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ASSESSMENT OF THE SEARCH ENGINE RANKING POSITION
DEVELOPMENT OF SELECTED ACADEMIC ENTITIES IN SLOVAKIA:
AN EMPIRICAL INVESTIGATION*

The aim of this article is to identify the deficiencies in the application of search engine marketing tools in the academic sector in Slovakia and to formulate recommendations for improvements. In the presented research study we proved that the faculties of Slovak universities lag in implementation of marketing activities, and especially, the Internet marketing tools. The situation is dramatically different compared to commercial sector, although more than 28% of the faculties are private and thus directly dependent from their performance and efficiency. We have identified great reserves in the Internet marketing tools utilization.

Keywords: Internet marketing, search engine rankings, search engine results page, search engine visibility, university marketing.

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ОЦІНЮВАННЯ ПРОСУВАННЯ В ПОШУКОВОМУ РЕЙТИНГУ
ОКРЕМИХ НАУКОВИХ УСТАНОВ СЛОВАЧЧИНИ:
ЕМПІРИЧНЕ ДОСЛІДЖЕННЯ

У статті виявлено недоліки в застосуванні засобів пошукового маркетингу в академічному секторі Словаччини та сформульовано рекомендації щодо покращення пошукової оптимізації. Доведено, що факультети словацьких вищих навчальних закладів відстають у реалізації маркетингової діяльності, особливо в застосуванні засобів інтернет-маркетингу. Академічний сектор різко відрізняється від комерційного, хоча більше 28% факультетів є комерційними і безпосередньо залежать від своєї продуктивності та ефективності. Доведено великий потенціал у сфері використання інструментів інтернет-маркетингу.

Ключові слова: інтернет-маркетинг, рейтинг у пошукових системах, видача результатів пошуку, видимість в пошуковій системі, маркетинг університетів.

Таб. 5. Рис. 2. Літ. 15.

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ОЦЕНКА ПРОДВИЖЕНИЯ В ПОИСКОВОМ РЕЙТИНГЕ
ОТДЕЛЬНЫХ НАУЧНЫХ УЧРЕЖДЕНИЙ СЛОВАКИИ:
ЭМПИРИЧЕСКОЕ ИССЛЕДОВАНИЕ

В статье выявлены недостатки в применении средств поискового маркетинга в академическом секторе Словакии и сформулированы рекомендации по улучшению поисковой оптимизации. Доказано, что факультеты словацких вузов отстают в реализации маркетинговой деятельности, в особенности в применении средств интернет-маркетинга. Академический сектор резко отличается от коммерческого,

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хотя более 28% факультетов являются коммерческими и напрямую зависят от своей производительности и эффективности. Доказан большой потенциал в сфере использования инструментов интернет-маркетинга.

Ключевые слова: интернет-маркетинг, рейтинг в поисковых системах, выдача результатов поиска, видимость в поисковой системе, маркетинг университетов.

Introduction. The objective of this work is to determine how efficiently are the search engine optimization tools (and search engine marketing in a broader sense) applied at the university faculties in Slovakia, through measurement of their search engine ranking positions. We aim at pointing to the development of the rankings and faculties' performance in time. We have analyzed the data within the time frame of 2007 to 2012. Because we perceive a strong link between performing marketing activities on the Internet and the implementation of basic marketing principles and strategies, we also realized a research based on a standardized questionnaire to find out how faculties organize marketing activities. The results will show how this sector performs and if there is a positive change observable. To the research base sample we included the economic-oriented faculties, because of their focus at research and education in the related fields such as management and marketing. Therefore, excellent performance of their own solutions on the Internet can be expected legitimately. We formulated the following hypothesis which we will verify in the following research:

H1: The situation in the search engine ranking positions of the analyzed faculties will not prove as optimal.

H2: There will be a significant positive change in the results when compared the two databases from 2012 and 2007.

H3: The faculties of private universities/colleges will perform substantially more efficient than public faculties.

H4: At least 2 of the total 21 subjects analyzed will improve their rankings significantly, that means by more than 25 %.

1. The usage of the Internet in marketing of the academic sector.

In our empirical study we have concentrated on the organic results and we analyzed the primary data from the search engine results pages (SERP). Our analysis reflects the activities and situation regarding the issues of search engine optimization in the analyzed academic sector in Slovakia. The visibility in search engines affects not only brand awareness and the number of visitors and potential students on a web site, moreover it can have much broader impact on the position of the faculty at the market. Lee and Park realized a similar study exploring the visibility of world-class universities (Lee and Park, 2012). They have proved the existence of positive correlation between the university rankings and its web visibility. Based on this evidence we can note that quality of SEM implementation is vital not only for faculties in Slovakia but the results are universally applicable and internationally comparable.

1.1. Research methods. In January 2007 we conducted a research oriented at determining the usage of the Internet in marketing activities at the faculties of Slovak universities. In this research we applied the following methods: analysis, synthesis, comparison, generalisation, questionnaire, construction of algorithms and summarising of findings. The empirical study was realized based on the primary quantitative survey by querying 117 faculties of both public and private universities in Slovakia. The respondents were the employees responsible for marketing activities. In

the standardized questionnaire we have used a combination of online and offline questionnaire to increase the response rate. The questions in the questionnaire were designed to meet the objectives of the marketing research. We used a standardized questionnaire with 15 questions. In the research we wanted to evaluate the situation in these main areas:

- organizational aspects of marketing activities execution;
- intensity of various communication channels exploitation;
- Internet marketing activities (quality of web site, usage of CMS, Internet advertising - banner and PPC campaigns).

1.1.1. Results. The survey results confirmed the assumptions about the insufficient level of marketing instruments usage, especially the Internet marketing tools. The faculties mostly do not have a separate marketing department (96.22%). They fail to implement a coherent marketing strategy and most of them (84.91%) do not even dispose the allocated budget on marketing activities. A high contrast between commercial and academic sector can be observed here. The average value of the annual amount reaches less than 670 EUR. The budget amount is satisfied up to 92.45% of the respondents.

Almost all the faculties (98.11%) performed or implemented certain types of communication activities. The most popular are open door day (84.91%), fairs and exhibitions (66.04%) and Internet communication (66.04%). Print advertising dominated among traditional advertising media (50.94%), followed by radio (30.19%) and TV (28.30%). The last value is not surprising, since TV is definitely the most expensive form of advertising which is not applicable by such significantly limited budgets. Additional communication activities are used as follows: partnership (45.28%), PR articles (35.85%) and sponsorship (28.30%).

The evaluation of questions regarding authorship of the faculty web site resulted as expected. Most web sites were created by the internal school staff (71.70%). Only more than 1/5 of the faculties used outsourcing and left the creation to a specialized web design company (22.64%). A small percentage of schools even commissioned their students to create the web page (5.66%). Maintenance of the web site is also realized internally (67.92%), only a small part of the faculties uses a specialized company to maintain the web (7.55%).

Further we asked whether the faculty is satisfied with the quality of its website. Very surprisingly, up to 67.92% are satisfied with the overall quality of the web portal. We also realized a benchmarking of the websites evaluating their quality in several criteria including design, usability, information quality and code quality. We have to emphasize that the objective quality of the web portals compared to the commercial sphere or compared to foreign universities is unsatisfying. Since our faculties perceive the quality of their web sites positively, we can state that the competence of responsible people in these positions is low.

The next questions were focused on identifying which different aspects of the website should be improved in the future as perceived by the respondents (1 - most important to improve, 5 - least important). The results are summarized in Table 1, showing the most important factors first. From the table the final importance ranking is evident. Interesting are the decreasing values of both standard deviation and variation coefficient. It means that the respondents were much more unified in choosing

design as the less important required change compared to e.g. data timeliness, where the standard deviation and variation coefficient were much higher.

Table 1. Perception of the importance of future changes on the web site

Factor	Arithmetic average	Standard deviation	Variation coefficient
Data timeliness	2,566	1,599	62,33%
Content quality	2,830	1,424	53,32%
Structure	3,132	1,345	42,94%
Design	3,679	1,252	34,04%

Source: own research.

In the next question we wanted to determine how faculties update the web sites. 71.70% do not use content management system (CMS) to manage the web site content. Not surprisingly, 37.73% have no idea what CMS is. Although only 66.04% of the faculties declared they use the Internet in the communication activities, only 9.43% of them have ever realized banner campaign and 1.89% have ever used PPC. In addition, 41.51% do not know what PPC abbreviation stands for.

In the analyzed areas of Internet marketing activities among Slovak university faculties considerable reserves can be observed. Involvement of more specialists, improved coordination and cooperation between departments at the university and faculty level and particularly a larger budget allocation and responsibilities for the implementation of marketing activities on the Internet are the solution to this situation. The Internet is an extremely effective component of communication mix. It is suitable for branding and direct acquisition of relevant visitors to a website.

We can formulate the following summary of research findings:

1. The faculties are dependent on the implementation of marketing activities at the level of the university. Their management often does not include experts on marketing, despite the faculty needs to perform at least communication activities to build the brand and acquire a sufficient number of students.

2. Marketing budgets are extremely low. Even if this budget does not have to cover the salaries of the employees, there is no chance to realize any marketing plan with the budget at this level. We have made an analysis of the marketing budget of Slovak cities, which could be comparable to the budget of university faculties. Marketing costs are slightly below 0.5% of the revenues in average. We can carry out a following comparison: If we have a look at the total revenues of the university of Economics in Bratislava, in 2010 the revenues reached more than 28.4 mln. EUR. If it would allocate 0.5% on marketing, the marketing budget for the whole university would be 142.000 EUR. Provided that 50% of this amount is distributed among the university faculties equally, each faculty would get 20.285 EUR. This is the budget that the faculty could get from the university. It could be further enhanced by the faculty's own activities. Based on this premise the average budget of 7 faculties of the University of Economics would be 30 times higher than the real average marketing budget as it resulted from the research performed.

3. The faculties are not aware of the low quality of their Internet communication activities. Since they are satisfied with the overall quality of their websites they even do not produce pressure on allocating budgets to their modernization. Hand in hand with that go other communication activities such as SEO and PPC, which are not realized at all.

Although SEO can be realized also with a low budget using the appropriate methods, the faculties' lack of experts on Internet marketing and tend to use their own personnel instead of involving experts, at least at the consultation level. We have performed a detailed analysis on the selected sample of Slovak faculties. We have chosen the faculties offering economically oriented studies.

2. Search engine visibility in the academic sector. Commercial companies are realizing sophisticated and long-term activities to reach top positions in SERP. They are aware that these positions are generating highly relevant traffic to their web projects and if applicable they are generating desired conversions. The importance of top SERP position confirmed also Daniel Ruby who analyzed more than 8 mln. impressions coming into the Chitika advertising network from Google. The top spot drove 34.35% of all traffic in the sample, almost as much as the traffic from positions 2 to 5 combined and more than the positions 5 to 20 (the end of page 2) together. As the study revealed being on the second result page has no considerable effect. Ruby says that the biggest jump, percentage-wise, is from the top of page 2 to the bottom of page 1. Going from the 11th spot to 10th sees a 143% jump in traffic. However, the base number is very low - that 143% jump is from 1.11% of all Google traffic to 2.71%. As you go up the top page, the raw jumps get bigger and bigger, culminating in that desired top position (Ruby, 2010).

However, what was interesting for our study is if also in the academic sector is highly active in SEO activities. We are not aware of a study in academic sector of such an extent as the IBM Global Chief Marketing Officer Study 2011. From our research of the relevant sources we can mention the study performed by Ken Lyons from Worldstream, who has analyzed the SERP of US colleges and universities offering online courses. He compared the rankings on chosen root keywords such as education, business, psychology, communications, nursing or MBA, combined with some modifiers such as online, resulting in totally 20 queries. He expanded the volume to 100 results so there were 2000 potential SERP positions analyzed. The result is that most schools are not conducting SEO or are not doing it thoroughly. There were only 3 schools with top 10 ranking (Table 2) and 10 schools with top 20 ranking (Lyons, 2009).

Table 2. Academic institutions with top 10 rankings

Institution (school/University)	Frequency in Top 10
Drexel University	9
University of Phoenix	6
Capella University	1

Source: (Lyons, 2009).

There are many factors and tools for SEO which directly determine the visibility in search engines. The recent research study from SEOMoz identified the key factors of search engine ranking and their importance. We list them in Table 3.

We do not aim at analyzing these factors deeply in our work, however we would like to point out one recent finding. In our research we have been confronted with the opinion that managers at faculties are oriented at the web site quality. The recent research has proved there is no direct relationship between the content quality and the position in search engines (Caro et al., 2011). Thus, if trying to optimize the SERP position faculties should concentrate on other factors in on-site SEO and include the off-site tools as well.

Table 3. Search engine ranking position factors

Factor	Importance/weight (%)
Page Level Links Metrics	21,45
Domain Level Link Authority Features	21,13
Page Level Keyword Usage	14,93
Domain Level Keyword Usage	10,73
Page Level Social Metrics	7,22
Domain Level Brand Metrics	6,78
Page Level Keyword Agnostic Features	6,74
Page Level Traffic/Query Data	6,26
Domain Level Keyword Agnostic Features	4,92

Source: (SEOmoz, 2011).

2.1. Research methods. We conducted a research aimed at measuring the performance of selected faculties of Slovak universities in the search engines. We decided to include all economically oriented faculties in Slovakia to the sample, as following (Table 4).

Table 4. Faculties included in the empirical study

Institution	Frequency
Faculties of public universities	15
Faculties of private universities	6
Total	21

Source: own research.

In the research we used the search engine Google in its Slovak version (www.google.sk), because of its dominant market position in Slovakia and also its dominant market share worldwide. In the US the latest data from December 2011 claim that Google reached 65.9% search share (Flosi, 2012). In Slovakia the market share is even higher. Based on the data from Gemius from January 2012, 96,8% of the traffic generated by the search engines in Slovakia comes from Google (Gemius, 2012).

The empirical study was realized in years 2007-2012. This time frame not only allows us to evaluate the actual performance of individual university faculties, but we can also evaluate the development trends and directions in the implementation of SEO activities for the period of 5 years. The first data collection was performed in January 2007 and the last one in January 2012. In our study we will compare these 2 databases and formulate conclusions about the development status of the faculties included in the research. In 2012 we added one faculty of a public university to the database (totally 22 faculties), however for the comparison purposes it could not be taken into account in this analysis.

The performance in Google.sk was measured through identifying the SERP ranking of each faculty web site for the defined set of keywords. We have decided to use 8 keywords which are closely connected to the faculties and courses they are offering. The other criteria to select these keywords was based on identifying how potential customers (students) think when trying to find the appropriate faculty for their future studies on the Internet. The list of applied keywords is shown in Table 5. We have used Slovak originals of the keywords, however for understanding and comparability of the study results we are listing their English translations. We were look-

ing at analyzing the SERP position also for English keywords, however only 3 of the 21 faculties included in the research had English versions of their web sites.

Table 5. Keywords used to determine the SERP position

Keyword ID	Keyword - English equivalent	Keyword - Slovak original
A	University	Univerzita
B	College	Vysoka skola
C	University (abbrev.)	VS
D	Faculty	Fakulta
E	Economic Faculty	Ekonomicka fakulta
F	Economy studies	Studium ekonomie
G	Faculty+management	Fakulta+manazment
H	University studies	Univerzitne studium

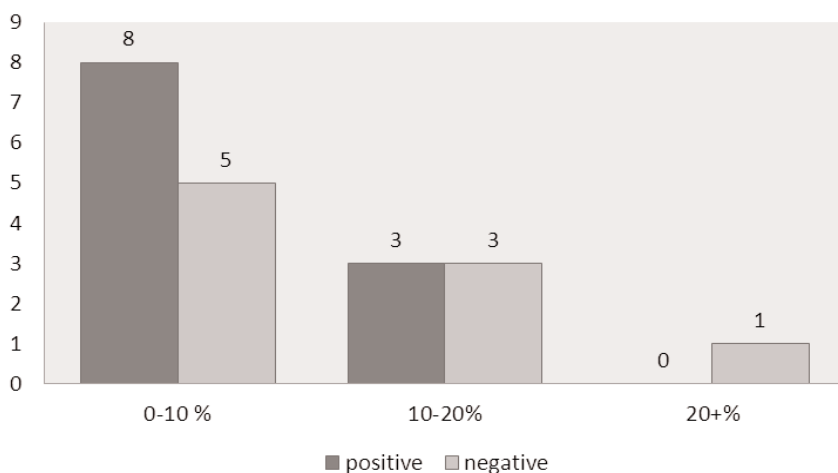
Source: own research.

There were 3 functional methods of determining the SERP position available: manual counting in a web browser, using the position identification tool available at Seotools (Seotools, 2012) and using the SERP tool from SEOMoz (SEOMoz, 2012). We have analyzed the results and differences using these 3 methods on a sample of 5 faculties and determined the most appropriate method of manual counting which enables us to reach precise results and search for the results within the positions 1-50.

We checked the position for every keyword and every faculty, in total 400 positions. We processed the values into a table. To be able to compare the results from 2012 and 2006 data collection, we modified the results to reflect only first 30 positions. If the faculty positioned 31+ in SERP, we used the value 31 which is 1 more than the worst position taken into account. This enabled us to evaluate average values and determine the overall development.

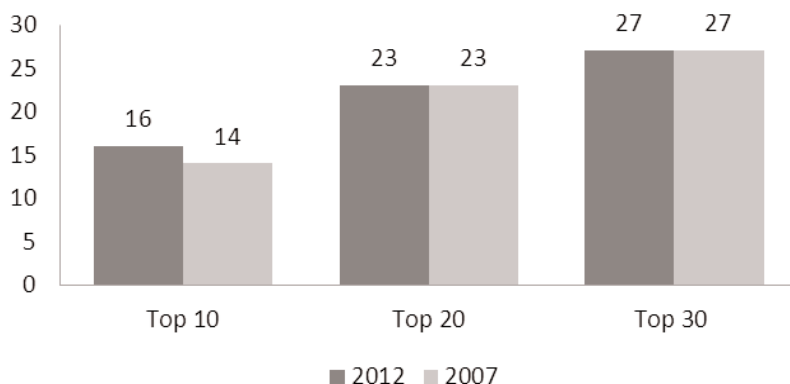
2.2. Results. We aggregated the data and analyzed the findings we made. At first we looked at the average position in the search results. The average SERP ranking in 2012 was 27.71, compared to the value 27.77 in 2006. In the summary the average positions did not change significantly. However, if we have a closer look at the partial data, there were some significant movements in SERP between the faculties. In total 11 faculties have improved their overall rankings and 9 have decreased their SERP position. One faculty (no. 20) did not change its rankings, to be exact; it did not reach any ranking in Top 30 for any of the 8 keywords. 8 faculties have improved their SERP position by 0-10% and 3 faculties even by 10-20%, what can be described as a major positive change. On the other hand, 5 faculties worsened their position by 0-10% and 3 faculties even by 10-20%. One faculty fell in the rankings by more than 20% (32.9%) and lost its positions compared to 2007. We visualized the overall change in rankings at Figure 1.

To receive the real traffic from the SERP it is crucial to position in Top 10. According to many analyses there is the biggest percentage decrease in conversion between the position 10 (first results page) and 11 (second page). We counted all occurrences in Top 10 - totally 16. Potentially, if all possible positions are occupied by the web sites of the analyzed faculties, the total Top 10 occurrences would be 80. There was an improvement compared to 2007 where only 14 Top 10 SERP positions occurred. Monitoring Top 20 and Top 30 has no direct influence to traffic generation, however, future potential can be recognized in these data. Moreover, positive trends can be identified when compared the future data with this fundamental base.



Source: own research.

Figure 1. Frequency of SERP position overall ranking changes according to their intensity



Source: own research.

Figure 2. Number of positions in Top 10, 20 and 30, 2012 to 2006 comparison

As cited the data from the Ruby study (Ruby, 2010) the first position in SERP can generate the highest conversion driving 34.35 % of the impressions to the website. Also the second position (16.96%) and the third position (11.42%) are interesting for traffic generation. At Figure 3 we present the incidence of these positions in our research.

As can be seen at the figure, 1 first and 2 second positions have been lost, however, there were 2 new third position reached.

Finally, we were interested in finding out if there is a direct dependency between the organizational form of school and its performance in SERP.

Privately owned faculties did not perform better compared to public faculties.

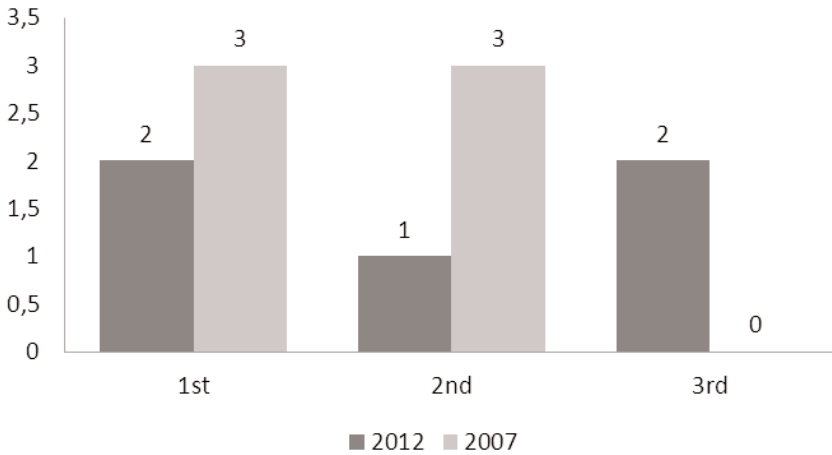
If we sum up the findings we can formulate these conclusions:

1. In general, the positions of the faculties' web sites in search engines can be described as unsatisfactory. Here we can identify a parallel with the results of the

Internet marketing usage investigation among all faculties in Slovakia. The faculties are not doing well because of the described reasons.

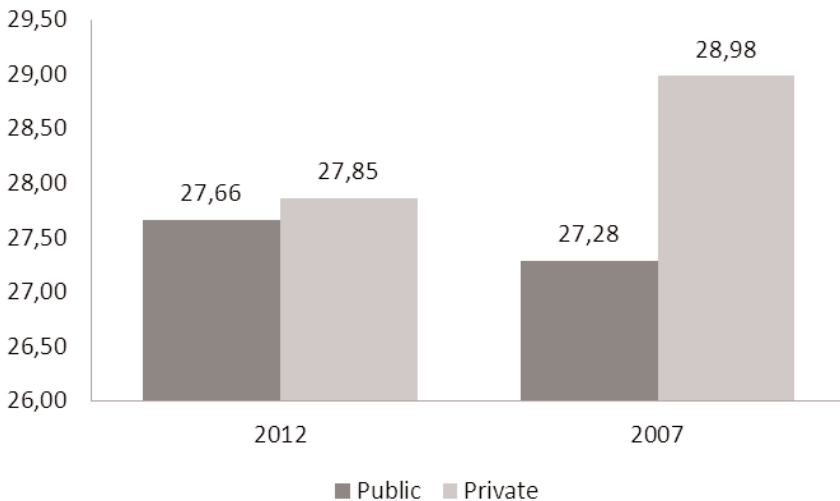
2. There is no significant improvement in general. Although there are differences at the individual level, no positive change in general was identified.

3. There is no significant individual improvement in SERP ranking for any faculty in the research. The maximum improvement reached is 15.3%. This improvement has reached the faculty which did not occur in top 30 in 2007 at all. So its current rankings still cannot be designated as good.



Source: own research.

Figure 3. Top 3 positions frequency in 2012 and 2007



Source: own research.

Figure 4. Dependency of ownership on SERP performance

Discussion. The results of the empirical study have showed significant disparities between the expectations on the level and quality of the communication activities

over the Internet and their implementation in practice. We consider our research to be important in terms of future and continual analyses of changes and development in the usage of Internet marketing tools in the academic sector. The applied methodology is applicable when realizing benchmarking in other sectors which can lead to comparison of situation in different sectors of the economy. Moreover, very interesting would be the comparison between different countries and the situation in the SEO and SEM activities of public and private universities and their faculties.

Conclusion. In the presented research study we proved that the faculties of Slovak universities lag in implementation of marketing activities, and especially, the Internet marketing tools. The situation is dramatically different compared to commercial sector, although more than 28% of the faculties are private and thus directly dependent from their performance and efficiency. We have identified great reserves in the Internet marketing tools utilization. The faculties are receiving much less traffic from the major search engine in Slovakia - Google.sk than possible. We have proved that universities and their faculties do not perform SEO efficiently or at all. It is a stark contrast to what would be expected because of at least these two arguments:

- Universities should represent the institutes holding the latest cutting-edge knowledge, which is passed on their students (and should be applicable in practice),
- More than 28% of the entities in the empirical study are privately owned institutions which have to generate profit to their owners.

We verified the following hypotheses in our empiric study:

H1: The situation in the search engine ranking positions of the analyzed faculties will not prove as optimal.

The results of the research regarding the situation in SERP have proven that the faculties are not active in improving their rankings. There are 80 potential positions for top 10 rankings from which only 20% are utilized. Even worse situation can be observed when evaluating the usage of potential positions in top 20 (14.38% utilization) and top 30 (11.25% utilization). Our results thus proved the validation of H1.

H2: There will be a significant positive change in the results when compared the two databases from 2012 and 2007.

We expected that within the given range of 5 years a noticeable improvement would happen. However the average ranking, identifying the average SERP position of all faculties on all keywords changed from 27.77 in 2007 to 27.71 in 2012. The change is positive, however, the improvement is minimal - at 0.2%. There is no significant positive change in the rankings resulting in rejection of H2.

H3: The faculties of private universities/colleges will perform substantially more efficiently than public faculties.

We have proved that private faculties have made more significant progress in their performance. However, their rankings are still worse than those of public faculties. Despite their private ownership they are not doing well enough to use the potential of the Internet communication and SEO to attract potential students and create stronger brand awareness. H3 was rejected.

H4: At least 2 of the total 21 subjects analyzed will improve their rankings significantly, that means by more than 25%.

We expected that at least 2 faculties will work hard and significantly improve their rankings. This result could be reached quite simply by gaining two positions in Top 10

for 2 of the keywords which did not occur in Top 30. Of course, also other combinations of more partial improvements could result into the same effect. The research study results showed that the maximum improvement achieved by a single entity is 15.3% followed by the second highest increase in rankings by 13.6%. According to these results we rejected the H4 hypothesis.

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