

MEDIA STUDY ON CORRELATION CONNECTION BETWEEN "LIKES" AND „VISUAL ELEMENTS OF FORM“ IN COMMUNICATION CONTENT PERCEPTION ON FACEBOOK

MEDIJSKA STUDIJA KORELACIJSKE POVEZANOSTI DOSEGA „SVIĐANJA“ I „VIZUALNIH ELEMENATA FORME“ U PERCEPCIJI KOMUNIKACIJSKIH SADRŽAJA NA FACEBOOKU

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Abstract

Investigating the role of visual elements the authors are postulating visual elements influence on perception of the content and, consequentially, the activity of participants on Facebook pages. The authors also examine the relation between post "likes" and reach on an analysed sample, demonstrating in the process the existence of other elements which may influence the observed phenomenon and suggesting potential directions for future research. Research results confirm the prevailing importance of content's relevance to the user's interests compared to its visual presence, as well as the existence of a slight correspondence between reach and the number of "likes".

1. Introduction – What are social networks and what is their purpose?

There have been four revolutions in the history of media: creation of the Greek alphabet enabling modern kind of writing, invention of the printing machines, the development of broadcast media (radio and television), and arrival of the computer, the internet, and social media /1/.

Since the introduction of the first digital computers in the 1950's, which were the size of a factory hall, some 64 years have passed – a pe-

Sažetak

Ispitujući ulogu vizualnih elemenata autori pretpostavljaju utjecaj istih na percepciju sadržaja te slijedom toga aktivnosti dionika na Facebooku. Autori također istražuju relaciju između "sviđanja" i dosega postova na analiziranom uzorku, otkrivajući pri tom postojanje i drugih elemenata koji mogu utjecati na promatranu pojavu i sugerirajući moguće pravce budućih istraživanja. Rezultati istraživanja potvrđuju presudnu ulogu relevantnosti sadržaja na njegovo usvajanje u odnosu na vizualnu prezentaciju istog, kao i postojanje blage korelacije između dosega i broja "sviđanja".

riod shorter than an average life span in developed countries. 34 years have passed since the first connections of a network we now call the Internet were established in the 1970's, and it took Facebook only 10 years to become the most popular social network on the planet and an unprecedented communications platform. In less than a decade, social media irreversibly changed the content, the speed and channels of human communication on all levels. A. L. Barabasi discusses the expansion of the Internet in modern-day world and the challenges its exponential growth imposes on communication and information science: "Although completely man-made, the Internet takes a life of

its own. It has all the characteristics of a complex, evolving system, which makes it much more similar to a living cell than a computer chip... Therefore, the researchers of the Internet are more and more transforming from architects into observers." /2/

Internet is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet. Information that travels over the Internet does so via a variety of languages known as protocols. The World Wide Web, or simply Web or W3 or Web 1.0, is a way of accessing information over the medium of the Internet. The Web also utilizes browsers, such as Internet Explorer or Firefox, to access Web documents called Web pages that are linked to each other via hyperlinks. Web documents can contain articles, graphics, sounds, text and video /3/. The appearance of the Web 2.0 platform sparked the development of social media on the Internet. The major difference between Web 1.0 and Web 2.0 lies in the fact that with Web 2.0 the web-sites have evolved from static HTML formats towards dynamic, "communication friendly" formats which enable a broad circle of users to exchange information, articles, images, audio and video documents, something which required programmer intervention in Web 1.0 (Web 2.0 basically refers to the transition from static HTML Web pages to a more dynamic Web that is more organized and is based on serving Web applications to users.) Social networking, however, has always existed. It is within human nature to socialize and to communicate, either to comment, recommend or alert each other. With the advent of the internet and the globalization that came along with it, social media was introduced and social networking became much faster /4/. Web 2.0 is a new form of internet, where users actively participate in the development of content and appearance. In a paper entitled Social media – is it worth the trouble /5/, Iris Uitz introduces the term Web 2.0, defining it as a new form of Internet in which users actively participate in content creation and presentation. According to the author, the term Web 2.0 was

coined by Tim O'Reilly in 2005. In the same paper /6/, the author also quotes Ebersbach's definition of Social media as web programs/applications for persons who exchange information and build relations by means of communication and collaboration. "In its infancy the Web was primarily an informational medium which provided search engines for efficient gathering of globally dispersed information, says Uitz. Web 2.0 is a new Internet form in which users actively participate in content creation and presentation". New forms of social networking are recognized by authors such as Om Malik, founder of Gigaom, a Silicon Valley-based, tech-focused publishing company, Dove Jackie editor at Macworld and others.

SNAPCHAT, INSTAGRAM, TINDER, and countless other services are growing at whirlash-inducing speed. What do they have in common? Born in the post-iPhone era? Check. Delicious, addictive, time-wasting, attention-sucking quicksands? Yep. But most important: They are simple. Simple to understand, simple to use, and simple to enjoy. /7/ For some mobile-photography nuts, big social networks such as **Facebook**, Instagram, and even Flickr are passé. Today, if you share photos with family and friends online, new apps let you dodge the routine of posting to the mega social sites (eventile, VoxPixl; PicTapGo; Shutter-song, to mention just a few). /8/ In spite of the viral and unprecedented expansion of communication on social networks which undoubtedly provide new and hitherto unimaginable opportunities to commercial entities to realise their global marketing claims, the matter is relatively poorly represented and described in academic papers. In an article discussing a higher efficiency of brand promotion in blogs than in on-line magazines, which is reflected in a higher inclination towards buying a product/brand by blog readers than on-line magazine readers, Colliander and Dahlen /9/ conclude that "marketing in social media receives surprisingly little academic attention". On the other hand, Bortree&Seltzer /10/ , while approaching the issue from the aspect of commercial users, i.e. corporations which use social networks for the purpose of realizing their promotional and lucrative goals, have con-

ducted a survey among the organizations which successfully utilize their social media presence for two-way communication with the audience they address. Their study, however, concludes that the majority of organizations "fail to effectively utilize all the advantages social networking sites have to offer".

1.1. What is Facebook and what is the purpose of a page

Today, Facebook is the most popular social network. Founded in 2004, on its 10-year anniversary, the network has more than one billion active users. *Although Facebook is typically used for personal interaction with family, friends, and associates, it can be utilized by accounting firms to develop or enhance relationships increase brand recognition, and recruit and retain employees./11/*

On January 29, 2014 Facebook issued a press release reporting its business results for the year 2013, showing that revenue for the full year was \$7.87 billion, an increase of 55% year-over-year. The same document also cites Facebook's mission statement: "Facebook's mission is to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them." /12/

For business users, Facebook and other social networks like Twitter serve as suitable tools for building and maintaining relationships with their users (clients), employees, stockholders, members of the local community, or politicians. To achieve best results, constant engagement is required, not only in terms of providing content, but also in terms of listening to what individuals from target groups have to say by means of comments, sharing or transmitting content. Watson and Noble have this to say on the subject: "On line PR is about engaging people in conversation so that they become advocates for your organization. The more independent comment there is about an organization on line, the more people will trust you." /13/

A group of authors from the University of Cambridge, in a paper entitled "The Personali-

ty of Popular Facebook Users", investigates to what extent "digital representations of ourselves on Facebook can capture much about human social relations." /14/ According to them, writers and scientists can be divided into two camps according to their opinion on the issue. The first camp advocates the theory that Facebook is simply superseding traditional forms of communication. "This implies that people are doing online what they have been already doing offline, with the only difference that coordination and communication costs online are lower. Members of the second camp argue, instead, that social networking sites create and promote radically new forms of communication." This communication is burdened with the need to be kept short, often expressed through symbols, images, photographs or video clips which replace sentence structures and it is directed primarily towards the pre-defined opportunities Facebook offers: seeking friendship and connecting for the purpose of spreading social contacts or seeking a partner for socializing or an emotional relationship.

Each Facebook user has to register in order to be able to actively participate, and to do so, the user has to create a profile, regardless whether they are a private person, a company, a political party or an association. The information users provide about themselves is vital for Facebook. By using that data and by tracking users' interests based on their activities, Facebook is able to place adverts to potential consumers. Based on the information the users provide about themselves on Facebook, institutions can get in touch with existing employees, consumers, shareholders, members of associations, political parties, followers of ideas, and find new ones. However, considering that a large number of Facebook profiles are fake and the fact that things we disclose about ourselves cannot be verified, the information gathered from individual Facebook profiles is problematic in terms of accuracy and authenticity. We will briefly look into the basic characteristics of Facebook which are necessary for a complete understanding of research results and further debate.

Reach – how many Facebook users a certain profile will reach depends on a number of factors. From the aspect of a Facebook profile or

page's "owner", *content sharing* is the most desirable activity profile visitors can engage in because it is the fastest method by which information about the profile and its content is spread to other users. *Comments* are also desirable, because they tell us what visitors of our profile think about us and our content, giving us an opportunity to respond to their comments and extend the communication onto other users (who may be related to the author of the comment, but not to us). A "Like" represents the lowest level of engagement, but it does leave a mark because it is indicative of an increase in the number of people who like our page/post or people who were interacting with the content of a post on a FB profile in some way, although most often at a superficial level, whereas *organic reach* only shows how many visitors were in contact with a certain page or post, but does not prove if they directed their attention to its content or "took away" something with them.

The **simplicity** of use – like the majority of social networks, Facebook is simple to understand, easy to use and even easier to enjoy.

Speed – Facebook enables fast communication and content exchange, regardless whether it is in the form of text, an image, a photograph or a link to video or audio content.

Dialogue – perhaps the most important characteristic of social networks is that they enable dialogue between users, important both between private persons and for communication with corporations, state and parastatal institutions, political parties and other organized entities who are able to hear to what their audience has to say.

Accessibility – all that is required is a connection to the Internet and a smartphone. More than 50% of users in the USA access the content through their smartphones /15/

Independence – the ability to post content on one's own profile (images, documents, photographs, video and audio documents) independently of others or to intervene on other people's profiles by commenting or sharing content creates an illusion of independence, autonomy and self-sufficiency among the users. It is a fact that social networks provide average users with a much greater ability to in-

tervene on media content than regular website do.

Facebook's planet-wide popularity is based on a specific interactive platform which enables other media to improve their reach by means of its commenting platform often employed media which have their Internet editions, e.g. news portals. A number of other applications (games, programs, services) use Facebook as a platform for sharing of information generated by a certain activity in the programs themselves.

1.2. The problem and the research goal

The aim of this paper is to examine the role of visual content on perception of same while visiting a FB profile

We have defined the following starting hypotheses:

H1

We assume the existence of a positive correlation between posts which contain visual elements and the number of views and "likes" the post will achieve

H2

We assume the existence of a positive correlation between the number of likes and organic reach

1.3 Research methodology

Defining the basic terminology and its use in the research

Organic reach – the number of people who can be reached at no cost, simply by posting content on a Facebook page.

The number of "likes" – a number which shows how many people clicked the "Like" button on a piece of Facebook content or the page itself.

For a better understanding of the interaction between content and social network users, we need to expound on the idea of reach, or rather its growth. There are two basic methods of improving reach on social networks:

Organic reach – this method incorporates posting attractive, interesting content on pages (in this instance, the FB profile) which will attract "visitors" and enable them to spread a good reputation throughout the network with their

"likes", comments, and sharing. Organic reach requires considerable engagement by social network managers who are expected to post content every day or, preferably, several times a day, respond to comments and generally remain active both on their own and other people's profiles and social networks in general. This way is slower, but "safer" in the sense that it generates truly engaged and interested social network users who were attracted to our content and their communication with us. The second method of increasing the number of visitors to our FB profile in a short amount of time is a paid campaign. In the Media net's example, a single post published on November 6, 2013 received a total of 40,080 "views", 32 of which were a result of organic reach on the network and the remaining 40,048 visitors came to Media net's FB profile based on advertising which cost only USD 15 for two days.

1.4. What we analysed – researched:

4 different Facebook profiles by four different entities, namely: Zagrebacka pivovara (Zagreb Brewery) in the period from December 25, 2013 to April 25, 2014; Erste banka, Croatia in the period from January 1, 2013 to March 31, 2014; Labin Art Republika from June 24, 2013 to August 31, 2013 and Media net's Facebook profile from January 1 to December 31, 2013. In our choice of subjects we were led by one basic requirement, which was that an entity has an active Facebook profile with a critical communications volume necessary for research. The selected business entities gave us insight into their Facebook profile administrative pages. They were selected from various fields of activity, including service and production industries of different sizes and one project-type cultural institution.

Content analysis was the basic research technique which we employed.

One post constituted one analysis unit.

Elements of analysis: /content analysis categories/

Date of post publication

Post title and content

Presence of visual elements

Types of visual elements (classic photography, link photo / image, graph, article image)

Post author

Reach (organic / paid)

Number of "likes"

Number of "likes" by persons outside the company

Number of shares and identity of sharer

Number of comments

2. Research results

The research results are presented in two separate sections. The first section will present research results for chosen Facebook pages, and the second will present synthesized research results.

2.1. Research results for selected FB pages

Media net's Facebook page and content posted to it was monitored throughout the 2013 calendar year. The communication on this page was of relatively low intensity; only 64 posts were published in the period of one year, which is 5.33 posts per month or 0.17 posts per day, on average. All posts have achieved organic reach of 6,381 views in total, received 360 "likes" of which 287 were from people within the company, 15 comments were posted and the content was shared 17 times. Out of a total of 64 posts on the Media net Facebook page, 26.6% had no images or any other types of visual media. 13 or 20.3% of all posts included photographs, and the following 10 or 15.6% included charts illustrating the article text which was related to Media net's media consumption research. Among 5 most popular posts achieving the highest organic reach 2 had no visual elements. Which gave us the first lead related to the first hypothesis of this paper, that **the presence of visual elements was not crucial for their popularity**, attractiveness or getting "likes" and shares on Media net Facebook profile. The comparison of **organic reach of posts and the number of "likes"** should be able to show the strength of correlation between these two indicators. We can assume that an increase in organic reach will also cause an increase in the number of "likes," i.e. as the circle of users who "like" an individual post expands, the

possibility of that post being seen on all of the user's friends' feeds also increases, and thus organic reach of the post is increased, which was our second hypothesis. For this purpose we have used a correlation coefficient that shows the degree of relationship between two phenomena. If a linear relationship and continuous normal distribution is present for calculation of direction and strength of relationship between two variables in the observed model, the Pearson correlation coefficient is used. In case of so-called "non-normal" distri-

bution, where the relationship between two phenomena is not linear, we use Spearman's coefficient. The test of normality of the distribution of organic reach and the number of "likes" variables for Media net's Facebook profile data shows that the distribution is non-normal, so we need to apply Spearman's correlation coefficient to calculate the strength and direction of relationship between these two phenomena.

Tests of Normality

	Klmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VAR00007	.241	62	.000	.771	62	.000
VAR00008	.115	62	.039	.822	62	.000

a. Lilliefors Significance Correction

However, Spearman's rank correlation coefficient fails the significance test, so we have to conclude that there is no correlation be-

tween observed variables on the Media net example.

Correlations

				VAR00007	VAR00008
Spearman's rho	VAR00007	Correlation	Coefficient	1.000	.225
			Sig. (2-tailed)	.	.079
			N	62	62
	VAR00008	Correlation	Coefficient	.225	1.000
			Sig. (2-tailed)	.079	.
			N	62	62

Labin Art Republika is a project which aims to reanimate the historical and cultural heritage of the medieval Istrian town of Labin. In order to establish a correlation of variables described in the first and second hypothesis on the example of Labin Art, the project organizers provided visitor data for their Facebook page. We have monitored events on this page during the three summer months of 2013, when the town of Labin becomes a small art colony and all the events are announced and covered on the Facebook page. In the observed

period between June 24 and August 31, 2013, a total of 196 posts were published on the Labin Art Republika page, or 2.84 posts per day on average. All of 177 posts have some kind of visual element, while 90.3% include an image, 17 (9,6%) feature videos, and 2 (1,13%) posts were links to other pages. Related to the first hypothesis of our paper we have therefore **been unable to determine impact of visual elements on content perception**. The post which received the highest number of "likes" was a post announcing a prize giveaway with the ti-

the "PHOTO CONTEST – Win a trip to Venice for two!" which was "liked" 138 times, and its organic reach was 256. It was published on July 27, shared once and had three comments. The second post in terms of "likes" was published on July 31, 2013, entitled "Uskok days," containing a schedule of events in the old town. The post was "liked" 86 times and the Spearman correlation coefficient will once again be more suitable.

achieved organic reach of 1,176. The third post was a photo gallery of Uskok days published on August 2, which received 74 likes and achieved organic reach of 1,928. Test of distribution normality shows that the organic reach variable has a fairly normal distribution in this case, but since the number of "likes" does not.

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VAR00003	.062	190	.076	.968	190	.000
VAR00004	.218	190	.000	.612	190	.000

a. Lilliefors Significance Correction

The Spearman correlation coefficient is 0.319 and positive, therefore, we can conclude the correlation is significant since it has less than 1% of appearing by chance; $r(N190) = .319; p < 0.01$. There is a **positive cor-**

relation between organic reach and the number of "likes" variables for posts on the Labin Art page.

Correlations

			VAR00003	VAR00004
Spearman's rho	VAR00003	Correlation Coefficient	1.000	.319**
		Sig. (2-tailed)	.	.000
		N	190	190
	VAR00004	Correlation Coefficient	.319**	1.000
		Sig. (2-tailed)	.000	.
		N	190	190

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

For our research purposes **Erste banka Croatia** provided us with statistical data on the number of visitors to their page for a period of three months, from December 27, 2013 to March 31, 2013. In that period, 49 posts were published, or one post every two days. At the time of writing of this paper, on April 28, 2014, Erste banka, Croatia FB page had a total of 15,673 "likes". Out of 49 published posts 93,9% had any kind of visual elements. A post

published on January 21, 2014, featuring a photo of a mug and the text "Choose the right fund and relax! Erste Plavi pension fund will think about your pension for you" received the largest number of "likes", a total of 713. The second post in terms of the number of "likes" was published on March 3, 2014, and includes a photograph of female bank tellers with Erste banka's mascot Medo Stedo. The third post by number of "likes" was published on February 27, 2014, with 67 "likes" and 9 comments

which reads: “Forget about lines: Erste Redomat app does all the queuing for you”.

As far as organic reach is concerned, the highest organic reach was, not unexpectedly, achieved by a post with a link to job openings, followed by two posts with prize giveaways. Fourth most popular post was another job posting, and the fifth is a hockey game ticket prize giveaway. Out of 49 posts, 10 are job announcements, 9 are prize giveaways, 7 are related to exhibitions and cultural events sponsored by Erste, 3 contain information on pension funds, 3 are related to student scholarships, while the remaining posts are mainly about other content such as working hours of branches, opening of new offices, information on tax returns, Erste banka-related anniversaries or promotion of new commercials or spots.

We can conclude that Erste banka offers a wide range of useful information on its Facebook

page which attracts the biggest share of its visitors, but also skilfully combines this with the promotion of new products and services, branch offices and sponsored projects. We have **not been able to determine relationship between visual elements and content perception** in Erste banka Croatia FB profile due to a very small amount of posts without visual elements. Kolmogorov-Smirnov distribution normality test for Erste banka Facebook profile data shows that variables of organic reach and number of “likes” do not exhibit normal distribution (the test’s p value (Sig. column) is far below 0.05, which makes it impossible to accept the null hypothesis on the normality of variable distribution).

Because of this it was inadvisable to use Pearson’s correlation coefficient, so we opted for Spearman’s correlation coefficient.

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VAR00001	.206	49	.000	.892	49	.000
VAR00002	.396	49	.000	.223	49	.000

a. Lilliefors Significance Correction

Correlations

				VAR00001	VAR00002
Spearman's rho	VAR00001	Correlation	Coefficient	1.000	.251
		Sig. (2-tailed)		.	.082
		N		49	49
	VAR00002	Correlation	Coefficient	.251	1.000
		Sig. (2-tailed)		.082	.
		N		49	49

Spearman’s correlation coefficient for variables of organic reach and number of “likes” from Erste banka’s Facebook page **is not significant**, and thus the assumption that there is a correlation between number of “likes” and organic reach on Erste banka’s page cannot be

accepted; $r(N\ 49)=.082$, $p > 0.05$, so the correlation cannot be considered significant, but rather coincidental. Thus we conclude that there is **no relationship** between organic reach and the number of “likes” on the example of the Erste banka Facebook profile in the observed

period. For the purposes of this paper we have also obtained data from **Zagrebacka pivovara** (Zagreb Brewery) for the period between December 25, 2013 and April 25, 2014. A total of 44 posts were published on the profile in this period. Zagrebacka pivovara's Facebook profile is actually the profile for its main brand, Ozujsko pivo. The profile has more than 252,000 "likes". The posts are rich in photographs and other visual elements, and in terms of content they are predominantly connected with the projects sponsored by Zagrebacka pivovara, such as The Night of the Museums, IN Music Festival, Red Bull Air Race, concerts and, of course, football. 28 of the 44 posts contain photographs, 10 contain video clips, 3 are links, and 3 posts are status updates. Out of 28 posts containing photographs, 20 show bottles of Ozujsko pivo or a logo in the foreground, which shows that the profile is strongly oriented towards brand promotion. The highest number of "likes", 4,177, was achieved by a post marking Women's Day published on March 8, featuring an image of a bottle of Ozujsko pivo with three red roses in it and the text saying "Give a rose to your girlfriend, mom, grandma or friend because today is their day.☺" and "Zuja⁵ is the law, but women are above the law today☺." The post was shared 811 times and had 35 comments. Next, with 2,207 "likes", was a post published on February 7, 2014, containing the video of the famous TV commercial entitled "Zuja, the only beer with a nickname" which was shared 146 times and had 94 comments. The next post, with 2,019 "likes", was published on March 18, 2014 and contains a video clip. It is a promotional video for the joint project by Zagrebacka pivovara and Robert Knjaz inviting beer lovers to apply for a contest to travel to Brazil (with Robert Knjaz a TV celebrity) during the FIFA World Cup. The clip was shot in an old people's home and actual residents from the home appear in the video. This is followed by a post celebrating Easter published on April 20, 2014 with 1,834 "likes", and a post congratulating St. Patrick's Day published on March 17, 2014 with 1,724 "likes". Finally, a post with a promotional slogan "Spring rules" and a photo-

⁵ Zuja is a nick name of the most popular beer brand of Zagrebacka pivovara

graph of a bottle of Ozujsko pivo surrounded by grass published on March 21, 2014 got 1,798 "likes". As 93,2% of all posts had some kind of visual elements **it was not possible to determine the influence of visual elements** on content perception for Zagrebacka pivovara FB profile.

Testing the normality of distribution showed that variables do not deviate that much in skewness and kurtosis, but the Kolmogorov-Smirnov tests showed that they are non-normal. This means that we should use Spearman's correlation coefficient instead of Pearson's"⁶

⁶ Desirable skewness and kurtosis values are 0, but our results showed that skewness and kurtosis values were 1.141 and 0.318 for the first variable, 1.698 and 4.896 for the second variable, respectively.

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VAR00005	.234	44	.000	.861	44	.000
VAR00006	.136	44	.040	.859	44	.000

a. Lilliefors Significance Correction

(Sig. is below 0.05 which means that the distribution of variables is non-normal) Further calculations, however, show that there is a fairly small difference between Pearson's (0.327) and Spearman's coefficient (0.419), which is a consequence of the fact that the distribution is not too abnormal.

It would be more justified to interpret Spearman's coefficient results, as we have done in all previous cases. **Spearman's correlation coefficient is 0.419 and significant** (Significance is 0.005, which is less than 0.01). **This is proof of positive correlation** between organic reach and the number of "likes" on Zagrebacka pivovara's Facebook page.

Correlations

				VAR00005	VAR00006
Spearman's rho	VAR00005	Correlation	Coefficient	1.000	.419**
			Sig. (2-tailed)	.	.005
			N	44	44
	VAR00006	Correlation	Coefficient	.419**	1.000
			Sig. (2-tailed)	.005	.
			N	44	44

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

2.2. Synthesized research results – a comparative overview

In the following section of this paper we will compare the parameters we have obtained while respecting the different time frames encompassed by the research conducted on individual Facebook profiles.

Media net's profile had the lowest share of visual elements, while 100% of Labin Art Republika's posts incorporated visual elements, including photographs, video clips, image links, or any other visual element apart from bare text.

Table 1 - Presence of visual elements – a comparative overview

	Media net		Labin Art Republika		Erste banka		ZAPI	
	f	%	f	%	f	%	f	%
contains image/photo/video	47	73.4%	196	100.0%	46	93.9%	41	93.2%
no visual elements	17	26.6%	0	0.0%	2	4.1%	3	6.8%
Grand Total	64	100.0%	196	100.0%	49	100.0%	44	100.0%

Considering that a very small share of posts lacked any visual elements, it is impossible to conclude on the basis of conducted research whether the presence of visual elements has any impact on the post's reach. Likewise, considering the fact that a large majority of posts do contain visual elements (which are meant to attract attention) it is possible that the opposite is happening, i.e. that posts which contain no visual elements, consist exclusively of text and are

monochromatic in nature (black text on a white background) draw more attention considering that they stand out as different among the general colourfulness. If we add up all posts for the four entities included in our research, we get 343 posts (units of analysis) which will hereafter be analysed together as we attempt to establish the existence of correlation between organic reach and the number of "likes".

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VAR00001	.401	343	.000	.402	343	.000
VAR00002	.439	343	.000	.335	343	.000

a. Lilliefors Significance Correction

The distribution of variables of organic reach and the number of "likes" is non-normal. According to the Kolmogorov-Smirnov test of normality, p value for both variables is 0, which is considerably less than 1% (significance level), and thus we cannot accept the null hypothesis of the test that the distribution of variables is normal.

Considering the fact that the distribution of variables is non-normal, we will use Spearman's correlation coefficient.

Spearman's correlation coefficient for organic reach and number of "likes" for all surveyed

posts is 0.562, which is indicative of a **positive correlation between the number of "likes" and organic reach** of Facebook posts on the research sample of 4 Facebook pages of Croatian companies.

Significance test of Spearman's correlation coefficient is 0, i.e. less than 0.01, which determines that the **correlation is significant** (and not coincidental).

This correlation incorporates 31.58% variance of two connected variables, i.e. the effect size is 31.58%.

Correlations

				VAR00001	VAR00002
Spearman's rho	VAR00001	Correlation	Coefficient	1.000	.562**
		Sig. (2-tailed)		.	.000

	N		343	343
VAR00002	Correlation	Coefficient	.562**	1.000
	Sig. (2-tailed)		.000	.
	N		343	343

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

3. Conclusion

The aim of this paper was to research the role of visual content on the perception of same when visiting Facebook profiles.

We have defined the following starting hypotheses

H1

We assumed the existence of a positive correlation between posts which contain visual elements and the number of views and "likes" the post will achieve

H2

We assumed the existence of a positive correlation between the number of likes and organic reach

Research results have failed to corroborate our hypothesis that the presence of visual content is related to the number of post views and "likes". The share of content with visual elements is high on all analysed pages, ranging from Media net's 73.4% to Labin Art Republika's 100%. Possible reasons for rejection of the first hypothesis may lie in the extremely low share of content without visual elements. From the presented results obtained based on our research sample, we can conclude that the content of the post, alongside the presence of other elements such as its topicality to content recipients and the specific interests of profile visitors (related, for example, to prize giveaways, job notices, feedback by official persons which are important to users) has a much stronger influence than the presence of visual elements.

Regarding our second hypothesis, we can conclude that we have proven a positive correlation between reach and the number of "likes" for individual posts in the cases of Labin Art (KK = 0.319 and Sig 0.000), as well as Zagrebicka pivovara (r= 0.419, Sig= 0.005), while in the Media net (r=0.225 and Sig. 0.079) and

Erste banka cases (r= 0.251 and Sig.=0.082) we were unsuccessful in proving a correlation. Correlation was also proven on the basis of the results from all 343 posts included in the research, where Spearman's correlation coefficient was 0.562 at 0.01 significance level.

3.1. Discussion

Further research should be directed towards the study of other elements which influence the adoption of content on Facebook, such as vividness and interactivity, alongside the presence of additional variables. Vividness can be defined as a degree by which a certain medium is able to reproduce all aspects of the information transmitted by it. For instance, a telephone call is less vivid than video because the telephone cannot reproduce nonverbal aspects of communication which are present in video. This definition comes from Richard L. Daft's and Robert H. Lengel's Media richness theory /16/. Based on contingency theory and information processing theory, Daft and Lengel theorize that the more ambiguous and uncertain a task is, the richer the medium should be.

According to de Vries, Gensler and Leeflang /17/, Steuer in 1992, defined richness of media as a degree by which a certain medium, in this case a Facebook post, stimulates different senses. Vividness can, thus, be improved by incorporating animation, using more colours or images. By that definition video is more vivid than a photograph because it not only stimulates sight, but also hearing /18/. The existing research into media vividness postulates that the intention to click on a piece of content and the number of actual clicks are higher if there is a higher degree of vividness /19/. It also seems that higher degrees of liveliness are more efficient in increasing the positivity of attitude towards a certain web site /20/. Addi-

tional variables which may be connected with this paper's research results, vividness and interactivity are, for example, the participation of Facebook page provider's employees in the activities, socio-demographic characteristics of visitors, days of the week (we have observed that the number of visits and reactions to Facebook pages vary according to days of the week) and seasonal fluctuations.

We are of the opinion that conducting an experiment with manipulated variables is hindered by Facebook administration rules, as well as by difficulties in establishing a controlled environment for the execution of an experiment.

Notes

- /1/ Balnaves, M., Donald, S., & Shoesmith, B. (2009). *Media theories and approaches: A global perspective*. Basingstoke, UK: Palgrave Macmillan, according to article by J. Macnamara: "Emergent media and public communication: Understanding the challenging mediascape", University of technology, Sydney, p.12
- /2/ A.L.Barabasi: Linked, Jesenski and Turk, Zagreb, 2006., p.160
- /3/ (http://www.webopedia.com/DidYouKnow/Internet/Web_vs_Internet.asp)
- /4/ Iris Uitz: Social media – is it worth the trouble, IBIMA Publishing, Journal of Internet Social Networking&Virtual Communities, Volume 2012.
- /5/ Ibidem, p.3
- /6/ Ibidem
- /7/ Malik, Om. *Fast Company*. Feb 2014, Issue 182, p44-45. 2p. extract from the Ebscohost database.
- /8/ DOVE, JACKIE, Macworld, 07418647, Feb 2014, Vol. 31, Issue 2, Extract from the Ebscohost database
- /9/ Jonas Colliander & Michael Dahlen: Following a Fashionable Friend: The Power of Social Media – Weighing the Publicity Effectiveness of Blogs versus Online Magazines, Journal of Advertising Research, 51(1)p.313-320
- /10/ Bortree, D. S., & Seltzer, T. (2009). Dialogic Strategies and Outcomes: An Analysis of Environmental Advocacy Groups' Facebook Profiles. *Public Relations Review*, 35, 317-319.
- /11/ Eileen P. Moneson: Position yourself as a tough leader on Social media, Feb 2014; CPA Practice management forum, vol 10. Nr.2
- /12/ <http://investor.fb.com/releasedetail.cfm?ReleaseID=821954>

- /13/ T. Watson and P. Nobl: *Evaluating public relations*, Kogan page ltd, London 2007, 2008. p. 199
- /14/ D. Quercia, R. Lambiotte, D. Stillwell, M. Kosinski, J. Crowcroft: The Personality of Popular Facebook users, CSCW 2012, February 11–15, 2012, Seattle, Washington, USA. <https://www.cl.cam.ac.uk/research/srg/netos/papers/p955-quercia.pdf>
- /15/ Eileen Monison: Position Yourself as a Tough Leader on Social Media, CPA Practice Management Forum, Volume10, Nr. 2, February 2014, p. 7; http://www.cpareport.com/Newsletters/Put_Your_Employees_First.pdf
- /16/ Daft, R.L.; Lengel, R.H. (1984). Information richness: a new approach to managerial behavior and organizational design. *Research in organizational behavior* (Homewood, IL: JAI Press) 6: 191–233
- /17/ De Vries, Lisette, Gensler, Sonja i Leeflang, Peter S.H.. *Popularity of Brand Posts on Brand Fan Pages: An Investigation of the Effects of Social Media Marketing*.// *Journal of Interactive Marketing* 26, 2(2012), 83-91.
- /18/ Ibidem
- /19/ Ibidem
- /20/ Ibidem

Literature

1. Asherow, Akiva, Plenковиć, Mario. Analysis model of development consequence for expert system of responsible resolutions. *Informatologia Yugoslavica*, ISSN 0046-9483, 1991, 23, 3, str. 89-96.
2. Dinevski, Dejan, Plenковиć, Mario. Modern university and e-learning. *Media, culture and public relations*, ISSN 1333-6371, 2002, 1, 2, str. 137-146.
3. Dugonik, Bogdan, Plenковиć, Mario. The role of future generation hybrid TV technologies in education. *Informatologia*, ISSN 1330-0067, 2012, vol. 45, no. 2, str. 103-114.
4. Grbavac, Vitomir, Plenковиć, Mario, Antoliš, Krunoslav. The concept of info function model in complex organisational systems. *Informatologia*, ISSN 1330-0067, 1996/1997, 29/30, 3-4/1-4, str. 115-123.
5. Grbavac, Vitomir, Plenковиć, Mario, Nikolić, Branko. Development of electronic's communication and publication on the internet. *Informatologia*, ISSN 1330-0067, 1996/1997, 29/30, 3-4/1-4, str. 149-153.
6. Kučič, Vlasta. Das Rundfunksystem Kroatiens. *Internationales Handbuch für Hörfunk und Fernsehen*, ISSN 0946-3348, 1996/97, str. 132-135.

7. Plenković, Juraj, Plenković, Mario. Etyka w biznesie - analiza historyczna i stan obecny. V: Furmanek, Waldemar (ur.), Piecuch, Aleksander (ur.), Walat, Wojciech(ur.). Technika - informatyka - edukacja : teoretyczne i praktyczne problemy edukacji technicznej. Rzeszów: Uniwersytet Rzeszowski, 2005, str. 135-143.
8. Plenković, Mario. Holistic analysis of the public relations. *Informatologia*, ISSN 1330-0067, 2001, 34, 1-2, str. 27-30.
9. Plenković, Mario. Krizno komuniciranje i teorija odnosa s javnostima = Crisis communication and public relations theory. *Media, culture and public relations*, ISSN 1333-6371, 2002, 1, 1, str. 19-31.
10. Plenković, Mario. Visual communication and cultural hybridization of the global society. V: 12th International conference on printing, design and graphic communications, Blaž Baromić, Split, Croatia, September 21st - 24th, 2008. Bolanča, Zdenka (ur.). *Proceedings*. Zagreb: Faculty of Graphic Arts; Ljubljana: Faculty of Natural Science and Engineering; Senj: Ogranak Matice hrvatske Senj; Ljubljana: Pulp and Paper Institute, 2008, str. 11-15.
11. Plenković, Mario. *Media Communication*. Zagreb: Hrvatsko komunikološko društvo, 2014., 150 str.
12. Plenković, Mario. Holistic strategy of media communication and Cultural hybridization of European digitalized society // The Dialogue with the Other: Balkan Dimensions of European Identity / Zlateva, Minka (ur.). Sofija, Bugarska : "St.Kliment Ohridski" University Press, 2011. Str. 136-147.
13. Plenković, Mario. Visual communication and holistic public action. V: Bolanča, Zdenka (ur.). 11th International conference on printing, design and graphic communications, Blaž Baromić, Zadar, Croatia, September 26th - 29th, 2007. *Proceedings*. Zagreb: Faculty of Graphic Arts, University of Zagreb; Senj: Ogranak Matice hrvatske Senj; Ljubljana: Pulp and paper Institute, 2007, str. 121-126.
14. Plenković, Mario, Hadžić, Slobodan, Plenković, Juraj. Teacher's expression of character. V: Walat, Wojciech (ur.). Technika - informatyka - edukacija : teoretyczne i praktyczne problemy edukacij nformatycznej. T. 8. Rzeszów: Uniwersytet Rzeszowski, 2007, str. 228-231.
15. Plenković, Mario, Mustić, Daria, Hadžić, Slobodan. Visual communication of religious online media content. V: BOLANČA, Zdenka (ur.). *13th International conference on printing, design and graphic communications : Blaž Baromić 09 : September 30th - October 2nd, 2009 : proceedings*. Zagreb: University of Zagreb, Faculty of Graphic Arts, Croatia [etc.], 2009, str. 139-144.
16. Plenković, Mario, Mustić, Daria, Hadžić, Slobodan. Technology of visual estimation of electoral success of parliamentary parties based on billboards. V: The 15th International scientific Conference "Society and Technology", Zadar, June 26-28 2008.
17. Plenković, Mario, Mustić, Daria. Graphic technologies and communicational behaviour in ecological crises. *Informatologia*, ISSN 1330-0067, 2011, vol. 44, no. 4, str. 296-308.
18. Plenković, Mario, Mustić, Daria. Education of journalists and communication scientists in the Republic of Croatia. *Informatologia*, ISSN 1330-0067, 2014, vol. 47, no. 1, str. 36-45.
19. Plenković, Mario, Tomažić, Tina, Kučič, Vlasta. Holistic strategy of public action and visual digitalization in convergent environment. *Observatorio*, ISSN 1646-5954, 2010, vol. 4, no. 2, str. 197-210.
20. Wright, D. K., Hinson, M. D. Examining how social and emerging media have been used in public relations between 2006 and 2012: A longitudinal analysis. *Public Relations Review*.
21. Vreg, France. *Humana komunikologija*, Hrvatsko komunikološko društvo & Nonacom, Zagreb, 1998.