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Social Media as a Marketing Tool for European and North American Universities and Colleges

ABSTRACT

Objective: The purpose of the following study is to examine the approach to social media of European and North American higher education institutions ranked in the Top100 on the 2017 Academic Ranking of World Universities (ARWU). Data regarding the number of publications and the number of followers of each social media were analysed.

Methodology: The present study is quantitative in nature. The sample consisted of the European and North American universities and colleges listed in the Top 100 of the ARWU 2017: in total, 48 institutions in the United States and 35 in Europe were identified. To analyse the official social media sites used by each higher education institution, the links presented on the Homepage of the universities' website were followed. Data was collected between the 27nd of August and the 2nd of September 2018. Two different types of variable groups were defined:

1) the number and type of Universities' publications, and 2) the number of followers on each social media. For benefit of the research the authors considered Facebook, LinkedIn, Google+, Weibo and VKontakte as social networking sites; Instagram, Pinterest, Flickr and Snapchat, as photo sharing platforms; Youtube, and Vimeo as video sharing platforms, and finally Twitter and Tumblr as microblogs.

Findings: European and North American universities and colleges invest in marketing activities in social media. Regarding the number of social networking sites, content sharing and microblogging platforms no significant differences were found between means of the two independent samples. The most popular social media used are Facebook and Twitter ex-aequo, followed by Youtube, Instagram and LinkedIn. Concerning the number of publications on these media, significant differences by region are present for the variable number of photos and videos on Facebook, number of Instagram posts, and tweets. Furthermore, on all the prominent social media, North American universities and colleges benefit from a substantial higher number of followers than their counterpart. European users favour Facebook, LinkedIn, Twitter, and only then Instagram. Participation in G+ is marginal. In the United States the preferred social media are Facebook, LinkedIn, G+, Twitter, and Instagram. Regarding user engagement, measured by the number of followers, equality of means between the two independent samples were found for Facebook, Pinterest, Flickr and Youtube. Differences exist for the social media: LinkedIn, G+, Instagram, and Twitter. G+ is quite popular in the United States, but not in Europe, and Twitter attracts visibly more followers too.

Value Added: The contribution of this research paper consists in better understanding, from a quantitative point of view, differences between the use of social media as a marketing tool by the European and North American higher education institutions listed in the Top100 of the ARWU 2017. Regional differences exist, even though universities and colleges compete on a worldwide basis.

Recommendations: From an academic perspective, a qualitative study approach is advised to better understand the concurrence of the number of publications and followers on the different social media, since significant Pearson correlations between variables were identified. As practical implications, marketers from the European higher education institutions should invest more in posts, uploads and tweets. For both regions, the social networking site LinkedIn has been neglected, despite the high number of followers.

Key words: Social Media, Higher Education, Europe, North America

JEL codes: I2, M3

Introduction

Declining enrolment figures, decreasing student retention, higher students' mobility, reduction in funding, and global competition are seen as the main justifications behind higher educations' effort to bring branding strategies alive (Hemsley-Brown & Goonawardana; 2007, Sison & Brennan; 2012, Williams & Omar; 2013). Global application data to European (EU) and North American (US) Universities are expected to decline for demographical reasons, since the baby-boomer generation is already educated (Raciti, 2010).

Higher education institutions are increasingly investing in marketing activities to sustain a position of competitiveness worldwide (Whisman, 2011). Prior research has shown the importance of a well-planned online marketing plan for universities and colleges (Duesterhaus & Duesterhaus, 2014).

The use of social media for attracting students, grants and philanthropic donations (Palmer, 2013; Belanger, Bali & Longden, 2014) has become a reality for European (Asderaki & Maragos, 2012), North American (Barnes & Lescault, 2011) and Australian institutions (Raciti, 2010).

Social media are a very powerful tool to create and maintain relationships with consumers (Pollack, 2009; Grainger, 2010, Wigmo & Wikström, 2010; Shankar, Inman, Mantrala, Kelley & Rizley, 2011; Geho & Dangelo, 2012), by enabling the storage of information on all its users (Curran, Graham, and Temple, 2011). Research has revealed that online word-of-mouth is more effective to change consumer behaviour than traditional media (Roberts, 2004; Xia, Chunling & Yujie, 2012; Backstrom, Huttenlocker, Lan & Kleingberg, 2006).

Even though reports of practitioners based on the effects of social media marketing are still scarce, academic evidence already revealed its positive results (Steinfield, DiMicco, Ellison & Lampe, 2009; Stelzner, 2009; Zabin, 2009; Altimeter Group, 2018).

Literature Review

Since the last two decades, the higher education market, whether on the national or the international level, has become extremely competitive. For Whisman (2011), it is imperative for institutions to follow a clear-cut differentiation and marketing positioning. In order to achieve the required differentiation, branding became the name of the game (Bélanger, Syed & Mount, 2007; Kizilbash, 2011). Universities following a business-oriented path, and renaming courses as products, have been object of debate amongst scholars and practitioners (Durkin & McKenna, 2011). Mainly Faculty have difficulty in accepting this management jargon (Whisman, 2008; Chapleo, 2010).

Scholars believe that institutions in higher education themselves become brands (Curtis, Abratt & Minor, 2009), while others have questioned the value of branding in the education sector (Jevons, 2006; Waeraas, & Solbakk, 2009). Despite criticism, branding activities evoke associations and images (Bulotaite, 2003). Among other factors, the visual imagery is considered by prospective students while comparing universities (Ali-Choudhury, Bennett & Savani, 2009).

Universities are increasingly using social media channels for branding purposes (Constantinides & Zinck Stagno, 2011; Belanger, Bali & Longden, 2014; Galan, Lawley & Clements, 2015). According to the research of Davis, Deli-Amen, Rios-Aguilar, Gonzalez-Canche and Sacramento (2012), Universities may benefit, 1) in delivering useful information about the institution; 2) in strengthening the student-to-student interaction, the student engagement, and involvement in campus life, and 3) building the campus community.

Institutional branding is a major challenge, since it implies communicating effectively, off-line and online, with such diverse stakeholders as current and potential students, alumni, parents, faculty, staff, the scientific community, and news agencies (Constantinides & Zinck Stagno, 2011). According to Tuten (2008), social media marketing is effective for branding purposes and communicating objectives, while empowering the consumer to interact. As

a consequence, consumers' engagement through social media has a considerable impact on brand image (Xia, Chunling & Yujie, 2012).

Several authors have reported the importance of building virtual brand communities (VBC) (Schembri & Latimer, 2016; Hakala, Niemi & Kohtamaki, 2017) through social media (Balmer & Liao, 2007). A VBC can be defined as the aggregation of users that share the same interest in a brand (Muñiz & O'Guinn, 2001; Casaló, Favián, and Guinalíu, 2008). Branding and consumption efforts meet (Muñiz & Schau, 2007). Whenever members trust a VBC, increases in users' engagement and higher levels of loyalty are present (Casaló, Favián & Guinalíu, 2008).

Social media were defined by Kaplan and Haenlein (2010) as a group of internet based applications of the Web 2.0 that allow the creation and exchange of user-generated content. According to the authors, these applications can be categorized by the social presence they confer to its user and the media richness, and by the self-presentation/self-disclosure they allow.

The attractivity of this kind of communication lays in creating and sharing content (Kaplan & Haenlein, 2010), in its rapid dissemination speed and its global reach (Hakala, Niemi & Kohtamaki, 2017). Unlike traditional advertising, social media is a two-way communication (Constantinides & Zinck Stagno, 2011). Almost all business-oriented education institutions are involved in social media marketing activities (Raciti, 2010; Barnes & Lescault, 2011; Asderaki & Maragos, 2012) realizing the cost effectiveness of such platforms (Choudaha & Kono, 2012).

It is important to distinguish between social media and social networking sites. Social media is the environment in which social networking takes place. Social networking sites empower the consumer to share and communicate information with other users by creating and accessing to personal profiles. Users are held together by pre-established personal relationships, sharing themselves with others. Consequently, social networking sites (SNS) are classified as a way of communication that allows a medium level of social presence and a high self-presentation (Kaplan and Haenlein, 2010).

Unlike social networking sites, online communities bring together people with a common interest; people the user may not know or may want to know. Any person can be part of any community.

While social networks are individual-centred, content sharing platforms (CSP) are group-centred. People join online content communities mainly to share media such as photos, videos, and music to benefit the group (Mlaiki, Walsh & Kalika, 2017; Socialmediatoday, 2018).

Blogs are platforms that allow users to post messages for other users. The desirable continuous text updates are then viewed by the network. Microblogging consists of writing brief texts and publishing them in microblogging platforms (MBP) (Twitter, 2018).

Rogers and Croke (2012) found out in their US based study that 38% of the future students use social media as a valuable resource when deciding where to enrol. Facebook is the preferred social networking site used by 98% of universities and colleges in the US, followed by Twitter with 84% of acceptance (Barnes & Lescault, 2011). Rutter, Ropper and Lettice (2016) argue that tweets and retweets act as an endorsement of the brand.

Concerning user engagement (De Vries, Gengsler & Leeflang, 2012; Ashley & Tuten, 2015), users interact online with other users by clicking (clicking on the media type), liking (clicking the 'like' button), sharing (sharing link with others), and commenting posts (making a remark). Each type of involvement requires different levels of commitment and effort from the user (Oviedo, Muñoz, Verdugo & Mejías, 2014).

Ridings, Gefen and Arinze (2006) argue that becoming a follower on social media is the first action of users' engagement in an online brand community.

Objectives

The purpose of the following study is to examine the approach to social media of the universities and colleges in Europe and the United States ranked on the Top 100 on the 2017 Academic Ranking of World Universities (ARWU),

the Shanghai Ranking. Data regarding the number of publications and the number of followers of each social media will be analysed. Additionally, correlations between variables will also be discussed.

Methodology

The present study is quantitative in nature.

The sample consisted of the EU and US universities listed in the Top 100 of the ARWU 2017. The Academic Ranking of World Universities, developed by the Shanghai Jiao Tong University Institute of Education, is considered nowadays as the worldwide reference in universities' rankings by scholars and practitioners.

In total, 48 universities in the United States and 35 in Europe were identified. The 17 Asian/Oceanic and South American universities included in the Top 100 were not analysed. The Moscow State University, place number 93 in the Shanghai ranking, was assumed to be European, since located in the European part of Russia.

To identify and analyse the official social media sites used by each university, the links presented on the Homepage of the universities' website were followed.

Data was collected between the 27nd of August and the 2nd of September 2018.

Two different types of variable groups were defined: 1) the number and type of Universities' publications, and 2) the number of followers on each social media site.

For benefit of our research the authors considered Facebook, LinkedIn, Google+, Weibo and VKontakte as social networking sites; Instagram, Pinterest, Flickr and Snapchat, as photo sharing platforms; Youtube, and Vimeo as video sharing platforms, and finally Twitter and Tumblr as microblogs.

No content data for Youtube was collected since this sharing platform disabled the search information for uploaded videos. The same is valid for LinkedIn; no aggregator exists. The content on G+, Weibo, VKontakte, Pinterest, and Snapchat was not measured due to the lesser importance of these

social media for the chosen sample. As for Facebook, a distinction was made between photos presented on the chronology and videos.

Each variable of the study was conceptualized and operationalized in the following way:

Table 1. Conceptualization and operationalization of variables

Variable	Measurement / Source	Abbreviation
Region	Geographic location of the university www.shanghairanking.com	EU - Europe US - United States
Number of Facebook followers	Data from the Official Facebook page of each university	FBfollowers
Number of page photos posted on Facebook	Data from the Official Facebook page of each university	FBpagephoto
Number of profile photos posted on Facebook	Data from the Official Facebook page of each university	FBprofilephoto
Number of photos on Facebooks' Chronology	Data from the Official Facebook page of each university	FBphotocron
Number of posted videos on Facebook	Data from the Official Facebook page of each university	FBvideos
Number of LinkedIn followers	Data from the Official LinkedIn account of each university	LIfollowers
Number of G+ followers	Data from the Official G+ account of each university	G+followers
Number of Instagram followers	Data from the Official Instagram account of each university	INfollowers
Number of posted photos on Instagram	Data from the Official Instagram account of each university	INposts
Number of Pinterest followers	Data from the Official Pinterest account of each university	PIfollowers
Number of Flickr followers	Data from the Official Flickr account of each university	FLfollowers
Number of photos on Flickr	Data from the Official Flickr account of each university	FLphotos
Number of Youtube followers	Data from the Official Youtube account of each university	YTfollowers
Presence in other sharing platforms	Presence on the homepage of the website of the link to other sharing platforms not mentioned above	Othermedia
Number of Twitter followers	Data from the Official Twitter account of each university	TWfollowers

Number of tweets on Twitter	Data from the Official Twitter account of each university	Tweets
Number of Social Networking Sites	Computed variable: Arithmetic sum of the number of SNS used by each university: Facebook + Linkedln + G+ + Weibo + VK	NoSNS
Number of Content Sharing Platforms*	Computed variable: Arithmetic sum of the number of Sharing Platforms used by each university: Instagram + Pinterest + Flickr + Snapchat + Youtube + Vimeo	NoCSP
Number of Microblogging Platforms	Computed variable: Arithmetic sum of the number of microblogging sharing platforms used by each university: Twitter + Tumblr	NoMBP
Number of publications	Computed variable: Arithmetic sum of the number of posts/tweets on Facebook, Instagram, Flickr, and Twitter	Nopublications

* No distinction was made between photo or video sharing platforms

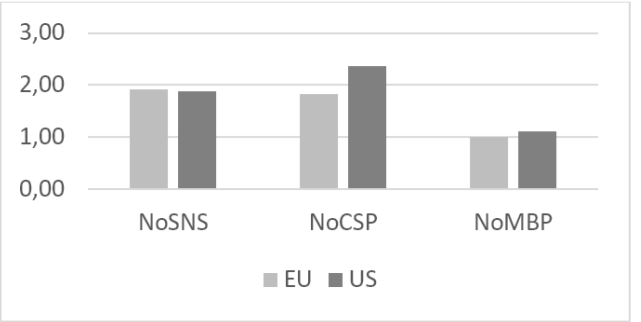
Source: own elaboration.

Furthermore, the following abbreviations were used: FB-Facebook, LI-LinkedIn, G+ -Google+, W-Weibo, VK-VKontakte, IN-Instagram, PI-Pinterest, FL-Flickr, SC-Snapchat, YT-Youtube, VI-Vimeo, TW-Twitter, and TU-Tumblr.

Results

Starting with the number of social media managed by the EU and the US universities, in average 2 different types of social media networks (SNS) are used for marketing purposes (EU: 1,91; US: 1.88). The US universities turn more to content sharing platforms (CSP) than the European ones (EU: 1.83; US: 2.38). Regarding microblogging platforms (MBP), mostly Twitter is used for both groups (EU: 1; US: 1.1).

Figure 1. Number of social media used by region



Source: own elaboration.

Means were further tested for equality using the independent samples t-test; no significant statistical differences were found.

Table 2. T-test for the equality of means of the number of social media used by region

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Means of samples
NoSNS	Equal variances assumed	.070	.792	.240	81	.811	equal
NoCSP	Equal variances assumed	.218	.642	.538	81	.592	equal
NoMBP	Equal variances assumed	2.773	.100	.826	81	.411	equal

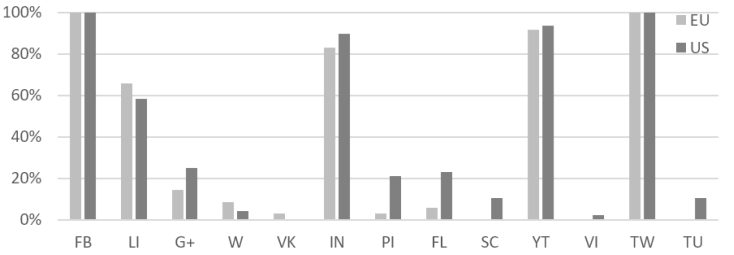
Source: own elaboration.

No correlations between variables were present, except for the US universities with the pair NoSNS and NoCSP (p=.314 at a 0.05 level of significance).When it comes to the type of social media used by the EU and the

US universities, Facebook and Twitter are the most popular ones, followed by Youtube, Instagram and LinkedIn.

VKontakte, a Russian social networking site, is only used by the Moscow State University. To attract the Asian students, the University of Oxford, the Imperial College London, and the Aarhus University have a Weibo account. The same is valid for Yale University and Carnegie Mellon University. Pinterest and Flickr are more popular media for the US universities than for the European ones (Pinterest: 21% versus 3%; Flickr: 23% versus 6%). Altogether, 5 US universities have a Snapchat and a Tumblr account, and only the University of California, Santa Barbara use the Vimeo Platform.

Figure 2. Percentage of the type of social media by region



Source: own elaboration.

For these variables no significant statistical differences between means on a 2-tailed t-test for independent samples were found.

Other media were used by isolated universities to engage with users, namely iTunes, Soundcloud, Coursera, edX (free edu), Medium, Futurity.org, The Conversation, Issuu, scoop.it!, and Apps. Means for both groups were found to be statistically different.

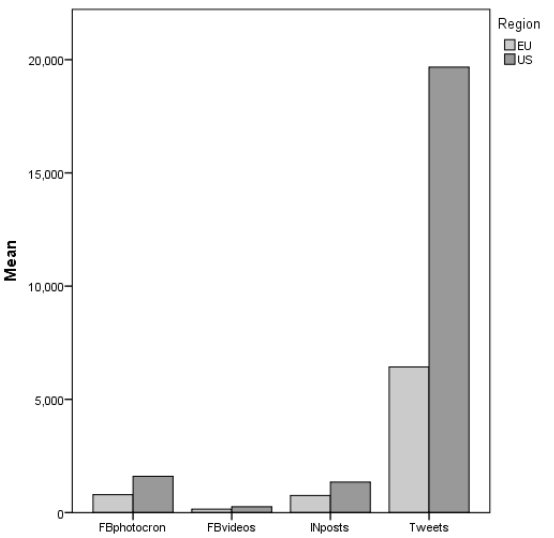
Table 3. t-test for the equality of means of the number of other social media by region.

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Means of samples
Noother-media	Equal variances not assumed	23.151	.000	2.485	41.570	.017	different

Source: own elaboration.

Regarding the number of publications of the most used social media by region, US universities invest more in posting than their counterpart. As can be seen, tweets on Twitter accounts of the US universities are three times as high as for the EU. The number of Facebook's profile and page photos, and Flickr photos were left out of the following graph for scale reasons.

Figure 3. Mean of the number of publications per social media by region



Source: own elaboration.

Comparing the means of both samples, statistical equality was found for the variables number of Facebook page and profile photos, but not for the number of photos listed in the chronology. The same is valid for the number of photos posted on Flickr. Differences in means were identified for the number of photos in the chronology (EU: 984.46; US: 1615.63) and number of videos (EU: 141.49; US: 279.27) in the Facebook account, number of Instagram posts (EU: 751.54; US: 1344.09), and the number of tweets (EU: 6308.69; US: 19901.46).

Table 4. t-test for the equality of means of the number of publications per social media by region

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Means of samples
FBpage-photo	Equal variances assumed	2.279	.135	-1.646	81	.104	equal
FBpro-filephoto	Equal variances assumed	2.701	.104	-1.879	81	.064	equal
FBphoto-cron	Equal variances assumed	.493	.485	-2.259	81	.027	different
FBvideos	Equal variances assumed	.799	.374	-3.301	81	.001	different
INposts	Equal variances assumed	1.602	.210	-3.609	69	.001	different
FLphotos	Equal variances assumed	2.003	.185	-.936	11	.369	equal
Tweets	Equal variances not assumed	14.158	.000	-7.900	68.447	.000	different

Source: own elaboration.

Considering bivariate Pearson correlations between these variables for the EU universities, a statistically significant correlation was found between the number of page photos and profile photos on Facebook at a 0.05 level (.396) and between the number of Instagram posts at the 0.01 level (.516). Furthermore, the number of photos on Facebook's chronology also correlate to the latter variable (.409). Both the number of videos on Facebook and the number of Instagram posts are correlated with the number of tweets respectively .510 at the 0.01 level and .433 at the 0.05 level.

Table 5. Pearson bivariate correlation of publications for EU universities

EU	FBpage-photo	FBpro-filephoto	FBphoto-cron	FBvideos	INposts	FLphotos	Tweets
Fbpage-photo							
FBpro-filephoto	.396*						
FBphoto-cron							
FBvideos							
INposts	.516**		.409*				
FLphotos							
Tweets				.510**	.433*		

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: own elaboration.

For the US universities, and for the same variables, statistically significant correlations at the 0.01 level were found between the following pairs of variables: number of photos on the Facebook chronology and the number of videos on the same SNS (.398); number of photos on the Facebook chronology and the number of posts on Instagram (.636); number of videos on Facebook and the number of Instagram posts (.470) and tweets (.482). At the 0.05 level, significant correlations resulted between the following variables:

number of page photos on Facebook and number of Flickr photos (.613); number of videos uploaded to Facebook and the number of Flickr photos (.650) and tweets (.288); and the number of Instagram posts and tweets (.343).

Table 6. Pearson bivariate correlation of publications for US universities

US	FBpage-photo	FBpro-filephoto	FBphoto-cron	FBvideos	INposts	FLphotos	Tweets
Fbpage-photo							
FBpro-filephoto							
FBphoto-cron							
FBvideos			.398**				
INposts			.636**	.470**			
FLphotos	.613*		.650*				
Tweets			.288*	.482**	.343*		

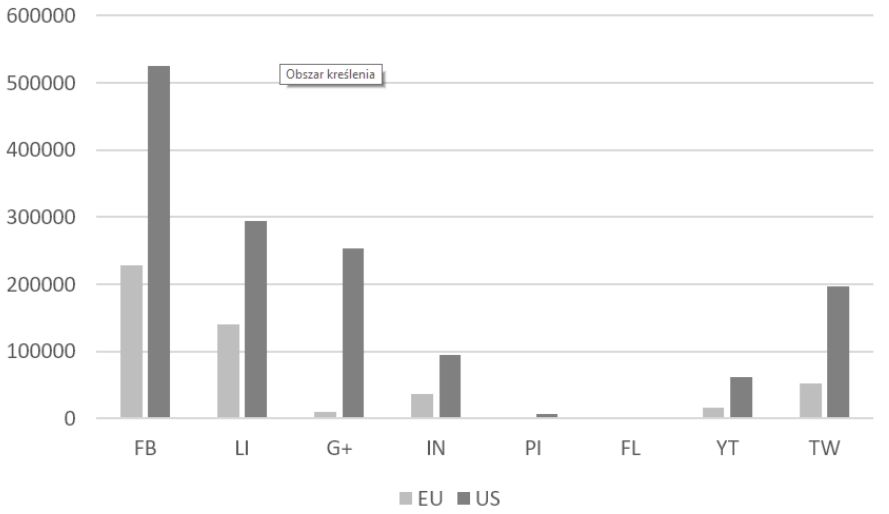
**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: own elaboration.

The second part of the analysis consisted in examining engagement data by looking at the number of followers of each social media. The number of followers of the US universities is substantially higher than the one regarding EU higher education institutions. The difference between the means of the number of followers is the highest for Facebook (296528 followers) and for G+ (243749), tailed by LinkedIn (154296), and Twitter (143246).

Figure 4. Mean of the number of followers per social media by region



Source: own elaboration.

In relationship to the means of both regional independent samples, statistical equality was found for the variables number of followers on Facebook, Pinterest, Flickr, and Youtube; differences for the social media LinkedIn, G+, Instagram and Twitter.

Table 7. t-test for the equality of means of the number of followers per social media by region

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Means of samples
FBfollowers	Equal variances assumed	1.503	.224	-1.508	81	.135	Equal
LIfollowers	Equal variances not assumed	10.467	.002	-3.711	41.304	.001	Different

Gfollow-ers	Equal variances not as-sumed	15.023	.001	-2.945	11.084	.013	Different
INfollow-ers	Equal variances assumed	1.930	.169	-2.291	70	.025	Different
PIfollow-ers	Equal variances assumed			-.641	9	.537	Equal
FLfollow-ers	Equal variances assumed	.332	.576	-.811	11	.435	Equal
YTfol-lowers	Equal variances not as-sumed	5.866	.018	-1.886	48.903	.065	Equal
TWfol-lowers	Equal variances not as-sumed	6.743	.011	-2.959	58.996	.004	Different

Source: own study.

By calculating the bivariate correlations coefficient between the followers in several social media for the EU universities, statistically significant correlations were found at the 0.01 level between the number of Facebook followers and LinkedIn (.777), Instagram (.964), Youtube (.904), and Twitter (.960) followers. The correlation with G+ is also significant (.954) at the 0.05 level. Furthermore, at the 0.01 level, the number of LinkedIn followers is correlated with the number of followers in Instagram (.824), in Youtube (.786), and Twitter (.820). A positive significant Pearson correlation was also found between the number of followers of Instagram and the ones on Youtube (.949) and Twitter (.986). Last, but not least, Youtube and Twitter followers are also associated (.954).

Table 8. Pearson correlations between the number of followers per social media for the EU

EU	FBfol-lowers	LIfol-lowers	Gfol-lowers	INfol-lowers	Pfol-lowers	FLfol-lowers	YTfol-lowers	TWfol-lowers
FBfol-lowers								
LIfol-lowers	.777**							
Gfol-lowers	.954*							
INfol-lowers	.964**	.824**						
Pfol-lowers								
FLfol-lowers								
YTfol-lowers	.904**	.786**		.949**				
TWfol-lowers	.960**	.820**		.986**			.954**	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: own elaboration.

As for the universities in the US, and between engagement variables, all correlations are at the 0.01 level. No relationship was present between the number of Facebook followers and G+ followers, LinkedIn followers and both G+ and Pinterest followers. The number of G+ followers is not linked to the number of followers in Instagram, Flickr, and Youtube. Additionally, no connection was found between the variable for the engagement on Pinterest and Flickr.

Table 9. Pearson correlations between the number of followers per social media for the US

US	FBfol-lowers	LIfol-lowers	Gfol-lowers	INfol-lowers	Pfol-lowers	FLfol-lowers	YTfol-lowers	TWfol-lowers
FBfol-lowers								

LIfol-lowers	.599**							
Gfol-lowers								
INfol-lowers	.682**	.669**						
PIfol-lowers	.968**		.982**	.846**				
FLfol-lowers	.794**	.872**		.930**				
YTfol-lowers	.732**	.584**		.756**	.861**	.924**		
TWfol-lowers	.621**	.614**	.583*	.733**	.834**	.754**	.516**	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: own elaboration.

Discussion and Conclusion

In line with Sison and Brennan (2012), Williams and Omar (2013), and Duesterhaus & Duesterhaus (2014), the results of the present study confirm that higher education institutions invest in marketing activities online. When it comes to social media, European and North American universities and colleges opened accounts in social media networks (in average: EU-1.91; US-1.88), content sharing platforms (in average: EU-1.81; US-2.38), and microblogs (in average: EU-1.00; US-1.18). Regarding the number of social media that are managed, no differences between means were identified for both groups.

The results of the present study agree with Palmer (2013), and Belanger, Bali, and Longden (2014). According to the analysed data, the use of social media for attracting diverse stakeholders is a reality. Asderaki and Maragos (2012) already confirmed this fact, in general terms, for Europe, and Barnes and Lescault (2011) for the US.

Our study demonstrates that this online marketing tactic is used by all European and North American education institutions on the TOP 100 of

the ARWU ranking, without exceptions. The most popular social media are Facebook and Twitter simultaneously, followed by Youtube, Instagram and LinkedIn. Concerning our sample, and from the perspective of the education institutions, these findings do not confirm the research of Smith (2010) that Facebook is the most popular social networking site in general.

The importance for universities to build onlin

Regarding the number of publications, the approach to social media is not the same for EU and US universities and colleges. For posted pagephotos and profilephotos on Facebook, and for photos in Flickr no statistically significant differences were found. These types of publications represent a minor share. Concerning the majority of posts, significant differences were found for the number of Facebook's chronology photos and videos, Instagram photos, and tweets.

These findings match the statements of Bulotaite (2003) and Ali-Choudhury, Bennett, and Savani (2009) about the importance of visual branding activities to evoke associations and images. The need to inform stakeholders about the institution was already discussed by Davis et al. (2012).

For the European and the North American higher education institutions significant correlations exist between the publications on social networking sites, content sharing and microblogging platforms. For the EU, the number of photos on the chronology of Facebook is related to the posts on Instagram. Furthermore, the number of tweets show an association with the videos uploaded on Facebook and the photos on Instagram. For the US, significant correlations were verified between the publication activity of Facebook chronology photos and videos, Instagram and Flickr photos, and tweets. These correlations can hypothetically be explained by the use of applications like Hootsuite and Agorapulse that enable marketers to manage several social media at the same time. To test this hypothesis a qualitative study approach to publications should be followed.

Our paper studied user engagement as defined by De Vries, Gensler, and Leeflang (2012), and Ashley and Tuten (2015). On all the prominent social

media, US universities benefit from a substantial higher number of followers than their counterpart. European users favour Facebook, LinkedIn, Twitter, and, at last, Instagram. Participation in G+ is marginal. In the US the preferred social media are Facebook, LinkedIn, G+, Twitter, and Instagram. Our study agrees with Smith (2010) and Barnes and Lescault (2011) that, from the perspective of the user, Facebook is the most popular social networking site for both regions.

Consequently, several practical implications can be drawn. When universities' data on publications are contrasted with users' choices to engage as followers, contradictions were found. For both regions, the most popular social media for posting are Facebook and Twitter ex-aequo, followed by Youtube, Instagram, and LinkedIn. In Europe, the social networking site LinkedIn is neglected as a marketing tool, despite the fact that it is the second option for users. This same conclusion is valid for the US: LinkedIn is also the secon option for followers, but fifth in terms of posts. Moreover, there are more G+ than Twitter followers. Priorities should be reset.

Regarding user engagement, measured by the number of followers, equality of means between the two independent samples were found for Facebook, Pinterest, Flickr and Youtube. Differences exist for the social media LinkedIn, G+, Instagram, and Twitter. G+ is quite popular in the US, but not in Europe, and Twitter attracts visibly more followers than in the EU.

In terms of practical implications, it would be advisable for European universities and colleges to raise the number of tweets. Mangold and Faulds (2009) already identified Twitter as an effective way to create strong brand communities. Despite the popularity of Facebook, Twitter is also more indicated for interactions between brands and users (Smith, 2010).

Users follow more than one type of social media. In European higher education institutions, high correlations at the 0.01 level were found between the number of FB, LinkedIn, G+, Instagram, Youtube, and Twitter followers. In total, 11 correlations are present; seven of them with values higher than .900. Evidence shows, that in North American universities, even more members

concur with the users of other social media. From the 21 associations, 4 show high values for equality. Further research would be advisable to understand the overlap of members in different social media for both regions. To ensure face validity it would be necessary to involve the administrator of social media for each university in the research.

To deepen the understanding of the marketing activities on social media, research should additionally focus on a complementary qualitative approach, addressing the textual and visual posts on hand of thematic and visual content analysis instruments. Furthermore, engagement data in the form of likes, posts, shares and comments could also be collected, since they have a considerable impact on brand image.

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