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Impact of Promotional Activities on Social Networks on Election Results for the Mayor of Zagreb in 2021

Abstract

Political communication and political marketing have fully embraced the potentials and power of digital social networks, such as Facebook. The rise of social networks has revolutionized political marketing, creating new opportunities and challenges for political contestants. Today, it would be hard to imagine a political campaign without the use of social networks, so it is not surprising that human and financial resources dedicated to political promotion on social networks are constantly increasing. The main objective of this paper was to research the impact and relationship of promotional activities on the Facebook social network on the election results of the mayor of Zagreb in the local election of 2021. Obtained results proved the undeniable existence of a statistically significant, strong positive linear relationship (correlation) between all types of user reactions on the social network and the number of votes. However, a strong correlation does not necessarily mean that one variable directly causes the other. They only indicate the presence of a relationship between the variables. The practical implication of this research is found in the possibility of laying the groundwork for a future, more refined and better-tested predictor model for forecasting voting results solely based on user reactions and engagement on social networks, rather than on conventional voter surveys. Such a model would be much more cost and time-efficient compared to the personal surveying methods.

Keywords: political marketing, digital marketing, social networks, local elections, Zagreb

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1. INTRODUCTION

The realm of politics is often characterized by the exchange of ideas and policies, with political actors vying for support from the electorate. Political marketing has emerged as an essential tool to facilitate this exchange, allowing political candidates and parties to communicate their messages to the public. Political marketing refers to the process by which political actors use marketing strategies and techniques to communicate their messages to the electorate (Newman, 1999). This includes understanding the needs and preferences of voters, developing a clear and consistent political brand, and engaging in targeted communication efforts to influence public opinion. Political marketing has gained prominence in recent years, as the increasingly complex and competitive nature of modern democracies necessitates effective communication strategies to garner voter support (Lees-Marshment, 2001).

One significant aspect of political marketing is its influence on electoral outcomes. Research has shown that effective marketing strategies can significantly impact voter behavior and election results (Baines & Harris, 2014). By tailoring their messages to the preferences of different voter groups, political candidates can establish an emotional connection with the electorate, resulting in increased voter turnout and support (Lilleker, 2006). Furthermore, political marketing can help candidates differentiate themselves from their competitors, creating a strong political brand that resonates with voters (Henneberg, 2004). Political marketing also plays a vital role in shaping public opinion. By framing issues in a way that resonates with voters, political actors can influence the public's perception of political events and policy proposals (Entman, 2004). For example, political marketing strategies have been employed to generate support for controversial policies by emphasizing the benefits and downplaying the drawbacks (Scammell, 2014). In this way, political marketing can serve as a powerful tool for shaping the political landscape and directing public attention toward specific issues.

The rise of digital technology and social networks has revolutionized political marketing, creating new opportunities and challenges for political actors. Social media platforms, such as Facebook and Twitter, have become essential tools for political communication, allowing candidates to engage with voters directly and in real time (Enli, 2017). This has enabled a more personalized and targeted approach to political marketing, as candidates can tailor their messages to specific audience segments based on demographic information and online behavior (Bode & Vraga, 2018). However, the increasing reliance on digital technology in political marketing also raises ethical concerns. The use of data-driven targeting techniques has led to the proliferation of so-called "microtargeting," in which political messages are tailored to appeal to individual voters based on their personal data (Kreiss, 2016). This practice has raised concerns about privacy and the potential for manipulation, as it may enable political actors to exploit voters' biases and preferences in order to secure their support (Bennett & Livingston, 2018).

The research presented in this paper contributes new empirical evidence by examining the specific case of the Zagreb mayoral election and provides insights into the relationship between social media engagement and electoral success in that context. It fills the gap between the previous researches where exact and quantifiable connection has not been investigated in a specific empirical study focused on a particular electoral context. Therefore, the scientific contribution lies in several key aspects. The research provides empirical evidence of the impact of promotional activities on social networks, specifically on Facebook, on electoral outcomes in the context of the mayoral election in Zagreb in 2021. By analyzing actual data from the election campaign, the concrete insights into how user reactions on social media posts correlate with the number of votes received by candidates are offered. Furthermore, a methodological approach for studying the relationship between social media engagement and electoral success is outlined, which can serve as a framework for future research in this area. Finally, the potential development of a predictive model for forecasting voting results based on user reactions and engagement on social networks is suggested. This novel approach could have

significant implications for political campaigns, as it offers a more efficient and cost-effective method compared to traditional voter surveys. The abovementioned findings have implications for political actors, policymakers, and electoral regulators in terms of understanding the role of social media in modern political campaigns. Overall, the scientific contribution lies in the combination of empirical analysis, methodological innovation, contextual understanding, and potential policy implications, all of which advance our knowledge of the intersection between social media, political communication, and electoral outcomes.

2. IMPLICATIONS OF POLITICAL COMMUNICATION THROUGH SOCIAL NETWORKS

Social networks represent key platforms for political engagement and communication. Users browse news, engage in current events, and develop their political identity through them (Risso, 2018). Most authors consider them an ideal or primary means of manipulating public perception and shaping desired narratives (Bond & Messing, 2015; Howard & Parks, 2012). Marketing is part of political communication aimed at ensuring greater support during the electoral process (Lesinger, Đaić, & Felger, 2019). Venturini and Rogers (2019) emphasize that political debates can be significantly polluted by the use of computational marketing, as was the case with Cambridge Analytica. This company participated in the 2016 US presidential campaign, where it created and launched 4,000 different ads, each tailored to a very narrow, homogeneous segment it wanted to influence (Parsily, 2017). Many authors have investigated the role of Cambridge Analytica and found connections to manipulation of social network users without their consent (Oddleifson, 2020; Ascott, 2020; Wilson, 2019; Risso, 2018; Manokha, 2018). However, not everyone agrees. Kavanagh (2018) believes that there is little evidence that the company was involved in winning the US presidential election or the Brexit referendum, stating that the influence of targeted advertising is exaggerated. Lynch et al. (2018) agree with her regarding the 2017 presidential elections in Kenya, which were also attributed to Cambridge Analytica. In their research, they showed that there was no targeted advertising (Lynch et al., 2018). The reason for using social networks in today's campaigns is to keep pace with trends in advertising and entertainment (Venturini, 2019; Jenkins, Ford & Green, 2013). Through political campaigns, politicians emphasize the information that voters want to hear and fear (Wilson, 2019). Matz et al. (2020) mention the Privacy Paradox, where more than 75% of social network users accept personalized ad messages when it comes to events, concerts, etc., but only 37% of them have the same opinion when it comes to political advertising. Due to negative public opinion, Twitter banned political ads in 2019, and Spotify announced the same (Buckley, 2020). Data-driven campaigns and information about social network users are rooted in literature that explores the implications of microtargeting on democracy, but most are dystopically concerned about the possibility of unbiased voter information (Kreiss, 2012; Tufekci, 2012; Pariser, 2011; Howard, 2006).

Modern political campaigns are conducted in a data-rich environment; every typed word, used image, or viewed ad provides data that can be exploited when creating persuasive messages placed at the right time (Baldwin-Philippi, 2017). Frishknecht (2020) points out that almost all Swiss parties use personal data in adapting communication and placing ad messages through social networks, and this trend will continue, if not increase, as long as it is effective (Frishknecht 2020, according to: Püntener, 2019). Recently, the number of studies dealing with the use of social media in political discourse in the Republic of Croatia has been increasing (Lesinger et al., 2019; Sinčić Ćorić, Brečić & Šimunjak, 2017; Vučković & Bebić, 2013). Communication through social networks has become more transparent and accessible to citizens, allowing the creation of better relationships between politicians and the electorate. However, as Sinčić Ćorić et al. (2017) concluded, politicians do not fully utilize the potential of social networks to establish stronger connections with citizens, missing the opportunity to encourage higher voter turnout, and instead use them to send old messages through new means of communication. Politicians can use social networks in two ways: a) by placing

paid advertising messages and b) by communicating through their (official) profiles. Sending paid advertising messages is treated as one-way communication (politician → voter), while a profile on a social network allows for direct two-way communication (politician ↔ voter). By using social networks, politicians have the opportunity to communicate directly with their electorate and listen to their comments, but they usually do not take advantage of this benefit (Sinčić Ćorić et al., 2017). From the more recent studies it is notable to mention Abid et al. (2023) who delve into the interplay between marketer-generated content (MGC), social media engagement behavior (SMEB), and online relationships within the realm of political marketing. Their study, grounded in the Elaboration-Likelihood Model, underscores the significance of MGC in driving SMEB, which, in turn, enhances relationship quality. Through a mixed-methods approach, including content analysis of official Facebook pages of American political parties and semi-structured interviews with politically engaged voters, they reveal that peripheral cues primarily drive SMEB. Moreover, their findings highlight shares as a higher-involvement activity compared to likes, urging political marketers to leverage distinct MGC cues to elicit both shares and likes. On the other hand, Rita et al. (2023) employ sentiment analysis in tweets to explore the influence of social media discourse on voting decisions during an electoral period. Their study utilizes supervised learning methods to predict sentiment in tweets mentioning two political parties, revealing the accuracy rates of various algorithms. Notably, Naïve Bayes and Support Vector Machine algorithms demonstrate higher precision in sentiment prediction. However, the research fails to successfully predict electoral outcomes, suggesting limitations in solely relying on social media content to influence voter decisions. Additionally, unsupervised learning methods yield inconclusive results, emphasizing the challenges in predicting electoral results based solely on social media sentiment. Finally, Bossetta & Schmøkel (2023) conducted a cross-platform analysis of images depicting political candidates on Facebook and Instagram during the 2020 US election. Their study explores the extent of cross-platform image posting, the expression of emotions by politicians across platforms, and the relationship between these emotions and post-performance. Despite little variation in candidate emotion expressions across platforms, their findings reveal differing audience responses to emotions, with happiness performing better than calm on Instagram but not on Facebook. This suggests a potential generation polarization in the preferences of social media audiences regarding the emotional traits they value in political leaders.

3. RESEARCH GOALS AND METHODOLOGY

The main research objective was to establish and analyze connection and possible correlation between social media (promotional) activity of the candidates for the Mayor of Zagreb and their election results. Specifically, the research goals have been focused on answering the following three research questions:

RQ1: What is the relationship between social media engagement metrics (such as posts, emoticons, comments, shares) and the total number of votes received by candidates in the Major of Zagreb election in 2021?

RQ2: Is it possible to determine quantitative impact of different social media engagement metrics and number of votes?

RQ3: How do the findings of this empirical research contribute to our understanding of the evolving role of social media in shaping political discourse and outcomes?

In order to conduct the research, frequency of pre-election promotional posts of individual mayoral candidates and their audience engagement in the form of reactions (emoticons, comments, and shares) data has been collected and correlated with their results in the first round of election where 10 candidates participated. Zagreb, the largest and capital city of the Republic of Croatia, is home to over 800,000 inhabitants, contributing 34% to the Croatian GDP, making it the most significant economic center in the country (Gatarić, 2021). Local elections for the Mayor of Zagreb occur regularly every four years, beginning in 1993. The total electorate is approximated to around 690,000, with the

Table 1. Data collection dates from the Facebook social network

No.	Collection of web data	Remark
1	March 03, 2021 at 17:30	Initial social network review
2	April 14, 2021 at 19:00	Election announcement Day
3	April 30, 2021 at 10.00	The day before the official start of campaigns
4	May 15, 2021 at 18:30	Election silence day (Day before election)

Source: Authors

average turnout at elections to date being 44%-47% in the first round and 38-41% in the second round. The turnout for the first round of last elections held in 2021 was as expected (47.11%), but the number in the second round exceeded the average (45.03%). The Mayor of Zagreb is the executive body that represents and advocates for the city of Zagreb.

The research was carried out on the Facebook social networking platform from March 3 to May 29, 2021, (the list of the exact data collection dates from the Facebook can be found in Table 1). The rationale for selecting this platform lies in its status as the largest in the world with 2.6 billion monthly active users and also being the most popular social network in the Republic of Croatia with a share of nearly 83% by the number of all social media users in the country, distantly followed by Pinterest (6.68%), Instagram (4.28%), and Twitter (3.9%) (Luty, 2020). According to Facebook data, in June 2021, this social network had 2,353,000 users from the Republic of Croatia, with the most represented demographic cohort being those aged between 25 and 34 years (28%) (Statista, 2021). The research results are intentionally published two years after the election to avoid heated daily politicization of election issues and participating candidates, as this academic study is unrelated to daily politics. Social Pilot software has been used for primary data collection from the social network. SPSS software has been used for the statistical analysis of the research data.

There have been ten contestants for the Mayor of the city of Zagreb, as shown in Table 2. During the initial review of the social network, it was found that Jelena Pavičić-Vukičević did not have an active profile on Facebook (neither official, nor private). She established her official profile after announcing her candidacy for the Mayor. Other candidates communicated with citizens through official profiles. The exceptions were Tomislav Tomašević, who conveyed his messages through the official profile of the "Možemo" political platform/party, and Miroslav Škoro, who communicated messages from his official page which is a mix of posts promoting his well-established singing career as well as the political one. On his page some other candidates for different posts from his political party "Domovinski Pokret" have been promoted as well. Anka Mrak-Taritaš was the only candidate who actually announced her mayoral candidacy via her Facebook profile thus demonstrating her understanding of the importance of communicating with citizens through social media. The financial spending of each candidate for different types of advertising is shown in the Table 2. It is evident that the majority did not utilize television and print media advertising services, instead placing emphasis on electronic portals and social networks. It is noteworthy that Zvonimir Troskot allocated his entire budget to social media advertising, while Miroslav Škoro and Jelena Pavičić Vukičević reported not using social networks as a means of ad placement (despite, for instance, sponsored ads in the name of Jelena Pavičić Vukičević being noticed during the campaign). Interestingly, three candidates used almost half of their budget for social media promotion (Filipović-58%, Mrak-Taritaš-56%, and Klisović-46%). However, when examining communication through official profiles, it is noticeable that the candidates exclusively used

Table 2. Review of the funds spent on promotion in the local elections for the Mayor of the city of Zagreb. (in Euros)

Candidate	Total	TV	Radio	Print	Web portals	Billboards etc.	Social networks
Jelena Pavić Vukičević	91 110.71	19 941.62	35 399.79	-	30 243.82	5 525.49	-
Miroslav Škoro	48 018.94	-	1 468.65	-	31 170.72	15 379.57	-
Joško Klisović	57 730.15	-	2 866.81	-	15 694.26	12 624.52	26 544.56
Davor Nađi	13 735.23	-	-	-	-	11 267.44	2 467.79
Zvonimir Troskot	15 520.27	-	-	-	-	-	15 520.27
Davor Filipović	56 458.21	-	10 090.23	3 010.94	10 603.86	-	32 753.19
Vesna Škare Ožbolt	45 851.14	1 212.42	22 261.55	-	9 954.21	8 937.22	3 485.73
Tomislav Tomašević	101 068.48	-	28 695.14	-	26 730.83	27 661.03	17 981.48
Anka Mrak Taritaš	5 598.70	-	-	-	-	2 452.44	3 146.26
Željko Tokić	10 231.39	-	5 063.96	-	265.45	3 455.35	1 446.64

Source: derived from financial reports of Zagreb candidates for the Mayor of Zagreb published at https://www.izbori.hr/lokalni2021/financ/1/

them for sharing their reflections, programs, and challenging other candidates. It was not observed that any candidate regularly responded to their followers' comments or engaged in discussions with them, meaning that they did not exploit the two-way communication that social networks enable.

4. RESEARCH RESULTS

The following table (Table 3) presents the most important data gathered about the social network activity for each mayoral candidate such as their number of followers and their performance in the first election round. The table lists each candidate's total number of posts, received reactions (emoticons), comments, and shares on those posts, as well as the average number of emoticons, comments, and shares per single post. In addition, it provides the number of followers on specific dates, the number of votes and percentage of total votes each candidate received in the first election round. The data offers valuable insights into their online presence and popularity, shedding light on the impact of social media in political campaigns.

From the given data, it appears that candidates with higher social media engagement and follower growth generally performed better in the first election round. Tomislav Tomašević, who had the highest engagement and follower growth, secured the highest vote percentage at 45.15%. However, there are exceptions, such as Anka Mrak Taritaš, who despite having high follower numbers, received only 0.83% of votes. This suggests that while social media presence can be indicative of electoral performance, other factors may also influence voter preferences. Overall, this data underscores the growing influence of social media platforms in political campaigns. It highlights the candidates' efforts to harness the power of online communication to engage with voters and build support. The substantial levels of social media engagement observed across the candidates indicate the significance of effectively utilizing these platforms to reach and connect with the electorate. In an

Table 3. Mayoral candidates' activity on Facebook and their election results

	Total				Average per post			No. of followers				Voting Results of 1st Round	
Candidate	Posts	Emoticon	Comment	Share	Emoticons	Comment	Share	Mar 03	April 14	April30	May15	Votes	%
Jelena Pavić Vukičević	197	62693	9761	4767	318	50	24	-	3836	4422	4947	36309	11.10%
Miroslav Škoro	233	392967	55901	35788	1687	240	154	144865	146843	148402	148858	39789	12.16%
Joško Klisović	170	38020	4703	4878	224	28	29	6226	7093	7287	7772	25601	7.82%
Davor Nađi	85	25965	2729	1065	305	32	13	3816	4596	4897	5161	6492	1.98%
Zvonimir Troskot	126	51999	6078	2578	413	48	20	4719	5771	6303	6839	13480	4.12%
Davor Filipović	161	57794	13113	2846	359	81	18	1480	3379	4101	4640	32151	9.83%
Vesna Škare Ožbolt	276	74866	10155	4697	271	37	17	5917	7233	7606	7990	16682	5.10%
Tomislav Tomašević	281	225283	22521	13662	802	80	49	51314	52792	53460	54980	147631	45.15%
Anka Mrak Taritaš	186	34888	7229	1320	188	39	7	-	23011	23049	23074	2743	0.83%
Željko Tokić	114	4890	498	663	43	43	6	-	-	-	510	1298	0.39%

Source: Data gathered by Social Pilot software

Table 4. Factor loadings after varimax rotation of factors

Variable	Factor Loadings (Varimax raw) Extraction: Principal components (Marked loadings are >,700000)	
	Factor 1 - User Reactions	Factor 2 - Posting Volume
1 No. of posts on Facebook	0.220075	**0.974823**
2 No. of emoticons on posts	**0.916126**	0.390401
3 No. of comments on posts	**0.958710**	0.247544
4 No. of post shares	**0.971620**	0.134541
5 No. of followers on Facebook	**0.967365**	0.207054
6 No. of profile/page likes on Facebook	**0.950689**	0.261549
Expl. Var.	4.847160	1.429771
Prp.Totl	0.765083	0.215558

era defined by digital communication, the ability to leverage social media can have a profound impact on a candidate's visibility, popularity, and ultimately, their electoral success.

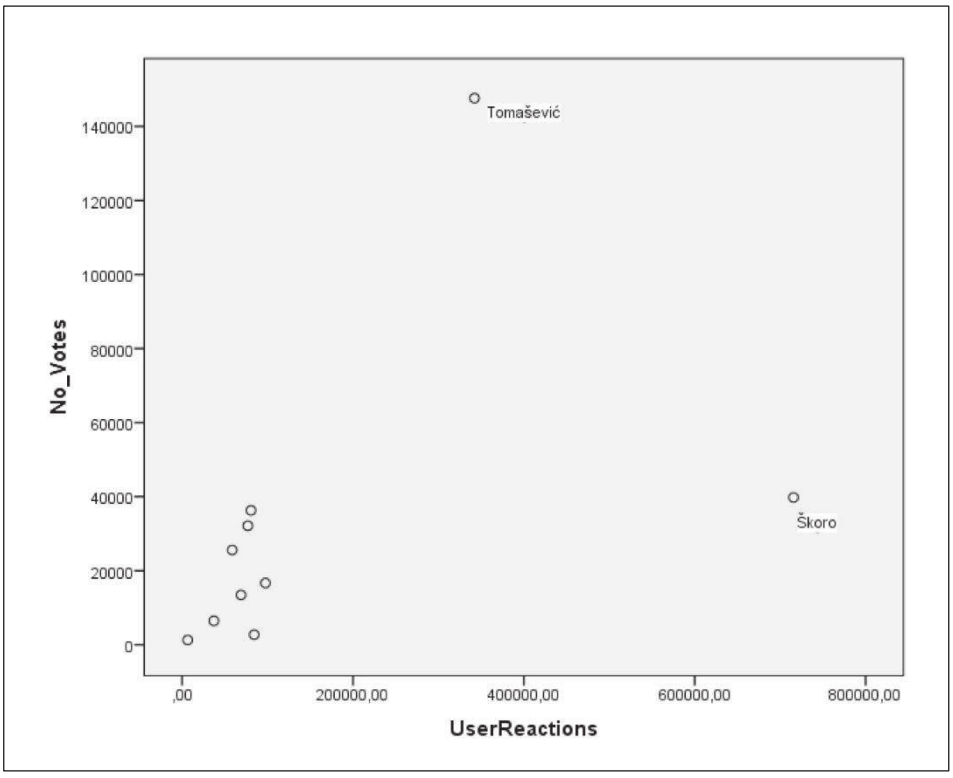
The factor analysis shows the consistent behavior of the observed variables. The purpose of the analysis was to group the factors of promotional activities on social networks into homogeneous groups or clusters considering the prevalence of certain characteristics of user reactions. For this purpose, 6 input variables for factor analysis were selected, these are: the number of candidate posts on Facebook, the number of emojis on posts, the number of comments on posts, the number of post shares, the number of candidate followers on Facebook, and the number of people who like the candidate's Facebook profile/page. Data from the first round of elections have been processed, accounting for 10 contestants for the mayoral post. Before performing the factor analysis, a descriptive analysis of the input (original or manifest) variables was carried out, then, in the next step, an exploratory factor analysis was carried out to determine a smaller number of dimensions (promotional) activities on social networks. The factors obtained are actually mutually independent linear combinations of initial mutually correlated input variables. The justification of the factor analysis was checked by calculating the correlation matrix of the original variables and it was found that the manifest or input variables are significantly and sufficiently correlated. The factor analysis was applied using the principal component method because its results are more suitable for cluster analysis because factor scores are directly determined. When selecting the number of factors, the criterion of eigenvalues was followed, according to which the value of variations explained by each factor must be greater than 1. Consequently, only one factor was suitable for retention. With a value of 5.09, the data can be interpreted that 84.96% of the variance belongs to the first factor. Therefore, it was necessary to make a rotation of the factors to get a clear pattern of factor loads. In other words, in this way, the variance is redistributed from the first factors to the others in order to get a simpler structure from the aspect of orthogonality, while the total variance does not change. For this purpose, a varimax rotation of factors was made to obtain factor scores.

From Table 4, it can be seen that both factors satisfy the criteria of eigenvalues and percentages of variance, since this solution explained 62.76% of the total variance, with the lower limit of acceptability being 60%. It is also important to emphasize that all factor loadings have a positive sign, and the factor loadings of factor 1 on variables 2-6 (number and types of user reactions) are extremely high, while factor 2 has

Table 5. Results of the analysis of variance (ANOVA) for two proposed clusters

Factor	Analysis of Variance					
	Between SS	df	Within SS	df	F	signif. p
Faktor 1	21,67	1	82,44	5	16,4791	0,000115
Faktor 2	7,72	1	11,36	5	3,0882	0,022473

Graph 1. Scatter plot displaying the relationship between *Number of Votes* and *User Reactions*



high factor loadings on the variable "number of posts". Based on the factors obtained, a non-hierarchical cluster analysis (k-means method) was performed to obtain groups of variables with similar or identical characteristics. The input variables were the factor scores, two factor scores in particular, because two factors were obtained by factor analysis, and the decision on the number of clusters is based on the analysis of variance (ANOVA), so that a significance test was conducted (Table 5).

Table 5 shows that with a set significance level of 5% for the tested factors, values of 0.000115 for factor 1, and 0.022473 for factor 2 were obtained. From these values, it can be concluded that the means between the two proposed clusters differ significantly. Therefore, it can further be concluded that there are differences in the specifics of these two proposed clusters, i.e., that the *Number of Posts* behaves differently from the *User Reactions*.

Table 6. Correlation of *Number of Votes* with different variables

		Posts	Emoticons	Comments	Share	Page Likes	Followers
Number of Votes	Pearson Corr.	.637	**.969****	**.887****	**.965****	**.848****	**.865****
	Sig. (2-tailed)	.065	.000	.001	.000	.004	.003
	N	9	9	9	9	9	9

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

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

A scatter plot (or scatter diagram) was used in order to visually examine the relationship or correlation between two variables: *Number of Votes* (results) and *User Reactions*. One point or candidate (Miroslav Škoro) breaks the pattern of positive linear correlation displayed by other points on the Graph 1. Škoro should have gotten much more votes than Tomašević given the amount of *User Reactions* on his posts. However, Škoro, who is also a famous singer, used his official page for political promotion and it was also his music's fan page where he posts a lot of content regarding his concerts and songs. Therefore, a large amount of his followers and their reactions come from his singing background (career), and those musical fans, as seen from the voting results, do not necessarily share his political views or consider him as an optimal person for the mayoral position. Dedicated fans might prefer for Škoro to use his time as a singer and a cant author rather than the politician. If data point representing Škoro is excluded from the graph then relationship will have much more accurate curve fit displaying strong linear correlation as shown in graph 2.

Indeed, Pearson correlation shows statistically significant, strong positive correlation between variables *Number of Votes* and *User Reactions* ($r=0.960$, $p<0.01$). As the number of user reactions increases, it is expected that the number of votes will also increase. Actually, all of the variables composing Factor *User Reactions* are in strong positive correlation with Number of Votes as shown in Table 6 bellow. The strongest statistically significant positive correlations with *Number of Votes* is with variables: *Number of Emoticons on Posts* ($r=0.969$, $p<0.01$) and *Number of Post Shares* ($r=0.965$, $p<0.01$) which provides an answer for the RQ1. However, it is important to remember that correlation does not imply causation and a strong correlation does not necessarily mean that one variable directly causes the other. They only indicate the presence of a relationship between the variables. Furthermore, the sample size (N) is relatively small for some of the correlations, which may affect the reliability of the correlation coefficients. Variable *Number of Posts* is not in statistically significant correlation with *Number of Votes* and also is not a part of Factor1 *User Reactions*.

Finally, it is possible to derive a regression equation in order to further describe the model and the dependencies between the variables in the model. The ANOVA table provides a statistical test of whether or not the regressions coefficients are equal to zero. This tests the overall significance of the regression model. Sum of Squares shows the total amount of variance in the dependent variable, partitioned into the portion that can be explained by the model (Regression: 15153859040.000) and the portion that cannot (Residual: 1299580407.000). F-test, which checks if the model improves the prediction of the outcome by using the mean of the outcome as a prediction. A larger F indicates a more useful model. Here, the F statistic is 81.624. Sign. or p-value displays the probability that the null hypothesis (that the regression coefficients are zero) is true. A small p-value (e.g., less than 0.05) indicates strong evidence that the regression coefficients are non-zero, suggesting the predictors are meaningful. In this case, the p-value is less than 0.001 (indicated by ,000), which means the *User Reactions* variable

Table 7. Regression model for dependent variable *Number of Votes* and predictor variable *User Reactions*

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	15153859040.000	1	15153859040.000	81.624	.000[b]
	Residual	1299580407.000	7	185654343.800		
	Total	16453439440.000	8			
a. Dependent Variable: No_Votes						
b. Predictors: (Constant), UserReactions						

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coeff.**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	-11238.846	6548.073		-1.716	.130
	UserReactions	.450	.050	.960	9.035	.000
a. Dependent Variable: No_Votes						

is a statistically significant predictor of *Number of Votes*. So, based on these data, *User Reactions* appears to be a strong and significant predictor of the *Number of Votes*.

The Coefficients table provides details on the regression model for predicting the dependent variable *Number of Votes* from the independent variable *User Reactions*. The slope (B for *User Reactions*) is 0.450, indicating that for each additional *User Reaction*, *Number of Votes* increases by 0.450 on average, assuming that all other variables are held constant. Beta (Standardized Coefficients) is the coefficient for *User Reactions* when the regression is run on standardized variables (all variables converted to z-scores). This can be interpreted as the number of standard deviations that *Number of Votes* will change per standard deviation increase in *User Reactions*. Here, Beta for *User Reactions* is 0.960, indicating a strong positive relationship. The t-statistic value tests whether the corresponding B value could be zero. The larger the absolute value of t, the less likely the coefficient could be zero purely by chance. Here, for *User Reactions*, t=9.035. The p-values for the t-tests on each coefficient are used to determine whether the coefficients are significantly different from zero. If the p-value is less than 0.05, the coefficient is typically considered to be statistically significantly different from zero. In this case, for *User Reactions*, the p-value is less than 0.001 (indicated as ,000), suggesting that *User Reactions* is a significant predictor of *Number of Votes*. Note that for the Constant (intercept), the p-value is 0.130, which is greater than 0.05, indicating that the intercept is not statistically significantly different from zero. This is often less meaningful, however, as it just indicates where the line crosses the y-axis, which might be outside the range of the data.

Based on the collected data, the equation of the regression line is:

Number of Votes = -11238.846 + 0.450 * User Reactions

This equation is used to predict the value of the dependent variable Number of Votes based on the value of the independent variable User Reactions. The intercept is -11238.846 and the coefficient for the variable *User Reactions* is 0.450.

Graph 2. Curve Fit – graphic representation of the regression line equation

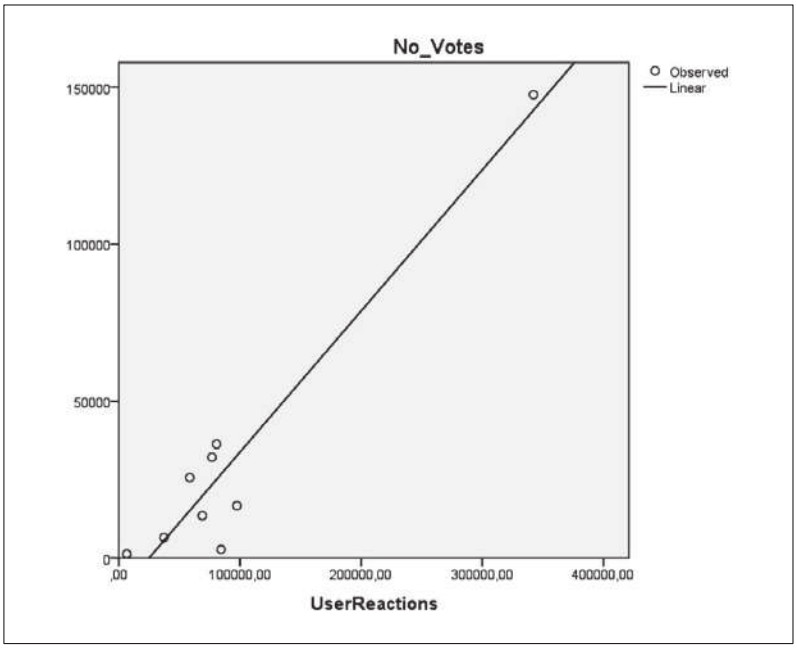


Table 8. Regression coefficients for all user reactions

Coefficients[a]						
		Unstadard Coeff B	**Std. Error**	**Stand. Coeff. Beta**	**t**	**Sig.**
	(Constant)	-12589.895	5826.891		-2.161	.068
	Emoticons	**0.686**	.066	.969	10.368	.000
	(Constant)	-21136.978	12768.964		-1.655	.142
	Comments	**6.155**	1.213	.887	5.072	.001
	(Constant)	-13410.952	6257.627		-2.143	.069
	Share	**11.051**	1.136	.965	9.731	.000
	(Constant)	1608.081	10395.319		.155	.881
	No_ Followers4	**2.311**	.506	.865	4.568	.003
	(Constant)	1555.270	11102.206		.140	.893
	Page/ Profile Likes	**2.463**	.583	.848	4.228	.004
a. Dependent Variable: No_Votes						

This means that for each unit increase in *User Reactions*, the number of votes increases by 0.450, assuming that all other variables are held constant. The graphic representation of the regression line is provided in Graph 2. Please note that this model is a simplification and does not consider other factors that may influence the dependent variable. It is also worth noting that the intercept value is negative and could be considered as statistically not significant (based on the provided p-value). So, although it is used for calculations here, its real-world interpretation might be less relevant if *User Reactions* cannot be zero or if zero is not within the relevant range of the data. In order to learn how different user reactions relate through regression with the number of votes, the following results have been calculated and jointly displayed in the following table (Table 8)

For each increase in emoticons on post, the average number of votes should increase by 0.7. For each single increase in Comments, number of votes should increase by 6.2. Fore each additional share number of votes should increase by 11, each new follower should mean increase of 2.3 votes, and each page/profile like should bring additional 2.5 votes which also provides an exact and quantifiable answer for the RQ2.

5. DISCUSSION

Research data provided undeniable evidence of the existence of statistically significant strong positive linear relationship (correlation) between all investigated types of user reactions on the social network Facebook and the number of votes candidates for the Mayor of Zagreb received in local elections in the year 2021. The number of posts on the social network is not statistically correlated to the number of votes, which is a logical outcome because the posts do not belong to user reactions but represent content which might be more or less interesting. The conducted research showed that different user reactions carry different weights in respect to the number of votes they correlate to. For example, each share is on average connected to the increase of 11 votes, while each additional emoticon (reaction to the post in the form of "Like", "Love", "Haha", "Wow", "Sad" & "Angry" ) is connected to the increase of only 0.686 additional votes. This is also very logical as it is much faster and easier for users to react on the post with an emoticon than to undertake more effort of sharing it. Also, posts that are shared are considered extra worthy by the users that share them, so there is usually not a lot of posts like that compared to the much larger number of posts user sees on their newsfeed and frequently reacts to with an appropriate emoji. Additionally, when shared, posts are visible to the extra audience consisting of network connections of a person that shared them and consequently to a larger number of potential voters. That is why the post content carrying appropriate message (and sometimes elements of surprise, shock, etc.) is very important in political communication. Posts with extra interesting content will be shared and the most effective among them will actually spread virally through social networks, multiplying promotional effects for the politician/party that benefit from them (RQ3). Also, comments and emoticons could be negatively directed, while sharing a post is usually representation of agreeing and supporting of its content. The main limitation of the research is that it is made "ad hoc" or at one time for a specific purpose of analyzing mayoral election in Zagreb. Therefore, the obtained ratios between different user reactions and the number of votes are probably far from accurate for a different political contexts. For further refining accuracy, it is necessary to use this research methodology and continuously analyze larger number of different elections in order to identify ratio patterns for different political contexts. Future research in this area should delve deeper into understanding the causal mechanisms underlying the observed correlations between user reactions on social networks and election results. This could involve experimental designs or longitudinal studies to explore how specific types of promotional activities directly influence voter behavior. Also, investigating the role of contextual factors, such as the political climate, candidate characteristics, and campaign strategies, could provide a more nuanced understanding of how promotional activities on social networks interact with other variables to shape election outcomes. Building on the study's suggestion of developing predictive models based on user reactions and engagement on social networks, future research could focus on refining

and validating such models. This could involve incorporating additional variables, improving model accuracy, and testing the applicability of the models across different electoral contexts. Given the diversity of social media platforms and their evolving features, it would be worth to explore platform-specific promotional strategies and their effectiveness in mobilizing support, shaping perceptions, and influencing voter behavior. This could involve comparative analyses of different platforms and their unique affordances for political communication. Overall, future research in this field should aim to address the complex interplay between digital technology, political communication, and electoral dynamics, while also considering the ethical and societal implications of using social media for political promotion.

6. CONCLUSION

There is an undisputable rise of the importance of political marketing and communication with key audiences on social networks. The possibilities that social networks offer for the promotion of political ideas, candidates and parties are almost limitless comparing with the classical mass media. They allow 24/7, two-way live communication in a real time. They enhance democracy by offering a technical platform and speaker podium for every person that wish to express their political views. Information spreads instantly and everyone can be heard and accessed. Political marketers use these platforms very efficiently to spread political messages across the political spectrum using microtargeted segmentation and appropriate customized content. Croatian political parties and their leaders are aware of the benefits of political marketing on social media, but do not use it to the full extent. Research data showed that mayoral contestants used Facebook as a platform to proclaim their political views and programs but did not exploit two-way communication that social networks offer. The results showed that there is a strong positive linear correlation between user reactions on their posts and the number of votes. Different user reactions have been studied, and their relationship with the number of votes has been calculated. For example, one share is correlated to 11 votes, while one emoji reaction is "worth" only 0.686 votes or, in other words, one share has the same effect as 16 emoji reactions on a post in correlation with the number of votes. If further research is conducted, following this methodology, additional refined accuracy of correlation coefficients could be obtained and help to establish a predictor model for forecasting voting results solely based on user reactions and engagement on social networks rather than on the conventional voter surveys. Such a model would be much more cost and time efficient compared to the personal surveying methods and would represent a true practical implication of this research. Quality, customizability, and precise microtargeting of content (posts) are vital at generating user interests and therefore increased number of their reactions and consequently votes. That represents the main arena for the activities of the political marketing. The research showed the increasing critical relevance of social networks for political promotion and for the results of political campaigns. So perhaps it is time to replace an old marketing phrase "There is no bad publicity" with a new one "There is no bad user engagement" given the importance and relevance of digital social networks and their content in the modern society.

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Utjecaj promotivnih aktivnosti na društvenim mrežama na rezultate izbora za gradonačelnika grada Zagreba u 2021. godini

Sažetak

Politička komunikacija i politički marketing u potpunosti su prihvatili potencijale i moć digitalnih društvenih mreža poput Facebooka. Prisutnost i porast korištenja društvenih mreža revolucionirala je politički marketing stvarajući nove prilike i izazove za političke natjecatelje. Danas bi bilo teško zamisliti političku kampanju bez korištenja društvenih mreža pa ne čudi što ljudski i financijski resursi namijenjeni političkoj promociji na društvenim mrežama konstantno rastu. Glavni cilj ovog rada bio je istražiti utjecaj i odnos promotivnih aktivnosti na društvenoj mreži Facebook na rezultate izbora za gradonačelnika Zagreba na lokalnim izborima 2021. godine. Dobiveni rezultati neupitno su dokazali postojanje statistički značajne snažne pozitivne linearne veze (korelacije) između svih analiziranih vrsta korisničkih reakcija na društvenoj mreži i broja ostvarenih glasova pojedinih kandidata. Međutim, snažna korelacija ne znači nužno da jedna varijabla izravno uzrokuje drugu. Ona samo ukazuje na postojanje veze između varijabli. Praktična primjena ovog istraživanja ogleda se u mogućnosti postavljanja temelja za budući rafiniraniji i detaljnije testirani prediktivni model za predviđanje rezultata glasanja isključivo na temelju korisničkih reakcija i angažmana na društvenim mrežama, umjesto onih konvencionalnih temeljenih na anketiranju birača. Takav model bio bi mnogo efikasniji u smislu financijskih i vremenskih troškova u usporedbi s metodom osobnog anketiranja.

Ključne riječi: politički marketing, digitalni marketing, društvene mreže, lokalni izbori, Zagreb.