Enhancing Citizen Participation through Social Media Engagement: The Case of Czech Municipal Facebook

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Abstract

The popularity of social media is expanding, and so is the interaction between towns and residents. Municipalities in the Czech Republic rely heavily on Facebook as a direct communication medium with citizens. The main goal of this research is to assess the drivers of municipal social media engagement with citizens. To do so, we looked at 183 official Facebook sites of Czech municipalities with extended powers. We applied the first generational statistical techniques, specifically the correlation and regression analyses in delving into the nexus between the citizenry engagement on local government issues via facebook toward onward local government development. Our results indicated that indeed most local governments have a Facebook page with little activity and large municipalities dominated most social media activity. The study found out that Facebook activity, interactivity and mood are the factors driving citizen engagement on municipality social media pages.

Introduction

Government is accountable to society and the citizens, as they are responsible for providing the facilities and safeguarding the public's interest (Forrer et al, 2010; Mutula and Wamukoya, 2009). Social media allows us to publish a large amount of information at a meager cost (see Kirtiş and Karahan, (2011). So the use of information and communication technology (ICT) has become a strong tool for spreading administrative reforms at all local and governmental levels. According to Johannesen et al. (2012), social media is the third most preferred mode of communication after emails and municipality websites among identified stakeholder groups consisting administrators, politicians, and civil society.

There is a worldwide use of social media by local governments to communicate and dialogue with citizens, promote openness, transparency and involve them in making decisions (Bonson et al., 2017; Agostino & Arnaboldi, 2016; SandovalAlmazan and Gil-Garcia, 2012). Previous studies suggest that social media can help public authorities to enhance citizens' engagement (Lee and Kwak, 2012). Through social media, citizens become more informed, aware of local issues, increases their interest in corporate social responsibility and allows them to participate in two-way dialogical communication with the government (Chun and Luna-Reyes, 2012),(Mossberger et al., 2013), (Guttormsen and Sæbø, 2013).

According to Fung (2015), public participation has become a strong means to seek legitimacy, justice and efficacy in governance. Social media has become one of the most effective channels through which public participation can be achieved and to create loyal citizens (Agostino, 2013). There are different types of social media platforms that have been adopted by both governments and citizens and they include Twitter, LinkedIn, Youtube, and Facebook. Data indicates that Facebook is the most widely used social media platform among users (Alexa.com., 2013) with the highest level of engagement among users with 63 % users visiting the site at least once a day and 40 % visiting multiple times throughout the day (Pew Research Center, 2013). So, Facebook provides an opportunity for local governments to develop a sustained interaction with their citizens (Ellison & Hardey, 2013).

There are many studies that have explore the use of social media by local government (Abdelsalam et al., 2013;

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Bertot et al., 2010; Bonsón et al., 2012; Bonsón et al., 2014; Ellison & Hardey, 2013, 2014; Ferro et al., 2013; Graham & Avery, 2013; Hofmann et al., 2013; Meijer & Thaens, 2013; Mossberger et al., 2013; Oliveira & Welch, 2013; Panagiotopoulos et al., 2013; Reddick & Norris, 2013; Snead, 2013) and the use of Facebook for political engagement (Conroy et al., 2012; Rustad & Saebo, 2013). The studies of Bonson et al. (2015) found out that European Union towns are less active on Facebook than previously thought. A similar study by Hofmann et al. (2013) to investigate German city Facebook to promote awareness and participation found out that a strong correlation exists between public participation and social media use. However, many of studies concluded that most social media communication for political engagement seems to be one-way, which might mean a lack of establishment of interactions with citizens (Agostino and Arnaboldi, 2016; Bonson et al., 2015; Mergel, 2013; Mossberger et al. 2013; Norris & Reddick, 2013; Halpern Katz, 2012).

The findings of above studies have served as motivation for the current study to identify drivers that influence citizens engagement on social media platforms of municipalities in the Czech Republic. The study mainly focused on Facebook and its use by Czech municipalities. It was picked because according to Statista (2021), the Czech Republic has over 7.58 million Facebook active users, up from 5.62 million in 2017. Then again, facebook dominates the global social media landscape, with 2.17 billion users (Global Digital Suite, 2018).

Literature Review

Application of social media platforms for local governments

Facebook, a popular social networking site, provides a platform for communities to share information, ideas, and viewpoints on various topics. This leads to better public services and policies that are more accessible to the public (Guillemoin et al., 2016). Social media platforms aid local governments in monitoring public sentiment and responding appropriately. They also assist in legitimizing and enhancing the democratic process itself. Social media might enhance awareness, comprehension, and interest in local issues (Mossberger et al., 2013). Using specific social media platforms can help improve local government operations and decision-making. Figure 1 summarizes the key benefits of using social media appropriately in local governments, according to Triantafilidou and Siomkos (2018).

Supply as a local government	Demand as a citizens of municipality
Effective informations and its massive distribution of content	General informed and interest of citizes in local government activities
Quick communication during emergency cases	Higher engagement of non – elite individuduals
Mining, crowd-sourcing of citizens content	Proper interaction between citizens and governments including dialogs.
Efficient knowledge management	Deeper relations between citizens and government
Increased quality in local public services Community issues solve creative and innovative	Re – designing local public service Re- designing major community issues
Transparency and accountability	Participation in public debates and trust in local governmence and greater public value.

Fig 1: Social media usage and its benefits adopted by Triantafillidou and Siomkos, (2018).

However, there are various hazards and drawbacks of using social media networks. A lack of knowledge and established regulations and policies by ICT employees are just a few risks (Picazo-Vela, et al., 2012). Most social media networks, including Facebook, are open to anyone. Local governments may be hurt by inappropriate responses and complaints on municipal social media pages and unwanted publicity for other visitors, who may act unfavorably and change their opinion on the watching page. However, Facebook may develop stable and loyal relationships with residents, volunteers, and the media.

Citizen involvement is fundamental interaction, a two-way exchange of information between the government and

citizens. Klein (2000) claims that the old-fashioned public hearing approach is often too little, too late. The author also distinguished instrumental and normative citizen involvement activities. The first focuses on informing citizens or getting citizen feedback on government actions, while the second focuses on strengthening communities, democracy, and governance processes. Researchers concluded that municipal governments must move beyond formal hearings and engage individuals in problem solutions. Also, find strategies to enable communication and interaction with and amongst various local players (Klein, 2000).

Hypothesis Development

Facebook activity and interactivity

To boost the amount of interactive, symmetrical interaction with belonging stakeholders, Nah and Saxton (2013) state that organizations active on social media usually have profiles on platforms with high content. While Munchener (2013) and Zavattaro and Sementelli (2014) argue that governments recognize the need to engage individuals and not merely share random material on social media to attain a more engaged society, Mergel (2013) adds to the argument that residents should be supported to comment on local government posts and to participate actively. Whereas Bonson et al. (2013) found no relationship between the level of government aktivity in social media and citizen engagement, Haro-de-Rosario et al. (2018) found a negative relationship. Likewise, Haro-de-Rosario et al. (2018) found a positive relationship between facebook interactivity and citizen engagement on social networks. However, the study proposes that:

H1: Facebook activity negatively influences citizen engagement of local governments through social networks.

H2: Facebook interactivity negatively influences citizen engagement of local governments through social networks.

Several authors consider mood are very specific factor. According to Haro-de-Rosario et al. (2018), emotions play a major role in driving communication and interpersonal behaviors between organizations and their stakeholders. The desire to actively seek, process and exchange information is also influenced by emotional states. As a result, they stressed on the significance of mood analysis of stakeholders from a business perspective. Leppert et al. (2022) claim that messages may concurrently contain and trigger both happy and negative emotions in people. Leppert et al. (2022) further established that evidence from a variety of business sectors shows that posts generating higher emotional arousal lead to higher social media engagement. Thus:

H3: Moods positively influence citizen engagement of local governments through social networks.

Methods and Data

The methodology of this study is comprised of two parts. In the first part, descriptive analysis is done by adopting metrics proposed by Agostino (2013) and Bonsón et al. (2017) to measure citizen engagement through the Facebook pages of municipalities. In the second part, empirical analysis is carried out to measure the correlation among different variables related to the study.

Descriptive analysis of citizen engagement via Facebook

This study is divided into two steps. First, descriptive analysis was performed by using metrics developed by Bonson et al. (2017) and Agostiono (2013) to assess citizen involvement with Facebook and official pages run by local governments. The second section of this paper examines how much local governments use Facebook. Various influencing elements in citizen participation are measured using Facebook. All data from official Facebook sites of Czech towns were collected. The latter portion of our endeavor focused on each municipality's communication strategy and essence.

We used the same metrics that Agostino (2013) and Haro-de-Rosario et al. (2018) used to identify the primary dimensions of engagement on social media, in this case, Facebook, to determine the population of each selected municipality and the level of public communicatelli (LPC), which means that citizens are aware of daily activities on specific social media platforms. According to Agostino (2013) and others, it is possible to use LPC to assess the level of citizen involvement in government. Three corporate indicators (popularity, commitment, and virality) from Bonson and Ratkai (2013) were used to measure citizen engagement. Different methods were utilized by Agostino (2013) when comparing municipal levels of citizen participation.

Literature has found that content density, post type, and posting frequency were significant determinants of engagement levels. The degree to which people participate in the process is determined by Bonson and Ratkai (2013), and Bonson et al. (2017). Agostiono (2013), for example, looked at how people interacted with social media profiles on Twitter and Facebook. Official Facebook pages and accounts will be scrutinized. When measuring LPC, consider how many people know about the municipality's Facebook page. LPC is the metric used by Agostino (2013) to gauge citizen involvement. Bonson et al. (2017) adopted three business measures (P3, C3, and V3), and this investigation will follow the same methods. Through the aggregated engagement index (E), Bonson and Ratkai (2013) measure the level of citizen participation. Agostino (2013) used population size to compare the levels of public engagement in two towns.

Name	Sign	Formula	Measures
Popularity	P	Total likes/total posts (P/LPC)	Average number of likes per post
	P *	.	Popularity of messagess among public communication
Commitment	C	Total comments / total posts (C/LPC)	Average number of citizen comments per post
	C *		Commitment of public communication
Virality	V	Posts with shares/total posts	Average number of shares per post
	V *		Virality of messages among public communication
Engagement	E *	P *+ C * + V *	Stakeholder engagement index

Fig. 2: Measurements of the main dimensions used in citizen engagement.

Table 1: Citizen Engagement through Facebook: Explanatory variables, measurement method and expected relation.

Explanatory variables	Unit of measurement	Source	Expected relation
Activity	Mean number of posts (posts/tweets) per day for 3 months	Official Facebook profiles of the municpialities analyzed	H1: Negative
Interactivity	Percentage of replies by municipalities to comments by citizens in 3 months	Official Facebook profiles of the municpialities analyzed	H2: Negative
Mood	Positive, negative, and neutral comments	Official Facebook profiles of the municpialities analyzed	H3: Negative

Data Collection

For the investigation of our study, the sample was selected through purposive sampling. For this purpose, we chose Czech municipalities and collected data from their Facebook pages. The Czech statistical office estimates that there are 205 municipalities with extended powers. The total number of municipalities evaluated was 183 (89.27 %) because the rest lacked proper information, data, and official Facebook pages.

Data Analysis

For empirical investigation, we computed correlation among different study variables and regression analysis using IBM Statistical Package for Social Science 26.

Results

Table 2 shows that out of 183 municipalities facebook pages in Czech Republic, only 12 % were made up of large municipalities and 88 % were made up of small municipalities. With mean of 48, the level of facebook activity of large municipalities was more than the level of activity of small municipalities. The level of activity included posts, likes, comments and shares. The study further found out that activity per each observation on monthly basis is 12.62. This is a clear indication of the low level of activity on the facebook page of municiplities.

Table 2: Facebook Activity of Municipalities.

	Activity	Mean	Median	Max	Std Dev.	No of Obs
Large Municipalities	980	48.27272727	39	172	33.67942	22
Small Municipalities	5947	36.58385093	33	120	19.20728	161

From table 3, the results for engagement of citizens were measured in terms of popularity, commitment, and virality of the local government's Facebook profiles. Table 3 shows that popularity presents the strongest trend. The score on the level of engagement indicated that citizens are engaged with the Facebook pages of municipalities, but the level of commitment and virality is very low. Table 3 was adopted by Haro-de-Rosario (2018), who examined 1 month period; our research was inspired but 3 months long.

Table 3. Citizen Engagement and its studies components in the Czech Republic 2021 (3 months period).

Name	Sign	Facebook CZ
Popularity	P	1.46
	P*	5.99
Commitment	C	0.06
	C*	0.26
Virality	V	0.01
	V*	0.05
Engagement	E*	6.30

Using Pearson Correlation Matrix, Table 4 shows the correlation between the variables. From table 4, there is a positive and medium correlation between citizen's mood and citizen engagement and a very weak correlation between facebook activity and citizen engagement. Since the correlation is less than .80, there is no multi-problem of collinearity that might have affected the model.

Table 4. Pearson correlation matrix.

		Activity	Interactivity	Mood	Citizen Engagement
Activity	Pearson Correlation	1	-.116	-.111	-.217**
	Sig. (2-tailed)		.140	.148	.004
	N	170	162	170	170
Interactivity	Pearson Correlation	-.116	1	.115	-.140
	Sig. (2-tailed)	.140		.147	.075
	N	162	162	162	162
Mood	Pearson Correlation	-.111	.115	1	.470**
	Sig. (2-tailed)	.148	.147		.000
	N	170	162	170	170
Citizen Engagement	Pearson Correlation	-.217**	-.140	.470**	1
	Sig. (2-tailed)	.004	.075	.000	
	N	170	162	170	170

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

Table 5 shows the results obtained in the multiple linear regression analysis conducted after verifycion that all the initial hypotheses for the model were fulfilled. The explanatory power of the result model measured by adjusted was low, all the explanatory variables namely activity, mood were statistically significant.

Table 5. Regression analysis – Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.550[a]	.303	.289	112.39

Note: [a]Predictors: (Constant), Mood, Interactivity, Activity

			ANOVA[a]			
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	866011.139	3	288670.380	22.849	.000[b]
	Residual	1996116.697	158	12633.650		
	Total	2862127.836	161			

Note: [a]Dependent Variable: Citizen Engagement; [b]Predictors: (Constant), Mood, Interactivity, Activity

			Coefficients[a]		

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	159.028	22.931		6.935	.000
	Activity	-1.096	.406	-.182	-2.697	.008
	Interactivity	-32.854	10.206	-.216	-3.219	.002
	Mood	38.375	5.369	.482	7.147	.000

Note: [a]Dependent Variable: Citizen Engagement

The level of activity was found to be inversely related with engagement as expected. This mean that high publication of Facebook m essages and comments reduces citizen engagement on platform of the municipality. These findings are in line with our hypothesis. The study also foud an inverse relationship between interactivity and citizen engagement and therefore the hypothesis was accepted. Thus, municipalities with a high degree of interactivity on Facebook enjoyed lower levels of citizen engagement.

A positive relationship was recorded between mood and citizen engagement. This really indicates that posts generating higher emotional arousal leads to higher social media engagement by citizens. This accepts our hypothesis.

Discussion

Stakeholder engagement behaviors are crucial to the success of a community because there wouldn't be much to speak about if there weren't active likers and commentators. Consequently, it is crucial to have more knowledge about how to raise stakeholder participation as well as their preferred media and content. This study was carried out on the facebook pages of municipalities in the Czech Republic. Even though the large municipalities were less in terms of facebook numbers, they dominated the facebook activities including posts, comments, tweets, likes and shares.

The study also found out that municipalities with a high number of facebook activity and interactivity experienced very low levels of citizen engagement. The findings of this study agreed with Haro-de-Rosario (2018) that even though municipalities may have high levels of social activity does not necessarily translate to citizens' commitment. Bonson et al. (2014) advised local governments and municipalities to flood their social media pages with interesting and beneficial content to improve citizen engagement.

Further, the study found out that posts generating higher emotional arousal causes higher social media engagement. This study's finding was in contradiction with Bonson et al. (2014) who found a negative relationship between both variables. This proposition sides with Leppert et al. (2022) that people may need to interact and socially share more often when they are confronted with high intense emotional messages, regarding the type of emotion they are experiencing. They advised that posting of messages with high or low emotional feelings should not be done with the motive of increasing citizen engagement but should give credence to social context. In this vein, local government agencies should be strategic in sharing posts with psychological implications.

Practical Implications

From a practical viewpoint, our findings suggest that local governments should také into effect content if their social media stratégy aims at enhancing citizen engagement. Purposeful utilization of social media content seems to be imperative in order to achieve the desired behavioral responses (likes, comments or retweets).

Also, if local governments want to increase citizen involvement on social media, they should consider the tone influence of emotional content in posts, tweets, and comments.

Limitations

This paper's strategy only applies to municipalities with intended powers, not more prominent cities, and it was shown that there are significant variations among them. You may utilize various methodologies, such as in-depth interviews or other sorts of analysis, to get more accurate results in the future.

The study didn't identify the categories of clients (Facebook users) being investigated, such as citizens of local governments or visitors to the Facebook page. In the future, new data collection approaches may be used to identify and search for diverse audiences in greater depth.

This study focuses solely on facebook as its primary focus. Future studies should look at many social media sites, such as Instagram and Twitter, or compare the platforms and their components side by side. It might be interesting to collect primary data in the future by conducting a questionnaire on a different topic rather than utilizing data from official Facebook pages.

Future research should cover more longitudinal studies (in this study, November and December 2021, when COVID

and Christmas and other December events were mentioned).

Conclusion

Local government agencies across the world have widely adopted Facebook for complementing their communication strategies and enhancing citizen engagement. Much knowledge has been accumulated about how government agencies use social media for engagement and some of the studies have explored the drivers that lead to social media engagement (Bonson et al. 2014). Nevertheless, some of the studies such as (Dardenne et al., 2011; Hughes et al., 2012; Bonson et al. 2014) produced contrasting results with regards to factors including activity, interactivity, and mood. This motivated the researchers to replicate a similar study in the Czech Republic. The present study contributes to the field since the political and administrative systém is more conservative than liberal. This study offers not only valuable insights for scholars and practitioners but far-reaching research avenues to be explored.

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