EXTENDED ABSTRACT

ANALYSIS OF PHOTOGRAPHS AND VIDEOS OF INSTAGRAM FOR THE CREATION OF A POPULARITY RANKING OF TERRITORIES AND DESTINATIONS

Assumpció Huertas
Universitat Rovira i Virgili. Tarragona
sunsi.huertas@urv.cat
https://orcid.org/0000-0001-6684-4220

Xabier Martínez-Rolán
Universidade de Vigo
xabier.rolan@uvigo.gal
https://orcid.org/0000-0002-7631-2292

ABSTRACT

Most social media allow the sharing of photos and videos on their platforms. In addition, Visual Social Media (VSM), which specialize in sharing photos and videos, has proliferated largely, achieving great interest and impact among audiences. For this reason, photos and videos have become important tools for the promotion of tourist destinations. In fact, Instagram is the photo and video sharing platform with the fastest growing VSM in recent years.

Rankings of the Spanish or the World most photographed cities in Instagram published on the Internet show which Spanish cities or which cities in the World are the most popular in this medium. Nevertheless these existing rankings only measure the number of photographs taken and do not take into account either the videos, the reactions got by the publications among the users, or the deviation that the size and the population of a territory can suppose in these figures. That is exactly why the study aims to create a more suitable analysis index to measure the popularity of Instagram destinations through the analysis of photographs and videos shared by users.

Based on geo-referencing, the objectives of this research are: 1- to analyze the photographs and videos of users of certain destinations labelled in Instagram to know the volume of publications, when are published and what interactions they generate between users; and 2- taking into account these previous variables of analysis and the number of population of the cities, to create an impact factor through an algorithm that allows us to construct a ranking to assess which destinations achieve greater popularity and image in Instagram by means of the photographs and videos generated by users.

The sample was limited to Spanish cities with more than half a million population, such as: Barcelona, Madrid, Malaga, Seville, Valencia and Zaragoza. The aim was to select destinations that would generate a high volume of publications of geo-referenced

photographs and videos from the users, enough to produce a ranking with a high volume of data and great reliability.

Due to the huge number of photographs and videos obtained, the analysis period was limited to two calendar weeks at two very different times of the year: one week from 11 to 17 December 2017 and another week from 4 to 10 June 2018. In this way, it was possible to study the weekly trend in winter and summer without specific interference derived from national or local festivities. The total sample comprised 360,650 publications.

The variables analyzed in this study are: 1- the volume of publications according to the type of content published (if they are photographs or videos); 2- the reactions or interactions that these user publications receive from other users, specifying whether they are visualizations, likes and comments; 3- the date of publication of these contents and the temporary distribution of these publications; and 4- the Impact Factor in Instagram for the creation of the ranking of popularity of the territories or destinations.

The impact factor in Instagram (IFI) is a methodological tool developed for this study based on the creation of an algorithm that enables to get a ranking of the most popular destinations in Instagram through the analysis of photographs and videos published by users. The algorithm uses and relates the variables of the study. Specifically, it relates the daily average of geo-referenced publications and the interactions received by users (reproductions, likes and comments) with the number of inhabitants of the city.

The algorithm created is defined in the following formula:

$$IFI = Daily\ average\ (P + R + L + C) \div Pop$$

Where P= the photographs and videos published by users for a certain destination, R= the number of reproductions or visualizations only of the published videos L= the number of likes got by the set of publications (photographs and videos), C= the number of comments got by the set of publications (photographs and videos) and Pop= the population of the destination.

This study, which analyses the popularity of destinations through photographs and videos published by users in Instagram, has proved the importance of taking into account the volume of population. However, this study has also confirmed that some destinations with fewer inhabitants than others can get more publications of photographs and videos, as Barcelona or Seville. This evinces that they are more attractive destinations to achieve publications, they have a greater number of tourists or their audiences are also more active in Instagram.

The study has also shown the importance of users' reactions to the publications of photographs and videos to measure their popularity. These reactions really prove the success of the publications through the expression of interest, liking and participation of users. The reactions have been analyzed and taken into account for preparing the IFI, showing their importance in assessing the popularity and image of the territories. An example of this is Valencia, which although Seville surpasses it in number of publications, gets more reactions from users, both in likes and in number of comments. This reveals the high popularity and image of the destination and its position in the ranking.

The study also indicates that the Impact Factor in Instagram (IFI) is a much more appropriate index to measure the popularity of destinations through publications of photographs and videos of users in Instagram than the simple volume of publications. In addition, it is also key tool for the creation of popularity rankings and it is applicable to many destinations.

Given that users' photographs and videos in social media generate destination image, the Impact Factor in Instagram (IFI) identifies the position of destinations created in the minds of individuals. This is a great contribution for the tourism sector and for the management of destinations.

The relevance of this study and the IFI contribution for the tourism sector is twofold. On the one hand, it can be seen that tourism, leisure and the attraction of destinations influence both the publication of photographs and videos and the reactions of users. On the other hand, this factor (IFI) also identifies the destinations that are more popular and attractive and therefore will get more visitors. As a consequence, the IFI and the ranking of popularity are of great interest to the Destination Marketing Organizations (DMOs), because they allow them to know the position of the destination in the minds of users, which is determinant to being more attractive and more visited.

The study also corroborates that Instagram is an important social media and a powerful tool to create the image and popularity of destinations and to achieve good positioning in the minds of users, as other authors have previously stated. Therefore, DMOs should consider the measurement of the impact of destination popularity through the IFI for the management of destinations.