The Effectiveness of Social Software for Public Engagement

Regular Paper

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Abstract This article examines the level of diffusion of social software (SS) in Italian local administrations and the effectiveness of these technologies in supporting public engagement, focusing on the specific case of Facebook in Italian municipalities. Public engagement refers to the involvement of citizens in public decisions and public life. This activity is here analysed with respect to the support provided by SS. SS effectiveness for public engagement is explored drawing on the measurement of awareness and engagement, to evaluate the ability of the local administration to interact with citizens. The researcher conducted a website analysis on 119 Italian municipalities and their relative social presence on Facebook. The results provide evidence about the effectiveness of SS for public engagement. An SS matrix is proposed following the measurement of awareness and engagement. This model can support local administrations in planning and evaluating their SS strategy with regard to public engagement.

Keywords Social software, Public engagement, Facebook

1. Introduction

Public administrations are nowadays widely adopting instruments such as Facebook, Twitter or YouTube to interact with citizens. These instruments are based on Web 2.0 technologies and they go under the umbrella term Social Software (SS), which applies to any tool that allows two or more individuals to collaborate while each person is at a different location [1].

SS gives the possibility of changing the relationship between public administrations and citizens from a mono or bidirectional exchange of information into a many-to-many, viral communication process, by which a person can reach in a few seconds millions of people publishing online content [2-3]. More specifically, distinctive elements of SS include the following: the possibility for users to create online content [4]; the possibility to establish a real-time communication, not only with the owner of the SS, but with all its users [5]; the possibility to engage in a many-to-many communication process based on a pervasive network arena [6].

These SS characteristics represent interesting elements for all organizations and they are potentially of central importance for public administrations [7], which have been seeking to increase and improve public engagement over the last ten years [8-9]. More generally, public engagement is defined as the inclusion of citizens in public affairs [10], by establishing a symmetric

relationship between citizens and public administration. Traditional tools for public engagement include citizens' panel, focus groups, opinion polls, town meetings, surveys or consultation documents [e.g., 11-16].

Recent studies [17,19] provide evidence on the wide diffusion of Web 2.0 technologies among public administrations, especially at the local level. This widespread adoption is linked to SS characteristics of collaboration and activism, which are recognized as suitable to enhancing public engagement [20-21].

However, it is also acknowledged that SS for public administration has not been exploited to its full potential [e.g., 22], mainly for two reasons. First of all, SS is primarily used as a one-way communication tool by local authorities rather than as a networked system. For example, [23] investigated the use of Twitter by governmental agencies and concluded that, despite Twitter's potential to support interactions, governments use the tool to inform rather than to establish a networked symmetrical conversation. This finding is in line with the study by [22], which recognized that SS does not deliver automatically success in public engagement activities. This research leads to the recognition that "blogs, wikis and social media (also known as Web 2.0) do not automatically deliver public engagement" [22: pp. 5] and it calls to further analysis on the measurement of SS's contribution to public engagement. Second, public administrations are adopting SS without evaluating these technologies. While there are several studies about the diffusion of SS or about the type of use by public administrations, the issue about SS effectiveness is mainly neglected. Public administrations are devoting human and financial resources in managing their SS activities, however, they are not assessing the impact of these investments. This study has the objective to evaluate the effectiveness of SS in supporting public engagement. Specifically, this research aims to answer the following questions: what is the level of diffusion of social software in Italian municipalities? Are social software tools used by municipalities effective in supporting public engagement? Social software effectiveness is evaluated adopting the model proposed by [24] based on the level of engagement and awareness.

A website analysis of 119 Italian municipalities was conducted in order to evaluate the current level of diffusion of SS using the most popular SS in Italy - Facebook. This analysis opened up the possibility, not only of providing a snapshot about the Italian context of social software adoption in public administrations, but also to evaluate the level of engagement and awareness achieved with these technologies. Results show that Italian municipalities are not yet fully involved in SS because only 26% use Facebook. Moreover, an SS

effectiveness matrix is proposed in order to evaluate the level of engagement and awareness in the use of social tools by public administrations. This model is useful to describe the current SS strategy, but also to provide directions for improvements. These findings can be of interest for both academics and practitioners. At the academic level, a preliminary model to evaluate SS effectiveness for public engagement is proposed. At the practitioner level, results can be of interest, not only for Italian municipalities to be aware of their actual use of SS tools, but the results also suggest to practitioners a practical approach to measure their ability to achieve a wider audience and increase their level of engagement with citizens.

The paper is structured as follows. First, the social software term is described followed by a specific analysis on how SS tools are currently used by public administrations to support public engagement. The second part of the paper describes the extant literature about public engagement, while the third part focuses on the effectiveness dimension. The methodology of the research will be presented followed by the result section. Results are related to the level of Facebook diffusion among Italian municipalities and to the evaluation of this SS effectiveness in public engagement. Finally, contributions and avenues for further research conclude the paper.

2. Social Software

"The term social software refers to web-based applications which support human interaction as well as the networking of the users" [25: pp.1]. Accordingly, it is related to both applications that support communication among groups of users [5], but also to their associated social aspects [26]. SS is not a new phenomenon because social computing, groupware and similar concepts emerged in the scientific literature from the 1980s. Nonetheless, it has been the wide diffusion of Internet usage that has dramatically increased SS popularity [27].

SS are based on Web 2.0, the second generation of the World Wide Web that emphasizes active participation, connectivity, collaboration and sharing of ideas [4].

A precise list of SS tools does not exist because it is a broad term to describe all technologies that support social interactions. This is the reason why under the SS term several tools are included ranging from social network, micro-blogging, second life, instant messaging to blogs, media sharing or social bookmarking.

SS differs considerably from Web 1.0 technologies for three main reasons. First of all, social technologies allow creating online content, rather than passively receiving

information. They are based on Web 2.0, also referred to as the "Read-Write Web" [28-29], as it enables members of the general public to actively contribute and shape the content. A typical example is Wikipedia, which is based on the notion that any user can participate in creating content - becoming a "prosumer" (both a consumer and a producer).

Second, SS enables both online and offline communication. For example, Flickr or YouTube facilitates the sharing of videos or photos with friends. Social networks, such as Facebook, MySpace or instant messaging allow both the sharing of content with friends, but also interacting in real-time with existent contacts, establishing relationships inside the network of users.

Finally, and directly associated with the previous aspect, SS facilitates the creation of a network of relationships. The possibility of creating content and communicating in real-time support the creation of a community of users, that share knowledge and ideas. Peer-to-peer networks [6] is the term that is used to describe the virtual collaboration between dispersed users. Cooperation between peers is an important aspect as it underlines the blurring of differences between users [30-31]. Within the social space there is no central authority and in the virtual community of users, everyone has the same role and collaboratively contribute to the creation of the content [32-33].

Given these potentialities, SS has become a widely adopted instrument in a variety of fields such as libraries [34], private companies [35] and universities [36]. Also public administrations have started adopting social technologies to increase the involvement of citizens in public decisions and public life [37], a trend which was already in place and referred to with the label "public engagement" [10]. The following section discusses this further.

3. Public Engagement

Public engagement is broadly defined as the involvement of citizens in public affairs [10]. Since the middle of the 1990s the public administration model has shifted from a centralized bureaucracy to a citizen-centric model [38-39], in which citizens are involved in all government activities, from policy formation and implementation to coproduction of services [40].

The rationale behind the involvement of citizens is represented by the need for public administrations to promote transparent and collaborative government processes [20-41].

Literature about public engagement proposes different levels of citizen involvement as well as different tools to favour citizen involvement. As far as the levels of involvement are concerned, different ladders of participations have been proposed [e.g., 10-42-43-44] depending on the participation of citizens in public affairs. For example, [42] proposed eight ladders of engagement, from manipulation to citizen control. On the contrary, [10] distinguished between public communication, public consultation and public participation. Albeit the different labels, they can all be connected to the five layers spectrum of public participation, which include information, consultation, involvement, collaboration and empower [15]. While information and consultation are associated with the diffusion of facts and data to the public, the remaining levels imply the inclusion of citizens in the decision making process, finally arriving at placing the final decision making in the hands of the public, called the empower level.

As far as tools for supporting public engagement are concerned, they include question and answer sessions, focus groups, surveys, open panels, opinion polls, workshops, deliberative polling, citizen juries or citizens advisory committees [e.g., 8-9-10-15]. The recent diffusion of SS has complemented this array of tools available to public administrations [e.g., 17-18], which have been widely endorsed, although often without a precise plan or strategy [19-22].

The distinctive features of SS (creation of content by users, real-time communication and network structure) are especially beneficial to support public engagement for three main reasons. First, SS has the ability to foster the creation of a network of relationships, not only between local administrations and the citizen, but also between citizens themselves [1]. Second, SS can increase the transparency and accountability of governments through the sharing of information, supporting the development of trust between citizens and administrations [20]. Finally, SS can act as a data collection tool for public administrations to gather dispersed information about citizens for free. In this way, "local governments can improve not only decision intelligence to locate and tackle social problems but also democratic responsiveness by designing public services customized to citizens' needs and demands" [45: pp.29].

Given these potential benefits, public administrations all around the world are embarking on implementing these technologies to favour of citizen engagement, albeit often without a specific strategy [e.g., 22]. Recent studies [19-23-46] show that public administrations in the US, Mexico, and also in Europe, are using web tools to enact their dialogue with citizens.

The absence of an SS strategy is rendered more problematic by the lack of contributions about the

effectiveness of SS in supporting public engagement. Despite the wide diffusion of public engagement initiatives based on SS [e.g., 23], this aspect has not been followed by an evaluation of these activities. Are social software tools effective for public engagement? Literature to date has mainly dealt with an assessment of public engagement initiatives [e.g., 13] or on surveys to analyse the current level of diffusion [e.g., 19]. However, an evaluation of the effectiveness of SS for public engagement is still missing. The objective of this research is to evaluate the ability of public administrations to use these technologies for public engagement; the reference framework for this evaluation is discussed in the next section

4. Measuring Social Software Effectiveness for Public Engagement

The widely diffusion of SS and its relative investment in both industry and the public sector has raised awareness of the importance of measuring the value of these social instruments [47]. The importance of SS evaluation has been addressed by business [e.g., 25], while it is mainly under-investigated in the field of public administration.

Several evaluation models have been proposed, especially by the marketing field. For example, [27] proposed various social metrics for SS and classify it on the basis of the performance objective. Specifically, they argued the importance of evaluating three different parameters: brand awareness, measuring the number of visits, brand engagement, considering the number of comments or response, and word of mouth, which is related to the evaluation of the virality of online content. This last aspect is suggested to be measured through surveys that measure the likelihood of recommendation. In [48] a set of measures for wikis and weblogs derived from a systematic literature review were proposed. According to these authors several aspects need to be considered: quality of the system, quality of the information provided, level of satisfaction and impact on the individual and on the organization. In a similar vein, [25] applied the previous model for analysing the effectiveness of SS in three different companies. They concluded with a general framework based on the distinction between the quality of SS and the impact of the technology on both individuals and the organization.

Even though a variety of measurements have been proposed, they are specific to business, in which the output is represented by a product or service. The effectiveness of SS in public engagement has not been measured yet, despite its importance in strategy development [22]. Evaluations of these technologies for public engagement are mainly qualitative and derived from analysis about the level of SS diffusion. For

example, [23] conclude that Twitter is not used to its full potential by public administrations which rely on the instrument as a communication tool rather than as an involvement tool. The same conclusions are drawn by [19], who investigated public administrations' websites more in general acknowledging the low interaction level of their websites, albeit the potentialities of these instruments. These results are in line with the OECD (2009) recommendations which underline that SS does not automatically lead to public engagement.

This research enters the issue of SS effectiveness proposing a quantitative measurement approach for its evaluation in the public administration field. The proposed model is derived from the marketing literature. Specifically, we draw on the concept of brand awareness and brand engagement [24] for evaluating SS effectiveness in Italian municipalities.

In marketing, brand awareness represents the exposure of the brand. It is defined as "the rudimentary level of brand knowledge involving, at least, recognition of the brand name" [49]. Nowadays, it represents a key SS objective [24] that is considered here to be suitable for evaluating the recognition of the presence of the public administration on the social software.

Brand engagement is instead defined as the commitment by users towards the company's brand. It represents a relevant aspect within the SS landscape because it allows assessing the ability of a company to stay in touch and generate interactions with its users [50]. For a public administration the engagement with citizens is extremely important and it can be represented by the level of interaction between citizens and public administrations.

The decision to use the level of awareness and engagement in order to evaluate the effectiveness of the social presence of a municipality is justified by the objective of public engagement to establish relationships with citizens [37]. Following this view, the municipality presence on the social tool is here conceptualized as the strategy of public administrations to increase being known by citizens and to establish relationships with them. In this sense, public engagement activity can be assimilated to a branding strategy. This branding strategy is represented by the objective of public administrations to establish a strong connection with citizens, which is here evaluated through the level of awareness and engagement.

5. Research Approach

To evaluate SS effectiveness in municipalities, a website analysis was conducted by focusing on Facebook adoption and use in Italian municipalities. The choice of

Italy as the field of analysis is justified by the extensive utilization of social instruments by Italian people, that has also resulted in the most active population in the world on Facebook [51]. The phases of the research can be distinguished between a preliminary phase of data collection and a second phase of data analysis.

In the preliminary phase, data have been collected about the presence of municipalities on SS, namely Facebook. Both official and unofficial presences have been recorded with the purpose of identifying the gap between public administrations officially present on SS and fake accounts. The 119 municipalities, that are the capitals of, and give name to the Provinces, were included in the analysis.

The definition of official social media follows [52], who defined an official social media presence when there is a direct linkage at the SS from the homepage of the municipality. This means that the analysis about the presence of a municipality on a specific SS was carried out in two steps: in the first step we entered the municipality homepage searching for links to SS tools. In the second step, the author accessed the SS website typing the name of the municipality. This approach was useful to distinguish between official pages, those linked to the local administration homepages and unofficial pages. This preliminary phase provided an overall view about the level of Facebook adoption by Italian municipalities.

In the second phase of the analysis, the focus was on official pages only in order to increase the reliability about the information collected. These pages have been analysed evaluating the level of awareness and engagement, which means that different information was collected from the web. Following the suggestions provided by [24], brand awareness and engagement have been operationalized.

For Facebook we retrieved the number of "likes" of a municipality fan page and the number of "people talking about". Total "likes" represent the number of unique people who liked the municipality page, while "people talking about this" indicates how many people are actually talking about the municipality to their friends. This number includes everyone who liked the page, liked, commented on or shared a page post, answered a question asked, responded to an event, mentioned the page, tagged the municipality in a photo or "checked in" the place [53]

The adoption of these metrics to define the level of awareness and engagement opened up the possibility of assessing the SS effectiveness for public engagement initiatives aimed at informing and consulting citizens. They are instead not enough to evaluate the SS effectiveness in supporting involvement, collaboration and empowerment. This can be a limit of the research, but the scarce research in the public administration field justified our choice to focus on the first two levels of public engagement initiatives.

Data from websites were collected in the period from 20th to 28th February 2012. This is relevant information given that SS statistics change continuously overtime and also data collected are dependent on the time period object of the analysis. Moreover, we divided this number by the population of each municipality in order to have comparable data. Following this procedure, the percentage of awareness and engagement for municipalities using Facebook was calculated. The SS effectiveness was disaggregated by municipality, but also an overall assessment concerning the instruments have been carried out. The next section provides results of the analysis.

6. Results

The findings from the website analysis provide evidence on the level of diffusion of Facebook in local Italian municipalities and on SS effectiveness.

As far as the level of Facebook diffusion is concerned, the results show that Facebook is officially used by 26% of municipalities. On the contrary, the search of each municipality through the Facebook search engine revealed that 92% of the sample is unofficially using the instrument. In fact, all the Facebook pages with the name of the municipality, but not linked to their homepage, do not guarantee the identity of the page. This means that two different situations can occur. In the first case, the municipality is not using Facebook, but someone else is registered on Facebook with the municipality identity. It can be an organized association of citizens or groups of friends living in the city. This situation could be awkward for citizens that rely on information that is not officially validated, or at least, without knowing exactly who is providing the content. The second situation is related to a municipality that does actually have a Facebook account, but it is not sponsoring the social activity on its institutional website. This second case has also controversial effects because citizens are not aware of the existence of the Facebook account unless they search specifically for the municipality on the Facebook website. The uncertainty around the reliability of unofficial presences led the author to focus only on official pages for the remaining analysis (hereafter referred to as the social media without specifying "official"). The second type of analysis concerns the geographical area of the SS diffusion. Results show that municipalities in the north of Italy use Facebook more that those in the south and in the centre. Specifically, the level of diffusion is equal to 48% in the north, 25% in the centre and 2% in the south.

As far as SS effectiveness is concerned, information about the level of awareness and engagement for each municipality officially accounted on Facebook was collected. On average, Italian municipalities scored 1.9% of awareness and 0.05% of engagement suggesting that the number of "likes" of local administration social pages is higher than the number of "talking about" on those pages. These data about the level of awareness and engagement can be disaggregated by municipality in order to investigate the ability of each local administration to use the social instruments to engage with citizens. For three municipalities (Varese, Imperia and Gorizia) the level of awareness was not calculated because they used the "profile page" rather than the "fan page", and therefore the statistic about the number of "people talking about" was not provided by the social tool. The detailed analysis (see Figure 1) shows that the levels of awareness and engagement vary extensively from one municipality to another, suggesting the existence of different engagement strategies adopted by local administrations. The level of awareness ranges between 0.08% for Verbania to 11.41% for Imperia. This means that a small percentage of the citizens of Verbania are aware of the existence of the Facebook page of the municipality, while 11% of citizens of Imperia know about the municipality social page.

The level of engagement instead ranges between 0.01% for Venice, Pordenone, Cremona, Milan, Cuneo and Pisa to 0.24% for Rimini, revealing that few citizens interact with their local administrations. The difference between the level of awareness and engagement provides evidence that these two measurements are independent of each other. Municipalities with a high level of awareness did not score the highest levels of engagement. This means that being known by citizens (hence scoring a high level of awareness) does not automatically imply being interactive with citizens (hence recording a high level of engagement). For example, the municipality of Rimini has emerged as being the most interactive municipality in Italy with citizens, but it did not score a high level of awareness. On the contrary, the municipalities of Arezzo, Padua or Lodi are extensively known by citizens (as evidenced by the high level of awareness), but they scored low levels of engagement.

A few municipalities scored high values for both awareness and engagement.

Frosinone, Macerata and Reggio Emilia registered high values, but not the highest, for both the measurements.

These findings are useful in supporting the planning and controlling of the strategic choice on public engagement of each public administration. This analysis entails the following questions: does the municipality want to increase its visibility on SS tools, and therefore the awareness, or does the municipality want to increase its ability to interact and discuss with citizens, and therefore effectiveness? The comparison between municipalities can provide insights into the planning and control of the social strategy of each local administration on Facebook.
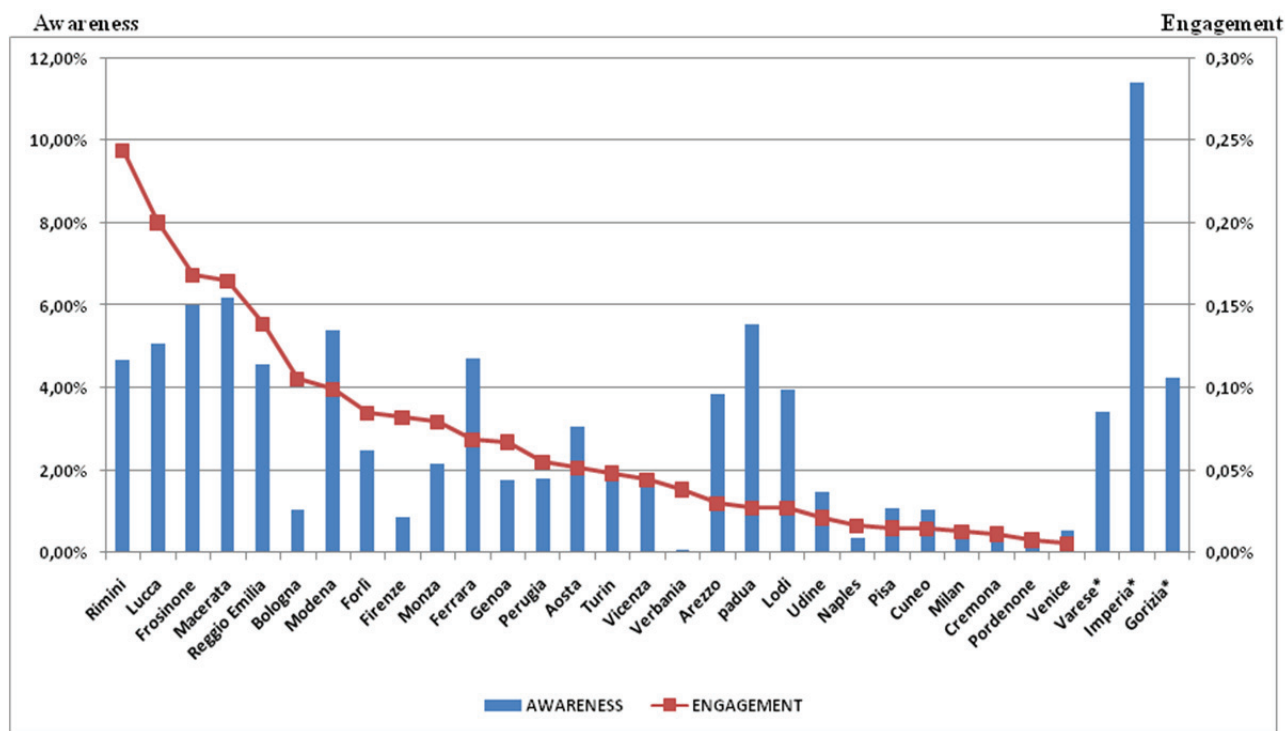

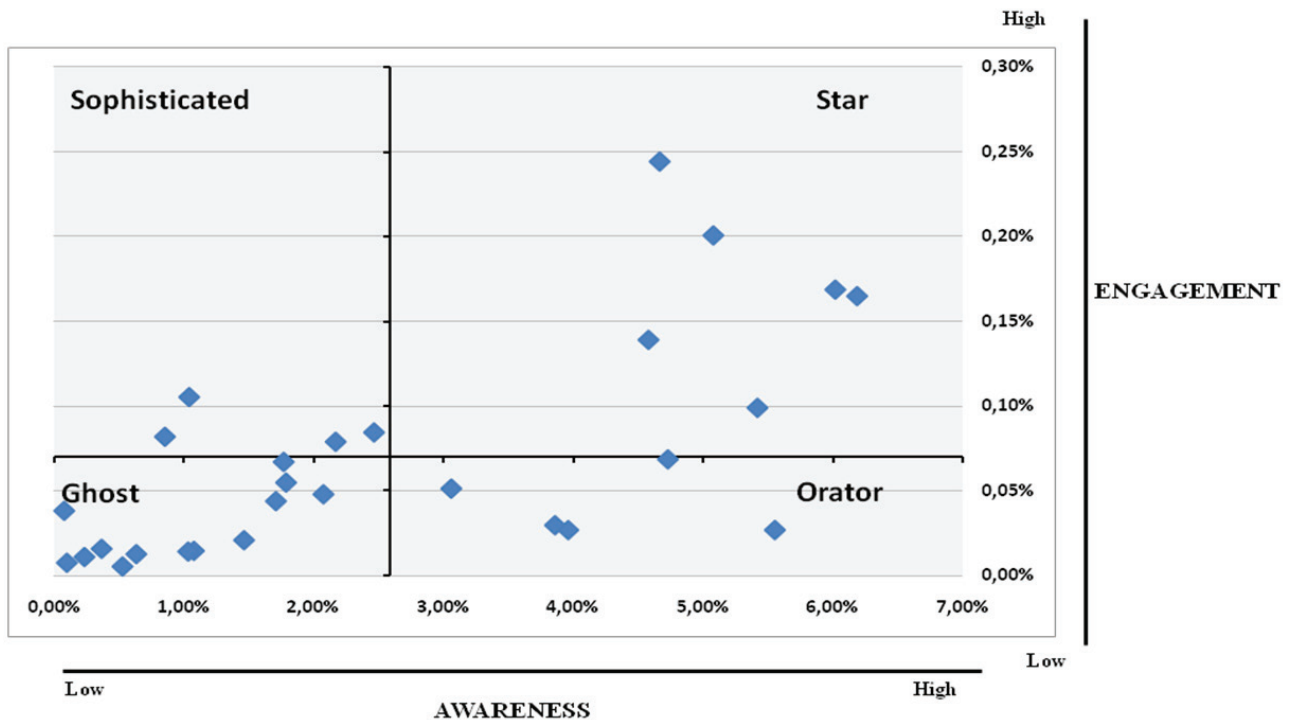**Figure 1.** Level of awareness and engagement for each municipality

Figure 2. The social software effectiveness matrix

7. Discussion and Conclusion

This research was aimed at evaluating the effectiveness of SS tools to support public engagement activities aimed at informing and involving citizens through an empirical examination of the adoption and use of Facebook by Italian municipalities. Two main contributions can be derived from the analysis.

The first contribution is related to the level of Facebook diffusion in Italian municipalities. This finding mainly affects the Italian context and underlines the immature level of diffusion of these technologies: only 26% of municipalities officially use Facebook, while 92% of the sample has an unofficial Facebook account. An unofficial page on Facebook, that is not linked to the institutional website, does not guarantee the univocal identifiability of the local administration on the social tool and it can

reduce the willingness of citizens to take part in social conversations. This result provides guidelines to practitioners that manage social tools, suggesting they should link the presence of the local administration with the SS managing risks and opportunities [54].

The second contribution is derived from the assessment of the level of engagement and awareness, and it is related to the development of a model for analysing the current SS strategy adopted by public administrations. It is based on the idea that the performance measurement

model can drive its use [e.g., 55-56] and therefore the measures of awareness and engagement can drive the strategy of use of SS for public engagement. The joint analysis of engagement and awareness gives the possibility to define a more general model that can be applied to any public organization that is using social instruments. Figure 2 shows the model applied to Facebook. On the horizontal axis the level of awareness is represented, while the vertical dimension includes the level of engagement. Positioning the axes on the average values of the observations, four quadrants can be identified corresponding to different SS strategies for public engagement: ghost, orator, sophisticated and stars. Ghost represents municipalities with a low level of awareness and engagement. This means that few people know the social page of the local administration and a few people talk about it. This position underlines a current poor SS strategy for public engagement. Municipalities in this situation are the majority in local Italian administrations. Administrations in this position should ask themselves: is it relevant to stay social? If the answer is yes, then a substantial revision of the SS strategy is required to increase the number of "likes" and the number of interactions ("talking about") with citizens. If the answer is no, then it is better to dismiss the engagement activity through SS.

Orator represents the case of municipalities with a high level of awareness and a low level of engagement. In other words, a lot of people know the social page of the municipality and like it, but few people are actually

interested in interacting with the administration. This is a signal that the current SS strategy is not well defined because the public administration is able to inform, but not to involve. A potential suggestion to improve SS strategy can be through the communication approach: the change in the content of the communication or the language through which contents are communicated can be useful in encouraging dialogue.

Sophisticated includes municipalities with a high level of awareness but a low level of engagement. This means that the local administration is able to establish interaction with a small portion of citizens because few people know about the municipality social page, but those few people are actually engaged.

With regard to the Italian context, only four municipalities can be categorized as this, even though

they are very close to the borderline of both awareness and engagement. Municipalities in this area should understand if this position is the result of a deliberate choice to intensively talk with a few people. If the answer is yes, then the public administration can maintain this strategy, otherwise it is necessary to increase the exposure of the SS instrument.

Star instead includes municipalities with both a high level of awareness and engagement, which means that a lot of people know about the municipality page on Facebook and they are also engaged. This is the best situation because it provides evidence that the current SS strategy is successful for both communicating and involving citizens. The suggestion for the future is to maintain and improve the current position.

These results are useful for practitioners as they provide a practical instrument to assess the level of awareness and engagement. The model proposed can be used to evaluate the effectiveness of any social tool and it can represent the first step towards the construction of a performance measurement system in the public sector in the SS era [57]. At the academic level, this study adds to the extant literature on public engagement with the importance of assessing the effectiveness of SS tools. This aspect is of extreme importance given the continuous diffusion of these instruments among public administrations. Limitations of the analysis are related to the approach through which engagement and awareness were operationalized. They are based on statistics provided by the SS and therefore they are dependent on the time window of the analysis. Further research should develop more stable measurements for these two variables that are less dependent on the moment in which the analysis is performed.

7. References

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