Co-governance on a local level: the analysis of the “Citizens’ initiatives” service in the Slovenian municipality of Ljubljana

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ABSTRACT

Co-production in the public sector can be described as a way of designating collaboration between government agencies and stakeholders from the private sector, third sector and citizens. Within this concept, citizens upgrade their role of users or passive clients to a more demanding but influential and active role of co-producers or co-creators of the public services. Such a role can also be linked to the context of the New Public Governance (NPG), which prompts the development of new forms of leadership that will support public innovation based on collaborative forms of co-initiation, co-design, and co-implementation. In such a role, citizens are expected to and can contribute valuable information for the improvement of existing or even development of new public services. Within such a process, citizens and public service providers achieve a deeper understanding of the problems, better collaboration and therefore an improvement of services.

With the advancement of information and communication technologies, such activities can be put online. Using different online services and tools, citizens can implement their role anytime from anywhere using their computers, tablets or smartphones. Adequate back-office systems linked to these front-office platforms can efficiently integrate the process into the internal activities of service providers at state, sectoral or local level. Along with other existing influential technologies, such as social media, these special tools, customised for collaboration and co-creation activities, can increase the potential for success.

In this paper, we analyse one such service provided to the citizens living by the municipality of Ljubljana, the capital city of Slovenia. Ljubljana, as the largest municipality of Slovenia, with almost 300,000 citizens and an almost equal number of daily commuters, conducts many public services and successfully uses ICT in many areas. We analysed the Citizens’ initiatives service that enables citizens to co-produce different public services using a web or mobile application. We gathered more than 14,000 suggestions over the period of seven years (2009-2016) and used quantitative and qualitative analysis tools to detect and categorise co-production activities from the aspect of location, service types and topics.

From the analysis of the "Citizens’ initiatives" service, we detected the topics that are of most interest to the citizens, the issues that they find appropriate to be raised through the co-production concept, and the language used in such co-production activities. Using interviews of the municipality’s employees, we analysed the internal view on the concept of co-production. From the analysis of the whole process of the service, including the back-office system evaluation, we explored the ways in which such co-production works and should be organised, in order to be successful.

POINTS FOR PRACTITIONERS

The paper and its results are of interest to public service providers and policy makers at a local level, that are interested in providing the best services with co-production and co-creation activities from the citizens. The results can direct organisations in developing and implementing successful co-production services, especially when technology-based.

It is also of interest to those who see modern information and communication technology (ICT) as a driver for such activities, considering the important role of ICT in today's society. As researched in this paper, local level organisations like municipalities can benefit from these results when they try to implement similar online tools in their own environment. Only effective and easy to use participation tools, based on institution policies that demand an active role by institutions and their employees, can create a partnership environment for better public services.

Keywords: co-production, co-creation, local government, online services, qualitative research

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1 Introduction

Co-governance and social innovation can be described as a new reform strategy for the public sector (Voorberg, Bekkers, & Tummers, 2015). They relate to the concept of social innovation, which can be described as “a collaborative process of improving services for disadvantaged groups and delivering publicly desired outcomes” (Bovaird & Loeffler, 2016). Although social innovation was deployed in various contexts, it was also criticised as being weakly conceptualised and nebulous (Massey & Johnston-Miller, 2016). Since it encapsulates “activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organisations whose primary purposes are social” (Mulgan, Tucker, Ali, & Sanders, 2007), it holds a great potential for the co-production and co-creation activities. These two activities can be seen as the path towards social innovation.

Co-production and co-creation outcomes have been often detected in the private sector through activities conducted by end users to create added value for the service or product providers. These activities were based on end-user experiences and participation interest, where end users can be regarded as co-producers or co-creators. These activities can sometimes even lead towards innovation and competitive advantage for producers themselves (Grissemann & Stokburger-Sauer, 2012). Moreover, Farr (2016) enveloped co-production into a concept of public service implementation by the private sector or NGOs, relating it with outcome-based contracting. The two areas in the public sector where co-production and co-creation were researched most often, are healthcare and education. This can be explained by the fact that these two areas include a lot of direct interaction between end users/citizens and service providers (Voorberg et al., 2015). Citizens can play different roles during the process of service design and implementation. Voorberg et al. (2015) differentiated three types of citizen roles: co-implmentor, co-designer and initiator, while some other researchers sometimes mix these roles or make some conceptual distinctions. For example, Bason (2018) linked the co-creation with the citizen as co-designer, and co-production with the citizen as co-implmenter. Nambisan (2013) defined four roles, namely citizens as explorers, ideators, designers and diffusers.

In any of the above-mentioned roles, citizens (and on the other side, organisations and their employees) can participate using different channels. Considering the wide spread of information technology today, many of them are conducted online, using information and communication technology. Moreover, Andrews & Brewer (2013) placed information technology and its systems as one of five crucial organisational systems that constitute the capacity required to achieve public service improvement, including the area of participation. On the other hand, it is crucial to be aware of the challenges that come along, including the issues of the digital divide, technology dependant environment, digital user-experience, and others.

The paper discusses a technologically-oriented co-production platform on a municipality level, analysing a case of the municipality of Ljubljana and its “Citizens’ initiatives” service. The research question is: how did users understand and use the Citizens’ initiatives service from the aspect of co-production, and what was the impact for them and the municipality? We try to answer the question by a quantitative and qualitative analysis of the citizens’ suggestions, and by interviewing the employees responsible for this service at the municipality of Ljubljana.

In the next section, we discuss the literature on co-production and its relevance to local level services and their quality. Then we describe the process of empirical research from data gathering to qualitative analysis. The next section presents the results of both activities and displays the findings. We conclude the paper with some advice on the covered topics and by summarising the findings from the experiences of “Citizens’ initiatives”, drawing parallels with other research.

2 Literature review

Although co-creation and co-production are often used interchangeably (Gebauer, Johnson, & Enquist, 2010), both represent a topic of active participation, where citizens are seen as partners. Co-creation is a more specific term compared to citizens’ participation, and refers to the active involvement of end users in various stages of the production process (Prahalad & Ramaswamy, 2000). In these participation-activities, citizens can participate as long term partners, active players within the process, sharing the responsibility for the success and adding value. It is also important to understand that co-production (or co-creation for that matter) should be considered both in voluntary (e.g. public parks) and mandatory (e.g. prison, hospitals) service provision environments. Participation should be a core component of the service delivery at any point with any user and any service provision organisation (Osborne, Radnor, & Strokosch, 2016).
Gebauer et al. (2010) perceived that co-creation literature puts more effort on value, created by merging the resources of service providers and service users, and thus creating value for the users of the service (Vargo, Maglio, & Akaka, 2008). Co-production can be defined as the processes by which professionals and citizens may support each other to make “better use of each other’s assets, resources and contributions to achieve better outcomes and/or improved efficiency” (Bovaird & Loeffler, 2013, p. 4). Osborne and Strosch (2013) go even further, separating the concept on two levels:

- strategic and design level (including co-design, co-management, co-management), and
- service level (co-delivery, communication at service interface, communication of need).

These two levels were further extended with the third level by Bovaird and Loeffler (2013), focusing on value co-creation and outcome development. The linking of participation and value can be studied on very different levels. On a very broad level, e.g. the value of public health, citizens participate by taking medicine prescribed by their doctors. The youth participate in the value of their country’s education level by doing the homework given by their teacher.

Nevertheless, Osborne, Radnor and Strokosch (2016) describe co-production as one of cornerstones of current public policy reforms across the globe, but at the same time stress that the term is still poorly formulated in the literature and a ‘woolly word’ in public policy. They link the term with public administration and management theory on one hand, and service management theory on the other, conceptualising the relationship between co-production and co-creation through the value of the service delivery.

It is also important to discuss the reasons why co-production or co-creation are taking place. These might include the increased involvement of citizens driven by their wish or demand, the increased need of service effectiveness, efficiency, value (Osborne et al., 2016) and others. In some cases, the reason itself is just the increased involvement per se, being directly by the citizens or through different organisations (Lelieveldt, Dekker, Völker, & Toorenvlied, 2009). Additionally, Osborne, Radnor, & Nasi (2013) promote a public-service-dominant approach which conceptualises the user as an inherent co-producer of services, highlighting the importance of the user’s experiences.

There are different important influential factors that influence the success of the co-production or co-participation initiatives. They relate to the environment of all included stakeholders, being citizens, NGOs, private or public sector organisations and their environments. Voorberg et al. (2015) suggested eight factors, and stressed that the most often mentioned among researched literature are:

- (on the organisational side) the compatibility of public organisation with citizen participation and an open attitude towards citizen participation;
- (on the citizens side) citizens intrinsic and demographic characteristics.

In the former, organisational structures and procedures for citizen participation are expected, including communication infrastructure and a positive attitude of employees, public officials and politicians (Leone, Walker, Curry, & Agee, 2012). In the latter, it is expected that more educated people are more aware of community needs and possess skills to be more participative. Furthermore, citizens are more willing to participate if they see public organisations as partners not just authorities, which was for example detected in the case of hospitals (Lachmund, 1998).

In the process of co-production or co-participation, citizens can play different roles. Some authors describe different roles of citizens for different forms of participation, namely (Voorberg et al., 2015):

- co-implementor: implementing activities within the service that were previously done by the government;
- co-designer: involved in service delivery content and process;
- initiator or innovator: takes initiative to formulate the service.

The first role is often linked to the co-production term. Co-implementers are users of the service in question, who have experience with the service and are able to communicate experiences and ideas with the goal of improving the service (Agger & Lund, 2017). The other two terms could correspond to the co-creation term, where the same people often play more roles at the same time (Merickova, Nemec, & Svidronova, 2015). On the other hand, some authors link the last role to the co-innovation term, in order “to emphasise the focus on innovation in collaboration between citizens and public entities” (Agger & Lund, 2017).
In this paper, we focus on co-production and consider co-production from the viewpoint of Osborne et al. (2016) as the voluntary or involuntary involvement of public service users in any of the design, management, delivery, and/or evaluation of public services. We focus on the area of local self-government, where services are even more related to the narrow territory, related to much of citizens’ everyday needs, associated with different public services (water, waste, electricity, transport, etc.). Citizens therefore have a big interest in co-producing the service, counting on the efficiency and quality of the service. The potentials of co-production were found and argued in other areas, such as the welfare system (Lindsay, Pearson, Batty, Cullen, & Eadson, 2018), safety (Eijk, Steen, & Verschuere, 2017; Williams, LePere-Schloop, Silk, & Hebdon, 2016), the environment (Cornwell & Campbell, 2012), education (Oldfield, 2017, p. 83) health (Leone et al., 2012), and others.

Public organisations, deriving from its original bureaucratic structure, are often lacking the practical organisational structures, procedures, and tools required for active citizen involvement. In the modern organisational environment, based on the use of information and communication technology (ICT), these tools are and could often be technologically-based. ICT itself is of course no silver bullet, but can represent an efficient and effective means for co-creation and co-production. Emerging new technologies offer service users potential new channels to initiate a bottom-up control over public services from different structures (policy, administrative and managerial) (Osborne et al., 2016). Recent theories of public management, stressing five critical public service improvement systems, classify information technology management among those critical five (Andrews, Ashworth, & Meier, 2014). Information technology serves not only as a source of efficient information management, but also as the new enabler for people to voice their views about issues that affect them, based on their knowledge as members of society (Eriksson, 2012). The use of information technology within the area of co-production primarily depends not only on the motivation of users, but also on their capability and confidence of doing so through digital media (Breit & Salomon, 2015).

On the other hand, digital technology is often used as a part of the service provision, not only as a channel of co-production. McLoughlin et al. (2009), for example, stress that virtual technologies have been seen as “the key enabler of a transformation in health and social care practice for, and services to, older people”. Digital channels and services greatly advance the government’s ability to ensure services tailored to individual needs (Van Berkel & Valkenburg, 2007). Breit and Salomon (2015) go even further, stressing that the quality of public services is no longer embedded only in a relationship between citizens and frontline personnel, but leans on complex relations between citizens, the front line, and the digital infrastructure. This requires new competences for citizens and public employees. Moreover, digital co-production brings along the issues of a digital divide. As stressed by Clark et al. (2013) poorer neighbourhoods refer to new information technology-based co-produced services less often than more affluent communities. Conversely, the impact of technology can lower the level of co-production and value co-creation, because ‘production and consumption occur through an electronic medium without interpersonal immediacy’ (Osborne et al., 2016).

3 Research

3.1 Research context and the “Citizens’ initiatives” platform

Ljubljana is the capital of Slovenia and has been a city since Roman times. Today, it has a population of around 300,000 citizens and an additional 200,000 commuters daily. Its population is more educated compared to the more rural parts of Slovenia, which can also be treated as a positive factor towards participation (Sundeen, 1988). The Citizens’ initiatives online service² was established by the municipality of Ljubljana at the end of 2008. It is under the supervision of a special committee of the city council and managed by a special department for citizen initiatives. The department employs three persons and their work covers initiatives passed through the online platform, by email, or phone. The municipality also organises monthly meetings with the mayor, where citizens can present their initiatives in person. The idea of the Citizens’ initiatives can be linked to the classical concept of public administration management theory, enabling the maximum feasible participation of residents of the areas and members of the groups served by selected organisation (Judd, 1988, p. 313). Such an online service arms citizens with bottom-up control over the implementation of public services, in a manner of technology-based co-production, but is on the other hand (according to the public administration management theory) only available because the public organisation decided to do so (Osborne et al., 2016).

Citizens’ initiatives is primarily a co-production service with a possible potential of co-creation. Within the definition of Voorberg et al. (2015, p. 1347), where co-creation is the involvement of citizens in the initiation and/or the design process of public services in order to (co)create beneficial outcomes, the Citizens’ initiatives

² https://pobude.ljubljana.si/
has a potential of initiation or design of public services or their parameters. Linking to the concept of levels of policy change (Hall, 1993), Citizens’ initiatives has major potential in first level policy change, where the modification involves an adaptation of current policy to present issues, without immediately changing overarching policy goals. Therefore, our research is focused on the co-production level of the service using the analysis of 14,544 existing initiatives, submitted by citizens between the end of 2009 and 2016.

3.2 Methodology and the instrument

The data was extracted from the “Citizens’ initiatives” online service database, provided by the municipality of Ljubljana as an Excel file. Since no personal data was included, and all existing initiatives are publicly available on the online site, there were no issues except technical ones to get the data. Export was done straight from the information system of Citizens’ initiatives that was purchased by the municipality and set up by an external provider. The data included 14,544 rows of data with 16 columns, each row representing one initiative. The date represents all the initiatives from 9.12.2009 until 30.11.2016. The data is already categorised by 17 local communities and 38 different types of initiatives.

3.3 Procedure

First, we had to correct the spelling mistakes, which was a time-consuming task, using Excel, where the data originated. To speed up the process, we used Notepad++\(^3\), being also able to use a Slovenian language spelling checker with the additional functionality of exporting all misspelt words to the clipboard. These enabled us to use “Find/Replace all” faster. Altogether, the Notepad++ was a fast text editor for such a task, compared to Microsoft Word, which we also tested. Secondly, we conducted lemmatisation of the initiatives text. We used a tool called Obeliks\(^4\). It is a statistical morphosyntactic tagger and lemmatiser for the Slovenian language. It consists of three modules: a rule-based sentence splitter and tokeniser, a morphosyntactic tagger, and a version of the LemmaGen lemmatiser which works in combination with the tagger. Obeliks is trained on the corpus of 500,000 words from the Slovenian learning corpus. Lemmatisation accuracy is 97.88% with capitalisation included and 98.55% for all-lowercase letters (Grčar et al., 2012). Since the Slovenian language uses different word forms depending on gender, number and case, this step was necessary to enable analysis of the text. The software created an XML file and we created and additional Python script to extract individual words, putting them back into Excel. Since other mistakes were detected (letter cases, unseparated words, local names, missed punctuation marks, etc.), we had to repeat the process many times. The data was processed in Excel files for some categorical and numerical analysis, and also imported into the NVIVO12 software, which is a qualitative data analysis software package that supports the identification, categorisation, and analysis of words and sentences forming the emergent dimensions (QSR International Pty Ltd., 2019). Stop words (common words such as pronouns) defined for the Slovenian language, were taken into account before further analysis. Methods of data analysis consisted of thematic analysis; constant comparison; content analysis; structural analysis; framework approach; and document analysis.

The second part of our research was an interview with two municipality employees, namely the head of the department for citizens’ initiatives and the operations manager for citizens’ initiatives. The answers were typed and analysed later on.

4 Results

4.1 Data analysis

First, we wanted to detect the impact of the service over the years. The municipality put a lot of effort in the service and tried to act upon each individual initiative. The results show the increase of received initiatives over the years (Figure 1, left). Although there is a small decrease noticed in 2011, we can see a steady increase in the number of initiatives indicating a successful adoption by the citizens.

\(^3\) https://notepad-plus-plus.org/download/v7.6.6.html
\(^4\) https://github.com/mgrcar/Obeliks
Secondly, to act upon some of the initiatives that demand instant action (such as obstacles on the roads, illegal parking that obstructs the traffic), we tried to detect time slots that indicate the hours of most frequent postings. Considering the times of postings, we can see that citizens are most active during the “lunch” hours. It would be interesting to see citizens’ age groups or employment status to get more future-interpretation possibilities out of this data.

Ljubljana is divided into 17 districts. When submitting an initiative, a citizen must select the location of the initiative. However, the submitter might or might not live or work in that district. According to the data in Table 1, most initiatives are related to the Center district, which is the most populated district of Ljubljana, and at the same time, hosts a huge number of governmental and private institutions and schools (workplaces). The majority of the commuters also work in the Center district. Moreover, we can notice that the area size of a district does not correlate to the number of initiatives. The largest districts, like Polje or Črnuče, have a relatively small number of initiatives.

Next, we tried to detect the most frequent topics that users select in the initiative submission form from the drop-down menu of the online form (initiative topics). Table 2 shows these topics. We can detect topics that are most important to users or most unsatisfying for them, expressed in the column with the highest frequency number. On the other hand, some topics might crosslink, so users might select a more generic topic (public and functional areas) instead of a narrow one (e.g. parking).

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**Table 1: Ljubljana districts, areas and populations linked to the number of initiatives. District is selected by the submitter of the initiative**

<table>
<thead>
<tr>
<th>ID</th>
<th>District</th>
<th>Area (km²)</th>
<th>Citizens</th>
<th>Initiatives/citizen</th>
<th>Initiatives/km²</th>
<th>No. of initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Šmarna gora</td>
<td>14.43</td>
<td>4965</td>
<td>0.020</td>
<td>7.0</td>
<td>101</td>
</tr>
<tr>
<td>2</td>
<td>Šentvid</td>
<td>15.83</td>
<td>14216</td>
<td>0.015</td>
<td>13.3</td>
<td>210</td>
</tr>
<tr>
<td>3</td>
<td>Črnuče</td>
<td>18.10</td>
<td>11641</td>
<td>0.022</td>
<td>14.0</td>
<td>253</td>
</tr>
<tr>
<td>4</td>
<td>Posavje</td>
<td>9.05</td>
<td>9901</td>
<td>0.060</td>
<td>66.0</td>
<td>597</td>
</tr>
<tr>
<td>5</td>
<td>Dravtje</td>
<td>11.11</td>
<td>15645</td>
<td>0.030</td>
<td>42.3</td>
<td>470</td>
</tr>
<tr>
<td>6</td>
<td>Bežigrad</td>
<td>7.24</td>
<td>3467</td>
<td>0.568</td>
<td>271.8</td>
<td>1968</td>
</tr>
<tr>
<td>7</td>
<td>Polje</td>
<td>22.10</td>
<td>20394</td>
<td>0.022</td>
<td>20.6</td>
<td>455</td>
</tr>
<tr>
<td>8</td>
<td>Šiška</td>
<td>7.36</td>
<td>35532</td>
<td>0.041</td>
<td>197.6</td>
<td>1454</td>
</tr>
<tr>
<td>9</td>
<td>Jarše</td>
<td>9.06</td>
<td>14394</td>
<td>0.036</td>
<td>57.0</td>
<td>516</td>
</tr>
<tr>
<td>10</td>
<td>Rožnik</td>
<td>8.35</td>
<td>17014</td>
<td>0.038</td>
<td>77.8</td>
<td>650</td>
</tr>
<tr>
<td>11</td>
<td>Center</td>
<td>5.07</td>
<td>25795</td>
<td>0.192</td>
<td>974.4</td>
<td>4940</td>
</tr>
<tr>
<td>12</td>
<td>Moste</td>
<td>3.40</td>
<td>21659</td>
<td>0.025</td>
<td>162.4</td>
<td>552</td>
</tr>
<tr>
<td>13</td>
<td>Sostro</td>
<td>88.56</td>
<td>6816</td>
<td>0.023</td>
<td>1.8</td>
<td>157</td>
</tr>
<tr>
<td>14</td>
<td>Golovec</td>
<td>8.27</td>
<td>12199</td>
<td>0.022</td>
<td>31.8</td>
<td>263</td>
</tr>
<tr>
<td>15</td>
<td>Vič</td>
<td>14.38</td>
<td>13995</td>
<td>0.054</td>
<td>52.8</td>
<td>759</td>
</tr>
<tr>
<td>16</td>
<td>Trnovo</td>
<td>7.18</td>
<td>16777</td>
<td>0.042</td>
<td>97.8</td>
<td>702</td>
</tr>
<tr>
<td>17</td>
<td>Rudnik</td>
<td>25.48</td>
<td>13905</td>
<td>0.036</td>
<td>19.5</td>
<td>497</td>
</tr>
</tbody>
</table>

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**Table 2: Number of words appearing in the initiatives (frequency) according to the initiative topics**
Additionally, we tried to detect if the initiative topic selected in the online form correlates to the content topic, arising from the initiatives text. To automatically detect the content topic, we used an approximation method, namely counting the appearance of the “topic words” in the text. Using NVIVO, we gathered the 150 most frequent words appearing in the initiative texts (including verbs, nouns, etc.). Then, we selected only words with topic meaning (skipping descriptive words like “interest”, “direction”, “part”, etc., and verbs like “going”, “having”, etc.). Table 3 represents the most frequent content words detected in initiative texts.

### Table 3: Number of initiatives by topics, selected by citizens in the dropdown menu on the web page

<table>
<thead>
<tr>
<th>Name</th>
<th>Freq.</th>
<th>Name</th>
<th>Freq.</th>
<th>Name</th>
<th>Freq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>422</td>
<td>Initiatives topic</td>
<td>253</td>
<td>Initiatives topic</td>
<td>18</td>
</tr>
<tr>
<td>Refuse</td>
<td>503</td>
<td>Children's playgrounds</td>
<td>361</td>
<td>Childrencare</td>
<td>40</td>
</tr>
<tr>
<td>Waste</td>
<td>571</td>
<td>Public lighting</td>
<td>361</td>
<td>Abandoned vehicles</td>
<td>214</td>
</tr>
<tr>
<td>Block of flats</td>
<td>690</td>
<td>Environmental protection</td>
<td>157</td>
<td>Initiatives and suggestions</td>
<td>1362</td>
</tr>
<tr>
<td>Building</td>
<td>478</td>
<td>Equipment</td>
<td>2356</td>
<td>Other</td>
<td>889</td>
</tr>
<tr>
<td>House</td>
<td>879</td>
<td>Development projects</td>
<td>189</td>
<td>Winter service</td>
<td>150</td>
</tr>
<tr>
<td>Neighbourhood</td>
<td>661</td>
<td>Pedestrian zones</td>
<td>96</td>
<td>Municipal offences</td>
<td>86</td>
</tr>
<tr>
<td>Outdoor areas</td>
<td>525</td>
<td>Property management</td>
<td>189</td>
<td>Parking</td>
<td>106</td>
</tr>
<tr>
<td>Green area</td>
<td>1142</td>
<td>Social issues</td>
<td>127</td>
<td>Sport</td>
<td>17</td>
</tr>
<tr>
<td>Park</td>
<td>874</td>
<td>Bike lane</td>
<td>571</td>
<td>Security</td>
<td>150</td>
</tr>
<tr>
<td>Playground</td>
<td>1180</td>
<td>Bike related</td>
<td>469</td>
<td>Invasive plants</td>
<td>44</td>
</tr>
<tr>
<td>Tree</td>
<td>1180</td>
<td>Childrens playgrounds</td>
<td>346</td>
<td>Road</td>
<td>640</td>
</tr>
<tr>
<td>Traffic</td>
<td>1076</td>
<td>Tourist and events</td>
<td>891</td>
<td>Road</td>
<td>2346</td>
</tr>
<tr>
<td>Cycling</td>
<td>1180</td>
<td>Parking</td>
<td>866</td>
<td>Road</td>
<td>1286</td>
</tr>
<tr>
<td>Society</td>
<td>422</td>
<td>Parking</td>
<td>469</td>
<td>Road</td>
<td>214</td>
</tr>
<tr>
<td>Child</td>
<td>1180</td>
<td>Parking</td>
<td>476</td>
<td>Road</td>
<td>1286</td>
</tr>
<tr>
<td>Intersection</td>
<td>2140</td>
<td>Parking</td>
<td>690</td>
<td>Road</td>
<td>214</td>
</tr>
<tr>
<td>Road</td>
<td>1180</td>
<td>Parking</td>
<td>571</td>
<td>Road</td>
<td>1286</td>
</tr>
</tbody>
</table>

Finally, we tried to detect the content “orientation” of each initiative by finding the three most frequent words from the initiative text that also appeared in Table 3. From each initiative, we then selected the most frequent topic word appearing in the text, but only where the second and third most frequent words had lower frequency of appearance (if two or three words have the same frequency it is hard to know what is the major topic of the initiative). We detected 74% of such “unambiguous” initiatives. We can see that the topic selection in the online form correlates to the topic that arises from the content of the initiative (Table 4).
Furthermore, we wanted to detect whether the activities of the municipality over the years influence the changes in the initiatives. We used the twelve most frequent content topics detected from the text of the initiatives and compared the changes in the number of cases of a specific topic over the years. The results show (Figure 2) that the frequency of some content topics increased over the years (roads appear to be the most critical area), sometimes even as a consequence of activities of the municipality. For example, cycling-related content topics have risen over the years, since more bike lanes were built, the Centre district was closed for cars but opened to bicycles, the BicikeLJ\(^5\) bike sharing system was introduced, etc.

\(^5\) [http://en.bicikelj.si/Ljubljana](http://en.bicikelj.si/Ljubljana)
Finally, we were interested in the attitude of the citizens towards the service and employees, or the institution on the recipient side of this service. Analysing expressions (verbs) used by citizens, the tone of initiatives sounded very polite in general (“asking for” is the word appearing more than 3700 times – word count 3752, weighted percentage 6.91%). Other favourite words used by citizens include “being interested in” (word count 2351, weighted percentage 2.57%), “suggest” (word count 1578, weighted percentage 2.38%), “to initiate” (word count 1574, weighted percentage 2.38%), “do something” (word count 671, weighted percentage 2.16%), etc.

4.2 Interview analysis

As described above, we conducted an interview with two employees of the department for citizens’ initiatives, that covers three areas: initiatives by phone and email, monthly meetings with the mayor, and the Citizens’ initiatives online platform. They told us that the idea came from the newly-elected mayor (his first mandate at that time) with customer relationship experiences from the private sector. The goal was to increase the level of participation (communication, feedback) among citizens, also offering new online e-participation tools. The primary focus was on co-production, but co-creation possibilities were anticipated.

The impact of the initiatives is very positive. The reaction to different issues is faster, the processes, adapted to include citizens’ initiatives, enable effective work, especially since the application and digitisation are custom-made, adapted to the processes of the municipality, and integrated with other information systems. The directive from the mayor is “initiatives first”, so employees have to react when a message pops up in their application. In this way, they prevent new messages popping up from other citizens about that same issue. Their motto is also, “if citizens are satisfied, so are we”. The definition of co-production by Bovaird and Loeffler (2012, p. 1121), where ‘the public sector and citizens are making better use of each other’s assets and resources to achieve better outcomes and improved efficiency’, is put into practice here.

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6 Weighted Percentage—the frequency of the word relative to the total words counted. If you adjusted the slider to include similar words, a word may be part of more than one group of similar words.
One of the employees stated, “the response teams are also happy to know where to go and what to do”, similar to the conclusions of Cornwell and Campbell (2012), that public officials treat citizen ‘lay knowledge’ as an insight into how to manage existing and to-be public services (Eriksson, 2012). There are of course some situations where the online service is too slow, e.g., inspectors for illegal parking are usually too slow when reacting to online reports. However, many departments also use data from the initiatives to detect critical issues and locations, sometimes even using the data to plan ahead, e.g., for the next year’s activities.

Another important influence is that people feel important and heard. The citizens of Ljubljana “are very active citizens”, as stated by one interviewee, and especially the elderly, who do like to feel that they matter. Of course, there are some “special” individuals, who put too much burden on the department and their employees, and cause a lot of work, but they are treated in a respectful manner, and very tolerantly.

As concluded by the interviewees, the interest for (e-)participation was and will be mutual. Many citizens do come forward with commendations. “Gaining trust is crucial here”, concluded one of the employees. Based on that, even the co-innovation level can be detected. In the case of children’s playgrounds, for example, citizens took the initiative in their own hands. They searched for new areas where playgrounds could be built, checking even the land registry for the owners. They also suggested new playground equipment, including suppliers and prices. The final result was a two-year plan made together with the municipality about the time and location of new municipal playgrounds.

5 Discussion and conclusion

As stressed by Voorberg et al. (2015), policy makers and politicians could consider co-creation and co-production as a necessary condition for public innovation. Its outcomes are supposed to meet the needs of citizens and take into account different factors like demographic and social variations. We partly disagree with Breit and Salomon (2015) that a central mechanism, through which self-service and co-production has been implemented, is through digitisation, but we think that digitisation does have an important impact, which can also be seen from our case, analysed in this paper.

The results show that the number of initiatives has increased over the years, with the Citizens’ initiatives service gaining trust among citizens. With the current response rate of 99.3% by the employees of the municipality, it relates to the findings of Rysell et al. (2004), that trust and commitment have a significant impact on value creation. Although the same authors diminish the importance of technology in favour of “the relationship atmosphere”, the impact and importance of technology has increased since 2004 and more research is needed.

The role of the citizen in the studied case of Citizens’ initiatives is primarily a co-production role. Citizens use the platform to report on existing observable situations and suggest solutions. We argue that using co-production to support public service can also be a base for innovation that occurs alongside. A good case is digitally-assisted public services, e.g., mobile apps, used not only in the deployment phase of the service within the use or support of the service, but also during their design (McLoughlin et al., 2009).

Ljubljana’s Citizens’ initiatives are a good case of public organisations oriented towards the participation of citizens and an open attitude towards citizen participation (Voorberg et al., 2015). The municipality successfully organised and implemented adequate organisational structures (special department, some reorganisation) and procedures (changes of processes, integration with business information systems, change of priorities in employee tasks), stressed by Leone et al. (2012) as crucial success factors. As detected in the interview, citizens of Ljubljana showed intrinsic values such as loyalty, civic duty, and the wish to improve the city, characteristics stressed as successful factors by Wise et al. (2012). Although we did not analyse the responses of the municipality, we suspect that the framework within the municipality and the support of the highest level personnel lowers the risk of ‘creaming’ (where initiatives which can be easily supported to achieve outcomes are prioritised) and ‘parking’ (where initiatives which are ‘harder-to-cope-with’ are neglected) (Shutes & Taylor, 2014).

Nevertheless, this study has some limitations. We detected that analysing initiative contexts would be best done by a human, but the sheer number of more than 14,000 initiatives did not permit us to do so. We relied on the approximation of the most frequent words within each initiative, but in the future this task (cases with a huge amount of unstructured data) might be trusted to artificial intelligence algorithms. Furthermore, a lot of additional analysis could be done with such data and especially newer and up-to-date data could extend the possibilities of more thorough longitudinal analysis.
Already in the distant 1972, Ostrom (1972) emphasised that public service organisations depended as much upon the community for policy implementation and service delivery as the community depended upon them. Although co-production and co-creation are not a guarantee for the improvement of public services, they present a potential that can lead to increased effectiveness, efficiency, citizens involvement, and satisfaction and democratisation. On the other hand, they cannot be used as a tool to fight the democratic deficit or performance deficit "per se" (Salge & Vera, 2012). The Citizens’ initiatives service of Ljubljana is a ‘pure’ co-production example, where the user co-produces the service experience and outcomes (public value) with public service staff (Etgar, 2008). According to the model of Osborne et al. (2016), it fits the co-design quadrant, where “co-production is a conscious and voluntary act, and is concerned with how to create capacity within public service delivery systems and to improve the design and delivery of a public service”. Users of the local community actively engage with the service design, evaluation, and improvement.

It is also crucial that digital competences are given to citizens and other stakeholders in the cases of digital-based co-production. Even in the cases like the Citizens’ initiatives online service, where only basic digital skills are required to use the service, some citizens are in an inferior position. Furthermore, some online co-production platforms are provided at a higher level of sophistication, e.g., some demand secure authentication, even by using digital certificates, which again creates an inequality between those with skill and those without it (Breit & Salomon, 2015), which should also be addressed in digitally-based co-production.

6 Literature


