How do cities use their communication channels? A study of social media adoption in two European federal states

Iris Bhatia*

Swiss Graduate School of Public Administration,
University of Lausanne,
Bâtiment IDHEAP, CH-1015 Lausanne, Switzerland
Email: iris.bhatia@unil.ch
*Corresponding author

Vincent Mabillard

Solvay Brussels School of Economics and Management,
Université Libre de Bruxelles (ULB),
42 Av. F. D. Roosevelt, 1050 Brussels, Belgium
Email: vincent.mabillard@ulb.be

Abstract: Although they often remain active on other traditional and digital channels, such as newsletters, public sector organisations are increasingly active on social media to communicate with the public. While the usage of these social media platforms has gained attention from many scholars and practitioners, the articulation of diverse channels in cities' communication has remained under-commented. In this article, we investigate this issue through an analysis of the channels preferred by Swiss and Austrian cities to communicate with the population. The following questions are of particular interest: What are the main communication channels used by cities? And are cities that communicate through multiple channels more likely to adopt social media? Results show that cities are less active on social media than on traditional and other digital channels; however, cities present on a social media platform are more likely to extend their presence on these new channels.

Keywords: public communication; digital government; social media; local government; Switzerland; Austria.

Biographical notes: Iris Bhatia is a Research Fellow at the Swiss Graduate School of Public Administration, Lausanne, Switzerland. Her research interests mainly focus on public sector communication, including the use of simplified language and social media in different domains of public administration.

Vincent Mabillard is a Professor of Public Management at the Université Libre de Bruxelles (ULB), Brussels, Belgium. His main research interests include public sector management, communication and marketing, transparency and accountability issues, and place branding strategies.

1   Introduction

Following a global trend towards digitalisation, electronic government (e-government) services are being increasingly implemented in the public sector. In fact, the use of information and communication technologies (ICTs) has proved to be a powerful strategy for administrative reforms (Bonsón et al., 2015). This rationale is guided by the idea of establishing a less costly, more efficient politico-administrative structure, and of achieving productivity gains (Fountain, 2009). An underlying idea is also to reinforce the democratic aspect of administrations, and to foster citizen involvement in policymaking. As an extension to this phenomenon, municipalities all across Europe are adopting social media platforms to interact with citizens. The potential of these platforms to reduce transaction costs in communication and to increase interactions between authorities and citizens has encouraged many governments to include social media in their communication toolbox (Mergel, 2013a). Several drivers have urged municipalities' (and other levels of government) to reinforce their communication, including legal requirements, but also the need to create and maintain trustworthy relationships with the population. As emphasised by the World Health Organization (WHO) (2017), trust is key when engaging communities, and digital channels may help in this regard.

Although the COVID-19 crisis has shown the renewed importance of these digital channels for informing the public (Mori et al., 2020), risks associated with dissemination of information – especially online (Kim and Kreps, 2020) – point to the necessity of communicating through various channels. This is in line with recommendations to associate social media platforms with alternative forms of communication to prefer integrated strategies (WHO, 2017). This assessment also echoes the necessity to reach all citizens, which constitutes a fundamental rule of public sector communication (Pasquier, 2017). Yet, a digital divide still exists in many countries, especially developing ones, even though the developed world is no exception to this phenomenon. This divide refers mainly to a lack of skills and experience with digital tools and programs on the one hand, and to a different access to high-quality/speed broadband connection between urban and rural areas on the other (OECD, 2019). Consequently, more 'traditional' channels (city journal, brochures, posters, advertisements) are important for communicating with citizens.

As presented just above, the global enthusiasm about transforming state communication into a digital activity must be balanced with potential disadvantages and opposing arguments to this transformation. Of course, online communication, especially websites, is increasingly used to disseminate information, and have the advantage of regular updates, reduced costs of transaction (Mergel, 2013a), and it is often less costly than printed leaflets distributed to all households. Moreover, evidence shows that in certain cases, such as Norway (Johannessen et al., 2012), internet, emails and social media are preferred by individuals over service bureaus and public meetings to participate in policymaking. In the same vein, the case of Denmark (Pieterson and Ebbers, 2020) shows an evident shift from traditional to electronic channels, even though traditional means to interact with government, such as in-person, written or phone contacts, have been only partially replaced by digital channels and mainly over long periods of time.

The pros and cons of digital channels, and social media platforms in particular, call for a deeper understanding of the articulation between the different forms of public sector communication. Few contributions have investigated this issue so far, due to the recency

of social media and, more generally, the tendency to focus on digital channels and e-government platforms solely (e.g., Reddick and Norris, 2013; Zavattaro and Sementelli, 2014). This approach eludes essential questions such as: do governments still use more traditional channels to communicate with the public? How do they use them, and how do they combine them with the new digital platforms? What are the expectations of both public administrations and citizens regarding online communication, especially social media? These questions cannot be addressed in a single article, but they all point to an under-investigated element of public communication: the usage of various channels to reach the population. Although Mergel (2013a) specifically mentions a 'representation' tactics (social media regarded as an additional platform for informing the public), the issue of channels' adoption and articulation has gone largely unexplored.

In this contribution, we look at the different communication forms preferred by Swiss and Austrian cities of more than 10,000 inhabitants. As explained below, these two cases will prove compelling to investigate since they share key characteristics (in terms of population size, total number of municipalities, topography, administrative tradition, institutional structure). More interestingly, Swiss and Austrian cities are less present on social media than some of their European counterparts (e.g., Belgium, the Netherlands), as will be detailed below. Therefore, they are well suited for our study on the usage of communication channels at the local level. More specifically, we are interested in the adoption of social media platforms in the framework of public sector communication as a global activity. These platforms are typically addressed through their potential for citizen engagement, and their adoption is said to vary according to individual, technical and cultural considerations. Here, we contribute to the literature through a different angle, as we aim to identify the channels used by local governments, and to investigate if traditional and digital channels of communication can be a potential driver of social media adoption. In this sense, our two research questions (RQs) are:

1   What are the main channels used by Swiss and Austrian cities to communicate with the population?

2   Are cities using a wide range of communication channels more prone to the adoption of social media?

The remainder of the article will be structured as follows. Section 2 consists of a literature review targeting the main contributions about public sector communication, digital channels, and social media platforms. Section 3 presents the key features of the Swiss and Austrian cases and their relevance for our study. Section 4 focuses on the research design, the method preferred, and the capacity of our study to contribute to the existing field of research in public sector communication. Section 5 concentrates on findings, with the first part highlighting descriptive results (what are the main channels used in Switzerland and Austria and how they compare to other European states), and the second dedicated to the potential influence of the communication channels used on the uptake of social media platforms. Section 6 offers an extensive discussion of the results, including implications for scholars and practitioners. Finally, Section 7 includes some conclusive remarks.

2   Literature review

Public sector communication is an essential function of all governments, regardless of the political system or institutional structure of a country, at all governance levels. The reason lies in the necessity, for public authorities, to inform the public about matters that are of specific interest to them (Pasquier, 2017). In this regard, the incorporation of social media technologies into administrations can be seen as means to effectively promote public goals (Oliveira and Welch, 2013). Sharing this optimistic perspective, a substantial majority of governments in North America (in particular) have adopted social media platforms (Reddick and Norris, 2013). In the same vein, Mossberger et al. (2013) affirm that "The rapid adoption of social networks by governments is remarkable. Within the span of only two years, adoption among the largest US cities increased as much as six times over for some social media". In addition, the global enthusiasm for these platforms can be explained by their accessibility, and the possibility for users to share thoughts with public authorities, to voice their discontent, and to remain anonymous if they want to (Zavattaro and Sementelli, 2014).

The potential added value of social media platforms has been praised by numerous think tanks, civil society organisations and consultancy firms (e.g., Eisenstein, 2019). At the same time, it has been extensively discussed in the scientific literature. As for citizen engagement, scholars have highlighted that since local governments are under constant scrutiny, authorities should take advantage of the interactive potential of social media to improve their relationships with citizens. Unfortunately, the use of new digital platforms remains too passive, and does not benefit from the multiple possibilities offered by social media (Ellison and Hardey, 2014; Molinillo et al., 2019).

Another obstacle to unleashing the full potential of social media platforms lies in the limited interest of citizens and, in the European context, raising the activity on a given channel does not necessarily lead to higher levels of activity from users, as shown by Bonsón et al. (2017). Digital channels are also praised for their potential to increase government transparency and reduce corruption. Bertot et al. (2010) argue that although all implications of new technologies remain to be tested empirically, and though their evolutionary nature calls for caution, ICTs may well create a culture of openness and discourage corrupt behaviour. Regarding social media especially, empirical evidence indicates that these platforms increase the level of government transparency perceived by citizens, which can in turn raise the degree of trust in public authorities. These positive results may also be explained by the possibility for the public to interact informally with bodies that are otherwise regarded as 'elite' circles, disconnected from the 'real world'.

As seen above, these effects stemming from social media usage in government are commonly found in recent studies. Another facet of the literature deals with the challenges related to the adoption of social media. It focuses on the institutional/technical drivers (Reddick and Norris, 2013) and barriers (Mergel, 2013b). For instance, public managers are facing high levels of uncertainty with the introduction of social media applications, which are mostly hosted and designed by third parties. Ethical questions also emerge, especially in relation to the potential surveillance of users and the collection of data operated by social media (Bertot et al., 2012; Zavattaro and Sementelli, 2014; Lovari and Valentini, 2020). Uncertainty then arises from technological developments and citizen use of these new digital communication channels, that are both out of governments' hands. Against this background, ensuring reliable and trustworthy communication is a great challenge for public administrations. Moreover, the provision

of information by governments online does not always result in greater citizen satisfaction. In some cases, citizens still respond better to information obtained offline, especially when it is provided directly by public authorities (Lee, 2021).

In the case of less open societies, governments are more in control of information production and dissemination. Consequently, the interaction potential suffers from closure, hierarchy and centralisation, and new channels such as microblogs may perform inadequately or improperly (Zheng, 2013). Feeney and Porumbescu (2020) add that although downloading social media applications is 'free', devices and digital literacy are still required to use them, which may further the digital divide. At the same time, relying on these platforms solely to engage citizens restricts participation on infrastructure, user capacity and accessibility. This assessment nuances the worldwide enthusiasm for social media applications, and indirectly calls for a global communication effort.

To the extent of our knowledge, contributions have so far mostly focused on positive aspects of social media, potential barriers to its effective usage by governments (Feeney and Porumbescu, 2020), and citizen engagement (Silva et al., 2019). Moreover, the uptake of social media in the public sector has been extensively discussed in the Public Administration (PA) literature, especially regarding the conditions of this adoption by local governments (Gao and Lee, 2017; Reddick and Norris, 2013; Zavattaro and Sementelli, 2014). Although less studied, the types of social media platforms and the rationale behind their adoption have been explored in few specific cases (e.g., Portugal; Silva et al., 2019). In contrast, the articulation between traditional communication channels, digital channels and the use of social media has remained under-documented in the PA literature. In other disciplines, such as communication in business, contributions show that different channels should be used to reach various types of companies, and that good communication results are mostly based on a successful combination of communication tools and forms (e.g., Sanina et al., 2017). Research in crisis communication show that television, radio and public events tend to be more effective during crises, since they are regarded in general as more credible sources of information than social media (Erikkson, 2018; Formentin et al., 2017). Nevertheless, different means can reach different target groups, and should be thought of strategically.

This lack of scrutiny in the PA literature is odd since empirical evidence points to a strong diversification of channels used by authorities in practice. First, the degree and intensity of social media uptake and use by governments can vary strongly from countries to countries (Pasquier, 2017). Second, municipalities have adopted digital channels in different ways, and this also varies across social media platforms and space. While 89% of French municipalities over 20,000 inhabitants have registered on Facebook, this percentage drops to 44% in Switzerland in 2019. In England and Wales, 88% of towns and cities were present on Facebook, but only 68% on YouTube (Mabillard and Zumofen, 2019). Third, traditional media channels are widely used and even preferred by citizens to get information, as shown in the Reuters Institute Digital News Report 2020 (Newman et al., 2020). Although print magazines/journals and TV audiences have declined sharply in most countries since 2013, and online channels have been increasingly favored, non-digital channels remain used by a significant part of the population. For instance, 64% of French citizens prefer TV as the main source of information in 2020 (84% in 2013). In addition, printed magazines and journals account for 33% in Germany, 22% in the UK and 21% in Denmark. Fourth, usage may vary over time, and newsletters, which used to be regarded as an outdated way for communicating

with people, are popular again (especially for individuals over 45) in certain countries (Newman et al., 2020).

Finally, regarding government information, people tend to rely mostly on printed material, such as official brochures/posters, or journals distributed to all households, as it has been observed at the local level in Switzerland (Mabillard, 2021). This observation is supported by figures presented by Cap'Com (2018) in France: 78% of citizens read city magazines to gather information about local development, 66% of citizens favour posters and brochures, and public events are preferred by 65% of citizens. In comparison, the municipality's website, Facebook and Twitter are used by 62%, 29% and 10% of them, respectively. All the above-mentioned elements point to the necessity to better understand how information is disseminated by municipalities, keeping in mind that citizens still largely consume news on non-digital channels.

3   Context

Investigating the issue of information dissemination is particularly compelling in the Swiss and Austrian cases. In the two countries, where the internet penetration rate is high (respectively 94% and 88%), citizens are still getting much information on TV and printed press (Newman et al., 2020). Although online channels and social media are gaining ground in both states, 59% of Swiss citizens are still actively watching TV, and 48% of them are reading newspapers, magazines, and brochures to browse the news. These figures are even higher in Austria, with 68% and 51%, respectively. As a result, although social media platforms are increasingly popular, they are still less used than other channels, whereas the opposite situation is observed in many other areas.

Moreover, comparing Switzerland and Austria is relevant since they share many structural and institutional characteristics. From a demographic point of view, the population of Austria is similar to Switzerland (8.86 and 8.51 million respectively in 2019; United Nations, 2021). The fragmented institutional structure is a common feature of both countries. In 2019, Switzerland and Austria were composed of more than 2,000 municipalities each; however, there were only 86 of them with more than 10,000 inhabitants in Austria, and 150 in Switzerland. There are no big centres or agglomerations, except for Vienna, most of these municipalities do not have more than 20,000 inhabitants, and the majority of municipalities are small, rural ones.

Size is of particular relevance in studies on government communication, since it matters when it comes to ICT and social media adoption in particular (Reddick and Norris, 2013). This has been well commented and documented, especially in densely populated areas. In contrast, Keuffer and Mabillard (2020) argue that in small municipalities, characterised by a high level of proximity between residents, public events and word-of-mouth are preferred over online channels. This may well be the case in Switzerland and Austria, where most cities over 10,000 inhabitants range from 10,000 to 25,000 inhabitants. As a result, the potential influence of size is also addressed in the empirical section of the study.

4 Method

Size specificities and institutional features of countries such as Switzerland and Austria have been rarely studied in the PA literature. The usage of different communication channels has also been under-investigated, since the gradual adoption of social media platforms by public sector organisations has prevailed in research on authorities-citizens relationships so far. Nonetheless, in Austria and Switzerland, combination and use of social media, as well as other communication channels, remains unclear. We gathered primary data from Swiss and Austrian municipalities, focusing on municipalities with over 10,000 inhabitants for two main reasons: they are more equipped, and therefore more likely to communicate through diverse channels; and they are members of city associations, which develop comparable indicators in their annual statistical reports (Union des Villes Suisses, 2020; Österreichischer Städtebund, 2020).

The literature review has shown that little to no attention has been given to municipalities' use of social media compared to the use of other communication channels. Therefore, our study aims to generate new ideas and hypotheses, as suggested by exploratory research theory (Reiter, 2017; Swedberg, 2020). Indeed, we present data about the use of different communication channels at the local level, and we investigate if those channels may have an influence on social media adoption by Swiss and Austrian cities. This approach sheds new light on the issue of social media uptake by municipalities, which is usually addressed through individual or technical factors (Criado et al., 2018). In addition, the chosen variables resemble the ones used to explain e-government adoption and, more generally, the implementation of ICTs in the public sector. They typically include political, institutional and structural factors, for example government type and population size (Reddick and Norris, 2013). The research design is then exploratory in nature, aiming to give an alternative view on factors explaining current communication channels in cities, and their recent developments.

Regarding data collection, we have managed to systematically gather data about the usage of city journals, newsletters and apps. These communication channels combine offline and online supports available to cities officials, which are still widely diffused at the local level (Rivas, 2017). As for city journals, in most cases, they were available in the PDF format online, and it was explicitly stated that they were sent to all households. When this was unclear, we contacted all cities to make sure that a journal existed (or not), and that it was distributed to all citizens (at least four times per year, excluding occasional brochures about specific services, such as waste management). Concerning cities' newsletters, we considered all newsletters distributed via email to subscribers. Regarding apps, logos were available on most official websites. However, as certain cities did not add the app logo to their homepage, we double-checked on both Google Play and the App Store to include all city apps in our sample.

Social media presence has been operationalised by studying municipalities' presence and actual activity on three social media platforms: Facebook, Twitter and Instagram. According to [Kaplan and Haenlein (2010, p.61)], social media platforms include all internet-based applications exploiting the ideological and technological foundations of Web 2.0 and allowing for 'the creation and exchange of user generated content'. Facebook, Twitter and Instagram were selected because of the high number of users and the widely diffused adoption in the public sector in both Switzerland and Austria

(Thommen et al., 2020; Fettinger and Grafenberger, 2020) and more generally in the Western world (Martínez-López et al., 2016) compared to other social media platforms.

In addition, a distinction was made between social media presence and activity. Presence indicates that a municipality has a social media account on a given platform. Activity measures if that same municipality has published content at least once in the last three months of 2019. Only active municipalities were considered to be using social media as a communication channel. The data collection process consisted of four steps. First, we checked municipalities' websites to identify any logos linking to the cities' social media profiles. In case the logo search gave no results or led to a misconnection, we searched for municipalities' social media profiles on the web. Then, social media platforms were screened through the municipalities' name in search engines. Finally, in case of serious doubt (i.e., unclear ownership of the social media profile), we contacted the municipality.

Other explanatory factors were then included in the research design. The number of inhabitants has been added since city size often appears to be positively correlated to social media adoption (see Reddick and Norris, 2013; Guillamón et al., 2016; Feeney and Porumbescu, 2020) as well as to the adoption of other ICT channels in general (Wang and Feeney, 2016; Lev-On and Rosenberg, 2021). Data were retrieved from the annual statistical reports of the Union of Swiss cities and the Association of Austrian cities (Union des Villes Suisses, 2020; Österreichischer Städtebund, 2020).

Table 1   Descriptive statistics of the variables and standard deviation

Variables	Indicator	Min	Max	Mean	St. dev.	Obs.
Facebook	Active account (at least one publication between October and December 2019)	0	1	0.55	0.49	236
Twitter	Active account (at least one publication between October and December 2019)	0	1	0.22	0.41	236
Instagram	Active account (at least one publication between October and December 2019)	0	1	0.26	0.44	236
App	Active App available for download on Google Play or App Store	0	1	0.21	0.40	236
Newsletter	Newsletter sent to subscribers	0	1	0.50	0.50	236
City journal	City journal sent to all households at least four times per year	0	1	0.64	0.47	236
Population size	Natural log of number of inhabitants	9.21	14.45	9.86	0.72	236
Median age	Median age in years	37	53	44.39	3.18	236
Income	Natural log of city income	20,688.84	95,034.49	38,325.01	10,871.15	236

Note: St. dev. = Standard deviation.

Median age was calculated based on the data available from the national statistical offices (Statistik Österreich, 2020; Federal Statistical Office, 2020). The variable was included to test for any link between the age of the cities' inhabitants and the adoption of social media, since these platforms are traditionally more extensively used by younger generations (Perrin, 2015; Horn Nord et al., 2020; Hruska and Maresova, 2020).

A city financial indicator was also used for all cities. Budget constraints or availability are sometimes mentioned as an explanation for variations in the use of ICTs in the public sector (Gallego-Álvarez et al., 2010). In our case, few financial indicators were available to establish an accurate comparison of Switzerland and Austria. Based on the available and comparable data, we gathered information about the total amount of city income, including taxes (Union des Villes Suisses, 2020; Österreichischer Städtebund, 2020), and included this financial variable in our analytical models.

The analysis of our data was conducted through both a pairwise correlation matrix and a logistic regression. From a methodological standpoint, and due to the categorical nature of the dependent variables, a logistic regression was preferred here (Long and Freese, 2014). To compare social media, the dependent variable intended as social media presence was operationalised through a separate measure for each one of them. Three models were estimated, one for each social medium (Facebook, Twitter and Instagram). This allowed to monitor any effect that one social medium might have had on the others, while also controlling for the effect of the other explanatory variables mentioned above. Odds ratios were estimated for each predictor allowing for a more comprehensive interpretation of cities' probability of adopting a specific communication channel.

5   Findings

First, we present the descriptive results concerning Swiss and Austrian municipalities' use of different communication channels. These results are compared to other European countries, Belgium and Italy in particular, based on data compiled by the authors. Descriptive statistics are displayed in Figure 1. They show that Swiss and Austrian cities seem to follow similar patterns in terms of choice of communication channels: in both countries, Facebook is used extensively, especially in Austria, where almost 70% of cities are active on Facebook, while this figure drops to less than 50% in Switzerland. Twitter and Instagram are less frequently used (less than 30% of all cities have an active account), and, along with apps, they remain among the least exploited channels. Almost half of the cities in both countries use newsletters (47% in Austria, 52% in Switzerland), while city journals are overwhelmingly exploited in Austria, where 95% of cities reportedly publish a printed journal compared to 47% of Swiss cities.

In comparison to other European countries, Austrian and Swiss cities' level of adoption of social media is quite low. According to recent data compiled by the authors, 75% of all cities over 30,000 inhabitants in Italy (N = 309) were active on Facebook on January 1st, 2020; 32% were active on Twitter; and 24% on Instagram. In Belgium, the figures are even higher in all cities over 10,000 inhabitants (N = 364): 90% are active on Facebook, 37% on Twitter, and 31% on Instagram. In the Netherlands, a study conducted in 2019 revealed that 378 out of 380 Dutch municipalities had a Twitter account (Faber et al., 2020). Therefore, our answer to RQ1 is that although Austrian and Swiss cities are increasingly adopting social media to reach out to their population, many cities over

10,000 inhabitants still rely on other channels, including more traditional ones, such as city journals.

Figure 1   Descriptive statistics: social media and other communication channels
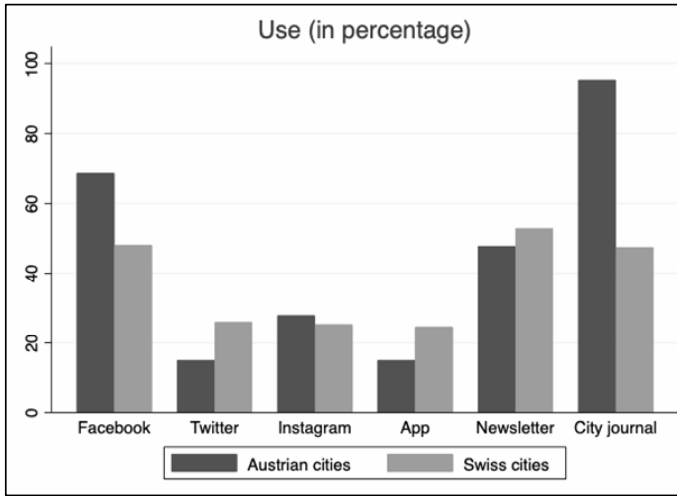
Table 2   Pairwise correlation matrix

Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
1 Facebook	1.000								
2 Twitter	0.250*	1.000							
3 Instagram	0.360*	0.472*	1.000						
4 App	0.047	0.200*	0.091	1.000					
5 Newsletter	0.177*	0.257*	0.221*	0.033	1.000				
6 Journal	0.287*	0.028	0.117	–0.139*	0.004	1.000			
7 Inhabitants	0.256*	0.554*	0.422*	0.299*	0.227*	0.107	1.000		
8 Median age	–0.230*	–0.113	–0.130*	0.038	–0.094	–0.305*	–0.258*	1.000	
9 Income	0.034	–0.032	0.094	0.013	0.166*	0.092	0.045	0.123	1.000

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

According to the correlation matrix presented in Table 2, almost all ICT channels, including social media, appear to be positively correlated with one another, with coefficients that are statistically significant at the 90th percentile. Therefore, the matrix suggests that cities' active use of social media could be related to their adoption of other channels such as newsletters and apps. Interestingly, the number of inhabitants also appears to be correlated to the different ICT channels, confirming previous literature highlighting the link between cities' size and adoption of new technologies (Reddick and Norris, 2013; Wang and Feeney, 2016; Guillamón et al., 2016; Feeney and Porumbescu, 2020). Finally, the coefficients for the variable 'median age' appear to be negatively and statistically significantly correlated to both Facebook and Instagram, suggesting that the younger the population is, the more the cities are likely to adopt these two

communication channels. Still, these results call for further analysis to confirm the initial observations, especially in light of the comparatively low levels of statistical significance.

Table 3 Logistic regression

	Model 1 – Facebook		Model 2 – Twitter		Model 3 – Instagram	
	Logit coeff.	*Odds ratio*	*Logit coeff.*	*Odds ratio*	*Logit coeff.*	*Odds ratio*
Facebook			0.374	1.454	1.607***	4.987***
			(0.512)	(0.744)	(0.454)	(2.263)
Twitter	0.519	1.680			1.600***	4.951***
	(0.500)	(0.841)			(0.459)	(2.272)
Instagram	1.571***	4.811***	1.642***	5.165***		
	(0.449)	(2.158)	(0.470)	(2.426)		
App	0.239	1.270	0.334	1.396	–0.457	0.633
	(0.403)	(0.512)	(0.509)	(0.711)	(0.507)	(0.321)
Newsletter	0.467	1.595	0.834*	2.303*	0.289	1.336
	(0.318)	(0.508)	(0.474)	(1.091)	(0.389)	(0.519)
City journal	0.909**	2.483**	0.149	1.161	0.0708	1.073
	(0.363)	(0.900)	(0.505)	(0.587)	(0.465)	(0.499)
Population size	0.299	1.348	1.812***	6.124***	0.871**	2.389**
	(0.347)	(0.468)	(0.422)	(2.587)	(0.359)	(0.858)
Median age	–0.0536	0.948	0.0152	1.015	0.00254	1.003
	(0.0559)	(0.0530)	(0.0787)	(0.0799)	(0.0672)	(0.0674)
City income	0.000	1.000	0.000	1.000	0.000	1.000
	0.000	(0.000)	(0.000)	(0.000)	0.000	0.000
Constant	–1.401	0.246	–20.80***	0.000***	–12.55**	0.000**
	(4.466)	(1.100)	(5.904)	(0.000)	(4.991)	(0.000)
LR chi² (9)	62.73		101.55		79.52	
Prob > chi²	0.000		0.000		0.000	
Pseudo R²	0.1934		0.4080		0.2926	
N	*236*	*236*	*236*	*236*	*236*	*236*

Note: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

The results observed in the correlation matrix are partially supported by the logistic regression (Table 3). In the first model, which considers Facebook activity as the dependent variable, the only statistically significant coefficient is Instagram activity, suggesting that cities which use Instagram are almost five times more likely to also be active on Facebook. The model suggests that the use of city journal might also be correlated to the adoption of Facebook as a communication channel. In fact, cities which are still sending out a journal are 2.5 times more likely to also be active on Facebook.

Model 2 confirms the link between social media platforms, since a statistically significant coefficient suggests once again that cities active on Instagram are five times more likely to also have an active Twitter account. Interestingly, a positive relation is also

found between the size of the cities and their use of Twitter, as well as Instagram, as showcased in model 3 as well. In this last model, two statistically significant coefficients confirm that cities which have active Facebook and Twitter accounts are almost five times more likely to also use Instagram as a communication channel.

In view of these results, our answer to RQ2 emphasises the influence of the initial adoption of one particular social media platform on the uptake of additional ones. Communication on other channels does not seem to have any significant effect on city presence on social media, except for cities that publish an official journal and tend to be more present on Facebook. In addition, and quite unsurprisingly, bigger cities, regardless of the communication channels they have adopted, are more active on social media. And once they have adopted one platform, they are more likely to adopt others.

6   Discussion

The correlation matrix initially suggested a significant bidirectional connection between social media and other channels. Nonetheless, this observation is not further confirmed by the regression results, which only indicate a significant relation between the use of city journals and Facebook in particular.

Interestingly, the results of the regression analysis show a strong relation between the use of the three social media included in our study suggesting that cities that use at least one social media platform are more likely to also use others. The relation between the three platforms is especially strong for Instagram, which is the most recent social media platform out of the three considered in this study. Then, it seems unsurprising that its use is linked to the adoption of Facebook and Twitter. A tendency to adopt different social media in chronological order of appearance could in fact explain the strong connection between Instagram and the other social media platforms across all three models.

Moreover, it appears that, if more communicative cities are more active on social media, this phenomenon is reinforced by the progressive adoption of additional platforms in the beginning of 2020. For instance, Swiss cities such as Zurich and Lausanne are still communicating on Facebook, Twitter and other channels, but have also registered on Instagram. The same pattern can be ascertained in Austrian cities such as Innsbruck and Salzburg, which are extending their social media presence to simultaneously exploit and be active on different platforms.

In addition, our results seem to confirm Mergel's (2013a) representation tactics, since social media do not replace traditional communication channels, which are still widely used by Swiss and Austrian cities over 10,000 inhabitants. On the contrary, social media appear to be used as an additional channel, with the use of one social media platform being strongly related to the use of the other two. Still, the importance of traditional and other digital channels casts some doubt upon the adoption and involvement of local government on social media. Therefore, as previously indicated by Lee (2021), our findings suggest that offline and alternative media should not be devalued, neither in theory nor in practice.

Overall, our study has shown that cities that are more active on social media also have a tendency to reinforce their social media presence by simultaneously adopting more than one platform. Bigger cities are comparatively more likely to choose a greater variety of digital communication channels, since they usually dispose of more resources and seem to be more open to – or attracted by – novelty in different domains, including

communication platforms. It goes without saying that smaller cities are less in need of positioning themselves vis-à-vis the other cities or the public and do not usually deploy large communication campaigns targeted at external actors. Hence, the bigger cities display activity on a larger set of communication channels, with an important social media presence as well. Nevertheless, if smaller cities appear to be less active on other channels, once they are present on at least one social media platform, they tend to also be active on other social media platforms.

From a comparative standpoint, the adoption of additional social media platforms by Swiss and Austrian cities still remains slow and late, especially compared to cities in the US and Canada. Previous research has shown that, in North American cities, Twitter and Instagram have been used along with Facebook for several years now (Reddick and Norris, 2013; Gruzd and Roy, 2016; Evans et al., 2018). One possible explanation for this different trend may be found in the unique set of characteristics that Switzerland and Austria share in terms of institutional structure. As explained above, the population is distributed in numerous small municipalities, each with its own public communication policy and channels, which makes our study hard to compare to countries such as Canada or the US. Further research is therefore needed to include other European countries and have a deeper understanding of the general trend in European cities' usage of communication channels.

However, the quantitative approach preferred here did not allow to control for the content published online, or the main objectives pursued by the cities. Qualitative data would constitute an additional way to grasp further information and deepen the understanding of social media usage. Indeed, it would provide additional information about the strategy developed at the local level, other motivations that drive cities to adopt social media, and how they envisage the usage of other channels in the future. A qualitative approach would therefore represent a compelling path for further research in this field.

Another limitation refers to the exclusion of certain channels used by cities. For instance, it is especially difficult to address non-digital communication tools mobilised by cities, due to their specificities and the impossibility to systematically identify them in all cities. We acknowledge that some cities prefer to disseminate information on their website and through offline channels. However, such an investigation would certainly require international collaborations in these two countries and surveys distributed to these cities, which also suggest an interesting path for future research.

7   Conclusions

This study has shown that Swiss and Austrian municipalities are still more intensively using traditional and digital communication channels such as city journals and newsletters compared to social media. Nonetheless, our results have highlighted that Facebook is gradually being adopted by cities, especially in Austria, and that it is by far the most widely used social media platform. A similar pattern was found in other European countries such as Belgium and Italy, where Twitter and Instagram have been adopted by a minority of municipalities. These results are in line with previous literature, showing that adoption of Facebook is growing rapidly with an increasing number of

municipalities using it in their communication (Mossberger et al., 2013; Bonsón et al., 2016; Gruzd and Roy, 2016; Williamson and Ruming, 2016).

From the local officials' perspective, our study has shown that, if social media are used by some municipalities, other communication channels are still more important in several instances. Enthusiasm about the usage of social media at the local level should therefore be nuanced. This is particularly striking in the Austrian case, where city journals are still at the top of the communication channels preferred by cities. The comparative approach adopted in the article highlights a similar pattern between Switzerland and Austria, although some differences could be emphasised. Policymakers at the local level should be aware of the relation existing between social media: when deciding to actively use a social media platform, municipalities are highly likely to also activate other accounts.

A first concrete implication of these results for city governments points to the necessity to integrate social media platforms in a global communication effort, since most of them do not give up on other channels. How should they be balanced and articulated? What is the added value of one particular channel compared to the others? And how can cities reach the whole population, an important rule of public sector communication (Pasquier, 2017), and at the same time avoid information overload through the intensive use of multiple channels? These questions call for additional efforts in monitoring and evaluation of the diverse means mobilised by municipal governments when they communicate with their population.

A second implication regards smaller cities in particular, since they are typically less equipped in terms of financial and human resources: if registration on a social media platform fosters the adoption of additional ones, these cities should be careful about the pitfalls of managing several social media accounts simultaneously. Studies have already indicated that city communication on social media requires a large amount of time, energy, competence and organisation (e.g., Mergel, 2013b). Cities with limited resources should thus pay attention to their engagement on these channels and monitor their activity closely. Ambition and enthusiasm about social media channels should never exceed the capacity to keep information dissemination and exchanges under control. Otherwise, cities will face the risk of losing control of their communication, a dangerous phenomenon that has dramatically increased with social media.

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