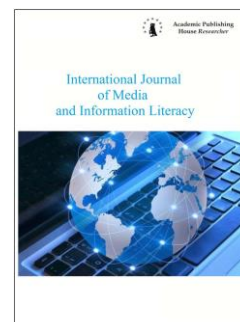


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How Universities Communicate with Public Using Facebook Page

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Abstract

Social media has been identified as an important vehicle in fostering social connections that maintain and expand existing relationships between organizations and their customers and stakeholders. This research was conducted on top public universities from the Czech Republic, Slovakia and Poland, with a focus on their communication activities on Facebook. First, quantitative data analysis was conducted using the data mining tool Netvizz. The research is unique as measurement using Netvizz is currently not possible due to technical limitations on the most popular social network. Data obtained from 24 Facebook profiles of selected universities were used. Second, the expert evaluation and content analysis were used to examine how the posts influence audience. The findings provide evidence on the use of Facebook by universities for communication with public and show differences among universities. The findings also support an integrated view of content marketing and highlight the importance of adjusting the content strategy to suit the utilitarian nature of higher education institutions and engage high-involvement target groups. The collected data also show that the most popular posts on SNS are not directly related to research conducted at individual universities. Paradoxically, communication strategies of universities through social networking sites are deprived of the most important element – the university mission, i.e. dissemination of research results.

Keywords: communication, public, social media, Facebook, higher education, Poland, Czech Republic, Slovakia.

1. Introduction

Social media has revolutionised not only people's lifestyle but also the way organizations communicate with their customers (students) and stakeholders. Social media allows to use audio-video platforms, such as videos and photos that have a greater effect on users than a simple textual content (Aparicio-Martínez et al., 2017). It is thus no surprise that social networks such as Facebook, Twitter or Instagram represent one of the most common forms of socio-cultural interactions in particular for young people.

In 2019, the share of individual internet users was 88 % in the Czech Republic, 85 % in Slovakia and 82 % in Poland. The share of internet users who participating on social network was 54 % in all EU27 member states, 59 % in the Czech Republic, 59 % in Slovakia and 53 % and in Poland (Eurostat, 2020). Among younger users aged 16 to 24 years in the EU popular online activities entail participating in social networks (90 % in 2017), watching videos from commercial or sharing services such as YouTube and listening to music (Eurostat, 2018). The youth uses social networks to maintain contact not only with friends and family but also with organizations and brands.

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Social media has been identified as an important vehicle in fostering social connections that maintain and expand existing relationships between organizations and customers. A growing number of organisations establish and maintain their interactive online presence via social networking sites and consistently seek to engage with potential and current customers (Alalwan et al., 2013). Social media also facilitates communication among higher education institutions and their students, alumni, staff and other public (Eger et al., 2020; Lund, 2019).

Therefore, understanding the characteristics that influence the interactivity and relationship between an organization and its page visitors and influencers is essential for the organization's ability to respond to public on social networking sites in a desired manner.

The main purpose of this research is to develop the existing higher education marketing literature by considering the use and impact of social media within the university sector. Specifically, the research examines the use of Facebook by universities in the Czech Republic, Slovakia and Poland and the impact of that social media communication with public on student engagement. We begin with a brief overview of the literature regarding social media, brand communities, and situation in higher education in three selected countries.

'Social media is a term used to describe the type of media that is based on conversation and interaction between people online' (Strauss, Frost, 2012: 306). Social media offer users a variety of online services to communicate with others, which results in a completely new communication style (Jahn, Kunz, 2012). Nowadays, social media represents a phenomenon which can drastically impact brand's reputation, image of educational organization, and as a result also student recruitment (Rutter et al., 2016). Social media enables open communication, which also helps organizations to understand customer needs and motivates them to respond proactively and efficiently to those needs (Tajudeen et al., 2018). Therefore, the challenge for universities is not whether to use social media for communication with the public but rather how to effectively use this tool to reach their marketing goals.

Social networks allow individual users and organizations to create a profile, to publish and to share information using text, photos, videos, and to connect and maintain connections with other users on the Internet. Social networking sites like Facebook offer organizations several options to contact and communicate with their customers (fans). Fan pages (brand communities) has become an important online service for brand communication.

At the core of all communication on Facebook is a single post. It represents the unit of every Facebook communication. Each post draws a specific amount of attention from a Facebook page (profile) of an organization.

Facebook is popular across a broad swath of demographic groups and in many different countries, so it offers a unique source of information about human behaviour. This network has been studied from different perspectives (Bowden, 2009; Cho et al., 2014; Kim, Yang, 2017; Tezer et al., 2017; Wilson et al., 2012). However, little has been published about the use of Facebook in the context of higher education in relation to marketing purpose (Eger et al., 2019; Lund, 2019), the empirical research is limited.

Currently, the popularity of social networking sites provides brands (including brands of universities) with new platforms, such as brand pages on Facebook or accounts on Instagram or Twitter (De Vierman et al., 2017; Eger et al., 2020). These virtual communities on Facebook offer brands (university = brand) new opportunities to interact with their public. A brand community is based on a set of social relations among admirers of a brand. It means also between university and students, alumni, academic staff etc. A virtual brand community connects people with a common interest in a brand and is unrestrained by time and space (De Vierman et al., 2017).

Virtual brand community or fan page is considered as an interesting and useful tool for organizations to use. The main typical characteristics of fans are self-identification as fan, and emotional engagement. In practice, users become fans of a Facebook fan page by pressing the "like-button," which indicates to their social network that they like this brand. In this case Facebook will automatically add users as a follower of that page. When users choose to follow a page, they keep informed about new posts made on or by that page.

The term engagement becomes the central construct used to describe the nature of participants' specific interactions (Cvijikj, Michahelles, 2013; Lund, 2019). Previous work has shown that brand community engagement can affect membership loyalty, brand image, and word-of-mouth (De Vierman et al., 2017; Jahn, Kunz, 2012). Facebook offers users an opportunity to engage with organisations' profiles and to send messages through three different engagement tools

such as likes, shares, and comments. These three tools/activities represent different forms of social engagement within this social network.

The social network Facebook is considered as one of the prime platforms for universities in Europe to reach their target groups and engage with them. It is also a leading social network actively used by people and by organizations in three selected countries.

In the 1990s, the democratisation of higher education in Central Europe coincided with the establishment of new regional universities, which replaced higher education institutions in the region. Selected countries became members of the EU on 1 May 2004 and all of them are members of the European Higher Education Area and Bologna Process (EHEA, 2018).

In the Czech Republic, the past 25 years have been marked by a period of school system reforms. The first private institutions of higher education were established in 1999. Since 2009, higher education in the Czech Republic has witnessed a decrease in the number of young people. The statistics from the Ministry of Education indicate that while in 2009 there were 389,000 students at Czech colleges and universities, in 2017 it dropped to 299,000. Currently in the Czech Republic (10.6 million inhabitants), 26 public universities and colleges, 2 states universities, and 34 private higher education institutions (HEIs) are operating (Ministry..., 2018, 2019). Almost 90 % of the general population of students attend public HEIs.

Currently in Slovakia (5.45 million inhabitants), 20 public universities and colleges, 3 states universities, and 12 private HEIs are operating. In the year 2017, there were 136,000 students at HEIs, which means 85 % of the general population of students attended public HEIs. Slovakia has rapidly increasing tertiary education attainment rates, but the internationalisation remains low. Slovakia has also seen a decrease in the number of young people at Slovak colleges and universities (Slovak..., 2019). According to the latest UNESCO statistics, more than 30,000 Slovak students studied outside of the country with almost 25,000 in the Czech Republic.

At present, Poland has 267 private colleges and universities, 59 public higher educational institutions (universities, technical universities, academies), and 34 state higher vocational schools (GUS, 2018). In the 2017/2018 academic year in Poland, there were 1.29 million students studying at universities, which is 4.2 % less than in the previous year. From the 2006/7 academic year, the number of students has been decreasing. This is due to demographic changes, that is, the decreasing number of individuals aged 19-24. In public HEIs, there was a 75 % enrolment of the general population of students. In the 2017/18 academic year, there was a growth in the number of foreign students-5.6 % of the overall number of students (Stat..., 2019).

HEIs facing falling numbers struggle to attract new students and thus have no other choice but to use effective marketing. The established HEIs (public institutions with historical tradition) may rely on the advantage of being well-known by people. However, that constitutes only the first step. They have a better position in terms of history and tuition-free education.

Marketing communication, including that on social media, became important for universities in the selected countries (Eger et al., 2019; Slabá et al., 2014). At present, the primary goal of marketing is to communicate the portfolio of study programmes to prospective applicants in an attractive way and convince them that studying the programmes taught at the university makes sense for their future (Kohring et al., 2013; Voss, Kumar, 2013).

The development of HEIs in the mentioned countries (Bilan et al., 2019) described above, the increase in competition in this field, and the demographic decline in the category of 18- to 23-year-olds, has resulted in the application of marketing in higher education (Slabá et al., 2014) including the usage of social media. In the last decade, it is evident that marketing at HEIs in these countries has become professionalised, first seen at private institutions and later followed by public ones.

This research provides evidence from a research focused on social media in higher education related to branding activities and PR activities and considers the impact of these activities on public engagement. It is assumed - based on the above-mentioned information about the importance and need of PR activities - that top universities from selected countries responsibly and professionally manage communication on their Facebook profiles.

Specifically, the research aims at answering the following research questions:

RQ1: How do top universities from three selected countries in Central Europe use Facebook to communicate with the public?

The hypotheses below were formulated in response to the research questions 1.

H1. There is a positive association between Engagement rate of the university Facebook page and number of published posts/year 2018 on university Facebook profile.

H2: There is a positive association between Engagement rate of the university Facebook page and number of students at the university.

RQ2: What kinds of call to action are used by selected universities to attract students and other publics on Facebook?

The answer to the question RQ2 is first based on the qualitative phase of the research. The research team applied expert evaluation of ten top posts and additionally conducted a quantitative survey using content analysis of the posts with the highest engagement from all selected Facebook profiles.

2. Materials and methods

Research design

To answer the research questions, a mixed-methods research design was used. This kind of design allows the researcher to explore a research problem from both qualitative and quantitative perspectives (Gray, 2009).

First stage of conducted research use the quantitative research design consisted of a data mining survey (Creswell, 2014). The quantitative approach used Facebook API to gather data using Netvizz with the aim to classify existing data and to compare activities on Facebook pages.

Second stage follows the first quantitative phase of research. The quantitative approach consisted of a data mining survey, while the qualitative approach used an expert evaluation of ten selected top posts.

Finally, the research team employed the content analysis of all the best posts from selected universities. This additionally conducted a quantitative survey used Facebook API to gather data using Netvizz (Netvizz, 2018) with the aim to classify existing data and to compare activities on Facebook pages. The expert evaluation and content analysis of selected posts were conducted to gather information about communication that Facebook administrators and marketing experts used to create engagement with the public via university Facebook profiles.

Sample

The sample consists of top universities from three countries in Central Europe, according to World University Rankings for the year 2018 (THE, 2018). The final sample comprised universities from the Czech Republic (12), Slovakia (3), and Poland (9). The list of selected universities and detailed information about the communication on their respective university Facebook profiles are presented in Appendix 1 and were also published by Eger et al. (Eger et al., 2020).

Procedures

First, the research used data mining using the Netvizz tool to analyse how selected universities communicated on Facebook in 2018. The data were downloaded in May 2019. It was freely available for non-commercial research purposes until September 2019.

Second, this tool was used to analyse different sections of the Facebook platform on every university profile (number of posts, types of posts, user engagement). A total of 8,696 (Netvizz) records of posts from 24 universities with Facebook profiles in 2018 were selected for detailed investigation (Links, Photos, Status, Videos).

To answer RQ1, the engagement was calculated for the selected 24 universities by using data downloaded from Netvizz. Engagement rate is a metric that measures the level (degree) of engagement received from the audience by a specific part of the published content. It shows how much target groups interact with the content. Engagement rate is a metric that is used greatly in analyzing social media (Kim, Yang, 2017; Rutter et al., 2016). This metric is continually refined by other parameters that enter into the calculation. As the engagement rate is calculated in relation to the number of followers a university has on social media, the rate for both small and large universities can be compared equally.

$$\text{Engagement Rate} = \frac{\text{Reactions} + \text{Comments} + \text{Shares}}{\text{Followers}}$$

The activity of the institution on Facebook is indicated, for example, by the number of published posts per year and the derived average number of posts per week. Generally, the number of students correlates with the number of alumni and academic staff. Spearman's rank-order correlation was used to analyse statistical difference between the rankings of two selected variables (Engagement rate and number of posts/year, Engagement rate and number of students). The Spearman correlation between two variables is high when observations have a similar rank.

$$r_s = 1 - \frac{6 \sum d^2}{n^3 - n}$$

To answer RQ2, the research team used content analysis as a method suitable for identifying, analyzing, and reporting themes within data from selected Facebook posts. In this stage of the research we followed recommendation by Green and Thorogood (Green, Thorogood, 2004) who argue that in exploratory work in an area where not much is known, content analysis may be suitable for the simple reporting of common issues mentioned in data. Applied method uses a descriptive approach in both coding of the data and its interpretation of quantitative counts of the codes. To explain the fan-page usage behavior, we used the uses and gratifications theory (Dolan et al., 2016; Katz et al., 1974; Ruggiero, 2000) and evaluated four main groups of gratification by Dolan et al. (Dolan et al., 2016).

3. Discussion

In the higher education marketplace, building open communication and developing positive relationships with potential and current students, alumni, staff, and stakeholders has become essential. This study has addressed the knowledge gap identified by Lund (Lund, 2019) concerning the use and impact of social media within the university sector. The study shows how followers of university Facebook pages engage in brand-related activities (De Vierman et al., 2017; Eger et al., 2020).

The study provides evidence from a research focused on social media use in higher education and related branding activities. It considers the impact of the marketing activities, in particular, of interactions between selected universities and their target groups. To reach high commitment (Dennis et al., 2016) and high engagement on social media (Alsufyan, Aloud, 2017; Lund, 2019; Tuten, Solomon, 2015), universities should actively communicate to the stakeholders and to the media using social networks like Facebook.

The conducted research on Facebook engagement (Eger et al., 2020) showed differences among the selected universities in the use of this popular social network for communication with the public. The results of the research showed that high engagement on Facebook profile is not associated with the number of students enrolled at the university and that efficiency is not related to the number of published posts.

The high effectiveness in communication with Facebook users in selected research sample was achieved primarily by photo and video posts.

The findings of the qualitative phase of conducted research shed light on what types of posts increase engagement of Facebook users. The results in Table 1 and Appendix 2 summarise that the post with content related to its target group and an appropriate call to action reaches higher engagement. The findings indicate that popular types of posts offer entertainment for the audience (Lund, 2019). The high engagement rate for some posts could illuminate a path for targeting ads on Facebook.

Information about top posts (Table 1 and Appendix 2) calls for discussion about categories of engagement behaviour, in particular about reactive and proactive engagement behaviour (Gutiérrez-Cillán et al., 2017; Ji et al., 2017; Kim, Yang, 2017, Peruta, Shields, 2017; Tajudeen et al., 2018).

A central topic in studies towards social networking sites is the motivation, why people use these platforms. The UGT approach is the predominant user-centric theoretical framework for studying how and why people use media (Mutinga et al., 2017). The research team, using content analysis, evaluated the sample of selected top posts and found that universities focused their posts namely on Information, Entertainment and Interaction. Our findings indicate that less attention has been given to the area Renumeration from selected UGT concept by Dolan et al. (Dolan et al., 2016).

Furthermore, the findings show that there is a possibility to improve application of so called “call to action marketing” in managing communication on the university Facebook profile (Table 1). A lot of analysed posts were evaluated only as information that not contains piece of content that encourages audience to do something. We are in line with statement by Cvijik and Michahelles (Cvijik, Michahelles, 2013) according to them, entertaining content is a significant factor in increasing the number of likes, comments and shares made on social media content. On the other hand, “joke” is also not content that usually leads all users to positive engagement.

4. Results

Engagement rate

The calculated engagement rate for selected universities and their communication on Facebook for the year 2018 is presented in Appendix 1.

The calculated value of Engagement Rate considers the number of followers and put the universities in order accordingly. The first universities were Palacký University in Olomouc (2.29) and the University of Chemistry and Technology from Prague (2.01) followed by universities University of West Bohemia, AGH University of Science and Technology and Masaryk University in Brno that achieved Engagement rate above 1.5. The lowest result was achieved by the University of Silesia Katowice (0.27).

As it is apparent from [Appendix 1](#), there were differences in publishing posts/year among selected universities, e.g. the Comenius University in Bratislava published 665 posts/year 2018 (12.8 per week) and opposite the Tomas Bata University in Zlín only 107 posts on university Facebook profile (2.1 per week).

H1. Association between Engagement Rate and number of post/year has been proven. The value of r is 0,38226 and the p (2-tailed) = 0.06527. The association between the two variables would not be considered statistically significant. It means that the high number of published posts /year does not leads to efficiency in terms of achieved engagement. For example, the Palacký University in Olomouc published higher number of posts (548) and achieved top engagement (2.21), the Comenius University in Bratislava published the highest number of post/year (665) but received engagement only 0.80, it means near the average (0.98). Opposite, the University of West Bohemia in Pilsen published only 220 posts /year and received third higher engagement (1.93).

H2. Association between Engagement Rate and number of students has been proven. The value of r is -0,05088 and the p (2-tailed) = 0.81335. The association between the two variables would not be considered statistically significant.

As it is apparent from [Appendix 1](#), the Charles University in Prague had 45,235 students and was the largest university in our sample of selected universities from the Czech Republic, Slovakia and Poland. The University of Chemistry and Technology in Prague had only 3,880 students but achieved the second highest Engagement Rate 2.01. It means, the high number of students does not mean that the university also automatically obtains high engagement on Facebook profile.

Posts types and engagement

Considering the marketing communication of selected universities on Facebook, the conducted analysis of posts in terms of their engagement provided important findings. The most used type of post in 2018 of the analysed universities ([Appendix 1](#)) was a photograph (4,758 = 55 %), followed by links (2,844 = 33 %). There were 985 (or 11 %) video posts and 109 (or 1 %) of the so-called basic status updates.

The high effectiveness in communication with Facebook users is achieved primarily by photo and video posts. These findings are in line with Peruta and Shields ([Peruta, Shields, 2017](#)). For instance, a very high engagement in 2018 was reached by the AGH University of Science of Technology. A photo ratio reached a value of 309; from the research sample, 9 universities reached a photo ratio above or near 100. There were big differences in the use of video for PR among universities. On the one hand, Adam Mickiewicz University published 91 video posts and the University of Wroclaw posted 83 videos per year. One university, Nicolaus Copernicus University, published only 3 video posts in the year 2018 ([Eger et al., 2020](#)).

The top posts and call to action

This underscores the need to qualitatively evaluate the posts that achieved the highest engagement and thus find out what may constitute the most appropriate type of content for universities while communicating with the public. In order to identify the most successful posts, data obtained by Netvizz were again used. The top three most successful posts for each university were described in detail and further analysed. [Appendix 2](#) shows the top 10 posts from 72 selected posts.

The expert evaluation of the selected posts includes key identity information (type, date, engagement data, hyperlink) and a brief description of their content, call to action, or motivation for users ([Strauss, Frost, 2012](#); [Tuten, Solomon, 2015](#)). In analysing the content, the researchers answer the question what types of posts result in greater engagement ([Lund, 2019](#)).

First, experts (authors of the research) evaluated ten top posts from the sample. The purpose of this expert evaluation is to demonstrate the focus of the top posts.

The first post ([Example 1](#)) is a result of student activity. It displays a photo, as a joke, that links to the issue of the famous Vogue magazine with a building from the university and the university's name. This post received higher engagement. [Example 2](#) presents the university campus using Lego-this type of post activated a lot of public engagement. The bronze medal

(Example 3), from our sample, received a post with information about donations for the university hospital and represents CSR activity by the university.

Some posts (Example 4 and 7) are invitations to activities at the university. Some posts aim to entertain the audience (Example 5, 8, and 9) and demonstrate that humour has a place in academia, which attracts high engagement. Example 6 is focused on international cooperation and uses appearances of VIPs to the university as promotion. This post contributes to the positive name of the university and also achieves notable engagement. Opposite to this was seen in Example 10, which was a very sad message, shown in [Appendix 2](#), and received a high number of shares.

Netvizz divides Facebook reactions into 'love', 'ha-ha', 'wow', 'sad', 'angry', and 'thankful.' As stated above, it is necessary to differentiate between the forms of interaction ([Zell, Moeller, 2018](#)). The post in Example 6 received a higher number of comments, which means that this post received a higher number of cognitive reactions by the public.

Furthermore, the examples also stress the importance of posts' content in relation to their target group. It may be assumed that the type of posts exerts less influence ([Eger et al., 2019](#)).

It is evident ([Appendix 2](#)) that users are engaged with an organisation not only through connecting and liking but also by sharing its content on their personal social networks as well as by creating new comments on the organisations' profile page, which represents the highest level of public engagement on Facebook. In this case, the findings are in line with Peruta and Shields ([Peruta, Shields, 2017](#)) who argue that more page likes (reactions) means each post gets a larger organic reach and there is more opportunity for engagement.

To gain more detailed information, the research team conducted content analysis. After completing and organizing the data (three post with the highest engagement from each selected university), it was separated in two important parts. First one briefly describes content of each post and second one describes action from communication point of view. A brief description is based on the agreement of two experts after viewing the post (expert evaluation). Followed coding simply involves identifying similarities and differences in the data conducted by researchers. The code serves as a tag used to retrieve and categorize similar data so that the researcher can pull out and examine all of the data across the dataset associated with that code ([Castleberry, Nolen, 2018](#)).

In this case is the action of coding focused on specific questions of the data.

First part:

What is happening in the post?

Who are the recipients (target groups) of the post?

When is it happening?

Second part:

What kind of call to action the post used?

What kind of gratification is connected with the post?

A coding strategy was established before coding begins (a priori) based on current theory on communication using social media, namely social network Facebook ([Cvijikj, Michahelles, 2013; De Vierman et al., 2017; Lund, 2019](#)). Further, the uses and gratifications theory (UGT) was taken in account. This theory provides information for what people needs, where needs originate, and how they are gratified ([Choi et al., 2016](#)). In this research we follow Dolan et al. ([Dolan et al., 2016](#)) who posit that social media content can be categorised into four main group factors, based on its level of information, entertainment, remunerative and relational content.

Conducted content analysis concentrated analysis on the manifest content of data. The unit of analysis was selected post. Next, the collected posts were classified based on different structural dimensions and related analytic categories, which where obtained from both deductive and inductive categorization techniques. The main categories were ([Table 1](#)) topic of the post, target groups, perceived time, call to action and categories of UGT.

Researchers divided up the content of the posts into smaller parts, into meaning units. Then condensed these meaning units further by formulating codes and then grouped these codes into categories. As is shown in [Table 1](#), the selected published posts in category topic of the post received 12 codes: Funny, Persons, Update photo, Promotion, Campus, Ecology, Study, Management, Offer service, Sports, Students event, Award and Others. Funny picture or funny announcement were the most used post in this sample of Facebook posts. Administrators and people responsible of Facebook profile often published posts about famous persons and update photo of the university on the second place. Some posts were focused on prospective students (Promotion). Above presented codes represent focus of selected posts. Recipients (target groups) were usually students, staff and all public but 11 posts had a

particular focus on students. The other 7 posts were mainly aimed at students and staff and 5 post aimed at prospective students on the first place.

Two thirds of the posts were related to the current event, some of the posts were focused on the future and the smallest number on historical information and events. To activate users on social media, it is suitable to use call to action phrases. However, almost half of the posts were assessed by experts as informational only without a call to action. Joke (16), then an invitation (5), a call to follow us (4) and a special offer (3) were most often used to activate users.

Finally, the communication presented on Facebook was evaluated from the perspective of UGT. As mentioned above, the researchers used four categories of UGT by Dolan et al. (Dolan et al., 2016). The factor Entertainment dominated in 13 posts and in a total of 30 posts contained tis factor. The interaction factor was identified by experts in 23 posts and the factor Information in 22 posts. The factor Renumeration was marked by experts in 9 posts (Table 1).

Table 1. Categories, distribution of codes for top 72 posts

Topic of the post	Total	Target groups	* Total	Perceived time	Total	Call to action	** Total	UGT	Total
Funny	15	Students, staff, all public	*	History	5	Joke	16	Entertainment	13
Persons	10			Past event	2	Invitation	5	Entertainment partially	30
Update photo	9			Actual	49	Follow us	4		
Promotion	4	Students	11	Actual/future	10	Offer	3	Interaction partially	23
Campus	5	Students, staff	7	Future	6	Call to protect freedom	2		
Ecology	4			Prospective students	5				
Study	2	Renumeration partially	6						
Management	3								
Offer service	4								
Sports	2								
Students event	2								
Award	2								
Others	10								

Note. * most of the posts are focused on students + staff + all public, ** the half of the posts has only information value and not contains piece of content that encourages audience to do something.

5. Conclusion

This research makes several contributions of both researchers and practitioners in communication using social media. The research aims to assist people who are responsible for communication of higher education institutions with their target groups (Slabá et al., 2014) in better understanding the methods and activities that support their institution’s image and brand via Facebook.

Universities need to attract attention from the public and the social network Facebook is considered as one of the prime platforms for this purpose. The study provides evidence that investment in social media can help institutions develop their relationship with prospective and current students, alumni, staff, and other stakeholders. The findings show that targeting community members on Facebook profile may be particularly beneficial and lead to higher engagement. This study also shows that in the higher education area the best practice is to publish posts about important persons that are connected with the university and briefly describe their stories. On the other hand, entertainment and jokes have also important role in communication via social media.

The findings support the claim that the type and content of the post play an important role in engagement (Lund, 2019). They also provide HEIs with a lot of useful information about interests

and behaviours of active followers. The results also show that community members can help develop positive stories about the university and support its image.

Limitations

We believe our research has interesting implications, but we are aware about its limitations. First, the study focused exclusively on the top universities from three Visegrad countries in Central Europe. We suggest that further research in different countries and cultures is needed. Second, data using Netvizz in May 2019 were obtained only from the social network Facebook. Third, this research investigated perspectives of UGT using the concept by Dolan et al. (Dolan et al., 2016) and thus focused only on four gratifications within social media content.

The presented research can be further extended by focusing on other relevant social media. Additionally, further research is needed for the effects of negative word-of-mouth on social media.

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Appendix 1

Universities	Country	No of students	Facebook 2018										
			No of followers	No of posts	Links	Photos	Status	Videos	Likes	Comments	Reactions	Shares	Engage-ment
Charles University in Prague	CZ	45235	42158	394	135	183	5	71	15033	843	18156	2353	21352
Masaryk University, Brno	CZ	30163	38389	595	351	216	7	21	46134	2389	55337	2872	60598
University of Chemistry and Technology, Prague	CZ	3880	9053	356	101	194	4	57	14333	473	16810	905	18188
Czech Technical University in Prague	CZ	17549	10991	372	147	197	3	25	3704	110	4107	344	4561
Palacký University Olomouc	CZ	19670	23369	548	173	322	5	48	38500	973	46598	6042	53613
Brno University of Technology	CZ	18263	15014	254	114	114	1	25	6022	952	7003	450	8405
Czech University of Life Science Prague	CZ	18533	16073	208	19	154	1	34	5634	293	6235	390	6918
University of Ostrava	CZ	8332	12163	279	121	104	2	52	6977	444	7951	498	8893
University of Pardubice	CZ	6804	11596	276	69	167	3	37	6977	444	7951	498	8893
Tomas Bata University in Zlín	CZ	8482	8354	107	12	83	0	12	2948	102	3457	223	3782
VŠB Technical University of Ostrava	CZ	11304	9992	255	62	146	1	46	7604	543	8438	871	9852
University of West Bohemia	CZ	10422	5496	220	29	175	1	15	8771	326	9861	416	10603
Comenius University in Bratislava	SK	23867	16771	665	436	187	2	40	10549	417	11386	1635	13438
Slovak University of Technology in Bratislava	SK	12195	11062	461	358	79	7	17	5190	172	5777	755	6704
Technical University of Košice	SK	9575	6171	334	77	186	1	70	4444	218	4724	535	5477
Jagiellonian University	PL	36902	69121	411	56	284	2	69	46769	3232	56932	2385	62549
AGH University of Science and Technology	PL	23909	62818	389	3	342	10	34	90770	4987	111225	2150	118362
University of Warsaw	PL	42700	70930	270	55	185	2	28	30318	2887	37351	2893	43131
Warsaw University of Technology	PL	27072	32985	238	41	172	5	20	16922	1713	20948	787	23448
Adam Mickiewicz University	PL	34534	30034	393	65	237	0	91	23639	1693	29237	2375	33305

Gdańsk University of Technology	PL	15085	23091	547	134	380	5	28	16530	2650	20270	885	23805
Nicolaus Copernicus University	PL	22169	31553	146	11	131	1	3	16115	480	18667	1186	20333
University of Silesia Katowice	PL	22774	27915	366	77	193	37	59	5967	146	6345	1078	7569
University of Wrocław	PL	24658	38772	612	198	327	4	83	37227	3576	46942	2836	53354

Note. CZ = Czech Republic, SK = Slovakia, PL = Poland, HU = Hungary, No of students = 2018

Appendix 2

No.	University	Type	Reactions	Comments	Shares	Content	Action	Categories	Target groups	Call	UGT
1	AGH University of Science and Technology	Photo	3548	76	47	Students photo in front of building, stylised cover Vogue	Joke, VOGUE journal and university name	Funny	Students, staff, all public	I	I
		14.02.18	https://www.facebook.com/239574985661/posts/10155379906985662/								
2	AGH University of Science and Technology	Photo	1848	48	25	AGH campus build from LEGO (scale 1:1250)	Promotion of campus using LEGO	Update photo	Students, staff, all public	I	I
		12.12.18	https://www.facebook.com/239574985661/posts/10156063290370662/								
3	Jagiellonian University	Photo	1824	10	59	Volunteering. University hospital recived ambulance from national action WOŚP	Thanks to university for donation	Others	Students, staff, all public	Than ks	I
		12.02.18	https://www.facebook.com/311279977472/posts/10155474102522473/								
4	Palacký University Olomouc	Photo	1747	31	446	Streetartfestival, nontradion picture of president Masaryk	Invitation to visit the festival, call to discussion	Students event	Students, staff, all public	Invit ation	E+A
		12.09.18	https://www.facebook.com/165988140107925/posts/2420076041365779/								
5	Palacký University Olomouc	Photo	1589	2	86	Snow in the park	Joke, rabbit made of snow on the tree	Funny	Students, staff	Joke	E
		16.01.18	https://www.facebook.com/165988140107925/posts/1999647536741967/								
6	Masaryk University in Brno	Link	1368	226	87	Award of the president of Slovakia	Promoting cooperation with the neighboring country	Persons	All public, users from Slovakia	I	I + A
		20.12.18	https://www.facebook.com/570841892946940/posts/2200194696678310/								
7	Jagiellonian University	Photo	1342	54	70	Students action in main square in Cracow	Call to solve the puzzles	Offer	Students	Try to solve task	I+A+E
		10.05.18	https://www.facebook.com/311279977472/posts/10155679059317473/								
8	University of Wrocław	Photo	1315	26	47	Funny photo, students watch in class room ski jumping	Students watch sport reportage	Funny	Students	Joke	E
		19.02.18	https://www.facebook.com/222697984491947/posts/1663908987037499/								
9	Jagiellonian University	Photo	1314	81	11	Pigeon photo. The University is located in Pigeon street	Joke, pigeon and Pigeon street in campus	Funny	Students, staff, all public	Joke	E
		10.01.18	https://www.facebook.com/311279977472/posts/10155391829072473/								
10	Charles University in Prague	Photo	1306	59	320	Message of death of famous personality	Sad news	Persons	All public, staff, students	I	I
		21.12.18	https://www.facebook.com/100164363380362/posts/2207438282652949/								

Note. I = information, A = Interaction, E = Entertainment. All top post are evaluated as Actual