

SOCIAL MEDIA ADOPTION IN LOCAL GOVERNMENTS. THE CASE OF POLAND

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ABSTRACT

The use of social media is gradually transforming all marketing activities also in the public sector. Social media in public administration constitutes also a research area for numerous scholars not only with economic background. Still a majority of contributions deal with qualitative aspects of social media adoption by either presenting good practices or comparing the selected social media of cities and countries. Hence there is a paucity of research that presents the real share of social media adoption in public administration, especially at the local level. The aim of this paper is to fill this research gap and present the data of social media adoption among lowest level of Polish local government. As a research area we choose communes (municipalities (Polish: gmina) NUTS 5) as the lowest administrative unit in Poland. We used a random sample of 385 Polish communes (out of 2,478) and examined whether they have official social media profiles by inspecting their official web sites. The main result of this study is the estimation of a percentage of communes that have at least one social media official profile which in 2016 was 52,71%. This represents a huge expansion of social media popularity as in 2015 we estimated the same number as 26,75%. The structure of used social media sites between 2015 and 2016 did not change much as Facebook remained the most often chosen social media for local public administration.

Introduction

Landsbergen (2010) even argues that social media (SM) is paradigm-shifting technology, similarly to the printing press. The popularity of SM does not only reached for-profit organizations but also a government sector. As the number of SM popularity is virtually rocketing and SM is slowly replacing e-mail especially in private communication, the government sector is sizing the opportunity to enable an interactive communication with both

citizens and other stakeholders. Government officials may choose from numerous, both scientific and popular, publications that show best practices, usage patterns and booklets that introduce them to the SM marketing. Large cities as early SM adopters are usually selected as a research area, but it is still not much known about popularity of SM at the local government. The aim of this paper is to fill this research gap and estimate the percentage of Polish local government (communes) that use SM.

Research on social media role in public administration

Although social media definitely changed the way of communication in society and constitute an area of numerous research projects they lack a shared definition (Bryer, Zavattaro, 2011; Sidorkiewicz, 2013). Existing definitions either enumerate social media platforms or define them. Zavattaro (2013) argues that SM include platforms such as Facebook, Twitter, YouTube, Reddit, Vimeo, Google Plus, WikiSpaces, and more. Karakiza (2015) on the other hand define SM as “generally understood as Internet-based applications that carry consumer-generated content”. Similar definition is given by Zolkepli and Kamarulzaman (2015) for whom SM are “a group of Internet-based applications that are built on the ideological and technological foundations of Web 2.0, which allow the creation and exchange of user-generated content”.

Some scholars argue that adoption of SM does not only improve efficiency of governance but also may reduce corruption by providing transparency (Bertot, Jaeger, Grimes, 2010).

Mergel and Bretschneider (2013) created a three stage process of implementation of social media in governments. First one covers experimental stage where no technology use policies are used. Next government outline first regulations and norms and finally organizations draft formal SM strategies and policies. Moreover scholars underline that many local governments do not monitor the impact of their digital interactions (Agostino, Arnaboldi, 2016; Magro, 2012; Mergel, 2013a). A popularity and commitment might be used as valuable measures for evaluation of public commitment and participation.

Public participation in social media is not evenly distributed around the world. Similarly to the ICT adoption the adoption of SM in developing states is limited as Alotaibi, Ramachandran and Kor (2016) argue. When analyzing similar (i.e. from one state) public administration units Mergel (2013b) divided three factors that influence SM adoption: “information about best practices in their informal network of peers, passive observations of perceived best practices in the public and private sector, and market-driven citizen behavior”.

Research of SM presence in public administration uses generally two main instruments: (1) an analysis of publicly available SM content and (2) interviews with managers responsible for SM communication. A review of SM public administration studies shows that they can be classified into two main groups: studies that base on the limited and usually targeted sample and those that cover a given research area (Figure 1).

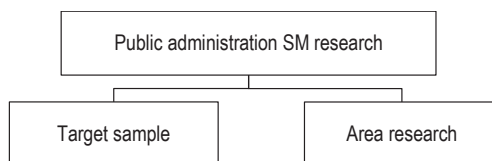


Figure 1. Research of SM adoption in public administration

Source: own.

Public administration SM studies focus usually on the large units, very often ministries or regional governments. Although many studies focus on the US market, there is also available research from EU and other regions. Table 1 depicts the selected available contributions to this research area.

Table 1. Research in public administration SM adoption

Study	Research area	Type of public unit	Sample
Bonsón, Ratkai, Royo (2016); Bonsón, Torres, Royo, Flores (2012)	EU	5 biggest cities from 15 first EU member states	75
Kavanaugh et al. (2012)	US	County	1 (case study)
Alotaibi et al. (2016)	Saudi Arabia	Ministry	13
Spurrell (2012)	UK	County	78
Lev-On, Steinfeld (2016)	Israel	City	75
Abdelsalam, Reddick, Gamal, Al-shaar (2013)	Egypt	Various government organizations	276
Oliveira, Welch (2013)	US	Cities	500
Harris, Mueller, Snider (2013)	US	Local health departments	2565
Pawlicz (2015)	Poland	Communes in national parks	119
Sułkowski, Kaczorowska-Spychalska (2014)	Poland	Large cities	120
Pawlicz, Kubicki (2016)	Poland	Communes	381

Source: own.

Usually authors that cover smaller area provided more detailed description of available SM content (e.g. Smalec, Gracz, 2015), while studies that cover more numerous populations provide less detailed data. As can be seen from table 1 there is little consistency across previous research, as both types of administrative unit and samples vary significantly. Moreover studies were conducted in different countries and across few years time span. For that reason results must be treated with great caution.

Bonsón et al. (2012) found that the most popular social platform for public administration was Twitter (32% surveyed cities had an official Twitter account) followed by YouTube (29%) and surprisingly only the 17% local governments that had an Facebook official page. Spurrell (2012), on the other hand produced much higher numbers from UK: Facebook – 93.2%; Twitter – 97.5%; YouTube – 62.7%. Interestingly he found that “that most use social media, but only a third allow all staff to manage its output” which implies that the rest is outsourced. Lev-On and Steinfeld (2016) conducting a research in Israel in 2012 found that 58.1% of cities maintained an official Facebook profile and they called it “an impressive rate of Facebook adoption”. Abdelsalam et al. (2013) analyzing SM presence in Egypt found that Facebook was most popular among Egyptian administrative units (23,2%). It was followed by Twitter (13,4%) and YouTube (11,2%). Finally Harris et al. (2013), whose studied local health departments in US, found that 24% had Facebook profile, 8% Twitter and 7% both.

Some scholars limit the research area so it contains only of administrative units that use SM, e.g. Hofmann, Beverungen, Räckers and Becker (2013) used a data from 25 largest German cities that have an official Facebook page. Others used selection criteria that favors units with high probability of having an active SM site by conducting research in central administration (Alotaibi et al., 2016), limiting the sample to larger cities who are traditionally early adopters of ICT (Bonsón et al., 2012; Sułkowski, Kaczorowska-Spychalska, 2014) or at least assuring that larger cities will be overrepresented in the sample (Oliveira, Welch, 2013). Actually only the study of Harris et al. (2013) was conducted on the large population, which were not purposefully biased.

Methodology

The aim of our research was to estimate the share of communes (Polish: *gmina*, also called municipality – NUTS5 region according to European Union statistics) that have an official profile in social media.

Population of communes in Poland in 2016 according to Central Statistical Office of Poland (*Area and Population...*, 2016) is 2478. There are on average populated by 15,524 inhabitants, but the median population value is much lower – 7,542 (2014).

We used a random sampling based on the sample which size has been calculated according to Eng's (2003) formula:

$$n = \frac{u_{\alpha}^2}{4d^2} = \frac{1.96^2}{4 \times 0.05^2} \approx 385,$$

where:

n – sample size,

u_{α} – the value derived from the Normal Curve distribution table,

d – maximum bias of estimation.

The adopted sample size for the study (confidence factor of 0.95 and a maximum estimation bias of 5%) based on the presented model was set at 385 units. The selection of communes was made on the basis of random numbers tables (Moses, 1978).

The survey has been conducted on October 31, 2016. The number of social media official profiles has been calculated basing on the official websites of communes. All randomly selected communes have their own official website.

Results

On 385 randomly selected communes 203 (52.73%) have an official account on at least one social networking site. To estimate an unknown proportion of communes that use social networking sites were used interval estimation index structure (Kot, Jakubowski, Sokołowski, 2007, p. 228):

$$P \left\{ \frac{m}{n} - u_{\alpha} \sqrt{\frac{\frac{m}{n}(1-\frac{m}{n})}{n}} \leq p \leq \frac{m}{n} + u_{\alpha} \sqrt{\frac{\frac{m}{n}(1-\frac{m}{n})}{n}} \right\} = 1 - \alpha,$$

n – sample size,

m – number of highlighted elements (number of communes that use social media),

u_{α} – the value derived from the Normal Curve distribution table,

$$\frac{203}{385} - 1.96 \sqrt{\frac{\frac{203}{385}(1-\frac{203}{385})}{385}} \leq p \leq \frac{103}{385} + 1.96 \sqrt{\frac{\frac{203}{385}(1-\frac{203}{385})}{385}},$$

$$47.73\% \leq p \leq 57.71\%$$

The value of the confidence interval for the estimated range is 0.95 ($1 - \alpha = 0.95$). The ends of the range of accepted values of 47.73% and 57.71%, which means that with 95% probability it covers the unknown value of the real share of communes that use social media. This value represents a massive 97% rise of an average value across one year (Figure 2).

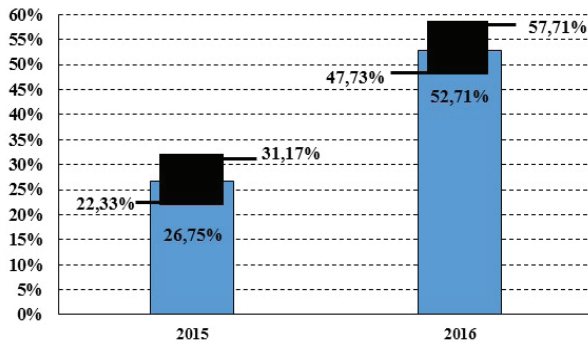


Figure 2. Percentage of Polish communes that use social media ($\alpha = 0.05$)

Source: own.

Just as in a study based on the same sample size in 2015 (Pawlicz, Kubicki, 2016), the most popular social networking site in 2016 was Facebook (201) and Youtube (46) (Figure 3). It has to be noted that other than Facebook profiles did not gain popularity between 2015 and 2016.

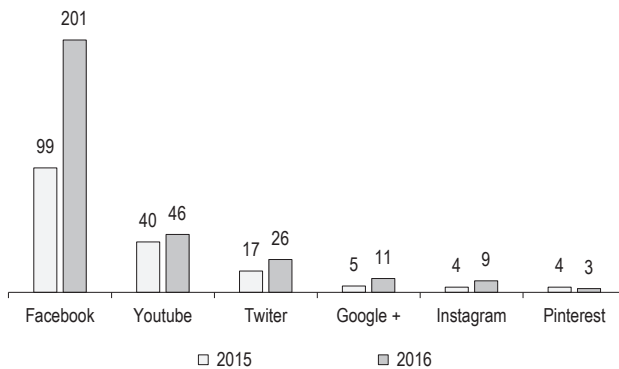


Figure 3. Most popular social media profiles among Polish communes

Source: own.

The share of communes that use social media increased from 26.75% in 2015 to 52.73% in 2016. To assess whether the difference between the percentage of communes that use social media sites between 2016 and 2015 is statistically significant a test was applied for two indicators of the structure of the right-hand critical area (Kot et al., 2007):

$$H_0: p_1 = p_2,$$

$$H_1: p_1 > p_2,$$

$$u = \frac{p_1 - p_2}{\sqrt{\frac{\tilde{p}(1-\tilde{p})}{\tilde{n}}}},$$

$$u = \frac{0,5273 - 0,2675}{\sqrt{\frac{0,3974(1-0,3974)}{192,5}}} = 7.37,$$

where:

p – share of communes that use social media (1 – 2016, 2 – 2015);

$$\tilde{p} = \frac{m_1 + m_2}{n_1 + n_2} = \frac{203 + 103}{385 + 385} = 0.3974,$$

$$\tilde{n} = \frac{n_1 \times n_2}{n_1 + n_2} = \frac{203 \times 103}{385 + 385} = 192.5.$$

The test statistic $u = 7.37$ is compared with the critical value $u_\alpha = 1.64$ taken from the tables of normal distribution function with the significance level of 0.05, assuming a single-tailed area (Machin, Campbell, Tan, Tan, 2011). Because the value of the test statistic is greater than the critical value we reject the null hypothesis in favor of an alternative, which enables a conclusion that the percentage of municipalities using social networking sites is greater in 2016 than in 2015.

Conclusions

This study examined the adoption of social media by Polish communes – lowest administrative units. Results showed that SM certainly represent one of those marketing instruments which is currently being discovered by Polish communes. The massive rise of share (from 27 to 53%) of Polish communes that use those instruments is certainly without precedence. Still most of their profiles still look unprofessional and need improvement. Still the distribution of used SM remained stable as Facebook remained a leader followed by YouTube.

Future research should focus on quantitative validation of Mergel's (2013b) factors that influence SM adoption. A literature analysis clearly shows that very few international comparisons have been conducted, so the question about relationship between various indicators of ICT and SM adoption is still not answered. Moreover the mentioned quality of social media adoption has not been quantitatively researched. Special attention should be given to international studies. As the percentage of social media adoption in the lowest administrative units will certainly increase, future research should focus on the creation of SM quality indexes which allow quantitative comparisons.

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