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RETHINKING SUSTAINABLE PUBLIC ORGANIZATIONS BY INFORMATION TECHNOLOGY

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Abstract

Public organizations should contribute to value creation moving towards sustainability as a vision for change, strategy and action by developing the potential of information technology in order to redesign trust-based relationships and support communities to create value within ecosystems, promoting co-production of public services, strengthening the agile working as a means to empower the employees and develop smart and digital platforms within ecosystems. As organizations seeking sustainability, public organizations should evolve as communities that develop human and technological sources to facilitate value creation within society. Public organizations should achieve sustainability and develop the community adopting a service logic view using technology in order to drive the transition from using technology in government to develop digital, smart, lean and open platforms that enable value creation, innovation and networking as source that help drive public organizations to design a sustainable pathway for future and wealth of communities.

Keywords: sustainability, technology, public organizations.

1 Introduction

Today, public organizations should rethink how to proceed towards the sustainability as a long-term goal, a vision for change and key source that facilitates the search for public trust and enables public administration and citizens to create value and promote wealth within democratic life of communities (Fiorino, 2010; Goodsell, 2006; Dumay, Guthrie and Farneti, 2010; Moore, 1995; Borgonovi, 2001). With regards to public sector, research is still in infancy in identifying how public organizations should behave in order to follow a pathway for sustainability as a source that helps both the development and effectiveness of public service organizations (Fiorino, 2010; Goodsell, 2006).

Public organizations are seeking a sustainable business model (Osborne, Radnor, Kinder and Vidal, 2014; Osborne, Radnor, Vidal and Kinder, 2014) in order to serve the public interest searching for a dialogue with citizens by strengthening cooperation and collaboration as a source for legitimacy and better outcome (Denhardt and Denhardt, 2003), following a public value management perspective that focuses on relationships, multiple goals and accountability systems, services quality, satisfaction, trust, and legitimacy (Stoker, 2006; O'Flynn, 2007). Public organizations should construct networked governance and shared partnerships (Hartley, 2005), and support multilateral cooperation to cope with changing contexts and achieving policy objectives within a community (Bourgon, 2007). Rediscovering human and technological factors helps support sustainability within organizations as a source that enables value-oriented processes (Pfeffer, 2010; Larsson and Grönlund, 2014; Osborne, Radnor, Vidal and Kinder, 2006).

Public organizations should adopt a service logic view enabling the service users to actively contribute to value creation and facilitate the value creation process (Osborne, 2018). Value creation relies on public organizations that encourage multiple relationships and processes that inform policy making and contribute to promoting co-construction and co-innovation where the locus of co-production is the service system within a pluralist state (Osborne, 2006; Osborne, Radnor and Strokosch, 2016). Public organizations should consider the public service delivery as a relational and process-based phenomenon supported by digital technologies that contribute to ensuring services efficiency, quality and sustainability, driving the users as active co-producers (Osborne, Radnor, Kinder and Vidal, 2015).

The aim of this study is to elucidate how technology helps public organizations to identify a pathway for sustainability by developing the potential offered by human (employees and citizens) and technological resources that enable public organizations to develop capabilities for sustainability.

Technologies contribute to changing governance and government (Lips, 2012), enhancing collaboration and partnership between government and citizens in order to support better accountability and transparency in government operations (Vigoda, 2002). Technologies are driving government as a digital platforms and smart communities (Larsson and Grönlund, 2014; Granier and Kudo, 2016), and empowering to collaborate with government agencies and co-produce services (Linders, 2012). Information and communication technologies (ICTs) help public organizations to engage citizens in co-producing services, to enable the employees to engage in agile working, contribute to developing networks that involve private and public actors, developing knowledge and capabilities in the pursuit of public goals (Janowski, Pardo and Davies, 2012). ICTs help to strengthen collaboration and support the exchange between governments and civil society for service innovation, governance and administration effectiveness (Lips, 2012). ICTs are enabling agile working as a means that facilitates trust-based relationships and innovation, empowering the employees that exercise autonomy and independence in responding to changes and customer's demands (Tims, 2010; Gillies, 2011).

The paper is structured in six sections. Following the introduction and methodological section, in the third paragraph, the theoretical background relies on rediscovering sustainability within public organizations as a source for strategy and action, as a vision for change and innovation within public

administration. Public organizations as communities should follow a service logic view as a service strategy oriented to sustainability within ecosystems. In the fourth paragraph, it is explained how public organizations can evolve as sustainable organizations within ecosystems managing strategic, managerial and technologic capabilities. In particular, public organizations are moving from being organizations to becoming communities adopting a service logic view to value co-creation processes, and developing technologies for strengthening the role of co-production of services and sustaining the agile working as sources that drive change within public services systems by promoting digital and smart platforms and open ecosystems. In the fifth paragraph, the discussion is presented. Finally, conclusions are set out.

2 Methodological section

The study relies on qualitative data that relate to the analysis and review of literature in the field of public service organizations that are following a service logic to value creation. This study aims only to provide an interpretive framework and advance some trends in understanding the dynamics of public organizations that have to translate human and technologic sources into capabilities to promote change and innovation developing the potential offered by the advent of digital and interactive technologies. Even if the theme of sustainability is an emerging topic in the recent studies about public administration, the research is still in infancy. Some studies elucidate the need to consider the sustainability as a vision for public administration living looking at the future (Fiorino, 2010; Dumay, Guthrie and Farneti, 2010). Other studies have identified the public value and governance perspectives as the context where public organizations tend to identify a sustainable pathway or model in the future (Osborne, Radnor, Vidal and Kinder, 2014). The advancement of technology in government for sustainability is emerging in recent times. Thereby, it is not yet available and defined a framework of reference for driving public administration towards sustainability (Larsson and Grönlund, 2014). The analysis on literature is no structured and systematic. The study is theoretical and only exploratory. It aims to propose some hypotheses and trajectories of change and evolution of public organizations that are proceeding towards sustainability as a value that enables future strategy and action for change and innovation. The study is the first step of a research project that aims to further investigate and develop the theme of sustainability within public organizations and services systems analysing the role of information technology for sustainability. Only a limited sample of articles is considered in order to lay down the basis for in-depth investigations on the relationships between sustainability and public organizations that adopt and use technology in order to interact with citizens, business and other stakeholders, and to promote the conditions that enable value creation within social and economic ecosystems. The research is based on archival and qualitative data considering the literature related to the role of information technology in driving public organizations to go digital in order to support services co-production, embrace agile working as a way for enhancing better ways of performing a job, and promote smart platforms that enable public and private organizations to work together and cooperate in order for public value creation. The study is based on the results of a search performed considering referred journal articles selected from *Google Scholar* as the main web source and database. In particular, the selected contributions refer to human and technological sources and factors that help enable the sustainability of public organizations. With regards to services co-production as a way to ensure sustainability of public services system some articles referring to the technology as a support are considered. Some journal articles that refer to sustainability and digital technology in the title are also considered. The selected contributions are summarized and interpreted in a narrative synthesis as a flexible approach that accommodates differences between the questions, research design and the context of the studies considered. It focuses on how studies address a different aspect of the same phenomenon and contribute to providing a picture of that assisting not only theory but practice in dealing. It helps provide a description of data in order to develop and present new perspectives on

emerging issues and advance theoretical models (Denyer and Tranfield, 2006; Dixon-Woods, Agarwall, Young, Jones and Sutton, 2004).

3 Literature review

Even if a universally agreed definition is absent, sustainability should be considered as a focus to be developed in order to understand the future evolution of public administration. Sustainability should be a principle that drives strategy and supports collective action within public administration as a community. Research is still in infancy in identifying a pathway for sustainability as a source that helps both the development and effectiveness of public service organizations. Public organizations should conceive sustainability as a long-term goal and vision that supports democratic development and life of communities within society (Fiorino, 2010; Goodsell, 2006; Dumay, Guthrie and Farneti, 2010; Borgonovi, 2001).

Public organizations should rethink about how to interact with citizens, business and other stakeholders in order to facilitate a pathway for public value creation (Osborne, 2018). Public organizations are seeking a sustainable business model (Osborne, Radnor, Kinder and Vidal, 2014), serving the public interest searching for a dialogue with citizens by strengthening multilateral cooperation as a source for legitimacy and better outcome (Denhardt and Denhardt, 2003; Osborne, Radnor, Vidal and Kinder, 2014), following a public value management perspective (Stoker, 2006) in order to construct a networked governance and shared partnerships to cope with changing contexts and achieving policy objectives (Hartley, 2005; Bourgon, 2007; Osborne, 2006).

Increasingly, it is necessary to evaluate and integrate policy and administration following a sustainability perspective (Fiorino, 2010). Public organisations are building a pathway for a sustainable business model (Osborne, Radnor, Kinder and Vidal, 2014) paying attention to privileging long-term relationships, encouraging the users to engage in co-productive work (Alford, 2002a), promoting co-production at the heart of public service delivery, developing knowledge of professionals and service users a key tool and adopting digital information technology to stress service effectiveness and outcome (Osborne, 2006; Osborne, Radnor, Vidal and Kinder, 2014). Citizens or service users contribute to creating the performance and value of a public service, whilst public organizations have only the task of facilitating the co-creation of value that relies on citizens actively contribute (Osborne, 2018).

Public organizations should proceed towards sustainability in order to achieve long-terms issues in order to provide benefits and contribute to value to be engendered for future generations (Fiorino, 2010) enhancing human and technological factors that enable value-oriented processes driving public organizations to emerge as platforms that facilitate exchanges and relationships within the ecosystem (Pfeffer, 2010; Larsson and Grönlund, 2014; Dumay, Guthrie and Farneti, 2010).

Public organizations seeking sustainability should pay attention to human factor (Pfeffer, 2010), strengthening the people that contribute to enhancing the effectiveness of public organizations in serving the public interest and rediscovering the human side as a source for sustainability enabling the employee to better perform their tasks (Denhardt and Denhardt, 2003; Pfeffer, 2010). Sustainability implies also that public servants should promote the dialogue with citizens developing collaboration to make a meaningful contribution for society respecting the people (Denhardt and Denhardt, 2000). Public organizations should design a work environment in which employees feel that they can contribute both to the public goal and to an organization performing valuable services (Moynihan and Pandey, 2007) by enabling the agile working that is claimed to bring ‘people, processes, connectivity and technology, time and place together to find the most appropriate and effective way of working to carry out a particular task’ (The Agile Organisation, 2010).

After the promises of New public management about efficiency and effectiveness, public organizations are following a public value management view (Stoker, 2006) by embracing ICTs in

order to achieve sustainability as a vision for managing *res publica* within digital and smart communities (Granier and Kudo, 2016) and strengthening the role of civil society and governance networks moving towards a community perspective for engendering value creation within society (Hartley, 2005; Osborne, 2006).

Public organizations should identify a pathway for sustainability following a service logic view to public value creation and looking at an ecosystem perspective promoting co-construction and co-innovation where the locus of co-production is the service system and the value is co-created through co-production that also relates to the interactions of the service user and service professionals (Osborne, 2006; Osborne, Radnor and Strokosch, 2016; Osborne, 2018; Dumay, Guthrie and Farneti, 2010). ICTs contribute to shaping dynamics of governance and government becoming a core element of contemporary understanding of the relationship between the state and the citizen (Lips, 2012). Technology helps to drive government as a platform to empower the citizen to play an active role to improve the functioning of government (Linders, 2012). The advent of interactive and digital technology helps public organizations to develop a community/citizen to support services co-production (Bovaird, 2007) public-private partnerships, involving citizens in policy-making for sustaining public values, equity and development (Dunleavy, Margetts, Bastow and Tinkler, 2005).

4 How technology enables public organizations towards sustainability

Public organizations should contribute to achieving sustainability as a source for strategy, action and change (Fiorino, 2010), promoting dialogue, cooperation and social exchange, and building inter-organizational relationships (Osborne, 2006). Public organizations tend to facilitate value co-creation processes by encouraging the users in the co-production, developing the potential of advanced information technology to support services co-production, enable and facilitate agile working, and to design digital platforms.

4.1 Sustaining the co-production of services

The user's contribution as a co-producer is a critical element in order to ensure the performance of a service. In particular, user and community co-production of services contribute to ensuring services quality and social value (Bovaird and Loeffler, 2012). Co-production of services relates to participation of collectivities, implies voluntary cooperation and involves active behaviours of citizens (Brudney and England, 1983). Co-production leads to value co-creation (Osborne, Radnor and Strokosch, 2016). Public organizations should facilitate value creation processes, enabling the service users to contribute to production, design, innovation and value of public services (Osborne, 2018).

The advent of technology helps citizens and public organizations to interact and behave as active co-producers of public value to exert an active role in developing collaboration and social exchange (Alford, 2002b). Public services are complex service systems that employ human, organizational and technical elements and processes. Bovaird (2007) defined the co-production with regards to the role of the user and community in service co-production in terms of long-term relationships that involve professionalized service providers and service users that substantially contribute to co-production. Users and community coproduction emerges as an integrating mechanism bringing together a variety of stakeholders and effective means of public policy where all the actors have significant influence on outcomes and contribute to interdependence of decision-making. Co-production helps both social inclusion and citizen engagement as a source of effective performance and innovation in public services (Osborne, Radnor, Vidal and Kinder, 2014). Co-production relies on building partnership and collaboration leading to construct trust identification-based in government over time (Fledderus, Brandsen and Honingh, 2014).

In the public sector, the primary concern in dealing with service-users is to encourage the willingness to co-produce (Alford, 2016). The Internet and technologies contribute to enhancing the role and capabilities of citizens opening up new channels for collaboration, and empowering the citizen as responsible partner in public services delivery and in the work of government (Linders, 2012). Sustaining networked coproduction of public services by virtual communities helps to support a community approach to public services strategy. Information technology helps to rediscover a community/citizen centred approach that enables citizens to interact with government agencies and contribute to co-production (Meijer, 2011; Bovaird, 2007).

4.2 Sustaining the agile working

World, economics and production are going across a phase of transformation characterized by a technological revolution that influences and changes the way to work and supports interaction among physical, biological and digital spheres (Schwab, 2016). In particular, the almost endless possibilities of computer connection enable the chances of working remotely, making the employee more agile in working within or far from a certain workplace and paying more attention to the results of work performances than the ways to execute the performance. Experimenting smart working as the way for performance characterized by a certain spatial flexibility helps redesign job organization and support a better work-life balance bringing together both technological and organizational infrastructures helps modify how people interact and perform their task at work (Ichino, 2017).

Agile working is claimed to bring 'people, processes, connectivity and technology, time and place together to find the most appropriate and effective way of working to carry out a particular task' (The Agile Organisation, 2010). Agile working implies working differently through trust-based relationships and innovation rather than hierarchies and bureaucracy (Tims, 2010), requires decentralization and flexibility in terms of the ability of employees to be autonomous and independent workers in responding to changing demands of services (Gillies, 2011).

Technology helps people to better work independently of the physical workplace meeting customer needs, reducing costs, increasing productivity and improving sustainability. Information and communications technologies drive the organizations to develop agile working by ensuring maximum flexibility and minimum constraints empowering the employees to work where, when and how they choose to perform the task without the traditional limitations in order to optimize their performance and deliver best value and customer service. Agile work is defined as a way of carrying out subordinate work without restrictions of place and time, partly inside and partly outside the company plant with possible use of technological tools. Agile work or smart work refers to a set of practices that enable a better workforce organization, combining flexibility, autonomy and collaboration by empowering the employees to achieve results measured through performance indicators. Agile working stresses the employer's exercise of directive power for achieving performances, helps long-term organizational success and enables responsive, efficient and effective organizations able to improve performance and increase customer satisfaction.

4.3 Developing technology-enabled and digital public organizations

Technology enables public organizations to advance digital, smart and open communities as spaces and platforms that help to encourage partnerships and collaboration among private and public actors within ecosystems. Digital evolution is driving public organizations to redefine the relationships with government stakeholders for building communities within society. ICTs help to support the networks and enhance the relationships between public organizations and civil society facilitating knowledge sharing, social exchange and partnerships to achieve public value issues, (Janowski, Pardo and Davies, 2012; Lips, 2012).

Public organizations are embracing ICTs in order to connect with networks, to drive change in democratic processes, and to create new governance structures that enable change, enhance government effectiveness, support public sector reform, and strengthen citizen engagement and relationships between civil society and government agencies (Bannister and Connolly, 2012). Digital government relies on creating a digital ecosystem for public value creation by strengthening cooperation, ensuring openness, inclusiveness, engagement and participation in policy-making and services design, opening up to a data-driven culture and strategy in order to better serve citizens and business that access to social and informative exchange (Oecd, 2014).

Technology enables the relationships between citizens and public organizations towards a community/citizen centred approach in order to support the design of public services (Meijer, 2011) and helps to build digital platforms and spaces that contribute to services co-production and value co-creation (Fishenden and Thompson, 2012) leading to open, public and networked ecosystems for innovation and transparency, citizen engagement, knowledge and information sharing (Harrison, Pardo and Cook, 2012). ICTs enable public organizations to promote policy driven e-governance platforms (Janowski, 2015) and develop smartness as a source for sustainable government to drive smart culture in government, empowering citizens as co-designers and co-producers of public services and leading to innovation and knowledge development (Gil-Garcia, Zhang and Puron-Cid, 2016). Governments should use technology to design digital platforms to enable future public services delivery and production (O'Reilly, 2010). Building public digital and open ecosystems relies on designing a network by combining expertise and emerging resources in the market and civil society (Tapscott, Williams and Herman, 2008) sustaining participation and collaboration driving the evolution of technology, organizations and institutions (Luna-Reyes and Gil-Garcia, 2014). Public organizations should strengthen Web 2.0 technologies in order to support citizen-sourcing as a new mode of government operations and to develop collective intelligence (Nam, 2012).

5 Discussion

Public organizations identify the sustainability as a vision for action and change in order to contribute to driving the wealth of communities and advancing the progress of society. As sustainability-oriented institutions, public organizations tend to integrate strategic, human and technological capabilities promoting collaboration and encouraging inter-organizational and long-terms relationships, where multiple inter-dependent actors contribute to public services delivery and help to facilitate and support policy making processes. As shown in figure 1, the main contribution of this study is to identify a pathway that drives public organizations to evolve as value-oriented and sustainable institutions.

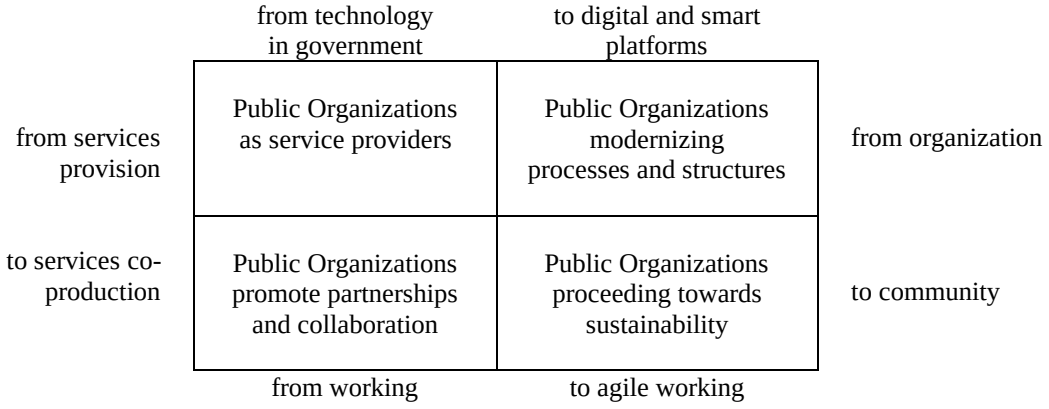

Figure 1 – Rethinking sustainable public organizations: a framework

As services providers, public organizations contribute to service provision following an organizational view in order to serve the public interest, driving e-government processes and strengthening traditional ways of working. As organizations embedded within social and economic ecosystems that merely contribute to service provision, public organizations should use the potential of digital and smart government and platforms in order to involve civil society within a networked governance where public employees develop skills and the benefits of agile working attending to value community and interacting with citizens to build shared partnerships. As value-oriented and service logic view-driven institutions, public organizations become sustainable communities that contribute to public service delivery and design, strengthening the potential of technology in processes and enabling autonomy and empowerment of employees, developing smart and lean platforms and communities within ecosystems. Public organizations as communities should consider the sustainability as a source that helps value creation processes and enables the wealth of people and business ensuring social, financial, economic and democratic performances.

6 Conclusions, limitations and further research directions

In this study, there are theoretical, managerial and organizational key implications. Public organizations tend to become communities driving the technological evolution, going digital and smart by promoting the dialogue and supporting cooperation among private and public actors as the result of multilateral relationships, social exchanges and shared values.

Digital technologies are leading sustainable public organizations to encourage private-public collaborations, to evolve as smart communities. Public organizations tend to follow a service logic view as strategic approach for developing action within public services systems, sustaining the potential of technology to drive smart, lean and open communities within ecosystems, and empowering the employees to meet the needs of citizens for being accountable in front of the society. Increasingly, citizens should actively contribute to value creation processes developing competences and promoting initiatives for innovation.

Some propositions are proposed along the pathway that drives public organizations to proceed towards sustainability: strengthening services co-production more and more involving citizens in co-design and co-production (proposition 1); promoting the diffusion of agile working as a means to perform tasks and ensure efficiency/effectiveness of administrative action (proposition 2); and developing the potential of information technology in order to drive the transition from the use of technology in government to drive digital, smart, lean and open ecosystems for value creation, innovation and networking (proposition 3).

In this study, there are some limitations. This study identifies some theoretical propositions and provides a framework of analysis in order to drive public organizations towards sustainability. Only a limited sample of journal articles are considered in order to track a preliminary focus on a pathway towards sustainable public organizations and to identify some trends for understanding the future of public organizations interacting with communities and citizens. Thereby, any empirical research and case studies are provided in the analysis because public organizations are still in infancy in dealing with sustainability as a source for change and innovation in governance and services design.

Further research perspectives and investigations will consider how the hypothesized propositions can be applied within local autonomies and be translated in managerial and leadership programs, human resources policies and practices, technological advancements and digital platforms that contribute to enhancing the community development within public organizations that interact with civil society in order to develop knowledge sources, organizational strategies, value-oriented processes, and shared culture within social and economic ecosystems.

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