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Discovering Innovation Labs in the Public Sector¹

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Abstract

While innovation labs (i-labs) are increasingly popular in the public sector, there is almost no systematic academic overview of these organizations. This article is a first comprehensive attempt to map and analyze such labs globally. We have identified 35 such organizations all over the world. The research is based on a two-step approach: first, a comprehensive survey was carried out followed by an extensive in-depth interview with the managing figures of i-labs; 11 i-labs responded. The survey is based on long-term and large-scale research into public sector organizations in Europe (COBRA project); we have significantly updated it to fit our purposes. In this article we report our first findings. I-labs are rather unique organizations and diverse in their mission, expected to act as change agents within public sector and enjoy large autonomy in setting their targets and working methods. I-labs are typically structurally separated from the rest of the public sector and expected to be able to attract external funding as well as 'sell' their ideas and solutions within the public sector. I-labs tend to be small structures, specializing on quick experimentations and usually lack the capabilities and authority to significantly influence up-scaling of the new solutions or processes. The main capabilities of i-labs are their ability to jump-start or show case user-driven service re-design projects. Interestingly, IT capabilities seem to be not that prominently present in the studied i-labs. In sum: i-labs, although prominent in many modern public management strategies, are yet far from becoming organic parts of public sector, which is paradoxically both their weakness and strength.

1. Introduction

Innovation labs (i-labs) are becoming increasingly popular in the public sector. In 2013, Parsons DESIS lab (the New School for Design) published the 'Government Innovation Labs Constellation 1.0' covering 16 of such innovation outfits. Subsequently Nesta and Bloomberg Philanthropies have published a report on public sector innovation labs that covered 20 such units around the world (Puttick et al. 2014). While these reports have been informative in nature, there is very little research on the public sector innovation labs beyond descriptive – and at times normative – overviews. Mostly, i-labs are described as versions of various existing organizations: as hybrids of think tanks, digital R&D labs, social enterprises and charitable organizations (Williamson 2014). The nature, organizational structure and need for such units within the public sector is largely unexamined. With this article we will try to take a first systematic step to fill this gap in academic literature.

There are some relatively well-known and obvious wider social and technological processes that have led to the surge of i-labs in the public sector:

First, recent public sector reforms, and perhaps even more so academic discussions of such reforms – new public governance –, increasingly focus on service processes and outcomes (Osborne 2005). This has opened public sector for influx of various process-oriented methods such design thinking that focuses on user experience, frequent experimentation and multiple analytical perspectives (Bason 2010). This is epitomized by such organizations as Mindlab in Denmark.

Second, many governments operate under some form of fiscal austerity constraints that re-enforce focus on public service processes in order to increase productivity and citizen trust simultaneously (e.g., through bringing in user experience via co-production methods of participation). On the flip side of fiscal constraints arguments are the discussions about entrepreneurial state that focus on public sector role in engendering new generations of technological revolutions (Mazzucato 2013). Here the focus shifts towards different kinds of policy experimentations, e.g. innovative public procurements and other so-called demand-side innovation policy measures that seek to create new markets (Lember et al. 2014).

Third, perhaps most importantly, governments are under siege from adoption and diffusion of ICT and the possibilities it has created, from participatory feedback mechanisms to utilizing web analytics and big data.

Furthermore, the emergence of i-labs in the public sector can be tied with larger theoretical debates about organizational and technological (radical) innovations. First, already Weber argued that new organizational forms (or change from one form to another) emerge through conflicts between old and new leaders and staff (Weber 2009, 154-155). Particularly interesting for our context is Weber's charismatic organization, as succinctly summarized by Samier: "A charismatic organization is consistent with its own principles, that is a new organization with its own language, mores, myths, and roles derived from the personality and belief system of the charismatic founder, affecting staffing, working patterns, social behavior, and the material environment." (2005, 71) Second, such new charismatic organizations can be linked with disruptive or revolutionary innovation (see Yu and Hang 2010). The disruptive innovation theory popularized by Clayton Christensen (1997) in *The Innovator's Dilemma* is worth mentioning in this context. Simply put, disruptive technologies are technologies that are significantly different from traditional technologies, and while being initially inferior to traditional technologies in performance

criteria that are mostly valued by mainstream customers, disruptive technologies are able to create new markets and provide new functionalities. These technologies disrupt the existing market structure, linkages and on the organizational level, destroy competences (ibid.). Thus, it has been recognized that established companies tend to excel in incremental innovation, but wane, when confronted with breakthrough innovations (Tushman and Anderson 1986). Smaller companies are presumed to be better suited for technological break-through (Baumol 2004). While organizational death can be a legitimate part of the evolutionary perspective of the economy, it has led management researchers to ask how incumbent firms can deal with these organizational challenges and which solutions there could be for the 'innovator's dilemma'. Already Schumpeter argued that such disruptive changes bring forth entirely new social values embodied by new firms (and other new organizations, such as new political parties, artistic movements, etc.; Schumpeter 1912). The theory of techno-economic paradigms by Perez shows how successive waves of technological revolutions bring forward 'new common sense' of organizing work. Thus, according to Perez, under mass production paradigm organizations tended to be hierarchically integrated and focused on scale economies (epitomized by Henry Ford: "Any customer can have a car painted any color that he wants so long as it is black") (Perez 2002). In turn, under ICT paradigm organizations have become more flat, networks of production and innovation span wider regions, there is strong focus on diversity of products (customization, etc.). (Perez 2006)

In sum, we can expect that technologically driven organizational evolutionary processes should have some impact in public sector as well, in particular as governments operate under fiscal constraints and new focus on service processes.

I-labs as an attempt to structure (radical) change processes within public organizations is not entirely a new phenomenon (see, e.g., Thompson (1998) on the US reinvention labs in 1990s). However, what is different in case of the current wave of i-labs is the context and logic why these structures have emerged, that is, the combination of user-driven service production logic, the ever-increasing computing power and fiscal austerity. As public sector change is always contextual (Pollitt 2009), there is, thus, a need to gain better understanding on the nature and potential of i-labs in public sector change.

From private sector literature we know that the abovementioned disruptive effects of technology and innovations bring forward the importance of human resources, organizational culture, resource allocation and organizational structure in regards to the aforementioned (Yu and Hang

2010). This has led to re-emphasis of lead users, user-led design (von Hippel 1986; 2005) and frontline workers (Christensen and Raynor 2003), new inter-organizational collaboration strategies (Gilson et al 2009), open innovation models (Chesbrough and Crowther 2006) and internal-external innovation organizational models: e.g. new management models (e.g. the ambidextrous organization (Tushman and O'Reilly 2002)), creating autonomous innovation units from the mother company in terms of value and resource structures (Christensen and Raynor 2003) or establishing autonomous business units, change agents or skunk works (Christensen 2006; see also Rogers 1995). Thus, today, it is not surprising to find a plethora of corporate innovation offices in the private sector.

The existing literature on i-labs shows that the surge of innovation labs also in the public sector can be tied to open and (lead) user-centered approaches (e.g. co-creation, co-design and co-production) (Bason 2013; Mulgan, 2014). Thus, the spread of user driven innovations and lead users (von Hippel 1986; 2005) has been a major contributor to the spread of innovation labs. Furthermore, these models have been powered by the popularity of 'open' innovation models during the previous decade (Chesbrough, 2003; 2006). Thus, the key has been to tap into '*collaborative*' innovation. What is different in public sector context is that direct feedback mechanisms from the market – which forces companies to change and acquire new capabilities to keep up or perish – do not exist. Thus, public sector has the luxury to be more 'self-absorbed', meaning that the discussion surrounding public sector innovation has jolted between internal performance and efficiency gains and external legitimacy (see Borins 2001), not so much public value based concerns (see further on the evolutionary perspective of public sector innovation in Kattel et al. (2014)).

This makes the public sector a very specific environment for innovation with many barriers to innovative behavior (Lynn 2013; Osborne and Brown 2013; Meijer 2014). To begin with, public sector attracts risk-averse individuals (Pfeifer 2010; Noussair et al 2014) and supports risk-averse organizational culture limiting experimentation and risk-taking (Borins 2001; Brown 2010; Osborne and Brown 2011; Kay and Goldspink 2012; Torugsa and Arundel, 2015). This is further magnified by politics and the media scrutiny of failed policies (e.g., Potts and Kastle 2010). Thus, it is proposed that risk-averse public servants indeed favor incremental changes over transformative innovations (Osborne and Brown 2011) or try to minimize risk altogether (Osborne and Brown 2013). Nevertheless, there is growing evidence that public sector still innovates constantly (Albury 2005; Borins 2008; Fuglsang and Sørensen, 2011; Schultz Larsen 2014). While we cannot discount the public sector

as the source of the most fundamental technologies in the world today, the types of innovations the public sector adopts itself internally may be less radical and more incremental by the time of their diffusion.

Public sector organizations are utilizing new technological possibilities, but thus far, their innovation capabilities are primarily focused on internal administrative processes (e.g., Eggers and Singh 2009) and hence, diversity in approaches and projects is low and concentrated on incremental changes (Bessant 2005; Brown 2009). It is not surprising that Carstensen and Bason (2012) argue that innovation efforts in the public sector are currently driven by specific individuals inside established institutions and dependent on their resources rather than open collaboration with citizens, businesses or other external stakeholders. On the municipal level smart city and other innovative approaches and new service solutions have been primarily industry-led (Hillgren 2013). However, public sector is not foreign to utilize small scale trials (Boyne et al. 2005). At the same time, public sector innovation is seen necessary in the face of complex societal problems and the reform of the traditional welfare state (Osborne 2010; Sørensen and Torfing 2012; Torfing and Triantafillou 2013). As such, new public governance and public sector innovation literatures emphasize the need to incorporate service technology principles into public management and administration (Osborne and Brown 2013). Here collaboration with outside stakeholders is seen as key (Pärna and Tunzelmann 2007; Kim 2010).

The theoretical and conceptual explanations on public sector change abound, yet they tend to be loosely linked (Fernandez and Rainey 2006, Pollitt 2009). Previously, 'agencification' in the public sector can be seen as a process through which the sector has searched for organizational and service innovation. Thus, public sector is not alien to hybrid organizations: there is a rich spread of works covering non-departmental public bodies, quangos and quasi-autonomous public organizations under agency theory (e.g., Christensen and Lægreid 2006). Agencification in the public sector describes both specialization and autonomization (Verhoest et al., 2010; Wynen et al. 2014). Under the NPM, one of the reasons for agencification has been the search for less hierarchical management and political influence on their daily operations with increased customer-orientation, flexibility, innovation and risk-taking behavior (Wynen et al. 2014). There is some evidence suggesting that indeed managerial autonomy and less red-tape lead to higher innovative culture (Boyne 2002; Verhoest et al., 2007; Thiel and van der Wal 2010; Lægreid et al. 2011; Bysted and Jespersen 2014). Also broader organizational studies bring out the positive effect of less centralization and formalization for innovation (Slater and Narver 1995; Koch and Hauknes 2005; Vigoda-Gadot 2009). Never-

theless, agencies vary considerably across countries and organizational cultures (Verhoest et al. 2010) and depending on their form and tasks their innovativeness can considerably differ as well (Lægreid et al. 2011). At the same time, the recent years have witnessed an increase in de-agencification in public sector caused by increasing coordination problems and facilitated by ICT. With the specifics of the technology and more access to data, public services, with the help of technology, are becoming more modular and open to outsourcing and decreasing the need for middle management (Langlois 2007) and thus, open to incremental, intra-services changes without the direct need for re-arrange the service system. Flatter organizations have emerged in public sector, where previously proliferate autonomous public agencies are being re-merged and re-incorporated with upper-level agencies (Verhoest et al 2011).

On the conceptual level it is still debatable how we can explain the emergence of dedicated public sector structures (Pollitt 2004). There appears to be two broad approaches to explain structural change in public sector. First, according to the rational perspective (epitomized by, e.g., delegation, principal-agent and bureau-shaping theories) involved stakeholders focus on the utility of agencification (James and van Thiel 2010, Pollitt 2004). Forming explicit contracts with lower level structural units should facilitate efficiency in public service delivery (through autonomy, specialization and market-like pressure) and increase credibility of politicians and work-related benefits for policy-makers by delegating and de-politicizing specific public tasks. Second, following the institutionalist explanations the nature of agencification is dependent on the existing norms, values, structures and traditions of a given public sector (ibid.). There can be isomorphistic processes at play where organizations become similar over time in order to gain legitimacy and survive (DiMaggio and Powell 1991). At the same time, agencification may reflect the dynamics of the wider politico-administrative traditions, legal traditions, economic conditions and public sector history, making agencification subject to path-dependencies (Christensen and Laegreid 2006).

Importantly, and especially when looking at the current wave of i-labs formation internationally, one cannot ignore the role of technology as an independent variable in the agencification process. Technology has been the central factor how change in private sector organizations has been understood (Langlois 2007, Gilson 2009), but not so in public administration literature (Pollitt 2010, Margetts and Dunleavy 2013). As outlined above, the creation of innovation labs in the public sector can be also linked to the diffusion and uptake of disruptive technologies – currently ICT – that challenges current organizational forms and norms. New adaptive technological solutions create the possibility to personalize services

and use new feedback mechanisms to upgrade services. The idea for these labs is to facilitate bottom-up innovations. Thus, innovation labs are used as a tool to start using new computational tools and that creates a wide range of possibilities to use web analytics and big data that is not yet fully grasped in the public sector.

While academic research on other formats of innovation labs and spaces is sparse, there is a variety of practical guides to establishing labs in general (e.g. Doorley and Witthoft 2012; Ståhlbröst and Holst 2013; UNICEF 2012; Puttick 2014) or even closing them down (Roberts 2014). One of the organizational origins of innovation labs in the public sector can be seen in the think tank culture predominant in Anglo-American politics (Williamson 2014). As such they have been described as purpose-driven do-tanks (Bellefontaine 2012). They form a loose hybrid of the think tank, the social enterprise and the charitable organization, merged with aspects of the digital R&D lab (all of which are themselves contested, elastic and emergent organizational forms). Broad based characteristics of i-labs are discussed in various reports and papers (e.g. Westley et al, 2011; Torjman, 2012; John 2014; Puttick et al. 2014). Efforts to analyze innovation labs include categorizing them by their segment of specialism (e.g. design-focused, psychology-based or technology-based); by sector (e.g. healthcare or education), if they are government-led or -enabled or their potential level of change (incremental or systematic) (Armstrong et al. 2014; see also Parsons DESIS lab constellation, 2013). In one of the overviews, Nesta and Bloomberg Philanthropies have divided i-labs into four categories: developers and creators of innovation (those who respond to specific challenges), enablers (those who bring in insights from outside the public sector), educators (transformers of processes, skills and culture) and architects (concentrating on system and policy level change) (Puttick et al. 2014). The labs are on the city, regional and national level (primarily on the city and national level) and they are predominately created in the new Millennium. I-labs are generally less hierarchical than other public sector units, often in a separate physical space and they have a small number of employees with low levels of turnover; usually i-labs enjoy a high level of senior management support and thus, they are not considered under short-term management objectives, traditional funding and cost control structures (see also John 2014).

These innovation units are described as 'innovation intermediaries' (Horne 2008, 20) – hybrid organizations that combine community activism, media outreach, political lobby and high-tech R&D. Previously the metaphor 'linking the bees and the trees' has been used as illustrative of bringing small-scale entrepreneurs or innovators to the established institutions (Murray et al. 2010, 125). They can also be seen as safe 'testing environ-

ments' where new proposals and services can be tested together with citizens, experts and government officials (Bason 2010; Mulgan 2014). Innovation labs are seen as experimental forms of government acting as innovation catalysts (Christiansen and Bason 2012). The corner stones of the labs are user engagement, cross-sector collaboration, open innovation and new ways of collecting data and insights (Puttick et al. 2014). Thus, labs are supposed to approach problems in non-hierarchical ways and operate in a more horizontal manner across stakeholders and including professionals from a variety of backgrounds. Under the label innovation spaces there are by now thousands of community-led 'hackerspaces' (e.g. Bloom and Faulkner 2015) and friendly hacking (e.g. La 27e Région approach) (Hillgren 2013). With the fad of public sector i-labs taking up speed, also international organizations are following suit (e.g. UN agencies have established a variety of innovation labs across the world (see Bloom and Faulkner 2015). However, the actual effects and use of these labs is found to be at its infancy (Gathege and Moraa 2013; Tiesinga and Berkhout 2014). This is all the more important today as many of the newly founded i-labs tend to be driven by public sector marketing rather than change motives (Townsend 2013), and therefore tend to be rather fluid organizations that are abandoned and closed down more easily as traditional public service organizations.

Thus, from the previous research we draw some theoretical expectations to explain the rise of i-labs:

- First, the worldwide emergence and diffusion of i-labs represent the latest fad or fashion in public management. As an isomorphic process, the proliferation of i-labs can be understood as diffusion and imitation of fashionable organizational practices that are perceived as the new common sense. In short, public sector i-labs are founded in order to gain legitimacy (isomorphism as hypothesis) and increase credibility of political and policy elites (credibility hypothesis);
- Second, in order to cope with increasing demand for personalized services in times of austerity and rapid technological change, i-labs represent an attempt to create experimentation space within public sector. Its utility logic as well as effectiveness can be understood as being a function of high level of autonomy and specialization, which in turn assume the presence of specific organizational capabilities and management resources. Thus, in researching in i-labs we need to understand how they are created (rational utility as a competing hypothesis to isomorphism) and coordinated (autonomy and specialization as hypotheses).
- Third, research on public sector shows that agencies tend to have low mortality rates, while i-labs dealing with rapidly changing

technologies tend to be more fluid and with somewhat higher level of mortality rates. In understanding i-labs it is important to test the mortality hypothesis as well and understand what sustains i-labs. We can expect that key in i-lab longevity is autonomy in project selection that reflect the evolution of their innovation capabilities (innovation capabilities as hypothesis);

- Finally, agencification literature has so far paid only a lip service to technology as an independent variable of public sector structural change, and thus i-labs can be used to understand the influence of technological development on public administration (technology as hypothesis).

2. Methodology

On the whole, innovation labs both in the private and public sector are very heterogeneous – in terms of their activities, scale and organizational structures – making them difficult to map and analyze. Thus, we decided to base the research on a two-step approach: first, a comprehensive survey was carried out directed at the management followed by an extensive in-depth interview with the same managing figures of i-lab. The survey is based on long-term and large scale research into public sector organizations in Europe – COBRA research project.² Based on proven structure and logic, the COBRA questionnaire addresses the autonomy of agencies towards their political and administrative principals on different dimensions. The questionnaire also helps to sheds light on the way agencies are controlled by their principals and what kind of internal management tools the agencies use. This helps us to compare i-labs to other (semi-) autonomous public sector organizations. However, due to the specific nature of i-labs, the questionnaire had to be significantly updated it to fit our purposes of the research.³ The survey was followed by an in-depth interview in which we more specifically covered the reasons behind the creation of the lab, team characteristics and main tools, network partners, activities and goals, outcomes and steering and control. The research design was tested prior to use with the representative from Mindlab, Denmark.

Based on prior reports by Nesta, IBM (Puttick et al. 2014; Burstein and Black 2014), Parsons “Gov Innovation Labs Constellation 1.0” and web-based searches we identified 35 i-labs in or directly funded by the public sector. Most of them could be found in Europe and North America,

² More details can be found at <http://soc.kuleuven.be/io/cost/survey/> (accessed 30.07.2014)

³ We are grateful to Koen Verhoest for his help in updating the questionnaire.

although, Asia is also showing growing number of such labs. In developing countries these labs (primarily social innovation labs) are usually found in the third sector and thus outside of the scope of this research. Furthermore, i-labs established under the United Nations (including the UNDP Public Service Innovation Lab) were not considered for this research. Prior to the survey and interviews, we made a profile for all i-labs in our sample based on document analysis. From the aforementioned 35 i-labs we were able to find a direct contact to the lab for 25, from which 16 answered our initial interview request. In the end, 11 i-labs joined the study of which 3 had closed down by the time of our in-depth study (see the list of interviews in the Appendix). Our study includes six i-labs from Europe, four from Northern America and one from Australia.

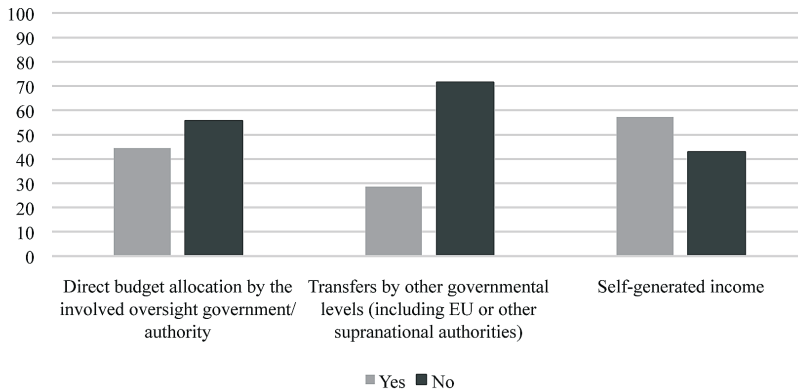
3. Innovation labs in the public sector

General characteristics

Innovation labs in our sample (11) were established between 1999 and 2013, although seven of the i-labs were established after 2010. From the total sample (35?) of i-labs around one third were established under the municipal level (if we would have considered innovation officers in the US cities as part of i-labs then this proportion would have been much higher), while others were created on the state or federal level. Approximately half of the i-labs in our sample had their own legal personality separate from their parent organization (both vested in public and private law). While others were identified as independent parts of a ministry or municipal department (e.g. DesignGov, Laboratorio para la Ciudad) or did not exist in the formal organization at all, which was the case for one of the most well-known i-labs – HDL (Helsinki Design Lab) – in SITRA.

The i-labs in our sample employed from 2 to 17 people, with the average team size of 6-7 persons. While it was difficult for some i-labs to differentiate their own budget from the overall budget of the organization, the maximum budget in our sample is 1.5 million € in their previous financial year. For over 60% of the teams the primary source of income was self-generated, that is project-based funding (for more than half of the labs under review this constituted more than half of their budget – see figure 1 below), although, closely followed by direct budgetary transfers from the government. In many cases, the internal funding (in addition to operating costs) comes from specific project or program partners within the public sector. This structure of finances was seen as important by i-lab executives: while the internal funding encourages ownership of projects inside the public sector, external funding gives the flexibility for i-labs to try new things.

Figure 1. Source of income provide more than half of the total budget (% of i-labs)



Source: Authors.

This gives also an indication of the power and control relations that separate these teams from the rest of the public sector – self-generated income and low operating budgets mean that most i-labs do not illicit strenuous performance evaluations nor the need to collect quantitative metrics to make the output of the labs measurable (see also figure 6 and 7 in Appendix A.2). This makes most i-labs small and agile and this is seen by most interviewed managers as necessary: the lean, start-up type structure enables much quicker communication, forces lab to do things “*quick and dirty*” (for example, some work with the time-frame 6 weeks discovery, design of a new service solution in 12), because there is not enough people nor budget to draw out the process. When projects become internally too big, then invariably i-labs run against existing structures (e.g. IT departments and ICT architecture) and procurement rules. This was seen as cause for loss of momentum as “*existing standards override everything*”.

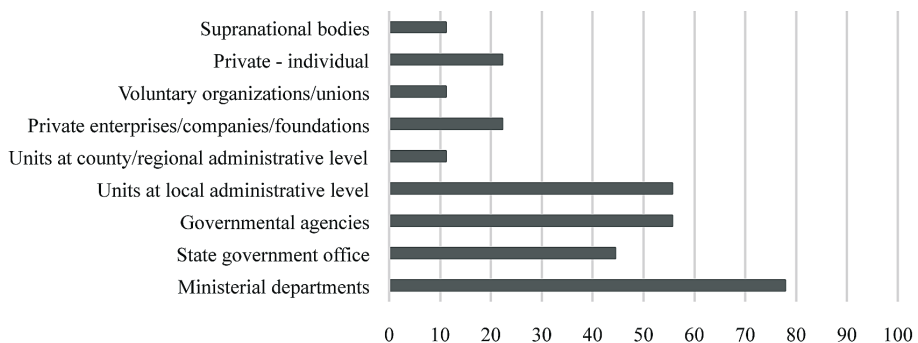
Usually i-labs are built around a particular user-design led method such as human-centred design (MindLab), ‘Friendly Hacker’ method (La 27e Région) or four-step Innovation Delivery model (New Orleans Innovation Delivery Team) (see further Puttick et al. 2014). However when it comes to specific analysis techniques and skills, i-labs use a variety of approaches: randomized control trials, ethnography or action research to work directly together with the people impacted by social problems and use variety of techniques (story-telling and story-boarding, character profiles; service journeys; experience maps; actors map; interactive tables and whiteboards; headlines and postcards from the future; and foresight) to increase the empathy with the target group and the social issue (see also Bellefontaine 2012; Puttick et al. 2014). This also means that labs have to incorporate a variety of skills to accommodate these approaches. Innovation labs usually bring together heterogeneous team of researchers,

designers, and stakeholders to discover and analyze problems from different angles and develop, test and improve prototypes for their practical application (van Helden and Lemke, *forthcoming*). Our interviews showed that i-labs employed both people from backgrounds generally new to the public sector – design, anthropology, ethnography, social geography – and more traditional skill sets – political science, sociology, communication etc. What was striking was that while these labs are often associated with new ICT solutions and hackathons, there were not that many IT engineers present in the labs that were in our sample – these skills were acquired from outside partners. In some sense, this can be seen as an attempt to make technology subservient to social change rather than letting the technology be the catalyst of the latter (see also Townsend 2013 on this point). At the same time, the cause for the former was also the fact that during the period of austerity it was not allowed to hire outside of the public sector.

Collaborative nature of i-labs

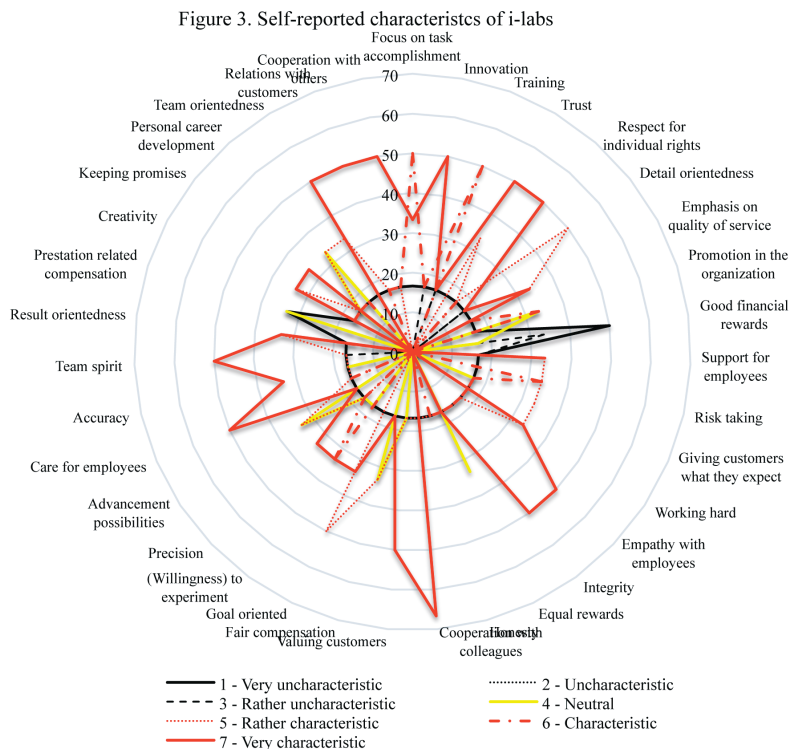
Overall, i-labs were created to enable cross-disciplinary and citizen-driven approaches, while at the same time they produce most of their work for or with the ministerial departments and other government agencies (see figure 2 below). This is dependent on the fact that public sector funds a large share of i-lab activities. Thus, our survey results showed that parent organization (ministry or municipal department) and general public influence the direction and strategy of the i-labs in our sample the most, while industrial partners and corporations and private consultants the least. Depending on the level where the innovation lab was established – local or national – the parliament, department of civil service played the central role in the strategy of i-labs.

Figure 2. Target groups of i-labs (i.e. relevant users of the activities, services and/or products of i-labs)



Source: Authors

Furthermore, the level of collaboration among the target groups change in accordance to the orientation of the i-lab as well (e.g. internal public sector processes). Burstein and Black (2014) differentiate between internally and externally focused innovations offices in the US city government context. While the first are foremost to engage the public in crowd-sourcing projects, community data collection and experimentation, then the internally focused offices are oriented to increasing administrative efficiency (e.g. the work of most i-teams), produce an organizational culture change in larger organizations (employee innovation competitions and resident talent programs) (e.g. Aleinikoff 2014) and innovation processes and protocols inside organizations. In the recent IBM report on public sector innovation offices, a more extended division of units in the US was made including laboratories, (internal) facilitators, advisors, technology build-outs, liaisons and sponsored units (Burstein and Black 2014, 8). Even so, the level of collaboration is high due to the user-centered approaches that the i-labs employ both in and outside of the public sector. Thus, collaboration – both inside and outside the public sector – and the ability to coordinate interdisciplinary user-needs across different partners is key for i-labs. Thus, it is not surprising that the self-reported characteristics of i-labs are concentration of activities on building trust, individual, relational aspects, cooperation and empathy – see figure 3 below.



Source: Authors.

Over 60% of the i-lab executives in our sample agreed with the need for the lab to coordinate with other government bodies on the national level, and 70% on the coordinate with local/regional government. Half of the i-labs saw it as necessary to coordinate their activities with supranational bodies and international organizations. At the same time, all i-labs agreed that they needed coordinate their activities with private sector stakeholders, interest organizations, user groups and civil society organizations. Figure 4 illustrates the most important partners for i-labs in our sample.

Figure 4. Most relevant participants in networks outside of the organisation of origin



Source: Authors.

I-labs try to include a variety of people from different backgrounds (service designers, ethnographers, anthropologists, participatory architects, videographers, comedians etc. in addition to civil servants and top officials from the public sector) in their employ or in their wider networks. Most of the profiled labs worked across government departments or agencies, some were established under different ministries (such as Mindlab). However, due to the nature of their activities and the methods they use, they are generally not understood in traditional (e.g. urban planning, engineering or IT) departments. The i-labs acknowledged that organization culture was difficult for them to change (or even impossible under conditions of siloed public services and negative attitudes from public sector managers) and the solution to move forward was to target individual staff and get them to lead and take ownership of specific ideas, programs and practical solutions. This was called by one of the i-lab executives as the *“Trojan horse strategy”*. Hence, informal networking (coffee tables etc.) and being present and seen in partner organizations was seen as very important (*“when we are building a relationship, we never ask people to come to us – we always go to them”*). In this line, the end goal

might be 'infrastructuring' (e.g. Hillgren et al. 2011), the process coined to denote the building long-term relationships (relational quality) with various actors without pre-defined deadlines and goals and beyond specific projects. While it was much easier for i-labs to include stakeholders from outside, they used personal relationships (both in- and outside of the public sector) as leveraging tools to guarantee support to the project and the organization.

The dilemma of autonomy and survival

Coming back to the characteristics of power to act, one of the most important aspects of i-labs is the level of autonomy which should allow the units to pursue discontinuous and disruptive innovations without the direct interference from the traditional organizational structures. The survey outlined that most i-labs in our sample were indeed characterized by high levels of autonomy with most units taking most of the decisions themselves with minister/parent department only slightly involved. Half of the surveyed i-labs considered their autonomy sufficient to a degree, others found it totally sufficient or hard to evaluate. When we look specifically at different factors of autonomy then we can see that two thirds of the labs had control over setting salaries and appointing and evaluating most of their staff. Furthermore, most organizations set their goals themselves with only third of i-labs having to consult their parent organization regarding the former. The same hold true for negotiations with external actors also from the international level.

Usually formal indicators are used to communicate results monthly or quarterly between parent organization and i-labs, while more ethnographic methods (description of activities, video diaries, blogging, etc.) are used internally and to communicate results to the wider network of lab partners. The latter is more to legitimize lab activities in the eyes of the general public. Goal attainment is usually evaluated inside the organization itself and there are no direct performance rewards for results (apart from the possible increase in budget in few of the reviewed cases).

However, in terms of finances, outside control over i-labs is more rigorous: meaning that investment and annual budgets have to be coordinated with parent department or the financial department. Most are subject to external audit concentrating on financial issues and legality and rule-compliance. One third of i-labs found that the use of resources is evaluated to a very great extent and another third to some extent. Nevertheless, measurable targets are usually not tied to budget allocation and the former are set in most cases for internal use only. Used indicators usually describe activities and task performance, measuring quality of ser-

vices and are both qualitative and quantitative in nature. However, when the budgets get higher and the activities become more visible, then calls for more precise control and 'meaningful' performance measures emerge (see in the case of the OPM lab in GAO (2014)). This is also the reason why, as mentioned above, most executives saw the small size of i-labs as key to the success of their activities, otherwise the center of control would go elsewhere and the steering of the i-lab more standardized, invariably influencing the core activities of the lab itself.

Here it is important to outline sources of such high level autonomy. As exemplified by decades of discussion over principal-agent problems in the context of agencification, high level of autonomy is typically not readily accepted in the context of public sector. The in-depth interviews gave an idea of how this leeway is granted within the public sector context: the key source of the autonomy is the support of the high-level civil service executive or politician (minister, mayor etc.). Consequently, our survey showed a reportedly high level of support to the organization from the minister or head of the local administration. However, the more ambivalent results emerged when lab executives had to evaluate the whole organization's (the ministry/department) support to the lab. While public sector i-labs try to legitimize their activities to the general public by their active presence in media or through broad-based networks (e.g. through social media), the latter did not prevent the close-down of i-labs in the three cases in our sample (HDL, DesignGov, the Studio). The most significant factor of survival in these cases – and also identified by working labs – was chief executive support. When the former was lost (through the political process or change in leadership) then the *"hindrance or benefit"* of these units started to emerge. The core characteristics of the lab – smallness, (physical) separation, autonomy – start to work against the labs without the presence of an organizational sponsor: *"we were not large enough to make it harder for us to close down; the rest of the organization didn't understand what we did; we weren't entwined with the system."*

There are various reactions to this: some innovation labs saw their existence clearly as temporal (some interviewees cited their own results from their scoping works of similar i-labs highlighting that the average lifespan of such units was on average 3-4 years, basically *"lifetime of a high-level CEO"*) realizing that in the long term they would have to change too much to fulfill their initial task or more institutionalized forms of collaboration would not be of interest to the people involved (designers, architects, videographers), especially in the case when an outside lead to the lab was brought into the public sector to build up the i-lab (e.g. Laboratorio para la Ciudad). Some innovation units have started their existence with a

sunset clause (e.g. the BIT unit in the UK), but managed to surpass the initial review due to rigorously documenting their output and developing metrics to substantiate it (which for most current i-labs would mean change (see e.g. in the case of Nesta in Puttick (2014)) and renew their political mandate; while some in different conditions have not (e.g. DesignGov in Australia)). Thus, for a longer term survival i-labs would probably need to change their organizations and they would need to engage the public sector in more broad-based activities (examples here could include Nesta in the UK; or even Mindlab in Denmark which has had different waves of activities).

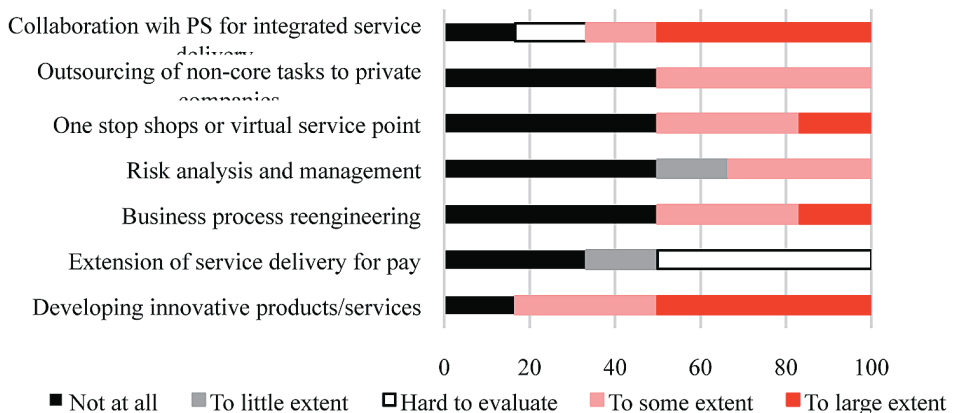
When it comes to small-scale 'labbers', they see i-labs more as a format of 'guerilla warfare' or 'guerilla army' of Pro-Ams (professionals-amateurs) to expand the political space (e.g. Leadbeater and Miller 2004, 59; Mulgan 2006) and hence, temporality is not a problem. In this sense, they can be seen as built on antagonism, questioning the current system – this can be linked to Mouffe's (2000) 'agonistic spaces.' Innovation labs both in public and private setting are supposed to hold the disruptive potential to the existing organization, so the existing routines, norms and organizational culture would not be able to immediately work against change. Thus, Bason (2013) describes these labs as 'authorizing environments' and some of these teams enjoy high media support (e.g. John 2014).

However, what is surprising the context of the aforementioned – autonomy created by high level political support and the antagonistic nature of their activities in terms of the prevailing organizational culture – is that i-labs in general do not (nor did they in our interviews) acknowledge the 'political' nature of their existence and rather emphasize the 'objective' or 'neutral' nature of their activities. This has been previously called the 'political blind spot' of i-labs (Kieboom 2014). Nevertheless, most lab activities were to some or great extent connected to policy development or making proposals thereof; however, when it came to political tasks (providing council to minister or mayor or helping draft policy documents), these were usually outside of the scope of i-labs. The 'political blind spot' might indeed be a format of a survival strategy as well. When things become under high level political scrutiny or there is conflict between ministries – "*it is altogether a different ball game*" –, i-labs tend to disengage from the projects or deem them as possible failures. The interviewed executives partially acknowledged that political patronage is sometimes accompanied by politically defined projects that are not well thought through and proposed because of the relationship between the ministry and the social partners. When the former do not succeed, there is more scrutiny towards i-lab activities and the more policy driven the activities become, the more resistance in- and outside the public sector they encounter.

Role of i-labs in the public sector

The discussion above shows i-labs by their nature exist in turbulent and conflicting environments (be it in terms of technological change or contradictory organizational cultures) and i-labs themselves have to justify their existence and are subject to change. Thus, it is not surprising that many i-labs are struggling to find a place in the policy-making infrastructure (Bason 2013). As mentioned above, the primary tasks of the organizations were service centered (developing prototypes, helping to scale new solutions and building capacity and networks outside of the public service (see also figure 5)), especially for those innovation labs on the municipal level dealing with social innovation. Thus, the role of i-labs can differ in the extent to which they are called to experiment and redesign existing services and processes relishing the skunk works mentality or primarily empowering citizens and enterprises to bring forth change – innovation through the public sector – in an open innovation mentality. The last are exemplified by very lean budgets, crowdsourcing and light-weight structures (see also the case of New Urban Mechanics in Townsend 2013, 214-215).

Figure 5. Selected activities characteristic to i-labs



Source: Authors.

In general, i-labs consider their tasks in the public sector unique without any unit or organization similar to them in terms of tasks, output and role in the public sector. At the same time, our survey of i-lab executives showed that they identify competition for their tasks both from inside the public sector and from private enterprises (e.g. consultancies, think tanks). However, in most cases the internalized i-lab perspective was preferred – meaning that public sector i-labs should not be set up as pub-

licly funded consultancies. The main benefits that were discussed during the interviews pertained to specific public sector experience and access to knowledge and decision makers that otherwise would be more difficult for the i-lab to attain. Furthermore, some feared that the learning effects accompanying experimentation and development inside the public sector would not be as great if the model would be externalized. Those with prior public service experience, emphasized also public service specific motivation compared to financial motivation that in some cases had taken over and started to interfere with the goals of the i-lab as members in the lab collaborating closely with outside partners.

While usually the goals that were mentioned during the interviews referred to complex challenges that require systems change (see also table 1 in Appendix A.3), the activities were usually directed at singular programs, projects or services. In cases, where the i-lab was supposed to work on higher level policy change, the organization was not successful. Only a third of the i-labs in our sample took some implementation of tasks. Thus, they primarily engaged in rapid prototyping and were less interested in long-term engagement, although scalability is one of the most stressed aspects in the new social innovation solutions (see also Kieboom 2014). Thus, in this sense simple solutionism (*rapid prototyping, quick and dirty approaches*) takes hold while complex system dynamics can be underestimated; especially in terms of social innovation some consider more long-term engagement important to have a real impact (Mulgan 2009, Schulman 2010). Thus, i-labs try to capitalize on the growing trend of open data based civic apps, as more complex changes political changes are outside of their control. While most i-labs did not measure the long term effects of their activities, evaluating their results and impact 3-6 months after the projects, several executives acknowledged that the prototype and accompanying change may only manifest itself after some years. Hence, in many cases there are high lead times between the project and the implementation. Thus, i-labs try to document and publicize their involvement in blogs in social media as much as possible. While the impact of labs can be measured on different levels – the lab itself, the spin-offs it creates, innovations and innovators it supports and innovation discourse it helps to establish (Tiesinga and Berkhout 2014, 106) – soft outcomes (networks, discourse change etc.) – are by the account of i-labs themselves easier to achieve. At the same time the question remains, how apt are i-labs in facilitating system level change or is there role in the public sector more connected to specific project as examples and legitimizers of further change in the other parts of public sector organization.

4. Discussion and conclusions

Our survey shows that i-labs tend to confirm rather well with Weber's charismatic organizations. In detail, to summarize our results, we can describe the i-labs as follows. I-labs as they are created today are rather unique in their mission, expected to act as change agents within public sector and enjoy large **autonomy** in setting their targets and working methods. I-labs are typically structurally separated from the rest of the public sector and expected to be able to attract external funding as well as 'sell' their ideas and solutions to the public sector. However, depending on context their organizational build-up can considerably differ. As a rule, i-labs have no authority over other public sector structures, thus their effectiveness depends heavily on their ability to communicate and persuade other public sector units through informal networking. This provides the i-labs the autonomy as well as incentive to experiment with new solutions and processes. Furthermore, typically i-labs have relatively low budgets and are generally small fluid organizations and are thus, dependent on the resources (funds, human resources) they are able to co-opt to their activities externally.

Yet, this kind of set-up also limits the ability of i-labs to catalyze and push through public sector-wide changes. I-labs tend to be small structures, specializing on quick experimentations that usually lack the capabilities and authority to significantly influence upscaling of the new solutions or processes. The main capabilities of i-labs are in their ability to jump-start or show-case user-driven service re-design projects, whereas the ability to do so often builds on antagonistic attitude of the staff who are motivated by the opportunity to prototype rather than standardize new solutions. Moreover, small size is even preferred by i-labs as it enables them to maintain agility and autonomy, as with larger budgets the hierarchical control tends to increase. Interestingly, IT capabilities seem to be not that prominently present in the studied i-labs.

I-labs, although prominent in many modern public management strategies, are yet far from becoming organic part of public sector. The main source of autonomy as well as survival is high level political and/or administrative support, meaning that once an i-lab loses its sponsors the survival chances diminish radically. This has created an interesting paradox – smaller i-labs are easier to close down, whereas larger i-labs face the risk of losing flexibility and freedom to act. One of the consequences of this paradox has been rather short life-spans of experimental i-labs.

Comparing the empirical results with theoretical expectations, we can argue that:

First, on the one side, the spread of public sector innovation labs could be seen as a fad or a fashion after media success and publicity in policy circles of some of the earlier i-labs (e.g. Mindlabs). At the same time, i-labs across the world are very different – there may be some models that are isomorphic (e.g. the city innovation delivery teams in the US), usually the small units are dependent on the labbers and specific skill-sets and interests they have.

Second, one of the tasks of such semi-autonomous spaces is indeed to catalyze and legitimize change in the public sector. By granting the i-labs with sufficient autonomy, providing them the incentive to specialize in user-driven experimentations and forcing them to develop respective capabilities, have made the i-labs as useful change agents in public sector. Yet, as argued above, the risk of diminishing autonomy and lack of supportive culture and authority to routinization of new solutions limit the potential of i-labs to act the change-agent's role.

Third, the i-labs indeed tend to be public sector units with somewhat higher mortality rate than usual public agencies.

Fourth, technology indeed plays a central role in the formation of i-labs. Many of the tasks i-labs carry out are directly or indirectly related to developing ICT-based solutions for the citizens as well as public sector. Yet, interestingly many of the i-labs tend to a large extent rely on external ICT capacities, obtained either through outsourcing or crowdsourcing. Although created to catalyze change in the public sector, i-labs themselves need to survive in the public sector context, for which relational and service design capabilities seems to be more vital than technological capabilities.

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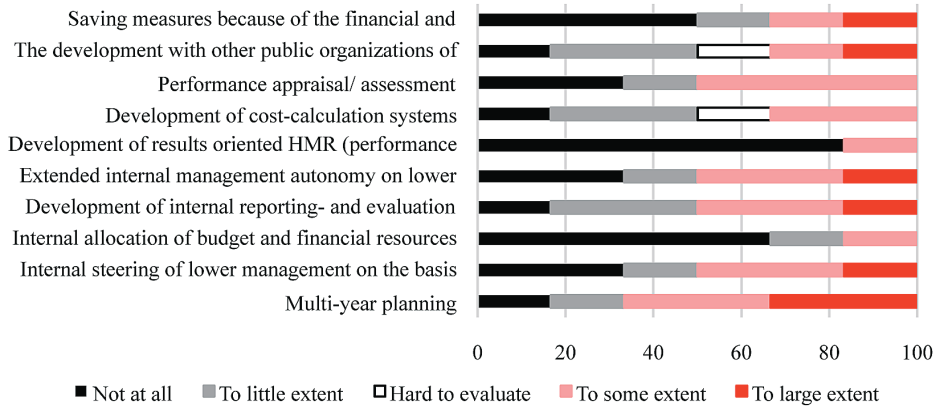
Appendices

Appendix A.1. List of interviewed i-labs

- 1) C. Bason, Mindlab, Denmark, 7.10.2014
- 2) A. Roberts, DesignGov, Canberra, 16.10.2014 (closed down)
- 3) S. Vincent, La 27e Region, Paris, France, 17.10.2014.
- 4) E. Barrett, Silk, Kent, UK, 2.12.2014
- 5) C. Mauldin, Public Policy Lab, New York, US, 27.10.2014
- 6) J. van den Steenhoven, Director, MaRS Solutions Lab, Toronto, Canada, 30.10.2014
- 7) A. Calderón Mariscal, Digital Nation Mexico, Open Mexico, Mexico, 10.11.2014
- 8) G. Gómez-Mont, Mexico City's Laboratorio para la Ciudad, or LabPLC, Mexico City, Mexico, 13.11.2014
- 9) M. Kieboom, Kennisland, Amsterdam, The Netherlands, 26.11.2014
- 10) M. Steinberg, Helsinki Design Lab, Sitra, Helsinki, Finland, 27.11.2014 (closed down)
- 11) D. Ni Raghallaigh, The Studio, Dublin, Ireland, 2.12.2014 (closed down)

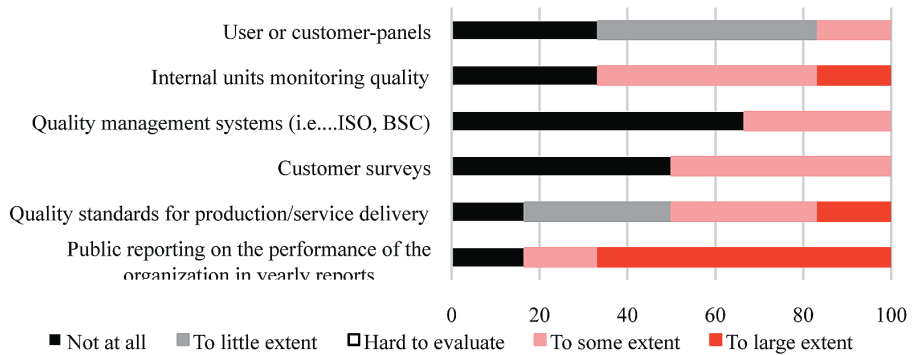
Appendix A.2. Illustration of i-lab activities in terms of evaluation

Figure 6. Selected activities characteristic to i-labs: planning, evaluation and measurement



Source: Authors.

Figure 7. Traditional evaluation modes



Source: Authors.

Appendix A.3. Outcomes of i-labs

Table 1. Assessment of the pertinence of i-lab results on the improvement of the following criteria (0 is the lowest score, 10 is the highest score)

	0	1	2	3	4	5	6	7	8	9	10
Efficiency	0	0	0	16,67	0	0	0	33,33	16,67	33,33	0
Effectiveness	0	0	0	16,67	0	0	16,67	16,67	16,67	33,33	0
Quality	0	0	0	0	0	16,67	0	33,33	16,67	16,67	16,67
Motivation	0	0	0	0	0	16,67	0	16,67	16,67	33,33	16,67
Satisfaction of staff	0	0	0	0	0	16,67	16,67	16,67	16,67	16,67	16,67
Quality of management	0	0	0	0	0	16,67	0	33,33	16,67	16,67	16,67
Internal cohesion	0	0	0	0	0	16,67	0	33,33	16,67	16,67	16,67
Stability of the organization in the environment	0	0	16,67	0	0	0	0	33,33	33,33	0	16,67
Flexibility of the organization	0	0	0	0	0	0	16,67	33,33	33,33	0	16,67
Responsiveness to society	0	0	0	0	0	0	0	33,33	33,33	0	33,33
Accountability towards society	0	0	0	0	16,67	0	0	16,67	33,33	0	33,33
Democratic level service delivery	0	0	0	0	16,67	0	0	33,33	0	16,67	33,33

Source: Authors.

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