The equations presented below summarise the inferential statistics, considering L = likes and C = comments:

$$H_{L0}: L_{GENERAL} = L_{DI} \mid H_{L1}: L_{GENERAL} \neq L_{DI}$$

$$H_{C0}: C_{GENERAL} = C_{DI} \mid H_{C1}: C_{GENERAL} \neq C_{DI}$$

As described, an overview of engagement in posts by Brazilian DMOs was found, with emphasis on those using digital influencers.

## 4 PRESENTATION AND DISCUSSION OF RESULTS

Each investigated DMO was initially analysed in isolation, considering the two intended scenarios (general posts and posts with digital influencers). Subsequently, the metrics were compared, contrasting both scenarios. For purposes of temporal contextualisation, it is important to point out that the results described here were collected in February 2019.

### 4.1 General description of the samples

The profiles were analysed according to general metrics, identifying the total number of followers and published posts. There is no standard regarding the total number of followers, with a variation between 2,896 followers in the profile of São Paulo and 49,552 in the profile of Minas Gerais (Table 1). This may indicate that, although these organisations operate in the same segment, the level of engagement and use of social media is different. There is a discrepancy in the number of publications made by destinations. While Ceará presented only 255 posts, until data collection was finished, Espírito Santo obtained 2,579, these being the DMOs with the lowest and highest number of posts, respectively.

**Table 1 -** General summary of the analysed profiles

| DMO | Total number of followers | Total number of posts | Proportion of followers per post |
|---|---|---|---|
| @visiteminasgerais | 49,552 | 1,417 | 34.96 |
| @turismoalagoas | 40,442 | 1,478 | 27.36 |
| @descubraoespiritosanto | 30,020 | 2,579 | 11.64 |
| @descubrapernambuco | 25,639 | 1,397 | 18.35 |
| @descubraceara | 21,841 | 255 | 85.65 |
| @visitamazonas | 11,005 | 824 | 13.35 |
| @goiasturismo | 10,801 | 1,174 | 9.21 |
| @visitpara | 5,894 | 673 | 8.75 |
| @tudocomecaaquirn | 5,123 | 381 | 13.44 |
| @destinoparaiba | 3,108 | 2,077 | 1.49 |
| @saopauloturismo | 2,896 | 448 | 6.46 |

**Source:** The authors (2019)

As noted, there is no direct link between the number of posts published and the number of followers. Espírito Santo, for example, destination with the largest number of posts, does not have the largest number of followers, but Minas Gerais does. The following sections will show the results of the level of engagement in general posts.

### 4.2 Analysis of engagement in general posts

Regarding engagement in publications in general, the results are presented and discussed in terms of monthly performance, with metrics of observation, monthly averages of likes and comments per post. To reach this indicator (I), the calculation was performed according to the following numerical equation: total likes/comments per month (XM), divided by the total number of publications per month (PM), with the indicator XM / PM = I. In order to facilitate the reader's understanding, the months with the highest and lowest

monthly results were highlighted divided by tourist destination (see Table 2). It is worth mentioning that the months in which the result was equal to zero were not considered, since that these periods of inactivity have no analysis value for this research.

**Table 2 -** Monthly analysis of engagement in general posts

| DMO | Engagement indicator (month with less engagement) | | Engagement indicator (month with more engagement) | |
|---|---|---|---|---|
| | Likes | Comments | Likes | Comments |
| @turismoalagoas | 207.47 (October/18) | 2.73 (September/18) | 422.31 (February/18) | 8.41 (April/18) |
| @visitamazonas | 54.85 (December/17) | 1.39 (January/18) | 245.79 (November/18) | 5.79 (November/18) |
| @descubraceara | 174.75 (June/18) | 0.87 (June/18) | 648.07 (December/17) | 8.55 (October/18) |
| @descubraoespiritosanto | 172.32 (June/18) | 2.16 (October/18) | 432.78 (May/18) | 8.28 (May/18) |
| @goiasturismo | 32.61 (December/17) | 0.63 (October/18) | 136.16 (June/18) | 4.73 (June/18) |
| @visiteminasgerais | 818.02 (February/18) | 11.27 (February/18) | 1.414.89 (July/18) | 19.67 (October/18) |
| @visitpara | 107.74 (June/18) | 1.35 (December/1) | 169.24 (March/18) | 5.05 (November/18) |
| @destinoparaiba | 64.02 (December/18) | 0.82 (October/18) | 128.57 (January/18) | 3.35 (December/17) |
| @descubrapernambuco | 229.50 (October/18) | 2.4 (March/18) | 408.46 (January/18) | 6.26 (November/18) |
| @tudocomecaaquirn | 49 (December/17) | 0.5 (September/18) | 853.62 (June/18) | 7.62 (June/18) |
| @saopauloturismo | 37.5 (June/18) | 0.12 (May/18) | 111.95 (December/18) | 2.11 (November/18) |

**Source:** The authors (2019)

In relation to general posts, it is not possible to perceive a linearity regarding the months with the highest and lowest engagement of likes in the publications of DMOs. Table 2 shows that tourist destinations have different results regarding the monthly effectiveness of their publications. However, some observations are in order. At first, the month of June/18 is shown as the period of lowest engagement in the sample, representing 30.76% of this. In addition, emphasis should be given to Minas Gerais, which has the best engagement rate based on likes. It is also possible to highlight that there is no monthly progression in the number of likes, since some profiles show more expressive numbers in previous months and more concise numbers in later months. This occurs, more precisely, in the profiles of Alagoas, Ceará, Espírito Santo, Pará, Pernambuco. and São Paulo. This situation is in line with Takahashi, Fujimoto, & Yamasaki (2003) and Khan (2017), who state that there is a difficulty in measuring the interaction of users and followers due to passive consumption.

Such results indicate that destinations should be aware of the decline in the engagement of likes in their publications. For their Instagram accounts to continue to be used as effective social media strategies, it is necessary to recognise that the indicators show a decreasing participation of users, measured by engagement. It must be emphasised that one of the main differences between social media and other communication channels is the co-participation of consumers (Ye, Law, Gu, & Chen, 2011). Content producers are important components for the tool's success (Latorre-Martínez *et al.*, 2014), and should be recognised as such.

Like the engagement indicator based on likes, comment rates also do not show a continuous monthly progression in general posts. Of the 11 profiles considered in the sample, five of them (Alagoas, Espírito Santo, Goiás, Pará, and Rio Grande do Norte) demonstrated that the number of comments per post decreased during the studied period. In addition to being in line with the previous finding, this result can also be worrying for DMOs, since, according to Tajvidi & Karami (2017), the opinion of other users is an important component

in the process of choosing goods and services, which is no different when it comes to destinations (Xiang *et al.*, 2014; Ukpabi & Karjaluoto, 2018).

### 4.3 Analysis of engagement in posts with digital influencers

Initially, it should be noted that Instagram in São Paulo was disregarded from the analysis, since publications with digital influencers were carried out by this DMO in only one month, within the investigated period. Accordingly, there were no values for the purposes of monthly analysis. As in the general scenario, specific publications with these endorsers also do not show a pattern regarding the months with less effectiveness in engagement of likes. However, the month of December seems to be the period with the best results in a large part of the sample, as shown in Table 3. Again, emphasis should be given to Minas Gerais, because its results of engagement in publications with influencers are much higher than the other profiles. This, according to Gómez, Lopez, & Molina (2019), shows a proactive and interactive association of users and followers with DMOs. In addition, the results indicate, once again, the lack of progression in the monthly average of likes.

**Table 3 -** Monthly analysis of engagement in posts with digital influencers

| DMO | Engagement indicator (month with less engagement) | | Engagement indicator (month with more engagement) | |
|---|---|---|---|---|
| | Likes | Comments | Likes | Comments |
| @turismoalagoas | 269 (June/18) | 3 (April/18) | 660.25 (February/18) | 15 (March/18) |
| @visitamazonas | 111 (June/18) | 0,66 (July/18) | 311 (April/18) | 2,6 (March/18) |
| @descubraceara | 493.83 (November/18) | 7 (December/18) | 587.33 (December/18) | 8 (November/18) |
| @descubraoespiritosanto | 209 (February/18) | 6 (December/17) | 766.67 (May/18) | 19 (June/18) |
| @goiasturismo | 21 (May/18) | 1.67 (May/18) | 55,60 (May/18) | 3,5 (August/18) |
| @visiteminasgerais | 616.5 (December/18) | 7 (December/18) | 1,426.1 (November/18) | 21 (February/18) |
| @visitpara | 287 (February/18) | 2 (December/17) | 138 (December/17) | 8 (February/18) |
| @destinoparaiba | 49.5 (April/18) | 0.5 (April/18) | 376 (December/17) | 17 (December/17) |
| @descubrapernambuco | 129 (December/17) | 1 (January/18) | 610 (April/18) | 16 (April/18) |
| @tudocomecaaquirn | 93.67 (October/18) | 0.67 (October/18) | 915.83 (June/18) | 12.17 (June/18) |
| @saopauloturismo | - | - | - | - |

**Source:** The authors (2019)

The next indicator was the average of comments. As with the general posting scenario, there was also no month with greater or lesser expressiveness regarding user engagement. Preliminarily, it is possible to state that, once again, there was a decrease in engagement, now measured from the average of comments. Although the endorsement strategy, by making use of influential personalities and opinion leaders (Uzunoglu & Kip, 2014), indicates the more effective participation of some users, this does not imply, based on the results presented by the sample, a continuous increase in participation.

### 4.4 Comparative analysis of general posts versus posts with digital influencers

This section presents the scenario of the posts of each DMO in the studied period. For the presentation of Table 4, each variable (total posts in the period, total posts with DI) and the ration of posts with DI were summed up. In the last line are the results of the sum of all publications, both general and DI, and the proportion of the latter is calculated. Still in this table, it is possible to see how many posts each DMO made in the period, the most significant numbers were those of the profiles @destinoparaiba, with 572 posts, @descubrapernambuco, with 429, @goiasturismo with 419, and @visitamazonas with 403.

Those with the least posts were @descubraceara, with only 94 publications, @tudocomecaaquirn, with 120, @visitpara, with 188, and @descobraespiritosanto, with 232. In total, there were 3,350 posts in the 13 months analysed. The scenario of the number of publications with digital influencer had the most expressive results, in decreasing order, the profiles of Paraíba, with 49 posts, Minas Gerais, with 39, Rio Grande do Norte, with 22, Alagoas and Amazonas presented the same number, 18, Espírito Santo, with 17. According to Uzunoglu & Kip (2014), this can thus bring a positive endorsement in the search for obtaining an authentic and reliable presence on social media, through digital influencers. The Pernambuco profile, even having the second largest number of posts in total, presented only 13 posts with DI. Ceará had 9, Goiás, with 8, and, finally, Pará, with 2 posts.

**Table 4 -** Comparison of number of posts

| DMO | Total number of posts (General) | Total number of posts (DI) | Ratio of posts with DI only |
|---|---|---|---|
| @turismoalagoas | 335 | 18 | 5.37% |
| @visitamazonas | 403 | 18 | 4.47% |
| @descubraceara | 94 | 9 | 9.57% |
| @descubraoespiritosanto | 232 | 17 | 7.33% |
| @goiasturismo | 419 | 8 | 1.91% |
| @visiteminasgerais | 298 | 39 | 13.09% |
| @visitpara | 188 | 2 | 1.06% |
| @destinoparaiba | 572 | 49 | 8.66% |
| @descubrapernambuco | 429 | 13 | 3.03% |
| @tudocomecaaquirn | 120 | 22 | 18.33% |
| @saopauloturismo | 260 | 2 | 0.76% |
| GENERAL | 3,350 | 197 | 5.88% |

**Source:** The authors (2019)

In Table 5 it is possible to observe that the highest average belongs to Minas Gerais, holding 1,136.47 and with digital influencers 1,104.85, this general average being more than double the second place, which is Ceará. Still in the case of Minas Gerais, it is noted that even with the highest average (general and with DI), engagement with digital influencer is less than in the general scenario. It can be inferred that in the cases of the presence of DIs in publications, the followers of this profile are part of the group of passive followers mentioned by Khan (2017). In @sãopauloturismo, there is the most expressive result when not engaging with DIs. In the general scenario, an average of 74.92 is seen, with DI this number drops to 14.05. São Paulo is a point outside the curve in this research. Goiás also has a significant number with an average of 80.66 and drops to 42.03 with DI.

All other profiles showed greater engagement in the average of likes with DI. The results that stand out, with the biggest difference between the variables, are @turismoalagoas, where the general average is 301.36 and in the context with DI the number grows to 445.20. Another highlight is @descubraespiritosanto, with its general average of 290.18 and with DI increases to 418.40. As stated by Khan (2017), likes represent an expression of esteem for the content and the number of this variable represents its popularity. As stated by Michopoulou & Moisa (2019), volume metrics are related to numbers, in this case the likes, @visitminasgerais and @descubraceara were the ones that reached the highest numbers. The lowest numbers belong to @saopauloturismo and @goiasturismo.

Regarding the average of comments (Table 6), the scenario where the average DI is lower than the general, are the profiles of the following DMOs: Minas Gerais (general 14.52 - DI 13.29), São Paulo (general 1.05 - DI 0.0) and Goiás (general 2.61 - DI 2.39), a fact that also happened in the previous table. This list also includes Amazonas (general 3.09 - DI 1.29). In the scenario in which the numbers were higher in the average with DI, Espírito Santo (general 4.64 - DI 11.36) stands out, and Paraíba (general 1.76 - DI 4.44). According to Khan (2017), comments vary in length and express the opinion of users on the topic. In this context, it can be seen that the presence of DIs interferes in more than half of the profiles (n = 7) in a positive way, increasing engagement in comments, from which followers generate content about the destination through their opinions.

**Table 5 -** Average of likes per post

| DMO | Average of likes (General) | Average of likes (DI) |
|---|---|---|
| @turismoalagoas | 301.36 | 445.20 |
| @visitamazonas | 147.22 | 179.63 |
| @descubraceara | 487.36 | 540.58 |
| @descubraoespiritosanto | 290.18 | 418.40 |
| @goiasturismo | 80.66 | 42.03 |
| @visiteminasgerais | 1,136.47 | 1,104.85 |
| @visitpara | 214.99 | 260.02 |
| @destinoparaiba | 90.44 | 162.80 |
| @descubrapernambuco | 291.31 | 334.16 |
| @tudocomecaaquirn | 214.99 | 263.43 |
| @saopauloturismo | 74.92 | 14.5 |
| GENERAL | 302.71 | 342.32 |

**Source:** The authors (2019)

**Table 6 -** Average of comments per post

| DMO | Average of comments (General) | Average of comments (DI) |
|---|---|---|
| @turismoalagoas | 4.54 | 7.19 |
| @visitamazonas | 3.09 | 1.29 |
| @descubraceara | 6.09 | 7.5 |
| @descubraoespiritosanto | 4.64 | 11.46 |
| @goiasturismo | 2.61 | 2.39 |
| @visiteminasgerais | 14.52 | 13.29 |
| @visitpara | 3.40 | 3.98 |
| @destinoparaiba | 1.76 | 4.44 |
| @descubrapernambuco | 4.05 | 5.90 |
| @tudocomecaaquirn | 3.13 | 3.97 |
| @saopauloturismo | 1.05 | 0.0 |
| GENERAL | 4.44 | 5.58 |

**Source:** The authors (2019)

As suggested by Taufique & Shahriar (2013) and Khan (2017), it is common that only a small portion of followers interact through comments and likes. While most followers just absorb the content, without generating any volume metrics described by Michopoulou & Moisa (2019). Therefore, it is observed that posts with DIs, in their majority, make passive followers (who do not generate metrics) become more active, generating numbers and increasing engagement in relation to the destination.

### 4.5 Differences between means in paired samples

As described in the methodological procedures, t-test was performed with the aim of verifying whether there were statistically significant differences between the means of likes (general and with influencers) and comments (general and with influencers) of the DMOs. For this purpose, the parameter used as a reference was sig ≤ 0.05. The results described in Table 7 summarize the indexes resulting from the test.

**Table 7 -** Paired samples t-test

| | Paired differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. deviation | Std. error mean | Confidence interval of the difference (95%) Lower | Upper | | | |
| Average of likes in the year (GENERAL); Average of likes in the year (DI) | -39.609 | 64.299 | 19.387 | -82.806 | 3.587 | -2.043 | 10 | 0.068 |
| Average of comments in the year (GENERAL); Average of comments in the year (DI) | -1.139 | 2.424 | 0.731 | -2.768 | 0.489 | -1.557 | 10 | 0.150 |

**Source:** The authors (2020)

As it is possible to notice in the sig values, both pairs of variables, referring to likes and comments, did not result in statistically significant indices. In such a way, it was possible to reject $H_{L1}$ and $H_{C1}$ while $H_{L0}$ and $H_{C0}$ were confirmed. In other words, the difference between averages in the general scenarios and with digital influencers was not striking, even though the descriptive results showed different numbers. This indicates that the influencer endorsement strategy does not produce an effective engagement on the Instagram of Brazilian DMOs. Even though these endorsers are considered opinion makers and persuasive leaders among their online communities (Araújo *et al.*, 2017; de Almeida *et al.*, 2018), they seem to be an inefficient strategy in terms of user interaction in the profiles of organisations.

At the same time, it is possible that this result is linked to the passive characteristic of some users of social networks (Khan, 2017). That is, these individuals tend to be only consumers of the posted content, so that they do not interact with the profiles. This absence of indexes can be particularly harmful for DMOs, since there is, therefore, a shortage of metrics to be analysed by them. These indices, however, should be used as a basis for verifying the strategy's effectiveness (Jakkola & Alexander, 2014; Harrigan *et al.*, 2017). Since there are no indicators for likes and comments, it is not possible to predict whether the strategy of digital influencers as endorsers has a return on investment.

## 5 CONCLUSIONS

The results of this research indicated, in principle, that there is no standard regarding the average of likes and comments of the DMOs in general publications, since the resulting indexes show a lot of monthly variation. At the same time, it was also evident that the numbers do not show a progression over the months, and there may be indications, therefore, that there is no continuous marketing effort to consolidate the good results. This goes in the opposite direction to what scholars and digital marketing experts propose, since they often emphasise the importance of maintaining a constant marketing strategy.

With regard to posts with digital influencers, specifically, once again, the results of the study indicated that there is no linearity in the indexes. Once more, the profile of Minas Gerais appeared to stand out from the rest, since its monthly averages of likes and comments per post were the most effective and significantly more expressive than in other tourist destinations. Although this DMO has the best engagement results in the analysis of general posts and posts with digital influencers, the comparative analysis positions it within the smaller group of destinations in which the use of endorsement does not prove to be as significant in terms of participation.

This leads us to believe, therefore, that the use of influencers as a social media strategy may not be as significant in cases where DMOs already have high engagement results. This finding, in turn, results in one of the main differences of this research. Finally, it was also noted that the profiles of DMOs have an average of likes below their number of followers, indicating that most of their followers are still passive. As predicted by some scholars, such as Taufique & Shahriar (2013), Khan (2017), etc., they only consume the content, without formal interaction with likes or comments.

In sum, the descriptive results showed that publications with influencers are more effective in terms of user participation. However, inferential analyses suggested that the differences between means are not statistically relevant. Thus, although there is an increase between the indexes when comparing posts with and without influencers, the findings of this study give evidence to conclude that this endorsement strategy does not seem to produce significant effects on user engagement with DMO Instagram accounts. Although some previous works (Pedroni, 2016; Hwang & Zhang, 2018) have suggested that endorsers can influence consumer choices, digital influencers have had no effect on the interaction attitude on social networks of the destinations that composed the study sample.

### 5.1 Managerial implications

Through the results found by this research, it was possible to point out some striking implications for destination management organisations. At first, attention is drawn to the fact that the use of digital influencers as endorsers of destinations does not seem to have any impact on user interactivity. This may present a risk to these institutions, since the absence of relevant metrics does not demonstrate the effectiveness and,

therefore, the profitability of this strategy. Thus, once destinations choose to select these advertisers, they need to do so through detailed and assertive planning. In addition, it is suggested to add other marketing techniques to the endorsement with the purpose, above all, to increase the levels of user interaction. This is the case, for example, of relationship marketing, a tool through which DMOs, in conjunction with digital influencers, can encourage engagement via likes and comments. It is also necessary to consider that these implications may be particularly important for organisations whose indexes of social networks are not high yet.

### 5.2 Limitations and suggestions for future research

As in every study, this research also had some limitations, although they did not compromise the achievement of the proposed objective. At first, it is possible to consider as a limitation the difficulty of accessing the official Instagram accounts of DMOs, in order to consider them in the sample. In addition, there is also the absence of more detailed information to justify certain occurrences, such as the inclusion of Minas Gerais in the group of destinations where the endorsement is not so significant, although this destination has shown the most expressive engagement results. Considering that, it is suggested that future research should focus on qualitatively investigating the publications made by these DMOs, covering the discussion initiated here. It is possible, therefore, to identify the type of these publications, given the various possibilities of content on Instagram, such as photos and videos. In addition, it is also possible to find out which digital influencers are most used by destinations, since, as suggested by the literature, it is possible to find a variety of celebrities online.

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