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Determinants and Consequences of Citizens' E-Participation:
The Case Study of the App MyHomeCity

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ABSTRACT

This article aims to discuss the determinants of digital active citizenship behaviors such as the e-participation using reporting urban apps. The article makes a comparative analysis between two groups of citizens: a) 98 users of a reporting app (MyHomeCity) who were selected for the case study); and b) 148 non-users of reporting apps. Users of MyHomeCity revealed higher scores for the satisfaction for life in the city, self-esteem, self-efficacy, and perceived happiness, for all place attachment dimensions and all digital citizenship dimensions except for political activism (online and offline) and critical perspective. The probability of being an app user is predicted by satisfaction for living in the city, place identity (attachment), and digital citizenship dimensions. The implications for public decision makers, app developers, and citizens' organizations are discussed.

KEYWORDS

Digital Active Citizenship, Digital Citizenship, E-Participation, E-Participatory Urban Apps, Perceived Happiness, Place Attachment, Satisfaction for Living in the City, Self-Efficacy, Self-Esteem

INTRODUCTION

Citizenship in the twenty-first century has increasingly evolved into an e-participatory construct that includes abilities, thinking and action regarding Internet use, enabling people to understand, navigate, engage in and transform self, community, society and the world. This definition of digital citizenship provided by Choi (2016) accords with notions of critical (Abowitz & Harnish, 2006) or transformative citizenship (Banks, 2008), while Jones and Mitchell (2016) distinguish digital citizenship education from digital literacy education (Internet and computer technical skills). According to Choi (2016), digital citizenship needs to be understood as a multidimensional and complex concept related with our offline (place-based) civic lives.

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Smartphones today play a prevalent role in everyday life, and thus present the possibility that citizens may engage more actively in civil society, opening new channels of communication with urban governance (Höffken & Streich, 2013). According to Höffken and Streich (2013, p.206), electronic participation (e-participation) or mobile participation (m-participation) can be defined as "the use of mobile devices (e.g., mobile phones, smartphones and tablet computers) via wireless communication technology to broaden the participation of citizens and other stakeholders by enabling them to connect with each other, generate and share information, comment and vote." The increase and extensive use of mobile technologies are thus paramount in promoting and facilitating participation and interaction between citizens and local government, enabling the establishment of collaborative actions.

In this context, citizens are invited to transform their quality of life hence the use of urban apps as co-governance tools has become widespread in contemporary cities and municipalities in order to promote citizen involvement in municipality management (Afzalan & Evans-Cowley, 2015; Ertiö, 2013, 2015; Evans-Cowley, 2012). For example, Mainka, Siebenlist and Beutelspacher (2018) have produced a list of 29 participatory apps in Germany, including Maerker Brandenburg (maerker.brandenburg.de), which enables direct communication with 117 municipalities. Those authors mapped these apps to compare them based on features and usage (defined by the number of downloads).

Other examples of participatory apps include Colab in Brazil (www.colab.re), ChangeExplorer in England (Wilson, Tewdwr-Jones, & Comber, 2017), FixMyCity in Greece (glyfada.intelligentcity.gr), FixMyStreet Brussels in Belgium (Pak, Chua, & Vande Moere, 2017), MiCiudad in Argentina (Ríos et al., 2017; appmiciudad.com), MiPueblo in Spain (inbox-mobile.com/index.html), Zurich as good as new in Switzerland (Abu-Tayeh, Neumann, & Stuermer, 2018) and in the United States, CitySourced (Santos, Rodrigues, & Oliveira, 2013; www.citysourced.com), SeeClickFix (Santos, Rodrigues, & Oliveira, 2013; seeclickfix.com), Improve Detroit (detroitmi.gov/ImproveDetroit) and PublicStuff (www.publicstuff.com).

All represent examples of e-participation tools that allow a bidirectional channel between citizens and local public administration, comprising a front-end mobile application for users and a back-end web application for local government. Regarding the use of participatory platforms, studies often describe their technical specifications and features, as well as their conceptual architecture (Ríos, 2017; Santos, Rodrigues, & Oliveira, 2013). Moreover, the widespread dissemination and growing use of e-participation tools has also prompted researchers to study the drivers that motivate users to support urban governance by means of their reporting. For instance, Abu-Tayeh et al. (2018) explored the drivers of citizen reporting engagement in terms of other-orientation and self-concern motivational factors. They examined the actual use of the participatory app "Zurich as good as new" by relying on actual use-data/reported data from objective sources (e.g. databases) and noted that both other-orientation and self-concern are significant drivers of citizen reporting engagement, although the effect of the latter is slightly greater. Furthermore, Wilson et al. (2017) assessed the degree to which the use of a participatory app raises awareness of urban change and its potential to affect participatory governance. Using Change Explorer as a case study, Wilson et al. (2017) recognised how the app compelled users to think critically about their areas of residence and the issues they wanted to change. Holding a different perspective, Pak et al. (2017) performed a socio-demographic analysis of civic participation using FixMyStreet Brussels, and identified unequal levels of civic participation, marked by the marginalisation of citizens of certain ethnicities and lower income.

Nevertheless, to date little is known about the underlying factors that motivate citizens to voluntarily engage in participatory reporting platforms. Therefore, discussion of the drivers and inhibitors of e-participation is a research topic that continues to require attention from scholars and practitioners. Moreover, there is a literature gap because no study has yet explicitly analysed the relationship between place attachment (a widespread concept from Environmental Psychology) and other constructs such as digital citizenship or e-participatory governance, within the context of using urban apps.

However, why should we care about place attachment? This multidimensional concept, which has been used by environmental psychology researchers for more than forty years (Lewicka, 2011) and has been defined by Hidalgo and Hernandez (2001, p.274) as "an emotional connection between people and specific places". It can represent a strong driver for citizens to engage in digital citizenship activities such as urban reporting apps. It is expected that a resident or visitor, physically, emotionally or economically connected with a city, will want to contribute to improve the quality of life of that city by reporting problems to the municipality.

According to Węziak-Białowolska (2016), the quality of urban life comprises several dimensions:

1. Physical features (buildings, streets, pedestrian ways and open space vegetation);
2. Accessibility (access to schools, parking spaces, retail shops, sport and cultural facilities and labour market);
3. Livability (access to healthcare, good environment and safety);
4. Communication and transportation;
5. Character (sense of place and time, stability and aesthetics);
6. Personal freedom (freedom of expression and privacy).

Therefore, the satisfaction for living in a city is the perceptual measure of the extent to which the quality of life meets all city residents' needs.

Considering the above, the objective of the present study is to assess and discuss the roles of place attachment, digital citizenship and satisfaction for living in a city in predicting participatory e-citizenship behaviours (such as being a user of a reporting app). This will include, for instance, the assessment of whether residents (depending on their residential time) with a self-ascribed high degree of place attachment will have the propensity to engage in digital/offline citizenship activities. It is plausible that residents with a low level of satisfaction with living in a city will be more willing to increase the city's quality of life through the adoption of participatory e-citizenship behaviours (such as the use of a reporting app). In summary, this paper aims to examine the following research question:

RQ: What are the determinants/predictors of digital active citizenship behaviours such as the use of e-participation reporting apps?

In order to address this research question, authors selected MyHomeCity app[1] as a case study. The MyHomeCity platform is a web and mobile service developed by the Ave Intermunicipal Community (CIM do Ave), comprising seven municipalities of Ave River's valley the NUT III Ave (http://www.cim-ave.pt) in Portugal. It is a pioneer project in Portugal, hence the authors were urged to assess the factors encouraging and preventing the usage of urban apps from citizens' perspectives. In 2016, the MyHomeCity platform was first provided to the city of Guimarães (154,920 inhabitants) as launching and testing city, before being made available for the remaining municipalities. Given that the MyHomeCity platform is provided to the associated municipalities, its advertisement was disseminated through several different channels including the municipality webpage, other municipality-related webpages, local newspapers, social media and radio.

The authors conducted a web survey and undertook a comparative analysis between two groups of citizens: users, represented by citizens who have downloaded and registered in the MyHomeCity app and, non-users, represented by citizens who did not have the app on their smartphones. The following sections will provide theoretical support for the conceptual model and work hypothesis, presented in the Methodology section and later discussed in the Discussion section. Finally, some recommendations for public decision makers, app developers and citizens' organisations are provided.

LITERATURE REVIEW

This section introduces the relevant constructs that help to explain the use of reporting urban apps. An understanding of the notion of digital citizenship implies knowledge of the evolution process of active engaged citizenship. Public decision makers capture this engagement as part of participatory governance, leading to the development of urban apps as powerful tools to assess citizens' perspectives. This paper also aims to examine whether citizens' engagement is influenced by a psychographic individual variable such as place attachment.

Active Engaged Citizenship

Since Marshall's (1964) pioneering work, three dimensions of citizenship have been identified and are widely accepted as definitions of traditional citizenship (Banks, 2008): civil, political and social. Later scholars added other perspectives, particularly identity and sense of community. Dalton (2009) subsequently developed a framework of a "good citizen", comprising several dimensions: generational, living standards, education, work experience, gender roles and social diversity. This notion thus reframed the traditional conceptions of civic participation from citizen duty (citizens vote, pay taxes, obey the law) to engaged citizenship (independent, assertive citizens concerned with others) (Dalton, 2009).

Hoskins (2006), quoted by Hoskins and Mascherini (2009, p.462), defined Active Citizenship as "participation in civil society, community and/or political life, characterized by mutual respect and non-violence and in accordance with human rights and democracy". Hoskins and Mascherini (2009) developed the framework of Active Citizenship, which comprises four dimensions: protest and social change, community life, representative democracy and democratic values. The dimension on protest and social change organisations comprises four components: protest activities, which are a combination of five indicators (signing a petition, taking part in a lawful demonstration, boycotting products, ethical consumption and contacting a politician). The next three components are three types of organisations; human rights organisations, trade unions and environmental organisations. Each of these components consists of four indicators on membership, participation activities, donating money and voluntary work. Alternatively, Jansen, Chionsel and Dekkers (2006, p.196) defined active citizenship as "exercising civic rights and obligations through participating in contextually differentiated social practices".

Gaventa and Barrett (2012) later created a typology of four democratic and developmental outcomes of engaged citizenship, including the construction of citizenship, the strengthening of practices of participation, the strengthening of responsive and accountable states, and the development of inclusive and cohesive societies. More recently, Mihailidis and Thevenin (2013) discussed the role of digital media literacy as a core competency for engaged citizenship in participatory democracy. These authors developed a framework for media literacy as a central political attribute for active, engaged and participatory citizenship. In the next section, the implications of digital citizenship will be discussed in order to generate the conceptual framework analysed in this paper.

Digital Citizenship

Citizens are invited to deconstructing injustices, expressing their own voices, and struggling to create a better society (Kellner & Share, 2007) and become critical thinkers, creators, communicators, and agents of social change. In this way, they can help empower civic voices for the future of sustainable, tolerant and participatory democracy.

More recently, Choi (2016) developed a conceptual analysis of digital citizenship. He identified six digital citizenship-related terms: online citizenship, cyber citizenship, e-citizenship, networked citizenship, technological citizenship and Internet citizenship. According to Choi (2016), there are four major categories that constitute digital citizenship: ethics, media and information literacy, participation/engagement and critical resistance. In the present study, the authors focus on the

dimensions of citizenship related with the practices of participation and engagement using reporting apps (namely MyHomeCity) that promote governance accountability through citizen surveillance (Abu-Tayeh et al., 2018) and willingness to amend reality.

Participatory Governance

This section introduces the notion of participatory governance, which is the underlying reason for the creation of urban apps such as MyHomeCity. In the last two years, several scholars have devoted considerable attention to the benefits and myths of participatory governance. Speer (2012) has identified four strands in the literature regarding participatory governance: 1) the democratic decentralisation strand, 2) the deliberative democracy strand, 3) the empowerment strand, and 4) the self-governance strand. Authors from the democratic decentralisation strand expect to remedy problems of elite capture and clientelist policy making at the local level (Bardhan & Mookherjee, 2000). The authors from the second strand expect that participatory governance render a political system more democratic by strengthening deliberative forms of decision-making. Scholars from the empowerment strand claim that participatory governance can only be successful in improving the livelihoods of the poor if it challenges existing institutions and structures. Research in this strand of the literature is mostly conducted in the form of concept-based case studies (Ackerman, 2004). The fourth strand of literature on participatory governance is seen as a flexible decision-making mode, allowing citizens to influence the design and implementation of everyday rules on public services.

On other hand, Ackerman (2004) claimed that although New Public Management does have a participative or "social control" dimension, it tends to adopt marketization strategies, which allows citizens to let their opinions be known, but prohibits their active participation in government. He argues that both "exit" solutions rooted in marketisation and ''voice" solutions grounded in "coproduction," social protest or consultation are insufficient and sometimes even undermine community organisation and social capital. The best way to tap into the energy of society is through "co-governance", which involves inviting social actors to participate in the core activities.

Participation Through Urban Apps

Aligned with concept of co-governance, Linders (2012) has acknowledged the evolution of citizen coproduction as critical driver for the existence of urban apps, whereby citizens perform the role of partner rather than customer in the delivery of public services. Linders (2012) has proposed the following categories:

1. Citizen Sourcing (citizens-to-government, C2G), in which the public helps the government to become more responsive and effective, influencing direction and outcomes and assisting in the execution of government services on a day-to-day basis;
2. Government as a Platform (government-to-citizen, G2C), in which the government makes its IT infrastructure available to the public, helping citizens to leverage their day-to-day productivity, decision making and well-being;
3. Do it Yourself Government (citizen-to-citizen, C2C).

In this informal arrangement, the government plays no active role in day-to-day activities, but may provide a facilitating framework. For example, Van der Graaf and Veeckman (2014) investigated how citizens are engaged via provided/generated toolkits in the development of mobile applications on the city-hosted platform of Ghent (Belgium).

The literature presents several examples of the use of apps as citizen participation tools in different urban contexts: for urban planning (Afzalan & Evans-Cowley, 2015; Ertiö, 2015; Evans-Cowley, 2012; Wilson et al., 2017), to explore measurable effects on citizen engagement using both online and offline engagement tools (Kleinhans, Van Ham, & Evans-Cowley, 2015), through the use

of gamification (Thiel & Ertiö, 2018), or even during natural disasters (Afzalan, Evans-Cowley, & Mirzazad-Barijough, 2015).

More recently, Afzalan, Sanchez and Evans-Cowley (2017) have built criteria for the selection of online participatory tools from the perspective of planning organisations. One should choose a participation platform based on the capacities of the organisation, the characteristics of the communities that are going to use the tool, user-community norms and rules, and the tool's capabilities.

Bonsón et al. (2012) have also highlighted the potential contribution of the Internet in enhancing the interactivity, transparency, accountability and engagement of citizens as a means of increasing their trust in governments. Participatory, 'bottom-up' geo-information technologies have been concurrently developing and are expected to strengthen participatory spatial planning. Particularly important among these has been the transformation of conventional mapping and GIS tools into Participatory GIS (PGIS). In the next section, we discuss the role of other antecedents of digital citizenship, such as place attachment.

Place Attachment: Antecedents and Implications

Lewicka (2011) undertook an extensive review of forty years of research of place attachment, including contributions from different areas such as Environmental Psychology (Altman & Low, 1992) and Geography (Tuan, 1974). According to Lewicka (2011), the categorization of predictors of place attachment is divided into three categories: socio-demographic, social, and physical-environmental.

On the other hand, Leyden, Goldberg and Michelbach (2011) analyzed the relevance of the "pursuit of happiness" as the ultimate goal, finding that health, wealth and social connectedness are the key predictors. In addition, cities that provide easy access to convenient public transportation and to cultural and leisure amenities promote happiness. Cities that are affordable and serve as good places to raise children also have happier residents. These authors discussed the "pursuit of happiness" as the ultimate goal for cities based on the report of Stiglitz, Sen and Fitoussi (2009), who advised that countries should consider a broad range of measures of social well-being that go far beyond traditional economic measures.

As a consequence of a higher level of place attachment, the literature suggests that one component of active citizenship, defined by Jansen et al. (2006, p.196) as "exercising civic rights and obligations through participating in contextually differentiated social practices marked by regularized communicative interactions balancing respect for autonomy with susceptibility and accountability to common causes", should be present.

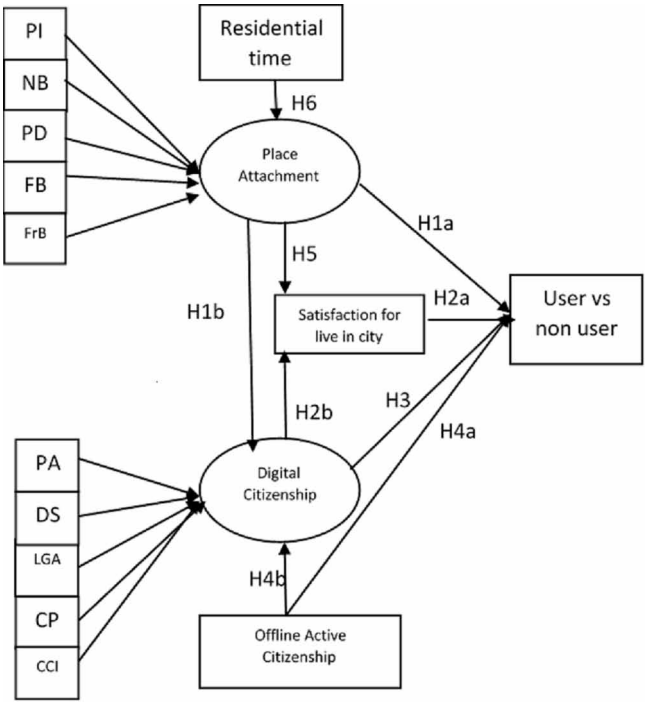
Several studies support the hypothesis that place attachment influences the quality of life and perceived restorativeness (Ruiz, Pérez, & Hernández, 2013). Moreover, for Zenker, Petersen and Aholt (2013), place attachment could also be seen as an indicator of positive citizenship behaviour, as it measures the individual or group's level of ''psychological ownership''. Kearns (1995) and Forrest and Kearns (2001) have also related place attachment to political participation and volunteerism (volunteer work for the city).

Theoretical Framework and Research Hypotheses

In order to examine the research question- What are the determinants/predictors of digital active citizenship behaviours such as the use of e-participation reporting apps? The authors propose a theoretical framework (see Figure 1) and postulate some research hypotheses. As stressed earlier, few studies to date have related place attachment with digital citizenship.

Nevertheless, some authors have acknowledged the role of place attachment as an influencing factor of participation and digital citizenship, providing support to our first hypothesis. For example, Zenker and Rütter (2014) have explicitly examined the influence of citizen satisfaction on place attachment, place brand attitude and positive citizenship behaviour. Moreover, Lee and Lee (2014) have viewed attachment as a dimension of the citizen-centric approach to smart services. On the other

Figure 1. Theoretical framework (Source: elaborated by authors)



hand, Brown, Raymond and Corcoran (2015) used online participatory GIS to map and measure place attachment.

The Place Attachment scale developed by Raymond, Brown and Weber (2010) comprises five dimensions: 1) place identity (PI), which refers to dimensions of self, such as the combination of feelings about specific physical settings and symbolic connections to place; 2) place dependence (PD), which refers to the functional or goal-directed connections to a setting; 3) nature bonding (NB), which refers to connections to the natural environment; and, 4) family bonding and 5) friends bonding, which are components of social bonding, defined (p. 426) as "feelings of belongingness or membership to a group of people, such as friends and family, as well as the emotional connections based on shared history, interests or concerns". Therefore, the following hypothesis will discuss the role of place attachment:

H1a: The probability of being an app user is predicted and positively correlated with place attachment dimensions: place identity (PI), nature bonding (NB), place dependence (PD), family bonding (FB) and friends bonding (FrB).

H1b: Place attachment is positively correlated with digital citizenship.

MyHomeCity is a reporting urban app, hence it helps citizens participate in improvements to quality of life driving engagement in urban apps (Aguilera, López-de-Ipiña, & Pérez, 2016; Tang et al., 2019; Walravens, 2015). On the other hand, perception of a city's quality of life may influence the usage of apps (Belanche, Casaló, & Orús, 2016). If one is not satisfied with the city's quality of life and wants to transform the reality, one is expected to be more prone to download reporting apps (H2a) or, according to Kelley (2014), digital citizenship may contribute to improving satisfaction with one's urban quality of life (H2b):

H2a: The probability of being an app user is predicted by satisfaction with living in the city.
H2b: Satisfaction with living in the city is positively correlated with digital citizenship.

In accordance with Aguilera et al. (2016) and Choi (2015), the third hypothesis is as follows:

H3: The probability of being an app user is predicted and positively correlated with Digital Citizenship dimensions: political activism (PA), digital skills (DS), local/global awareness (LGA), critical perspective (CP) and cooperative/ collaborative Internet activities (CCI).

McClurg (2003) has stressed that the amount of political discussion that occurs in social networks has a considerable influence on one's propensity to participate in politics:

H4a: The probability of being an app user is predicted by offline active citizenship.
H4b: Digital citizenship is positively correlated with offline active citizenship.

This work also strives to confirm the relationship between place attachment and satisfaction (Potapov, Shafranskaya, & Bozhya-Volya, 2016; Zenker & Rütter, 2014) as well as residential time designated by length of residence (Fleury-Bahi, Line-Félonneau, & Marchand, 2008; Zenker & Rütter, 2014):

H5: Satisfaction with living in the city is positively correlated with place attachment.
H6: Place attachment is positively correlated with residential time.

METHODOLOGY

The MyHomeCity platform was selected as case study for hypotheses testing. It is devised as a completely free-to-use e-governance tool that emphasises civic participation by engaging citizens in the process of governance. The platform consists of a management web interface provided to the municipalities and a mobile app that allows users/citizens to report diverse issues pertaining to urban public spaces. These include categories such as damaged, inoperative or missing traffic signalisation or street identification plates; road safety concerns; animal concerns (e.g. dead animals); damaged urban equipment; street cleaning; damage in public space and watercourse maintenance. Users are able to submit occurrences by entering a short description and a digital photo, which communicates with the web interface, recording the event and the associated GPS localisation and alerting the City Council. The City Council then manages the collected data. The user is able to follow up on the status of the occurrence and receive a notification when it changes, facilitating bidirectional communication and promoting citizen involvement in municipality management.

This project is integrated into the programme "Ave Digital XXI – Operação de modernização administrativa e tecnológica da CIM Ave e Municípios" for the modernisation and capacitation of public administration in the Ave region. The Intermunicipal Communities are 23 administrative divisions in continental Portugal (mainland), classified as administrative NUTS III (Nomenclature of Territorial Units for Statistics) regions and comprising geographically adjacent municipalities.

The Ave Intermunicipal Community is an association of municipalities created in April 2009 with the mission to promote the cooperation and management of inter-municipality projects within the NUTS III Ave region, to improve the management of the embodied municipalities. It includes eight municipalities, covering an area of 1,453 km^2 and a population of 425,411 inhabitants (data from 2011).

According to Ertio's (2015) classification, the MyHomeCity app is an information or reporting app. Lee and Lee (2014) have proposed a typology with the following dimensions: mode of technology

(automate–informative–transformative), purpose of service (hedonic–utilitarian), service authority (voluntary–mandatory) and delivery mode (passive–interactive). Therefore, MyHomeCity can be classified as a transformative, utilitarian, voluntary and interactive app. There are other similar apps discussed in the literature, including Fix My Street Brussels (Pak et al., 2017) and Zurich as good as new (Abu-Tayeh et al., 2018).

Instruments

Authors conducted two online surveys: Survey 1, in which all 986 citizens registered in the MyHomeCity app were directly invited by email; Survey 2, involving non-users of the MyHomeCity app. The sample of non-users was a convenience non-representative sample of residents in NUT III Ave that answered an online survey disseminated through a snowball method on social media (Facebook) and the researchers' university mailing lists. Survey 2 was online, necessitating a certain level of digital literacy among respondents. Nevertheless, the aim of the paper is not to compare citizens with different levels of digital literacy, but rather their propensity to use urban apps.

Survey 1 comprised several questions regarding engagement with the app: participation/claims, typology of claims (see Table 1) and satisfaction with the municipality's problem-solving efficacy. Subsequently in both surveys, the respondents were invited to answer questions on the following themes: overall satisfaction with living in the city, perceived self-efficacy, self-esteem and perceived happiness.

Next, the respondents answered the following scales:

1. **Place Attachment (see Appendix A):** 17 items of the Portuguese version developed by Magalhães and Calheiros (2015, p.69), adapted from the original version of Raymond et al. (2010) with five dimensions: place identity, nature bonding, place dependence, family bonding and friend bonding/belongingness;
2. **A reduced version of the Digital Citizenship Scale[2] (see Appendix B) (Choi, 2015) with 19 items and five dimensions:** Political activism (PA) (seven items), digital skills (DS) (four items), local/global awareness (LGA) (two items), critical perspective (CP) (seven items) and cooperative/collaborative Internet activities (CCI) (four items), and 13 items for measuring offline Active Citizenship behaviours (see Appendix C) adapted from the PA dimension of Choi's scale;
3. An adaptation of the ACCI (Active Citizenship Composed Indicator)[3] of Hoskins and Mascherini (2009), inviting the respondent to state his/her membership status, participation/relationship

Table 1. Number of claims in MyHomeCity until February 2017 by category (source: MyHomeCity)

Categories	Claims
Animals	11
Car Traffic signals	33
Traffic Lights	4
Street Name	12
Car Traffic safety	72
Damaged Urban equipment	35
Public space cleanliness	93
Public space damages	188
Other	15
TOTAL	463

degree, monetary donations or voluntary work regarding the following organisations in different fields: Non-governmental, human rights watch, environmental protection, religious, sports, teaching/parents, cultural and hobbies, business/ commerce, social, political, fair trade, and animal protection;

4. **Internet-using behavior:** Most frequent means of access, time of day, ease in accessing free public Wi-Fi.

The web survey was made using Google Forms, and data processing and statistical analysis were conducted using IBM SPSS Statistics 24.

Sample Characteristics

Survey 1 among the app users obtained 98 respondents (9.9% of the universe of registered users), the majority of whom are male (73.5%), while survey 2 among non-users obtained 148 respondents (68.9% female). There is also a significant difference in terms of age (see Table 2).

Table 2. Sample characteristics

Demographic Characteristics			User		Total
			User MyHomeCity	Not User	
Gender	Female	N	26	102	128
		% in user	26.50	68.90	52.00
	Male	N	72	46	118
		% in user	73.50	31.10	48.00
Total		N	98	148	246
		% in user	100.00	100.00	100.00
Chi-square=42,44; GL=1; p<0,001					
			M (SD)	M (SD)	M(SD)
Age			40.80 (11.29)	36.08 (14.00)	37.96 (13.17)
Z=-2,848, p=0,004					
Education			%	%	%
High school or less			36.70	20.30	26.70
University degree			38.80	29.70	33.30
Postgraduate, Master's, PhD			24.50	50.00	40.00
Residential time (years)			34.04 (15.67)	24.77 (13.72)	28.46 (15.19)
Z=-5,138; p<0,001					
Internet access usage			%	%	%
Only at home on personal computer and outside working hours			6.10	12.80	10.20
Only at home on the phone and outside working hours			2.00	5.40	4.10
Only at the workplace using the computer			5.10	6.10	5.70
Everywhere using the laptop whenever you want			10.20	20.30	16.30
Everywhere on the phone whenever you want			63.30	43.90	51.60
Other forms			13.30	11.50	12.20

The majority of respondents live in Guimarães (46.3%), Braga (27.2%) and Porto (7.3%). In terms of education level, the users sample includes fewer respondents with postgraduate degrees than the non-users sample. Moreover, the users sample exhibits superior residential time in their neighbourhoods (M=34.04 years). Mansuri and Rao (2012) concluded that participants in civic activities tend to be wealthier, more educated, of higher social status, male, and more politically connected than non-participants, and that the poor often benefit less from participatory processes. In a democracy, almost every adult can vote, but only some people "participate".

Regarding the use of MyHomeCity as a reporting tool, 13.8% of the users submitted a claim only once, while 8.9% used the app to report several times. These users stated that their overall satisfaction with MyHomeCity is positive in a 10-point Likert scale (M=6.19; SD=2.90; N=98), but the level of satisfaction with the municipality's intervention to solve the problem was only moderate (M=5.05; SD=3.15; N=98). In this sense, reporting apps represent a win-win situation: when the issues reported by citizens are fixed, seeing the immediate outcome leads to increased participation; for local governments, successfully handling requests showcases responsiveness to citizens' claims, as well as leading to improved and more liveable cities.

Table 3 presents the membership and participation activities regarding the different types of organisations as suggested by the ACCI of Hoskins and Mascherini (2009).

The majority of respondents stated that they have some experience in being members of sporting, cultural or educational organisations, thus leading to higher levels of participation. However, in terms of donating money and voluntary work, religious and social organisations received more attention from the respondents.

Chi-square tests were conducted in order to compare the two groups' (users versus non-users) observed frequencies for the different categories of participation, in particular in terms of membership, participation and voluntary work. Regarding the following organisations, the cross tabulation revealed

Table 3. Active citizenship (offline) by type of organisation

Organisation	Don't Answer	Never had Contact	Not Interested	Donating Money	Membership	Participation	Voluntary Work
NGO	17.8%	32.2%	17.8%	9.3%	11.0%	7.6%	4.2%
Human rights	19.5%	41.5%	16.9%	8.5%	5.9%	6.8%	0.8%
Environmental protection	21.2%	31.4%	18.6%	3.4%	5.9%	16.1%	3.4%
Trade union	19.5%	30.5%	28.8%	0.8%	12.7%	7.6%	0.0%
Religious	16.9%	17.8%	25.4%	6.8%	14.4%	11.9%	6.8%
Sports	15.3%	15.3%	9.3%	2.5%	30.5%	22.9%	4.2%
Culture	13.6%	21.2%	11.9%	2.5%	27.1%	20.3%	3.4%
Business	18.6%	34.7%	22.9%	0.8%	8.5%	14.4%	0.0%
Teachers/parents	13.6%	26.3%	18.6%	2,5%	23.7%	14.4%	0.8%
Social	15.3%	28.8%	19.5%	9.3%	13.6%	7.6%	5.9%
Political	16.9%	28.0%	29.7%	0%	15.3%	10.2%	0.0%
Consumer protection	22.,9%	34.7%	22.0%	2.5%	5.1%	11.0%	1.7%
Health	20.3%	34.7%	18.6%	1.7%	6.8%	14.4%	3.4%
Animal protection	22.9%	38.1%	16.9%	7.6%	1.7%	9.3%	3.4%

a more intense active citizenship among non-users: non-governmental organisations ($p<0.001$); human rights ($p<0.001$); trade unions ($p = 0.017$); consumer protection ($p = 0.001$); and health promotion ($p = 0.006$). In contrast, users were more engaged in the following organisations: environmental ($p = 0.006$); sports ($p = 0.039$); culture ($p = 0.005$); business ($p = 0.003$); and politics ($p = 0.009$).

DISCUSSION

Differences Between Users and Non-Users of MyHomeCity

Table A1 in Appendix A presents the scores for the Place Attachment scale and its dimensions. The Cronbach's alphas are very good, except for the family-bonding dimension. Mann-Whitney U tests were used to identify significant differences between users and non-users of MyHomeCity in the PA scale's item. The users showed higher mean values ($p < 0.001$) for all items and dimensions with the exception of "If I did not have the relationships I have in this city with family and friends, I would probably leave", and consequently for the Family Bonding dimension.

The indicators measuring overall satisfaction with living in the city (self-efficacy, self-esteem and perceived happiness) are presented in Table 4. Moreover, the Mann-Whitney U tests revealed that users of MyHomeCity app rated all indicators more favorably. Therefore, these findings support the hypothesis that citizens who are more likely to engage with e-participatory apps also exhibit higher mean values of place attachment, hence are more satisfied, and feel that their personal projects can be accomplished in their home city. That is precisely what the Spearman's correlation coefficients of Table 5 tell us later. These results may be compared with the findings of Font and Navarro (2013), who examined the role of personal experiences with participatory mechanisms in explaining these instruments' perceived efficacy.

The authors demonstrated that, contrary to most expectations, citizens who have direct experience with these processes evaluate their performance more negatively. However, people who

Table 4. Consequences of place attachment: Satisfaction with living in the city, self-efficacy, self-esteem and perceived happiness

		N	M	SD	Z, p
How satisfied are you with living in your city?	User MyHomeCity	98	8.153	1.9496	-2.819**
	Non-user	148	7.635	1.7346	
	Total sample	246	7.841	1.8371	
In the city where you live, do you feel that there are all the conditions required to carry out all of your personal and/or professional projects? (Self-efficacy)	User MyHomeCity	98	6.98	2.3286	-3.246**
	Non-user	148	5.905	2.4309	
	Total sample	246	6.333	2.4434	
What level of pride do you feel in living in your city? (Self-esteem)	User MyHomeCity	98	8.765	1.7099	-5.34***
	Non-user	148	7.318	2.3242	
	Total Sample	246	7.894	2.2143	
Are you happy living in your city? (Perceived happiness)	User MyHomeCity	98	8.714	1.6807	-4.919***
	Non-user	148	7.574	2.044	
	Total sample	246	8.028	1.9844	

M- mean; SD-Standard Deviation; Z- Mann-Whitney U test; p- significance level: *p < 0,05; **p < 0,01; ***p < 0,001.

Table 5. Spearman's correlation coefficients between place attachment dimensions and dependent measures

	DS	LGA	CP	CCI	Place Attach	Time	Age	SAT	SEF	SES	PH	OAC
PA	0.084	0.178**	0.656**	0.510**								0.670**
DS	1.000	0.479**	0.179**	0.194**	0.133*		-0.160*	0.141*	0.163*		0.174**	
LGA		1.000	0.229**	0.224**	0.215**			0.212**	0.134*	0.223**	0.249**	0.126*
CP			1,.000	0.548**								0.392**
CCI				1.000	0.170**	0.190**			0.129*			0.202**
Place attachment					1.000	0.338**		0.618**	0.543**	0.782**	0.781**	
Time						1.000	0.560**	0.133*	0.123	0.267**	0.226**	
Age							1.000					-0.137*
Satisfaction with living in the city								1.000	0.576**	0.734**	0.761**	
Self-efficacy									1.000	0.549**	0.588**	
Self-esteem										1.000	0.868**	
Perceived happiness											1.000	
Offline active citizenship												1.000

live in more participatory cities and those who participate in individually based mechanisms do not feel the same degree of disappointment with participatory experiences. Citizens who expect more from local participation can also be more easily disappointed. Moreover, citizens who expect more in this policy field are probably more critical when they judge these mechanisms, whether they have participated or not. Nevertheless, frustrated expectations are not necessarily the result of a frustrating experience.

Table B1 and Table B2 in Appendix B show the dimensions of the Digital Citizenship Scale (DCS) adapted from Choi's (2015) scale: political activism, digital skills and local/global awareness. As occurred in the offline citizenship assessment, users of MyHomeCity assign more importance to attendance at online public meetings. In terms of offline active and engaged citizenship (see Table C1 of Appendix C), users give more importance to attendance at public meetings, engagement in voluntary work and the presence of women in political activities.

However, MyHomeCity users are less willing to sign online petitions. In terms of digital skills (DS), users stated their higher interest and ability to download web applications. Moreover, users are also more aware and more informed about global issues, thus rating higher scores for the Local/Global Awareness (LGA) dimension. Table C1 in Appendix C shows two other dimensions of DCS: critical perspective (CP) and cooperative/ collaborative Internet activities (CCI). The Mann-Whitney U tests did not reveal any differences between the two groups in terms of critical perspective items. However, aside from the item "I enjoy collaborating with others online more than I do offline", users are more willing to engage in collaborative activities on the Internet. In summary, users of MyHomeCity app assign a higher score for Digital Citizenship. In order to confirm the existence of the five dimensions proposed by Choi (2015), a factor analysis was performed, extracting five factors with similar compositions in terms of items. These five factors explain 62.63% of the variation.

Hypothesis Debrief

Table 5 presents the Spearman's correlation coefficients, which permit the validation of the following hypotheses:

H1b: Place attachment is positively correlated with three dimensions of digital citizenship (DS, LGA and CCI).
H2b: Satisfaction with living in the city is positively correlated with two dimensions of digital citizenship (Digital Skills and LGA).
H4b: All dimensions of Digital Citizenship (except for Digital Skills) are positively correlated with Offline Active Citizenship (OAC).
H5: Satisfaction with living in the city is positively correlated ($R = 0{,}618$; $p < 0.001$) with place attachment.
H6: Place attachment is positively correlated ($R = 0{,}338$, $p < 0.001$) with residential time.

A stepwise logistic regression (see Table 6 and Table 7) was performed in order to identify the predictors of the dichotomy variable (users versus non-users). Accordingly, 85.8% of non-users and 62% of users were correctly classified, a global percentage of 76.7% of hits.

The predictors of the probability belonging to the MyHomeCity users group is predicted by the Critical Perspective (CP) (with negative parameter estimate), Cooperative/Collaborative Internet activities (CCI), and Place Identity, Place Dependence and Satisfaction with living in the city (with negative parameter estimate). Therefore, hypotheses H1a, H2a and H3a were supported by the results whereas H4a was rejected because offline active citizenship was not a selected predictor.

CONCLUSION

This paper has undertaken a comparative analysis of two groups of citizens: a) 98 users of a reporting app (MyHomeCity); and b) 148 non-users of the app. Several significant differences between the two groups were found. The results revealed that users of MyHomeCity rated higher scores for satisfaction

Table 6. Logistic regression for the probability of belonging to MyHomeCity users group

Omnibus Tests of Model Coefficients				Model Summary			Hosmer and Lemeshow Test		
	Chi Square	gl	Sig.	2 Log Likelihood	Cox & Snell Square R	Nagelkerke Square R	Chi Square	gl	Sig.
Model	76.564	5	0.000	242.959	0.273	0.371	8.985	8	0.344

Table 7. Variables in the equation of logistic regression

		B	E.P.	Wald	gl	Sig.	Exp(B)
Step 5[e]	CP	-0.493	0.166	8.859	1	0.003	0.611
	CCI	0.522	0.130	16.065	1	0.000	1.685
	Place identity	0.162	0.049	10.948	1	0.001	1.176
	Place dependence	0.105	0.048	4.921	1	0.027	1.111
	Satisfaction	-0.318	0.136	5.483	1	0.019	0.728
	Constant	-2.945	1.026	8.242	1	0.004	0.053

with living in the city, self-esteem, self-efficacy, perceived happiness, all place attachment dimensions and all digital citizenship dimensions except for political activism (online and offline), and critical perspective. Moreover, the probability of being an app user was predicted by satisfaction with living in the city, place identity (attachment) and digital citizenship dimensions.

When citizens feel strongly identified with their city, they are more likely to download reporting apps, which can foster their role in surveillance and as agents of transformation. The results revealed some differences in digital skills such as the habit of frequently downloading urban apps, the interest in being aware of local and global issues, or the willingness to engage in collaborative tasks on the Internet. These differences may explain the positive correlation between certain digital citizenship dimensions and place attachment.

However, the groups presented identical scores for political activism (online and offline) and critical perspectives. Most likely, due to their participatory profile, users provided a more favorable evaluation of satisfaction with living in the city, self-esteem, self-efficacy and perceived happiness. There was a bidirectional influence between satisfaction and digital and offline citizenship. Finally, this study contributes to a better understanding of the underlying factors that motivate citizens to engage in participatory platforms, which are central to the concept of smart cities.

Recommendations

As recommendations for public decision makers, the authors suggest that municipalities increase their advertising efforts to increase app awareness and number of users. Given that perceived happiness as the ultimate goal of city governance is correlated with place attachment and digital skills, all forms of e-participation (namely through reporting apps) should be acknowledged as governance tools in order to tap citizenship capital.

App developers and citizens' organisations must acknowledge that being a user of a reporting app does not necessarily imply a higher level of political activism and critical perspective compared to non-users. Therefore, offline activities continue to play a role in promoting active citizenship, in particular for those with inferior digital skills.

The implementation of advertising and communication channels will contribute to a consolidation of the reporting app and to a better reach, thus engaging all citizens. Complementarily, the authors suggest the implementation of lines of communication to help citizens use the reporting app. Finally, in order to increase the involvement of citizens in this process of digital participatory citizenship, it is recommended that municipalities provide feedback to users on the issues they have resolved.

From the municipalities' perspective, the app is a tool that allows residents easily interact in order to report and follow up on their daily life problems. Thus, residents have an opportunity to develop active citizenship and contribute to improving their city's quality of life. Moreover, municipalities also can use the app to communicate useful information in a customisable way.

Limitations and Suggestions for Further Research

The major limitation arises from the case study approach, which does not allow researchers to generalise the findings to other contexts. The same consequence is linked to the non-representativeness of the sample of non-users. Recently Abu-Tayeh et al. (2018) examined the question of whether self-concern and other forms of orientation are stronger drivers of citizens' reporting engagement. Therefore, further research should explore the combined influence of this driver with place attachment.

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ENDNOTES

1 https://www.cm-guimaraes.pt/p/myhomecity

2 In order to measure this construct, there are other alternatives that are more time-consuming: Zaff et al. (2010) developed the Active and Engaged Citizenship Scale (AEC) with 32 items, and Isman and Gungoren (2014) developed the Digital Citizenship Scale (DCS) comprising 34 items.

3 Hoskins and Mascherini (2009) used data collected in the European Social Survey 2002, which covered 19 European Countries, to assess 61 selected indicators and to create a composite indicator (CI), the Active Citizenship Composite Indicator (ACCI).

APPENDIX A: PLACE ATTACHMENT SCALE

Table A1. Place attachment scale's dimensions and item statistics

Dimension/Items		M	SD	M	SD	Z, p
Political Activism (PA)	User	4.441	1.3722	4.4436	1.35707	n.s.
(Cronbach's alpha = 0.872)	Not user	4.445	1.3517			
1-I attend political meetings by video-conference	User	3.388	1.9405	3.329	1.9255	Z = -2.527*
	Not user	3.291	1.9211			
2-I work with others online to solve local or national problems	User	4.684	1.7147	4.764	1.6907	n.s.
	Not user	4.818	1.6783			
3-I organise online petitions	User	4.337	1.958	4.602	1.8941	n.s.
	Not user	4.777	1.8362			
4- I sign online petitions	User	4.776	1.8641	5.073	1.7551	Z = -2.057*
	Not user	5.270	1.6561			
5- I regularly post my personal opinions on social networks about themes/issue	User	4.408	1.9522	4.191	1.9588	n.s.
	Not user	4.047	1.9564			
6- I sometimes contact the political representatives of the local or national administration via online methods	User	4.908	1.7824	4.919	1.8142	n.s.
	Not user	4.926	1.8409			
7- I express my opinion on social networks even if they challenge the dominant perspective or the status quo	User	4.214	1.9858	3.996	2.0152	n.s.
	Not user	3.851	2.0283			
8- I belong to online groups that are involved in political or social issues	User	4.816	1.743	4.675	1.8735	n.s.
	Not user	4.581	1.9553			
Digital Skills – DS (Cronbach's alpha = 0.649)	User	4.395	0.5698	4.2835	0.61871	Z = -2.258*
	Not user	4.21	0.6402			
1- I can use the Internet to find the information I need	User	4.633	0.6323	4.65	0.5853	n.s.
	Not user	4.662	0.5539			
2- I can use the Internet to find and download applications that are useful to me	User	4.337	0.9733	4.081	1.1146	Z = -3.036**
	Not user	3.912	1.1718			
3-I am able to use digital technologies (smartphones, computers, etc.) to achieve the goals I pursue	User	4.418	0.8113	4.321	0.8321	n.s.
	Not user	4.257	0.8421			
4-I can access the Internet whenever I want	User	4.194	0.9268	4.081	0.931	n.s.
	Not user	4.007	0.9295			
Local/global awareness -LGA	User	4.612	0.6679	4.5203	0.69663	Z = -2.034*
(Cronbach's alpha = 0.939)	Not user	4.46	0.7107			
1-I am more informed with regard to political or social issues through using the Internet	User	4.582	0.7169	4.492	0.7326	Z = -2.258*
	Not user	4.432	0.7392			
2-I am aware of global issues through using the Internet.	User	4.643	0.6773	4.549	0.7025	Z = -1.995*
	Not user	4.486	0.7142			

User MyHomeCity (N=92); non-user (N=148). Z= Mann-Whitney U test; p- significance level: *p < 0.05; **p < 0.01.

APPENDIX B: DIGITAL CITIZENSHIP SCALE

Table B1. Digital citizenship scale and its dimensions (political activism, digital skills and local/global awareness), adapted from Choi (2015) scale

Dimension/Items		M	SD	M	SD	Z, p
Political Activism (PA) (Cronbach's alpha=0.872)	User	4.441	1.3722	4.4436	1.35707	n.s.
	Not user	4.445	1.3517			
1-I attend political meetings by video-conference	User	3.388	1.9405	3.329	1.9255	Z = -2.527*
	Not user	3.291	1.9211			
2-I work with others online to solve local or national problems	User	4.684	1.7147	4.764	1.6907	n.s.
	Not user	4.818	1.6783			
3-I organise online petitions	User	4.337	1.9580	4.602	1.8941	n.s.
	Not user	4.777	1.8362			
4- I sign online petitions	User	4.776	1.8641	5.073	1.7551	Z = -2.057*
	Not user	5.270	1.6561			
5- I regularly post my personal opinion on social networks about themes/issues	User	4.408	1.9522	4.191	1.9588	n.s.
	Not user	4.047	1.9564			
6- I sometimes contact the political representatives of the local or national administration via online methods	User	4.908	1.7824	4.919	1.8142	n.s.
	Not user	4.926	1.8409			
7- I express my opinion on social networks even if they challenge the dominant perspective or the status quo	User	4.214	1.9858	3.996	2.0152	n.s.
	Not user	3.851	2.0283			
8- I belong to online groups that are involved in political or social issues	User	4.816	1.7430	4.675	1.8735	n.s.
	Not user	4.581	1.9553			
Digital Skills – DS (Cronbach's alpha=0.649)	User	4.395	0.5698	4.2835	0.61871	Z = -2.258*
	Not user	4.210	0.6402			
1- I can use the Internet to find the information I need	User	4.633	0.6323	4.650	0.5853	n.s.
	Not user	4.662	0.5539			
2- I can use the Internet to find and download applications that are useful to me	User	4.337	0.9733	4.081	1.1146	Z = -3.036**
	Not user	3.912	1.1718			
3-I am able to use digital technologies (smartphones, computers, etc.) to achieve the goals I pursue	User	4.418	0.8113	4.321	0.8321	n.s.
	Not user	4.257	0.8421			
4-I can access the Internet whenever I want	User	4.194	0.9268	4.081	0.9310	n.s.
	Not user	4.007	0.9295			
Local/global awareness -LGA	User	4.612	0.6679	4.5203	0.69663	Z = -2.034*
(Cronbach's alpha=0.939)	Not user	4.460	0.7107			
1-I am more informed with regard to political or social issues through using the Internet	User	4.582	0.7169	4.492	0.7326	Z = -2.258*
	Not user	4.432	0.7392			
2-I am aware of global issues through using the Internet.	User	4.643	0.6773	4.549	0.7025	Z = -1.995*
	Not user	4.486	0.7142			

M- mean; SD-standard deviation; Z- Mann-Whitney U test; p- significance level. * $p < 0.05$; ** $p < 0.01$

Table B2. Digital citizenship scale and its dimensions (critical perspective and cooperative/collaborative internet), adapted from Choi's (2015) scale

		M	SD	M	SD	Z,p
Critical Perspective CP (Cronbach's alpha =0.786)	User	4.315	1.2735	4.3333	1.1923	n.s.
	Non-user	4.346	1.1396			
1-I think online participation is an effective way to make a change to something I believe to be unfair or unjust	User	5.031	1.5562	5.012	1.5239	n.s.
	Non-user	5.000	1.5074			
2-I think I am given to rethink my beliefs regarding a particular issue when I use social networks	User	3.949	1.7133	3.947	1.6859	n.s.
	Non-user	3.946	1.6733			
3-I think the Internet reflects the biases and dominance present in offline power structures	User	4.347	1.4998	4.463	1.5402	n.s.
	Non-user	4.541	1.5666			
4-I am more socially and politically involved when I am online than when I am offline	User	3.735	1.9187	3.618	1.8823	n.s.
	Non-user	3.541	1.8604			
5-I use the Internet as an effective way to protest or participate in social movements/change using my true identity	User	4.082	1.9619	4.179	1.9734	n.s.
	Non-user	4.243	1.9851			
6- Online participation is an effective way to influence local government decisions	User	4.745	1.6641	4.780	1.6340	n.s.
	Non-user	4.804	1.6190			
Cooperative/collaborative Internet activities CCI (Cronbach's alpha = 0.872)	User	4.092	1.6432	3.620	1.6003	Z = -3.621***
	Non-user	3.307	1.4966			
1-Whenever possible, I comment on other people's blogs or social networks	User	3.531	2.0113	2.963	1.8677	Z = -3.699***
	Non-user	2.588	1.6698			
2- I enjoy communicating with others online	User	4.357	1.7542	3.935	1.8659	Z = -2.702**
	Non-user	3.655	1.8906			
3-I enjoy collaborating with others online more than I do offline	User	4.561	1.7175	4.427	1.7684	n.s.
	Non-user	4.338	1.8016			
4-I like to post original messages, audio, videos or photos to express my feelings/thoughts/ideas/ opinions on the Internet	User	3.918	2.0543	3.154	2.0225	Z = -4.868***
	Non-user	2.649	1.8401			
Digital Citizenship total score	User	21.85	4.097	21.002	3.9658	n.s.
	Non-user	20.77	3.829			
Other items						
I think it is legitimate to use hackers to attack the websites of organisations that are responsible for the injustices or problems	User	2.755	1.9534	2.911	2.0224	n.s
	Non-user	3.014	2.0669			
The city should have more places with free Wi-Fi access	User	4.520	.8878	4.435	.8438	Z = -1.992*
	Non-user	4.378	.8115			
I prefer to protest and complain on the Internet protected by anonymity because I am afraid of reprisals	User	2.531	1.8118	2.480	1.6799	n.s
	Non-user	2.446	1.5920			

APPENDIX C: OFF-LINE ACTIVE CITIZENSHIP

Table C1. Off-line active citizenship indicators: A comparative analysis between users and non-users

Cronbach's Alpha=0.847, 13 Items		M	SD	M	SD	Z, p
I attend political meetings	User MyHomeCity	3.041	1.8384	4.183	1.7988	n.s
	Non-user	2.885	1.9847			
I attend public sessions or meetings about local issues	User MyHomeCity	4.541	1.7000	2.947	1.9255	Z = -2.527*
	Non-user	3.946	1.8287			
I sign petitions	User MyHomeCity	4.765	1.5977	4.878	1.5887	n.s
	Non-user	4.953	1.5837			
I organise petitions	User MyHomeCity	3.786	1.9596	4.008	1.8930	n.s
	Non-user	4.155	1.8395			
I participate in legal demonstrations	User MyHomeCity	4.112	1.7284	4.244	1.8176	n.s
	Non-user	4.331	1.8750			
I boycott products and brands that violate any law	User MyHomeCity	4.969	1.8581	4.931	1.8580	n.s
	Non-user	4.905	1.8639			
I sometimes contact the mayor, deputy or political representative to solve a problem	User MyHomeCity	5.224	1.7500	5.195	1.7127	n.s
	Non-user	5.176	1.6932			
I help the community spontaneously even if it is not organised or non-institutional	User MyHomeCity	5.612	1.3288	5.533	1.4360	n.s
	Non-user	5.480	1.5050			
Voting in national elections	User MyHomeCity	6.337	1.3991	6.504	1.1909	n.s
	Non-user	6.615	1.0204			
Voting in local elections	User MyHomeCity	6.388	1.3288	6.520	1.1665	n.s
	Non-user	6.608	1.0409			
I do voluntary work for the community	User MyHomeCity	5.235	1.5717	5.520	1.3959	Z = -2.269*
	Non-user	5.709	1.2358			
I work in political parties or organisations	User MyHomeCity	2.959	1.9367	3.000	1.9836	n.s
	Non-user	3.027	2.0201			
Participation of women in politics/ public life	User MyHomeCity	5.796	1.5727	5.992	1.5091	Z = -1.989*
	Non-user	6.122	1.4564			
Offline Active Citizenship total score	User MyHomeCity	4.828	.9487	4.881	.9841	n.s.
	Non-user	4.916	1.0085			

M- mean; SD-standard deviation; Z- Mann-Whitney U test; p- significance level: *p < 0.05

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