

Article

Analysis of the Presence of Most Best-Ranked Universities on Social Networking Sites

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Abstract: Universities are becoming aware of the importance of social networking sites for the reinforcement of their institutional brands. This study was conducted to analyze the extent to which best-ranked universities use social networking sites. A quantitative methodology and digital methods were used to measure the social media presence of the first 400 universities listed in the QS (Quacquarelli Symonds) World University Ranking 2018. The results reveal a high degree of involvement of those universities on social media; some factors that are associated with significant differences in the adoption of social networking sites include the public versus private management model, the level of academic prestige, and the region of origin.

Keywords: social networking sites; higher education; social presence; QS ranking; digital methods

1. Introduction

The growing popularity of digital social networking platforms such as Facebook, Twitter, YouTube, and LinkedIn has created an entirely new universe of possibilities for communication and collaboration. Every day, millions of people across the world use digital social networks to engage in conversations that cover a wide range of topics from entertainment to professional subjects. This phenomenon has also had a massive impact on the manner in which the public perceives institutions of higher education and their respective institutional brands.

The connection between universities and social media seems natural to the extent to which new and prospective students, a group that forms the primary community of educational institutions, are native users of these platforms. They tend to adopt technological changes at a much faster pace than other socio-demographic sectors [1]. In a study conducted among 1000 students from 12 universities located across five continents, respondents consistently reported that constant access to digital technology was an essential part of their personal identity; thus, availability was considered vital for handling their work and social lives [2]. A high percentage of the participants also reported certain addictive behaviors associated with their usage of online platforms. However, the influence of these internet-based channels is not limited to a university's link with its student community or with younger audiences. These platforms open up a wide range of possibilities of communication between institutions of higher education and their external environment on a global scale. Using social media, colleges and universities can for example, connect with companies, corporations, Non-governmental organizations (NGOs), parents, and society in general.

Several studies have analyzed the adoption of social media by higher education institutions. Most of these studies have been located in the United States, and they have established that most universities are actively involved in some form of social media to promote their position in the educational market [3–5]. Barnes and Mattson evaluated the adoption of social media programs by 478

American colleges. Their study concluded that most admission offices use Facebook (83%), and about half of the institutions employ Twitter (55%) [6]. In addition, numerous local studies demonstrate that institutions of tertiary education from different parts of the world are systematically taking to social networking sites for the purpose of communication. Canada, Europe, Australia, New Zealand, Mexico, and Indonesia are some of the regions where such research has been conducted [5–11]. However, the extent to which best-ranked universities use social networking sites as communication channels and the factors related to the adoption of such online social media networking are not yet clear.

1.1. Risks and Advantages of Adopting Online Social Networking

The usage of social networking sites has opened multiple areas of opportunity for the world of higher education. Social media channels have aided the teaching process, encouraged collaborative resolution of questions, provided in-class support activities, and have made the distribution of educational content easier [12–15]. From the perspective of academic research, social media has significantly increased the availability of scientific publications [16]. However, the most representative application of social media networking is still the management of an institution's relationship with its students. The aspects of student relations made easier by social media platforms include the establishment of early contact with prospective students, the provision of support tools to new students, the maintenance of a flexible relationship between faculty members and current students, and the continuation of contact with alumni.

An academic institution's ability to recruit new students has considerable implications on its enrollment volume, its budgeting, and its survival as an organization [17]. Social networking sites have become the primary means of attracting prospective students. A significant section of aspiring college students stated that they used social media to collect information about and share their impressions of colleges [18]. College admissions offices are now recognizing the potential of social networking sites and are incorporating the implementation of social media strategies into their recruiting efforts [19].

With regard to the relationship between current students and universities, social media sites have proven to be effective tools for the exchange of information and of collaboration, especially in the case of crisis scenarios that require a coordinated response [20]. Social networking sites are also useful in facilitating the orientation and incorporation of freshman students into college life [21]. Increasingly, new students identify such sites as primary sources of information and look to them for institutional support.

The alumni comprise another large interest group for higher education institutions. An educational organization's alumni unit represents the visible face of its academic achievement and performance. Past students also are a rich source of founding, sponsoring, volunteering, human resources, and knowledge. Sites such as LinkedIn and Facebook are effective communication ducts for keeping in touch with former scholars [22–24]. According to Stephenson and Yerger, the act of following the social networking sites of one's alma mater (university from which an individual has graduated) is positively correlated with a person's feelings of identification with and of belonging to the institution [25].

However, the relationship between educational institutions and social networking sites is not exempt from damaging effects. Some studies have identified a negative association between the time a student spends navigating social media and critical variables such as the time dedicated to study and to academic performance [26–29]. Institutional reputation can also be negatively affected due to poorly managed crises, which can range from extreme violence on campus to illicit activities, accidents, epidemics, and so on [30]. The spreading of false or incomplete information can also imply a source of risk for these organizations, particularly when users are not capable of discerning the veracity of the information they receive [31]. Complaints that students or personnel might register with regard to the organization's performance can also cause problems. In this sense, opening the college or university to social media can become disadvantageous if the intention is to keep unconstructive information away from public scrutiny [19].

1.2. Role of Social Media in the Marketing of Institutional Brands

Higher education institutions are burdened by a growing pressure to engage in advertising activities so as to guarantee their position in a saturated and competitive market [32]. The promotion of higher education highlights the necessity of universities to distinguish themselves from their competitors by offering a brand proposition that is sufficiently distinctive [33]. These efforts to differentiate their offerings have brought about the implementation of corporate branding strategies such as the redesign of logos, the creation of slogans, and the use of advertising campaigns, among other activities [34]. This push to sell has become one of the drivers behind the decision of colleges to join social networking sites [35]. In turn, this effort to project a brand has translated into the inevitable growth in the marketing functions of educational institutions [36,37]. Departments of marketing and communication have seen their influence grow as social media has begun to merit more professional management.

Previous research on social media has proven it to be an extremely useful advertisement tool in creating communities loyal to business brands [38]. Despite this advantage, institutions of higher education require the development of more comprehensive promotional strategies than those offered by traditional marketing [39]. Several authors agree that a marketing model based on collaboration performs better in the context of higher education as opposed to marketing strategies focused on hard selling [40–43]. This model is based on the construction and maintenance of genuine relationships between institutions and their three main costumer groups: the alumni, current students, and aspiring students [19]. The quality of these relationships is positively correlated with long-term loyalty to the institution [44].

Institutions of higher education seek to develop loyalty for their institutional brands through the integration of the personal narratives and experiences of current students [45]. These stories attempt to help prospective learners gain a wider perspective regarding everyday life on campus. Digital social communication strategies that involve the participation of the student community provide a more powerful and authentic description of the college experience than pamphlets and other traditional recruitment materials.

Another new element associated to the presence of colleges in social networks is the publication of policies and support material to regulate the use of these platforms for a wide spectrum of purposes, including learning, teaching, and evaluation [35]. The creation and implementation of policies for the use of social media allow institutions to manage the risks and benefits of social media in the current technological environment and to protect the institutional brand's reputation.

2. Materials and Methods

This study aims to analyze the official presence of the best-ranked academic institutions on social networking sites by taking a quantitative approach. In this project, the concept of digital presence includes the existence or the absence of official social media profiles as well as the number of followers.

The research questions that guided this study were:

- a. How is the social channel mix associated with best-ranked universities influenced by factors such as size, management model, position in the QS ranking, and region?
- b. What is the quantity of followers associated with the official social networking profiles of universities in the QS World University Ranking 2018?

This research was designed following the concept of digital methods. Rogers defines digital methods as techniques for the study of social and cultural phenomena through the available data on the web [46]. These techniques make use of digital objects such as websites, URLs, hyperlinks, tags, likes, tweets, and other artifacts created through diverse internet platforms (content managers, blogs, social networking sites, directories). Specifically, a technique called web scraping was used to capture online data. Contemporary web pages have an underlying hierarchic structure formed by labels.

This structure allows the automated recollection of data through a sequence of commands executed by a program [47]. The data used for the analysis was collected during the month of July 2017.

The list of analyzed universities corresponds to the first 400 positions of the QS World University Ranking 2018. The list is based on criteria such as academic standing, employer reputation, the ratio of faculty to students, number of international faculty, number of international students, and citations per faculty [48]. The QS ranking is one of the main references when comparing the performance of higher education institutions in the global arena [49]. Within the same QS directory, one can find exhaustive information about each university, including details such as size with respect to the number of students, public or private management model, and location. These attributes were also included in the subsequent research analysis.

The first step to identify the social media networks associated with each university consisted of obtaining the URLs of the official websites of the universities. This search was made easier by the fact that most of these websites are available in the list provided by QS. Second, a scraping tool was used on the collected URLs to capture the associated social networking sites. This automatic search process was followed by a manual inspection of the websites to discard any omission of results that could have occurred because of the multiple models of programming available for the creation of the websites. This step led only to the creation of minor changes to the automatic search capture. It should be noted that the present analysis focuses solely on the review of primary profiles. Some universities have a branched digital presence, divided by faculties, student groups, academic services, and other attributes, and these were not included in the present research project.

3. Results

3.1. How Is the Social Channel Mix Associated with Best-Ranked Universities Influenced by Factors Such As Size, Management Model, Position in the QS Ranking, and Region?

Table 1 illustrates the presence of official accounts on seven social networking sites (LinkedIn, Facebook, YouTube, Twitter, Google+, Instagram, and Snapchat) broken down according to categories of size, management model, position in the QS ranking (in groups of 100 establishments), and region. The first two columns of results show the absolute and relative frequency of institutions that have at least one public profile on any of the platforms. The remaining columns reveal the proportion of universities that have profiles on specific sites. These remaining columns are ordered from right to left in descending order according to the total number of universities present on the respective site.

Through Chi-square tests of independence, it was analyzed whether the possession of an account on each platform (No = 1 and Yes = 2) is independent with respect to size, management model, position in the QS ranking, and region. The significance of the tests can be read in Table 1 in the intersection between the social network and its respective variables. The possession of accounts on Google+ and YouTube did not prove to be independent from college size: a lower propensity to own accounts on those platforms can be observed in smaller universities. The tendency to have a Snapchat account is not independent from management models and rank: the private universities and colleges located among the first 100 positions on the QS ranking report a larger relative existence on the platform. Finally, although the number of cases per cell is not favorable for the independence test, the possession of social media accounts is not independent from the region. The universities in the Asian region seem less likely to hold an account on some or on any of the social networks. This result implies the need for further analysis.

Table 1. Presence of official accounts on seven social networking sites.

	<i>n/N</i>	% Total	% LinkedIn	% Facebook	% YouTube	% Twitter	% Google+	% Instagram	% SnapChat
Universities with any social network	398/400	99.5%	97.5%	95.5%	92.0%	90.8%	78.3%	78.3%	28.8%
Size					**		**		
Extra large	103/104	99.0%	98.1%	93.3%	90.4%	91.3%	75.0%	76.0%	27.9%
Large	206/207	99.5%	98.1%	97.1%	95.2%	91.8%	81.6%	82.6%	30.9%
Medium	72/72	100%	94.4%	94.4%	90.3%	87.5%	80.6%	73.6%	25.0%
Small	17/17	100%	100%	94.1%	70.6%	88.2%	47.1%	58.8%	23.5%
Management model									**
Public	337/339	99.4%	97.6%	95.0%	91.2%	90.6%	77.0%	76.7%	25.7%
Private	61/61	100%	96.7%	98.4%	96.7%	91.8%	85.2%	86.9%	45.9%
Position in the QS ranking									**
Top 1–100	99/100	99.0%	97.0%	100%	92.0%	92.0%	76.0%	78.0%	44.0%
Top 101–200	100/100	100%	100%	94.0%	93.0%	95.0%	78.0%	80.0%	23.0%
Top 201–300	99/100	99.0%	96.0%	95.0%	93.0%	91.0%	77.0%	82.0%	25.0%
Top 301–400	100/100	100%	97.0%	93.0%	90.0%	85.0%	82.0%	74.0%	23.0%
Region			***	***	***	***	***	***	***
Western Europe	166/166	100%	100%	100%	98.8%	98.2%	80.1%	86.1%	22.3%
North America	90/90	100%	100%	100%	98.9%	100%	94.4%	97.8%	64.4%
Asian Region	72/74	97.3%	89.2%	77.0%	64.9%	56.8%	48.6%	35.1%	1.4%
Pacific Region	28/28	100%	100%	100%	100%	100%	92.9%	100%	53.6%
Eastern Europe	15/15	100%	93.3%	93.3%	93.3%	93.3%	60.0%	73.3%	0%
Latin America	13/13	100%	100%	100%	84.6%	92.3%	84.6%	53.8%	15.4%
Middle East	11/11	100%	90.9%	100%	100%	100%	90.9%	81.8%	0%
Africa	3/3	100%	100%	100%	100%	100%	100%	33.3%	0%

Codes of significance Chi-square test of independence: 0.01 **, 0.001 ***.

3.2. What Is the Quantity of Followers Associated with the Official Social Networking Profiles of Universities in the QS World University Ranking 2018?

Table 2 contains the average number of followers of the official accounts of the universities on six social networking sites (Facebook, LinkedIn, Twitter, Instagram, Google+, YouTube) broken down according to categories of size, management model, position in the QS ranking (in groups of one hundred establishments), and region. Follower count is not available for Snapchat. The columns are ordered from right to left in descending order according to the average number of total followers for universities with profiles on each respective platform. The total panel of universities aggregates 137.8 million followers: 55.4 correspond to Facebook, 44.2 correspond to LinkedIn, 22.8 correspond to Twitter, 7.0 correspond to Instagram, 4.3 correspond to Google+, and 4.1 correspond to YouTube. The number that appears in parentheses refers to the number of universities belonging to that particular group.

Subsequently, an analysis of variance (ANOVA) with multiple factors (size, management model, location, and QS rank) was conducted to examine if those aspects have significant effects on the average numbers of followers for each social network. The significance of the main effects can be read in Table 2, in the intersection between social network and corresponding factors. For each significant effect of ANOVA, a Fisher's Least Significant Difference (LSD) test ($\alpha = 0.05$) was used to create confidence intervals for all pairs of differences in the average of each level. In other words, Fisher's LSD was used where at least one of the averages was different to the others. In the same table, equivalent average groups are indicated with superscripts placed next to the average number of followers.

For LinkedIn and Instagram, all factors reported significant effects. For these platforms, the largest volume of followers is associated with private management, large size, being positioned among the first 100 places of the QS ranking, and being located in North America. For Facebook, Google+, and YouTube, the significant factors were management model and position in the QS ranking, with the largest volume of followers associated with private institutions and educational centers within the first positions in the QS ranking. Meanwhile, location is the only significant factor for Twitter, where Latin America, the Middle East, and North America are the leading regions.

Table 2. Average number of universities' followers on social networking sites.

	Facebook	LinkedIn	Twitter	Instagram	Google+	YouTube
Universities with any social network	145,058 (382)	113,323 (390)	62,737 (363)	22,445 (313)	14,292 (301) ¹	11,556 (352) ¹
Size	***		*			
Extra large	168,867 (97)	174,155 ^a (102)	68,105 (95)	30,958 ^a (79)	11,122 (75)	6055 (89)
Large	157,671 (201)	105,603 ^b (203)	63,110 (190)	22,256 ^{a,b} (171)	12,838 (163)	14,674 (188)
Medium	97,553 (68)	67,992 ^c (68)	65,427 (63)	13,938 ^b (53)	24,639 (55)	10,670 (63)
Small	44,154 (16)	21,858 ^c (17)	12,702 (15)	3499 ^b (10)	2506 (8)	8169 (12)
Management model	***		***		***	***
Public	118,297 ^b (322)	109,442 ^b (331)	55,527 (307)	17,730 ^b (260)	6407 ^b (251)	7033 ^b (294)
Private	288,672 ^a (60)	135,097 ^a (59)	102,260 (56)	45,571 ^a (53)	53,875 ^a (50)	34,486 ^a (58)
Position in the QS ranking	***		***		*	**
Top 1–100	319,052 ^a (94)	180,026 ^a (97)	87,558 (92)	49,236 ^a (78)	41,332 ^a (73)	29,672 ^a (88)
Top 101–200	107,343 ^b (100)	112,876 ^b (100)	64,624 (95)	17,096 ^b (80)	6695 ^b (77)	5124 ^b (83)
Top 201–300	87,418 ^b (95)	93,670 ^b (96)	65,124 (91)	12,875 ^b (82)	3030 ^b (74)	3985 ^b (92)
Top 301–400	68,625 ^b (93)	66,532 ^c (97)	31,206 (85)	10,429 ^b (73)	7077 ^b (77)	7469 ^b (89)
Region	***		***	***		
Western Europe	88,933 (166)	88,639 ^c (166)	29,319 ^d (163)	10,968 ^b (143)	2304 (130)	6186 (159)
North America	288,558 (90)	215,219 ^a (90)	101,175 ^{b,c} (90)	51,980 ^a (88)	46,226 (83)	26,194 (86)
Asian Region	72,141 (57)	46,654 ^c (66)	57,955 ^{c,d} (42)	9541 ^b (26)	2958 (36)	8416 (44)
Pacific Region	183,944 (28)	120,275 ^c (28)	26,326 ^d (28)	12,213 ^b (28)	1606 (25)	6422 (25)
Eastern Europe	10,048 (14)	26,213 ^c (14)	1448 ^d (14)	3143 ^b (11)	18 (6)	9542 (14)
Latin America	275,138 (13)	178,304 ^{a,b} (13)	283,471 ^a (12)	17,013 ^b (7)	1093 (11)	6904 (11)
Middle East	119,427 (11)	61,815 ^c (10)	191,800 ^{a,b} (11)	14,750 ^b (9)	715 (8)	7883 (11)
Africa	128,431 (3)	120,816 ^{b,c} (3)	61,865 ^{b,c,d} (3)	6008 ^b (1)	626 (2)	2227 (2)

Significance codes for ANOVA: 0.05 *, 0.01 **, 0.001 ***. The superscripts a, b, c, and d placed next to the average number of followers represent, in a descending order, differentiated groups according to the results of the Fisher's LSD. Means of groups that share a same letter are not statistically different. ¹ In some cases the count of followers was not available, so it could not be included in the analysis.

4. Discussion

The results of this study demonstrate that almost all the analyzed universities have an official presence on the monitored social networking sites. These findings match the multiple quantitative research efforts previously conducted with the same purpose. Slover-Linett and Stoner collected data from a sample of 1000 global universities who were members of the Council for Advancement and Support of Education (CASE). Their results revealed that 96% of these institutions used social networking sites to communicate with their students, and almost 57% employed social media as marketing tools to get in touch with prospective students. Nearly all (94%) of the institutions utilized Facebook and 60% exploited different social media sites such as Twitter, LinkedIn, or YouTube [50]. Nonetheless, this previous effort did not break down the results according to relevant variables such as geographic location. Merrill analyzed the social presence of the admission departments of 30 international universities. This study reported a preference for Facebook (96%) and Twitter (66%), followed by YouTube (46%) and LinkedIn (33%) [51]. The wide adoption of social media by universities can be compared with its employment by the business world. Barnes and Daubitz measured the presence of Fortune 500 companies on social media in 2016. The proportions were as follows: LinkedIn 97%, Facebook 84%, Twitter 86%, Instagram 45%, YouTube 67%, and Google+ 40% [52]. The percentages are lower than those of the group of 400 universities.

In this present study, several significant differences were identified with respect to geographical regions. Even when the adoption of social media is widespread in most places, the Asian region reports the lower levels of adoption. This difference could be associated with cultural and technical reasons. For instance, in China, the blocking of global platforms is a dissuasive element for an investment into the establishment of a digital presence on the part of educational institutions [17]. Another cultural factor is the difference in attitudes toward the use of social media among college officials who are in charge of marketing and recruiting efforts.

LinkedIn, Facebook, YouTube, and Twitter showed adoption rates higher than 90%, although there were differences in the average number of users. Facebook was situated at the top of the list, followed by LinkedIn, with Twitter taking third place. The rest of the social networks were positioned more modestly, and YouTube was at the bottom with the lowest number of followers. Dumpit and Fernandez suggest that the greater numbers of profiles on Facebook in comparison to YouTube can be attributed to the preference for more interactive capabilities and Facebook's higher potential for the exchange of opinions [53]. In the context of social media, Facebook is the platform with the largest number of users, the widest reach, and the greatest cultural impact [52].

Instagram and Snapchat deserve special mention. Both are fast-growing platforms that are biased toward younger demographic segments, with over 400 million monthly active users and over 100 million overall users, respectively [52]. The audience of the admissions departments is also the community that is most receptive to these forms of unconventional communication, especially when searching for firsthand narratives about experiences of college life [54,55]. The number of followers of these two social sites varies significantly according to the region and with regard to the institution's public or private nature of management. For instance, the greatest percentage of Snapchat penetration is associated with universities in the United States (68%), Australia (57%), the United Kingdom (49%), and Canada (47%). Similarly, private education centers showed a commensurate infiltration of 46%. Institutions of this profile can be categorized as early users. It can be hypothesized that other colleges will eventually join social media as well. Therefore, this is a topic deserving continuous attention.

Private and public management models show marked differences in the number of followers with respect to the examined social networking sites. This variance might be partly explained by the fact that many private education institutions have larger budgets that they can invest (A) in marketing strategies [56], and (B) into capacity-building programs to develop and upgrade the skills of their employees. Slabá identifies that one of the main differences between private and public institutions of higher education is the orientation to competition [57]. According to the results of Marie Slabá's study, public universities tend to underestimate the importance of their competitors, whereas private

universities are more inclined to pay their rivals more attention. It is probable that this peculiar characteristic reflects in the institutions' efforts to create and to promote a distinctive brand proposition in all possible ways.

In general terms, the current research project confirms the significant presence of the best-ranked universities on social networking sites. This incidence includes both the possession of accounts on multiple sites and the accrual of millions of followers. Being excluded from the digital conversation and the fierceness of the competition exceeds the expenses and the risks associated with joining the social media revolution. Entering this environment seems to be only the beginning of a continuous learning process, where universities face the challenges of generating authentic interactions synchronized with institutional values.

One of the primary limitations associated with studies about web environments is the volatility and the ephemeral nature of most digital objects [46]. This feature implies the need to continuously monitor the digital presence of academic institutions to detect the quick changes that could take place at any given time. Following up on the adoption and use of platforms such as Instagram and Snapchat would quite likely yield promising insights. In addition, this study only reviewed the main official accounts of the educational institutions, which represents barely the tip of the iceberg if the fact that many universities have a branched digital presence is taken into consideration. Another limitation of the current study has to do with the fact that only seven social networks were monitored. Although it is true that they are representative, other alternatives such as the social media sites native to specific geographic locations were excluded. For future studies, it might be worth investigating specific patterns of communication employed by universities in detail. The analysis of content and message, the type of follower (student, parent, or potential student), the communication proposes, the measurement of engagement, the quantification of the impact of the followers of educational brands on social media, the regional differences, the guidelines with respect to the design of social media policies, and the use of academic material versus advertising and recreational content could be some facets that could be examined in forthcoming research projects.

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