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The tourism effect of President Trump's participation on Twitter

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ABSTRACT

This research analyzes the effect of President Donald J. Trump's participation on Twitter on the performance of the United States as a tourism destination as reflected in the market value of tourism the country's tourism industry. Based on the effects that brand associations have on brand image and brand knowledge, this research proposes a conceptual model whereby a destination's association with a public figure might lead this personality's participation in social media to have an effect—derived from the resulting social media sentiment—on consumers' destination's brand knowledge and, consequently, on the incoming flow of travelers to the destination and on the tourism market value. The empirical application carried out on the tweets that the President of the United States posted over more than 150,000 trading minutes shows that the participation of public personalities in social media can have repercussions on the market value of their country's tourism industry.

1. Introduction

The United States has witnessed a decrease in visitor numbers in recent years – a decline in the performance of the United States perhaps prematurely dubbed in the travel industry as the "Trump Slump" (see for example, Lane, 2018). While such conclusions make attractive newspaper headlines, they are rarely based on a thorough examination of all factors that tend to affect visitation numbers. The destination performance of a country is a complex abstraction that is impacted by a wide range of drivers including, but not limited to, the political leader of a country (Culbertson and Chen, 2013; Mossberg & Kleppe, 2005). Moreover, the leader of a country – which in the case of the United States is the president – can be, in itself, a multifaceted label when one considers the many dimensions that constitute political leadership. In this study we investigate the effect of one very specific aspect of Donald J. Trump's presidency – his use of Twitter – on the performance of the United States as a travel destination as reflected in the market value of the tourism industry of the country.

From a tourism marketing perspective, every single interaction between tourists and the destination has the potential to be determinant for tourist decisions. Especially relevant in this context are the inputs that people collect – whether conscious or unconscious - before the trip. The image that people form of a place may at times be a consequence of a structured search for information (Vinyals-Mirabent, Kavaratzis, & Fernández-Cavia, 2019), but can also result from a series of stimuli received over the time. These stimuli that can be shaped, for instance, by the scenery portrayed in a movie (Rittichainuwat & Rattanaphinanchai, 2015), through a conversation with a friend, or by exposure to mass media.

The advent of social media in the last few years has fostered a new platform for sharing of all types of information, including information about tourism destinations. The social media activity generated by public personalities from a certain place - directly by themselves or indirectly by others (Barcelos, Dantas, & Sénécal, 2019), also has the potential to mold public opinion. The actions of actors, athletes or politicians are scrutinized by myriads of people. One would expect therefore that the appearances of these public figures in the mass and social media can have an influence on the image formation of the city, region or country with which these figures are associated (Lee, Bai, & Busser, 2019). This is perhaps the reason that actors and athletes are so frequently contracted as part of promotional campaigns to enhance the image of destinations (van der Veen & Song, 2014) – the celebrity message carries immense weight. In fact, Lewis, Kerr, and Burgess (2019) claim that for a marketing campaign to communicate the proper message to a specific target market, destination marketing organizations should proactively seek endorsements and placements in popular culture. Politicians too are also part of the brand of the place that they represent and consequently, they too can have an effect on destination image formation, and in turn on the travel decisions (Rawson, 2007; Zavattaro & Fay, 2019). As national leaders, the potential effect that presidents and prime ministers have on destination image and incoming tourism flows is likely even more significant than that of other

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celebrities. This is because what national leaders say and do lay the groundwork for the path their countries are taking. As Rawson (2007) argues, the political brand of a nation is a critical element of the nation's brand as whole, with the former having the potential to have a significant impact on the overall brand image of a country.

The president of the United States of America is perhaps even more prominent and more influential than any other politician on the global political landscape. As the head of the country with the largest economy, the highest military spending and arguably the most authority to dictate world policy, the position of the US president is extraordinarily unique. Often referred to using colloquiums such as "leader of the free world", the person occupying the seat of the US president may be one of the most globally scrutinized politicians on the planet.

Although there is an abundance of literature on the immense power that celebrities wield in influencing people, much of the impetus of this paper lies in two studies - the first being a research paper by Zavattaro and Fay (2019), and the second, an analysis of a more applied nature performed by the US Travel Association (2018). While the former is concerned with measuring the effectiveness of "Brand USA" on promoting the country abroad, the latter concludes that there has been a reduction in inbound international travelers to the US since President Trump took office. Stemming from these two studies, we examine in the present study the effect of the US President's participation on Twitter on the performance of the United States as a tourism destination as measured by the market value of its tourism industry.

President Trump is known to make an intense use of Twitter. His use of social media during his 2016 election campaign has in fact been cited as one of the factors that led to his ascendancy into the White House (Khan, 2016; Yu, 2016). At times, the president's tweets are posted as part of a "tweetstorm" the intent of which may be to generate new stories and spread his narrative (Wells et al., 2016). The style of his tweets has been described as informal, conversational and grandiose (Ahmadian, Azarshahi, & Paulhus, 2017). Moreover, his tweets often involve attacks on others, and his conduct on Twitter suggests that he is not concerned about violating accepted standards of political correctness (Buccoliero, Bellio, Crestini, & Arkoudas, 2020).

The president's activity on the Twitter platform is publicly spread and constantly provided to the market. At the same time, the market value of firms reflects discounted expectations about future performance, and according to the *efficient market hypothesis*, shareholders incorporate all new information to make their decisions (see Fama, 1970; Fama, Fisher, Jensen, & Roll, 1969; Jensen, 1978; Malkiel, 1989). Certainly then, that the president's tweets might affect the stock market is a prospect that warrants consideration, and it is indeed one that has received some interest. Analysis conducted by Bank of America suggests some correlation between the daily frequency of the President Trump's tweets and the firm's market values (Franck, 2019). The tone of his tweets also matters - Born, Myers, and Clark (2017) find not only that the president's tweets can result in statistically significant effect on the stock market, but that positive content in his tweets elicits an increase in market value, whereas negative content elicits a decrease. Given these findings it is perhaps reasonable to expect too that different industries might be asymmetrically affected depending on the particular topic and sentiment underlying each tweet.

In this paper, we are concerned with one specific industry – the US tourism industry, the performance of which is indicative of the performance of the United States as a tourism destination. Stemming from the propositions of the aforementioned efficient market hypothesis, we deduce that the effect of President Trump's tweets on the image of the US as a tourism destination would be reflected in the market value of the country's tourism stocks. Although we provide a more detailed discussion of the strengths of the methodology used in the study shortly, we note here that in using market value as a destination performance metric – an indicator which follows from the efficient market hypothesis – we are able to implicitly disentangle the effects of the President's tweets from the other possible drivers of destination performance.

The relatively short word limit of tweets (140 words before September 2017 and 280 after that date) enables a quick and efficient diffusion of information, and thus provides a platform for information sharing in almost real time. In fact, the speedy communication is regarded as one of the major reasons for Twitter's success (DeMers, 2017). A tweet gets out of sight in only a few minutes because newer tweets are constantly and rapidly generated (Hutchinson, 2016; Low, 2017). In a study such as this, it is therefore important that we utilize data that show potential reaction of shareholders in a minute-to-minute basis. Accordingly, intra-day stock market data are used for analysis.

This paper proceeds as follows: in Section 2 we review the relevant literature on the effect of public personalities on destinations, discuss the relevance of using market value as a metric to measure destination performance, and propose a conceptual model that presents the different relationships between public personas, social media and market value. In Section 3, we present the research design, describe our data collection procedure, and explain the methodology. In Section 4, we detail our results, and finally in Section 5, we offer our primary conclusions and discuss several important implications of our study.

2. Public personalities, destinations and social media

It is widely recognized both in the academic literature and beyond that public personas can exert considerable influence in shaping societal preferences, behavioral intentions and consumer decision-making. Consumers receive a plethora of communicated messages from a multitude of sources at all times, and these messages serve as some of the many inputs – whether conscious or not – for decision making. Certainly, one would expect that messages from certain sources might be more influential than messages from other sources. And indeed, there is ample evidence to suggest that communications from celebrities are often more effective in molding views and images that persons hold with regards to certain topics, products, or in the realm of tourism analysis-tourism destinations.

Due to the capacity of celebrities to influence societal attitudes and purchase intentions (Atkin & Block, 1983; Petty, Cacioppo, & Schumann, 1983), it is hardly surprising that celebrities are extensively contracted by brands and organizations to endorse products and serve as advocates for certain issues. Although the intention of President Trump's Twitter messaging is admittedly not to either formally or informally endorse the United States as a tourism destination, it is perhaps the well-established communications and advertising literature on celebrity endorsement that provides the most in-depth understanding of the influence that the celebrity voice possesses.

When one thinks of celebrities, it is often those in the sports and entertainment business that first come to mind, and sure enough, there are many instances of actors, musicians, athletes and other performers endorsing products and advocating for a number of causes. Irish singer-songwriter Bono has served for many years as an advocate for poverty and AIDS in Africa, actress Mia Farrow has successfully changed foreign policy on Darfur, and Hollywood megastar Angelina Jolie has attracted public attention toward the plight of people in Sierra Leone and Iraq (Cooper, 2007; Freydkin, 2006; Jolie, 2015; Poniewozik, 2005; Thrall et al., 2008; Traub, 2005).

It is important to note here that entertainers are not the only persons in the public sphere who might have the capacity to bring relevant matters to the forefront. With regards to tourism destinations, because political figures tend to be such an integral part of a destination's brand, they also have implications for destination image and choice (Hunter, 2013; Rawson, 2007; Zavattaro & Fay, 2019). When a public figure communicates publicly from a platform that might relate to a tourism destination, the message is transmitted across an array of audiences, drawing attention to that destination and shaping images about that destination. Destination image formation involves multiple agents and the role of celebrities in the process of image formation and destination selection is indeed recognized as integral in the literature (Gartner,

1994). Certainly, this image formation process takes place not only on offline platforms but also on online channels. The online representation of the iconic political figure, Mao Zedong might, for example, contribute to the online tourism image of Hunan Province, where the revolutionary but divisive Chinese leader was born (Hunter, 2013).

Public figures also play a definite role in stimulating tourism demand (Beeton, 2001), and tourism organizations and destinations frequently utilize celebrities for promotional purposes. In 2018, Argentine soccer star Lionel Messi was appointed ambassador for responsible tourism by the United Nations World Tourism Organization. Rihanna has served as a tourism ambassador for Barbados, Arnold Schwarzenegger for the city of Madrid, Richard Gere for Indonesia, James Cameron for New Zealand, and Chris Hemsworth for Australia. This trend is not surprising, for there is evidence in the literature that attitudes toward celebrities associated with destinations influence destination choice and trip behavior (Kim, Agrusa, Lee, & Chon, 2007). Moreover, because destination image is a dynamic concept with the views people have about places changing over time (Baloglu & McCleary, 1999), one would conclude that the choice of the appropriate external stimuli to trigger these positive changes in destination image is an important consideration for destination marketers.

The growth of social media in the last few years has added a new and powerful dimension to the dissemination of celebrity messaging. Channels such as Twitter offer an exchange between celebrities and their followers that is perhaps more interpersonal, informal, spontaneous, and authentic compared to traditional forms of celebrity message delivery. The information flow on platforms such as Twitter is more multidirectional than the traditional unidirectional modes of celebrity communication (Van Norel, Kommers, Van Hoof, & Verhoeven, 2014), and information distribution on Twitter more easily circumvents gatekeeping and intermediation systems that regulate other media (Weller, Bruns, Burgess, Mahrt, & Puschmann, 2014). Moreover, the geographical penetrative power of Twitter extends far wider than conventional celebrity messaging platforms such as television, print and radio. Unlike conventional mass media like television channels and radio stations, Twitter messages instantaneously reach consumers across global markets. This can occur directly if the user follows the celebrity on Twitter, or even indirectly through retweets and likes by others in the user's network. The unique and novel platform that Twitter offers is thus very appealing for brands seeking to enhance visibility.

Celebrities routinely tweet about products they have used, movies they have watched, social causes they support, etc. These tweets may occur in the celebrity's official capacity as a contracted ambassador, spokesman or endorser, as well as in a completely unofficial and unregulated capacity. Indeed, as noted earlier, we recognize that President Trump's use of Twitter is not intended to serve as an endorsement for the US as a travel destination. As such, while the discussion on celebrity endorsement sheds light on the influence that celebrities can have, it does not explain the specific type of destination image formation that may result from the President's use of Twitter. Because of his noncommercial Twitter transmissions, any image of the United States resulting from the President's tweets can perhaps be characterized under what is described in the literature as *organic* image formation (Gartner, 1994; Gunn, 1972; Tasci & Gartner, 2007). We describe this process and provide a conceptual model in Section 2.2.

While much of the discussion so far has been on the positive effects that celebrities can have on destinations, one might conversely expect negative stimuli to have an adverse effect on destination image and travel intentions. There is in fact also evidence that when the image of a celebrity is negative, endorsements by the celebrity may not produce desirable results. As Tiger Woods' image quickly turned negative in the wake of his sex scandal, for instance, the market value of his sponsors fell (Knittel & Stango, 2014). One is certainly not surprised, therefore, to see firms so quickly distance themselves from celebrities and even discontinue partnerships with celebrities when the celebrity's public image is tarnished. This was the case when Tourism Western Australia dropped Master Chef George Calombaris as the face of its "Create Your Own Gourmet Escape in WA" campaign when it emerged that the celebrity chef had been underpaying his staff (Perpitch, 2019). Certainly, the conduct of celebrities on Twitter can also have similar adverse effects. There are several cases of celebrities losing contracts because of their Twitter messages. For instance, comedian Gilbert Gottfried was dropped by insurance company Aflac when some of his inappropriate tweets surfaced (Savitz, 2011), and the Spanish *La Liga* club Barcelona terminated new signee Sergi Guardiola's contract when the player's offensive tweets came to the club's attention (de Menezes, 2015).

Interestingly, unfavorable portrayals of destinations in movies have sometimes produced effects that some may consider unexpected. The movie *Borat*, for example, portrayed the country Kazakhstan in poor light, yet led to more interest among people in wanting to visit the country (Pratt, 2015). Shani, Wang, Hudson, and Gil (2009) find that the film *The Motorcycle Diaries* reinforced previous positive as well as negative stereotypes about South America, but nonetheless resulted in a stronger desire to visit the continent among those surveyed. As such, there may be some truth to the old adage that "any publicity is good publicity."

2.1. Methodological framework

In order to investigate the effect of President Trump's tweets on the performance of the United States as a tourism destination, we considered a number of methodological alternatives. We deliberated, for example, the use of metrics such as visitor arrival numbers that are quite standard in the tourism literature. We also contemplated using accounting measures such as revenues, profits and losses of the US tourism industry. After a thorough dissection of the pros and cons of each methodological alternative, we selected the finance-based metric that is market value, for a number of reasons.

First, unlike arrival numbers at a destination or accounting measures like tourism industry revenues, the use of firm value allows us to better disentangle the *specific* effects of what we wish to examine – the President's tweets – from other indicators of destination performance. Destination image formation is a complex process that results from a multitude of multidimensional determinants (Echtner & Ritchie, 1991; Gartner, 1989). In order to understand the effects of President's tweets specifically, we require a methodological framework that isolates impacts of his tweets from any additional and potentially confounding effects resulting from other aspects of his presidency. Moreover, we additionally require that this methodology also be able to isolate the effects of the President's tweets from the several other determinants of destination image unrelated to the President. When using arrival numbers of accounting measures to measure the effects of President Trump's tweets, one is likely to face substantial challenges in controlling for these confounding effects. In using market value – a finance-based metric that under the tenets of neoclassical finance theory represents the discounted present value of all future cash flows, we are implicitly able to isolate the effects of his tweets from the multitude of other factors that also effect the image of the United States as a tourism destination.

Second, and very importantly in the context of this study – the methodological framework we have used in the study is sensitive to the high frequency of the President's tweets. Destination image is a fluid concept (Litvin & Mouri, 2009), and one that evolves over a long period of time. Because the President often tweets several times a week, and sometimes several times a day, measures such as visitor arrival numbers (and accounting based numbers) would struggle to capture the effects of his different tweets in short time frames. In analyzing minute-by-minute changes in market value, we are able to separate the effects of individual tweets, even when they occur in quick succession.

Third, the methodology used here is a forward-looking measure of performance unlike accounting numbers (or in the context of tourism, arrival numbers), which are backward-looking (Sorescu, Warren, & Ertekin, 2017). The metric used here allows us to capture not only

present effects, but effects indefinitely into the future.

Fourth, market value, unlike accounting measures and other measures such as arrival numbers, tends to be less susceptible to seasonality issues that can alter tourism performance over time. Consequently, in investigating the effects of President Trump's tweets on the performance of the US as a travel destination, separately controlling for seasonal patterns is not required.

2.2. Conceptual model

The conceptual model is depicted in Fig. 1. Any activities a destination carries out may enhancing the consumer's brand knowledge (arrow 1), so that the likelihood of potential travelers including the destination in their evoked set increases, and the market value of the firms operating in the destination would increase too (arrow 2). For that purpose, the two basic components of brand knowledge should be bolstered (Keller, 1993): brand awareness (arrow 3) and brand image (arrow 4). The former is reinforced via recognition and recall, while the latter is shored up through the brand associations linked to the destination. One of those associations might be a public personality (arrow 5). This public figure contributes to the destination's brand image as an important organic image formation agent (Gartner, 1994), who affects the destination's image in a noncommercial manner but who is nonetheless a credible source for his/her experience at the destination. The person's contribution to destination image formation may be because the persona's own image, but also via his or her appearances in the mass and social media (arrow 6). Moreover, when this figure – as the political leader - is one of the key personalities that may be associated with destination, his or her exposure in the media -mass and social-not only affects his or her own image but also, derived from the resulting social media sentiment, the consumer's brand knowledge of the destination (arrow 7). This brand knowledge has an influence on the market value of the firms that operate in the destination (arrow 2) via tangible components (e.g. sales) and intangible elements (brand equity) (Joshi & Hassens, 2010). Also note that, derived from the media activity, shareholders form their expectations (arrow 8) about the future evolution of the market value of the firms (arrow 9) that might be affected by the content of that activity in the media.

3. Research design

The research design includes two general tasks: 1) compilation of tweets and sentiment variables, and collection of intra-day stock market data; and 2) analysis of abnormal returns.

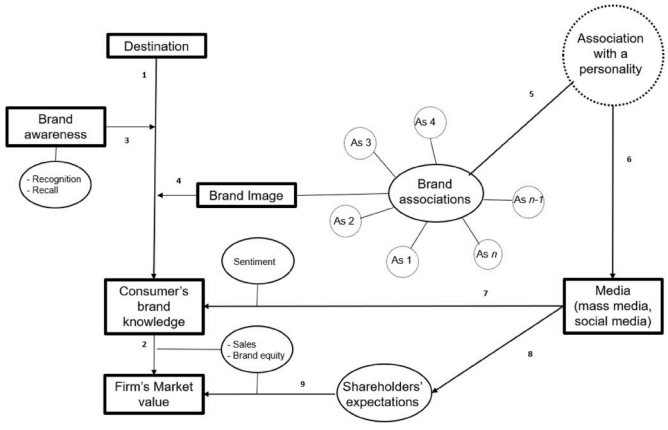

Fig. 1. Effect of a public personality's participation in social media.

3.1. Data collection

From the website called 'Trump Tweet Archive (http://www.trumptwitterarchive.com) we began by including in our initial dataset only those tweets by the president that satisfied two conditions. First, although President Trump had been active on Twitter throughout his presidential campaign, we only considered tweets that were posted during Trump's presidency. This is because we were interested in assessing the social media impacts of official leaders, and President's tenure as an official leader could reasonably be assumed to have commenced on the day of his inauguration. Thus, only those posted from the president's official inauguration day (January 20, 2017) until the day of data collection (September 8, 2018) were obtained.

Second, because our objective in this analysis was to investigate the instant and immediate market reaction to the President's tweets, we excluded from the dataset tweets that were not posted during stock market hours. Thus, only those posted from Monday to Friday between 9:30 and 16:00 were collected. Of course, we readily acknowledge here that a political leader's tweets outside of market hours will have an equally important effect, if any, as his/her tweets posted during trading hours. Moreover, we also recognize that President Trump tweets extensively during early hours of the morning, prior to the opening of stock markets.

One could, of course, assume that any potential effect of these tweets made outside of trading hours would be captured upon the next opening of the stock market. While this assumption would certainly be reasonable, and markets would indeed be expected to reflect the effect of "off-hours" tweets upon opening, this approach would introduce issues relating to confounding effects into our analysis. Recall that under the tenets of the previously described efficient market hypothesis, stock returns reflect *all* potential issues that could impact future performance. Over the course of hours or days, several relevant developments would typically take place, each of which, to varying degrees, would jointly impact expectations of performance and therefore stock returns. In fact, one strength of the approach we use in this paper – the use of minute-by-minute stock data – is that we can be more confident that any effects we detect result from the President's tweets themselves and not from other confounding factors that also affect firm performance.

After excluding tweets that were posted prior to President Trump's inauguration and tweets that were made during non-trading hours, we were left with an initial sample of 1229 tweets. Next, this initial sample had to be filtered further to remove tweets that could not be expected to be useable in our analysis. A number of reasons could render a tweet non-useable: 264 tweets were removed because they were of less than 30 characters or 10 words, and seemed too short to convey any significant message (Alvarez-Melis & Saveski, 2016; Xu & Zhang, 2018); 94 tweets were removed because they were duplicate tweets; and 330 tweets were removed because they were separated into more than one tweet due to the character limit (i.e. no more than 280 characters), and therefore would have had different time stamps associate with the same message. Next, we categorized the remaining 541 and then conducted a sentiment analysis on tweets belonging to categories identified as relevant as described below.

3.1.1. Compilation of tweets and sentiment variables

At this stage it was important to categorize tweets such that those tweets relating to a similar topic would be grouped together. Grouping similar tweets together is important for two reasons. First, not every tweet – and not every topic - would be assumed to have an impact on US destination image. For example, tweets that are more related to domestic, annually repeated news or events (such as commemoration of US national holidays which would be unlikely to have a major significant impact on the United States' image as a tourist destination). Second, for tweets that *would* be expected to have an impact, the magnitude of the effect would certainly vary depending on the "intensity" of words used in the tweet. In other words, while each of two tweets making negative

comments about immigrants might negatively affect US destination image, the effect could be different for the two tweets. One would expect, for instance, that the tweet "*Must build a Wall. Mexico which has a massive crime problem is doing little to help!*" would have a more severe (negative) impact than another tweet which says, "*Please understand there are consequences when people cross our Border illegally*".

Considering these two issues (i.e. non-relevant tweets and different degrees of impacts of relevant tweets), we categorized each tweet based on its content to remove non-relevant tweets and calculated the sentiment scores of the remaining relevant tweets to specify the degrees of their impacts. By reviewing all the tweets manually, non-relevant tweets were removed and the remaining relevant tweets were categorized into 7 categories in terms of content (Table 1). Each category describes a different topic. The topics that were identified as relevant span a number of issues (both positive as well as negative) with regards to which the President's tweets could impact the US' destination image. The topics range from tweets regarding the state of the economy, immigration, the United States' relationships with other countries, the US press and media, etc. The final dataset consisted of 170 relevant tweets across the 7 categories.

Each relevant tweet's sentiment score was calculated by utilizing the 'score.sentiment' algorithm through the R programming language program. Specifically, a sentiment score (whose range goes from −1: extremely negative to 1: extremely positive) was assigned to each relevant tweet based on the number of occurrences of positive and negative words which are counted based on the predefined dictionaries of positive and negative words.

3.1.2. Collection of intra-day stock market data

For the period for which the previously described Twitter data was obtained, the required intra-day stock market data was retrieved from the Bloomberg database. This data consisted of minute-by-minute returns for two series. The first of these series is the Dow Jones Industrial Average, which is a major market index that describes general performance of U.S. stocks. The second series consists of a tourism specific portfolio-the Dow Jones U.S. Travel and Tourism Index, which describes the minute-by-minute performance of the U.S. tourism industry.

3.2. Analysis of abnormal returns: linking sentiment scores to market value

Stemming from Sharpe. (1963; 1964) market model

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

where R_{it} represents the returns on the firm's share i on day t, and R_{mt} is the rate of returns on the market portfolio on day t. The parameters α_i and β_i represent the constant and the systematic risk on share i, respectively, and ε_{it} is the error term. Following Karafiath's (1988) alternative event-study methodology, we introduce a dummy variable x_t that takes value 1 on the minute the tweet in category j is submitted.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \sum_{j=1}^{J} \gamma_j x_{jt} + \varepsilon_{it} \quad (2)$$

where γ reflects the impact of the tweet on the returns; so, any potential abnormal returns will be shown by this parameter. To better capture the reaction of these abnormal returns, we include a sentiment variable z_j to explain the magnitude of this parameter. To reflect potential non-linear effects, we insert a quadratic term; thus, the influence of parameter γ is expressed as:

$$\gamma_j = \delta_1 z_j + \delta_2 z_j^2 \quad (3)$$

Therefore, substituting equation (3) in equation (2), we obtain

$$R_{it} = \alpha_i + \beta_i R_{mt} + \sum_{j=1}^{J} \left(\delta_{j1} z_j + \delta_{j2} z_j^2\right) x_{jt} + \varepsilon_{it} \quad (4)$$

$$R_{it} = \alpha_i + \beta_i R_{mt} + \sum_{j=1}^{J} \delta_{j1} z_j x_{jt} + \sum_{j=1}^{J} \delta_{j2} z_j^2 x_{jt} + \varepsilon_{it} \quad (5)$$

Consequently, δ_1 shows the effect of the sentiment variable of the tweet and δ_2 the potential curvilinear influence.

Table 1
Results of categorization.

	Category	Frequency	Percent
Relevant	Tweets that are critical of US press and media	54	31.76
	Tweets relating to US economic boom	22	12.94
	Tweets about natural disasters and accidents in US	14	8.24
	Tweets that positively portray US' relationship with other countries	14	8.24
	Tweets that negatively portray US' relationship with other countries	13	7.65
	Tweets that portray immigrants unfavorably	14	8.24
	Tweets about 'Spygate' (presidential campaign's conspiracy theory)	38	22.35
Total		170	100.00

4. Results

Before estimating the model we run some heteroskedasticiy and serial correlation tests. Specifically, the Breusch-Pagan test detects heteroskedasticity ($F = 5.62$; $p < 0.001$) and the Breusch-Godfrey test observes serial correlation ($F = 555.5$; $p < 0.001$), thus, we employ the Newey-West heteroskedasticity and autocorrelation consistent standard errors to estimate the models. Important for parameter interpretation is the value obtained for the sentiment measure: the average value is negative, in particular it is −0.074. Thus, this negative sign is critical to describe the effect of the parameters because positive parameters will lead to a global negative effects (negative sentiment times positive parameters) and negative parameters to global positive effects (negative sentiment times negative parameters). Table 2 shows the individual effects of each category of tweets, and we can see that the only category of tweets that has significant effects is "Tweets that negatively portray other countries x sentiment" in minutes 1, 2 and 3. The parameter has a positive sign, thus the global effect is negative because the sentiment measure is negative. This result is reasonable because if the president of a country does not speak well of other countries, it might affect international people's intentions to come to that country. Interestingly, these effects maintain their intensity for 3 min (the Wald tests find no significant differences (p-value = 0.279 for Models 1 & 2, p-value = 0.409 for Models 2 & 3 and p-value = 0.687 for Models 1 & 3) among the three parameters associated with this category of tweets); however, after minute 3, these effects fade, which can be a consequence of the rapid dissemination of information via Twitter. The curvilinear parameters associated with this category of tweets are also significant and positive; this means that when the reaction to the tweets are extreme the market become insensitive as the negative global reaction tend to diminish. This suggests that there might be some type of potential sensitivity threshold.

It is interesting to observe that no other category of tweets has an effect on tourism firms. Maybe these other categories do not have any effect per se or, in line with the previously postulated sensitivity threshold, some tweets can be considered too outlandish, so the market has become insensitive to "extreme" tweets. Still, while the other categories might affect some other industries, it certainly seems that the category that shows negative comments about other countries is the most related to the tourism industry.

Derived from these results, three points for discussion emerge: actual effects, immediacy and selective character of impacts.

Table 2
Effect of President Trump's tweets on tourism market value.

Variables	Minute 1	Minute 2	Minute 3	Minute 4	Minute 5
Tweets that are critical of US press and media x sentiment	0.0002 (0.001)	0.0009 (0.001)	0.0003 (0.0006)	0.0003 (0.0005)	0.0003 (0.0004)
Tweets that positively portray other countries x sentiment	−0.001 (0.0031)	−0.0021 (0.0015)	−0.0011 (0.001)	−0.0012 (0.0014)	−0.0008 (0.0012)
Tweets that portray immigrants unfavorably x sentiment	0.0003 (0.0036)	−0.0029 (0.0022)	−0.0002 (0.0011)	0.001 (0.0009)	−0.0003 (0.0007)
Tweets that negatively portray other countries x sentiment	0.0039** (0.0016)	0.0021** (0.0011)	0.0026*** (0.0008)	0.0012 (0.0008)	0.0011 (0.0009)
Tweets about 'Spygate' x sentiment	−0.0001 (0.0011)	0.00001 (0.0006)	−0.0002 (0.0003)	0.00003 (0.0005)	0.00002 (0.0004)
Tweets relating to US economic boom x sentiment	0.0022 (0.002)	−0.0003 (0.0012)	−0.0001 (0.0007)	−0.0002 (0.0007)	−0.0002 (0.0006)
Tweets about natural disasters and accidents in US x sentiment	−0.0009 (0.0014)	0.0004 (0.0011)	0.0008 (0.0008)	0.0007 (0.0014)	−0.0002 (0.0007)
Tweets that are critical of US press and media x sentiment^2	−0.0007 (0.0019)	0.0009 (0.0018)	0.0001 (0.0012)	0.0004 (0.0009)	0.0004 (0.0008)
Tweets that positively portray countries x sentiment^2	0.0001 (0.0119)	0.0057 (0.0055)	0.0017 (0.0038)	0.0029 (0.005)	0.0018 (0.0044)
Tweets that portray immigrants unfavorably x sentiment^2	−0.0102 (0.0124)	−0.0218 (0.0116)	−0.0076 (0.0045)	−0.0008 (0.0031)	−0.0047 (0.0028)
Tweets that negatively portray other countries x sentiment^2	0.0159*** (0.0054)	0.0109*** (0.0031)	0.0143*** (0.0035)	0.0065* (0.0034)	0.005 (0.0038)
Tweets about 'Spygate' x sentiment^2	0.0001 (0.0019)	−0.0002 (0.001)	−0.0004 (0.0007)	−0.0001 (0.0008)	0.0002 (0.0008)
Tweets relating to US economic boom x sentiment^2	−0.0048 (0.006)	0.0025 (0.0036)	0.0009 (0.0023)	0.002 (0.0026)	0.0016 (0.0021)
Tweets about natural disasters and accidents in US x sentiment^2	0.0002 (0.0047)	0.0025 (0.0035)	0.0033 (0.0025)	0.0034 (0.0045)	−0.0001 (0.0024)
Dow Jones market index	0.6765*** (0.0301)	0.6765*** (0.0301)	0.6764*** (0.0301)	0.6765*** (0.0301)	0.6765*** (0.0301)
Constant	−1.3E0-07 (1.5E-06)	−5.4E0-07 (1.5E-06)	−4.4E0-08 (1.5E-06)	−4.6E0-08 (1.5E-06)	−5.1E0-08 (1.5E-06)
R-squared	0.1175	0.1175	0.1175	0.1175	0.1175
Adjusted R-squared	0.1174	0.1174	0.1174	0.1174	0.1174
F-statistic	1418.43***	1418.93***	1418.81***	1418.19***	1418.07***
Akaike criterion	−11.7691	−11.7692	−11.7692	−11.7691	−11.7691
Schwarz criterion	−11.7681	−11.7682	−11.7682	−11.7681	−11.7681

*** = prob<0.01; ** = prob<0.05; * = prob<0.1.

1) Actual effects. The results prove the US Travel Association's (2018) conclusions right on account of the reduction in inbound international travelers since January 20, 2017. While the results of this report must have a direct effect on backward-looking measures such as accounting indexes (fewer people coming to the country leads to lower volume of sales), this article uses forward-looking metrics such as the market value. As pointed out in the conceptual model (Fig. 1), a brand association of a country might be a public persona; association that is even stronger if this celebrity is a decision maker of the destination. Consequently, the decision maker's actions will more likely have an impact on the consumer's brand knowledge of the destination. Remember, first, that the image that people might form of a place can be either a consequence of a structured search for information or just of a series of stimuli received for a period of time. Second, that politicians are part of a destination brand and contribute to its image formation and, thus, to the travelers' decisions about the destinations (Rawson, 2007; Zavattaro & Fay, 2019). With shareholders being aware of this information, i.e. the actions of the public persona (in this case, President Trump's participation in social media) as well as the potential effect on the destination brand knowledge, they will react according to their expectations about the future development of the tourism market value.
2) Immediacy. The results show that shareholders' reaction is instantaneous, and with the possibilities that intra-day data provide, the empirical application captures this reaction for the first 3 min only. Twitter has the advantage of spreading information in a quick way because of its word limit and the resulting ease with which people can process that information; however, that advantage comes with the drawback that a tweet can potentially vanish quickly.
3) Selective character of impacts. Despite we have focused on those categories of tweets that might have an effect on the country's image, the results show that only those tweets that are directly related to tourism and involve the choice of a destination have an impact on the tourism's market value. After all, it seems that with Twitter being an informal communication tool, shareholders process the information with a grain of salt, and they will react if they know the information provided is relevant and likely to materialize into a real action. Interestingly, when the message relates to negative descriptions of potential tourism-generating countries; we observe that investors need no further information. In fact, Stepchenkova and Shichkova (2017) find that the dimensions of the formation of a country image and of a destination image are different, and Stepchenkova, Su, and Shichkova (2019) find that animosity toward a country-destination is the most determinant dimension that explains consumer response to that country-destination's tourism promotional activities. It is important to recall that the tourism industry is unique in the sense that it is the consumer who is transported to the location of the product that is to be consumed. Because the involvement of the individual in the tourism consumption is high, and any uncertainty created has the potential to bring about a change in the destination choice.

5. Conclusions

In this article, we have analyzed the effect of President Donald J. Trump's participation on Twitter on the performance of the United States as a tourism destination. In order to assess the destination performance, we used the finance-based metric market value. The empirical application carried out on the tweets that the President of the United States published over more than 150,000 trading minutes between when he took office on January 20, 2017 and September 8, 2018, shows that those messages that can directly affect the country's image might have a repercussion on the tourism's market value. In particular, the negative comments about other countries have a negative effect as this might have an influence on people's brand knowledge of the country and on shareholders' expectations.

This result is explained by a conceptual model that this article proposes whereby a public figure can be a brand association of a country with the resulting effect on the country's image and thus on the consumer's brand knowledge of the destination. From a tourism marketing viewpoint, tourists collect information before the trip; information that might come from every single interaction between tourists and the destination. By interaction we include both formal structured searches as well as informal unstructured stimuli that tourists receive and will use as inputs to better acquire their knowledge of the brand and, consequently, for making their travel decisions. This brand knowledge formation will have an effect on the shareholders' expectations with the concomitant changes in the market value of the firms affected. When those public figures are politicians, the effect of their actions and sayings

might have an even bigger effect because they are decision makers of the destination. Note that the meaning transfer process - whereby characteristics of the endorser are transferred to the endorsed product or brand-, suggested for celebrity endorsements is exacerbated in the political context because of the stronger association with the destination brand (it is important to remember that in Keller's (1993) model, the strength of an association is a determinant of the contribution of that association to the brand image).

In today's technological environment, the participation of these public personas in informal communication media is more feasible due to the advent of social media. While they can be spontaneous communication tools, such as Twitter, the messages that relevant people publish not only might have an effect on their own personas but also on the brands for which these personas might be brand associations.

The fact that pejorative comments reduce the market value of tourism firms is explained through the negative effect on consumers' brand knowledge and the shareholders' expectations of a lower volume of inbound international travelers. Obviously, these are theoretical component of our argument that, with different purposes, could be confirmed with an analysis of brand knowledge and arrival flows.

Nevertheless, it is important to qualify this result: First, while Twitter messages instantaneously reach consumers across global markets, it comes at the cost of being ephemeral. The reaction in the market value of firms lasts for 3 min. Obviously, the actual market value -even if for just 3 min-represents the expected future performance of the firms, but the relevance of the impact is nuanced by its duration. Second, only those tweets that negatively affect the relationships with other countries seem to have an influence on the image of the country as a destination which seems to have an effect on the market value of tourism.

This article has both research and managerial implications. Regarding research implications, and from a methodological standpoint, with today's fast spread of information, we need tools to capture this immediacy and its consequences. In this article, we merge two databases to accomplish our objective: the tweets published are examined via intra-day stock market returns so that the potential reaction of the market value is captured instantaneously. Concerning managerial implications, it is important to note that not all tweets are expected to have the same effect as only those directly related to the industry a firm belongs to seem to have an impact. Observe that even generic tweets that could have a global effect do not seem to exert any influence on the tourism industry. Evidently, constant surveillance is needed to try to foresee those potential impacts; while ideally, counteraction actions could be implemented via instant messages in an attempt to reduce the negative effects (remember that the faster a negative effect is extinguished the better) and to reinforce the firm's policies, especially those related to corporate social responsibility, these actions are not always straightforward. Still, at the very least, the tourism firms affected must be aware of the potential detrimental impact. As for future research lines, this minute-by-minute methodology could be used in other countries and other contexts, so that the conceptual model proposed is further ratified.

Although this study uses a methodology that has several advantages that have been described earlier in the paper, we acknowledge that there are also certain limitations which must be considered when drawing any inferences from the study. First, our approach – although supported by commonly used postulations of neoclassical finance theory - is ultimately based on investor speculations, which at times may not be fully rational, and instead driven by emotions and biases (see for example Edmans, Garcia, & Norli, 2007). Two, we consider only US publicly traded firms in our analysis. While we assume the performance of these firms to be representative of the performance of the country's performance as a tourism destination, we realize that there are other firms – privately owned firms and other overseas airlines, hotels etc. that also operate in the US are not accounted for in this analysis. Three, the US President's office is rather unique, and in many ways, does not typify the political leadership of most countries. Any attempts to generalize the findings of the present study to other contexts must therefore be done while exercising a certain degree of caution. Four, in order to understand the weight that President Trump's tweets carry we have explored the celebrity endorsement literature. While the purpose of the President's Twitter participation is not to endorse the United States as a tourism destination, we believe that the endorsement literature helps explain the influence that celebrities possess. In deferring to this literature, we admittedly assume that celebrity communications on social media are processed by the public in a manner that is similar to messages that are communicated as part of endorsement campaigns. Accordingly, any conclusions drawn in this research hold only to the extent that this assumption is valid.

Also, while this study contributes to our understanding of the tourism effects of President Trump's participation on social media, the tourism scholarship has yet to thoroughly explore the effects of several other aspects of his presidency. Although the use of the metric market value provided the strongest methodological framework, the use of conventional measures of performance such as visitor arrival numbers would likely serve as the most powerful indicator when understanding the overall tourism effects of the Trump presidency. We advocate this as an additional future line of research.

Authors' contribution to the manuscript

The three authors (listed in alphabetical order) have contributed equally to the paper.

Declaration of competing interest

None.

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