IMPROVING DIGITALIZATION THROUGH CO-CREATION: CASE OF THE CITADEL PROJECT

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Abstract

This article examines problems related to digitalization and use of digital services provided by the government. The study is based on the research work and results of the CITADEL project, which has tested co-creation methods in Latvia considering requirements and interests of society and businesses in decision making processes of public administration. It appears that in many cases people aren't willing to accept proposed services as they haven't been involved in the processes of their creation. While enjoying benefits provided by information technologies, electronic services and artificial intellect people still need an exchange between human beings to make a good use of existing advanced solutions. This is especially important for electronic services widely used by a large part of the population and enterprises, which need to be easy, fast and friendly. The concept of co-creation or co-production has been initially developed in the 1970s emerging from theoretical and empirical analysis of urban service delivery. Nowadays the co-creation is becoming a priority of many governments in the world and scholars in public administration see the potential of ICTs in this exchange process. Governments around the world are promoting an increased use of ICTs to predict and understand the complexity of public services, as well as to improve the transparency and efficiency of government practices and facilitate democratic practices using e-government solutions. This paper aims at contributing to the concept of co-creation and the impact of digitalisation of public services. The article concludes that efficient decision-making for improving economic development, as well as social welfare at regional, national and local levels needs implementation of digitalised services applying new modern approaches, such as the co-creation as they inevitably become more important due to the increased digital competitiveness of countries.

Keywords: *digitalization, ICT, co-creation, Citadel*

1. INTRODUCTION

In scientific literature this phenomenon of a client being perceived as a partner in the provision of public services is described as the concept of co-production or co-creation of public services. Considering increasing and wide-ranging social and civil participation in overall public governance, it is inevitable that new tools and approaches will be needed to facilitate the cooperation and co-production between policy makers, society and businesses. For instance, such forms of cooperation between services' providers and recipients as crowdfunding and examples of social entrepreneurship are signaling about this new paradigm.

The main objective of this paper is to examine the development of co-creation concept and its applicability in the nowadays digital society; to present the CITADEL project and its main findings for improving the provision of public services through the co-creation process that was developed and implemented in Latvia in cooperation between the University of Latvia and the Ministry for Environmental Protection and Regional Development of Latvia; to discuss the relevance of co-creation for decision making processes and to draw relevant conclusions.

The research is structures as follows 1) analysis of the development of co-creation concept, its integration with the Information and Communication Technologies (ICT), and the role of digitalization and co-creation for improving public administration and its services; 2) review of a role of the CITADEL project for improving public administration services through co-creation; 3) analysis of research results on the non-use of public services and co-creation sessions performed in Latvia; 4) presenting main results of the research; 5) discussion on the relevance of the co-creation in public administration decision

making processes and provision of services; 6) identification of conclusions relevant for applying co-creation processes to improve the provision of public services. The research takes into account findings of the interviews of public services' non-users in Latvia during 2017 and results of co-creation sessions with categorized target groups –users of public services during the second half of 2018.

The research methods include, firstly, scientific literature analyses to review the applications of relevant theories and empirical studies in EU countries. Secondly, the research work is based on results of interviews of public services' non-users in Latvia during 2017 and results of co-creation sessions with categorized target groups – users of public services during the second half of 2018, which permits the author to discuss the relevance of co-creation for decision making processes and to draw relevant conclusions.

The study on non-use of public services has some limitations. Firstly, the study focusses solely on the Latvian case and might not be reproducible in other contexts. Secondly, the study is based on a stratified quota sampling procedure. The respondents may be biased because of our sampling procedure.

2. THE CO-CREATION CONCEPT AND ITS APPLICATION

2.1. The co-creation concept and its integration with ICT

Although co-creation was always there, the first attempts to define the concept were in the 1970s, as a new form of social interaction to delivery public services with a high degree of citizen involvement [3, 67]. The primary focus of scholars was on how to increase the efficiency of governments, especially at the US local level [15, 67]. These studies defined co-creation as a *"mixing of the productive efforts of regular and consumer coproducers (...) that occurs as a result of technological, economic and institutional influences"*. Incorporating the Alford's [3] definition, the role of regular and consumer producers would be performed by the service professionals and citizens, respectively. The interest in co-creation decreased in the mid-1980s because of the rise of marketization of public services activities [2]. A decade later, incorporating insights from Alford [3] and Ostrom [64] built further the co-creation definition. They focused on adding new co-producer inputs (time, efforts, labor) and a variety of new actors to be involved in public initiatives [1, 66]. This includes both client co-producers and volunteers in the public services' co-creation [2, 4].

A renewed interest in co-creation [6, 63, 71] has come about the increasing budgetary constraints carried out by governments in the aftermath of the financial crisis [73]. In this new stage, the interest is more focused on the factors related to co-creation such as the drivers and characteristics of co-producers [12, 68] in the provision of public services: self-efficacy, satisfaction, demographic characteristics and so on. Also, there is a research interest in understanding stakeholders' roles, as something that brings different form of expertise together [63].

Co-creation has been present in political and public management research agendas for about ten years [31, 44]. The integration of co-creation with ICT – *Information and Communication Technologies* – may have extraordinary value, with technology becoming a powerful enabler to facilitate public co-production with actively engaged communities [34, 78]. ICT technologies are perceived as a means to empower citizens by offering them the possibility to participate in the decision making process [76]. Accordingly, ICT technologies cannot only be seen to improve transparency and efficiency of government practices [49], but increasingly they are also used to facilitate democratic practices using interactive tools such as e-government applications [33, 43]. Co-creation, which has become one of the main ingredients of public policy reform, is defined as a *"voluntary or involuntary involvement of public service users in any of the design, management, delivery and/or evaluation of public services"* [64]. Scholars in public administration have also attempted to define co-creation within a technological environment. [47] define e-participation as "*the use of ICT technologies to provide an informal and egalitarian interaction, rather than vertical and bureaucratic*".

However, this interaction still has a long way ahead before becoming a true, since there are also obstacles at technological level [50]. Examples focused on how citizen engagement is impeded by new technologies are key to understand this new form of public service support [51]. For instance, the impact

of ICT technologies on citizen co-creation may exclude some citizen groups to coproduce [16]. Most empirical and theoretical studies consider a prospect based on influential factors of co-creation [64, 78]. However, little is known on the obstacles related to the engagement process [52, 78]. Therefore, this is important to assess barriers associated to the adoption of ICT technologies in public services' co-creation and seek for new solutions.

Furthermore, most studies on co-creation are focused on citizens as a co-implementer, while only a few identify the role of citizens as a co-designer [80]. Taking into account an importance of understanding the role of citizens in co-creation, the evidence-based approaches that provide examples of how citizens perform in co-creation initiatives and assessment on the non-use of public services should be used.

2.2. ICT technologies in the public sector

In the past few decades, governments have used ICT to modernize their own processes [56]. The gradual integration of ICT technologies into the everyday lives of citizens, businesses and governments has given rise new forms of public engagement which offer opportunities for more collaborative participation [19]. For instance, 28 out of 34 OECD countries have a Twitter account for the government communication department and 21 have a Facebook account to communicate and engage participation with citizens [57]. Governments are facing increasing expectation and greater demands from citizens about the quality of public services [58]. Therefore, governments are increasingly using ICT to provide citizens an active role in transforming public administration [9]. In the 1970s, the need for an improvement in the performance of public sector organizations led to a *"government reinvention"* [7]. This was based on the belief that the public sector was a large, inefficiency and unsustainable structure that should be modernized [29]. Later on, the arrival of the *'New Public Management'* focused on the privatization of the system to increase its performance. By this time, the growing use of ICT between the population was seen as a solution to improve the public administration, often referred to as e-Government" [18]. This consists of the use of ICT, using web-based internet applications, to achieve a better provision of public services [10]. For example, the use of artificial intelligence is emerging as one of the most potentially useful technology developments for diagnosing rare diseases [59]. Recently, with the boom in smartphones and mobile systems, e-government services have been integrated as critical *"m-government"* applications in mobile services, providing benefits for chronic illness users [42]. In this transition phase, a new concept is emerging, we-Government. This presents a new framework in which citizens are empowered to play a far more active role in the functioning of their governments [46].

2.3. ICT technologies in public services co-creation processes

New practices of co-creation have been facilitated by the integration of ICT technologies into public sector [51]. However, no consensus exists among scholars regarding the role of ICT in co-creation. According to Osborne et al [64], the degree of co-creation is high when the interaction is face-to-face between the service user and the service provider such as health-care and education. On the other hand, the level of co-creation is lower for examples where the engagement is carried out through an electronic interface. However, according to Brandsen et al [13] the focus should be aimed at improving effectiveness of services and increasing collaboration regardless of the interaction process. This means that co-creation should not be directly restricted to face-face contact and therefore some developments in co-creation may be conducted through ICT technologies.

The role of co-producers in public services is gradually changing with the introduction of ICT technologies. Kavenaugh at al [43] and Kleinhans [44] show that ICT changes the relationships and responsibilities of both professionals and citizens, while Hall et al [37] note the importance of including citizens and their knowledge when designing ICT solutions to support professionals' work in user-centered design. An example of this new role of citizens in the design of ICT solutions can be found in smart cities projects with the implementation of Living Labs [40]. ICT technologies are increasingly used to enable a decision-making process in which citizens have a crucial role in supporting policy decisions, especially in a local environment [33, 64]. This is due to local authorities are providing citizens with technological infrastructure to increase the *'social intelligence'* of the cities [46]. Using

ICT technologies, non-state actors have been empowered with previously unthinkable capabilities for self-organizations and value creation [8].

While the impact of technologies on boosting citizen participation in public sector is encouraging, they also bring important challenges and difficulties [30, 53, 64]. Barriers associated with the integration of ICT technologies in public services' co-creation differ in several domains: citizen government and cultural barriers [50]. First, there are citizen characteristics that can be identified as a key barrier to coproduce [54]. For instance, citizens need the skills and motivations to engage with governments in the production of public services, especially when the new technologies are integrated in the process, the 'digital divide' [30, 39, 53]. The image that citizens have of their governments constitutes an important obstacle to coproduce. This means that whether citizens expect little of governments in terms of trust, they probably will not be willing to be engaged in co-creation initiatives through digital means [54]. Second, specific characteristics of government organizations can result in obstacles to co-creation [48], such as lack of political, management support and leadership in the context of e-governance [61, 74]. Third, there are cultural barriers identified with existing routines and value orientations [45]. For example, when empowering citizens to coproduce the security tasks, the police feels that it could threaten its position [50].

3. DIGITALIZATION AND CO-CREATION FOR IMPROVING ECONOMIC DEVELOPMENT AND PUBLIC PERFORMANCE

The trend of digitalisation is transforming both manufacturing and services. As a result, societies and citizens in the EU face significant opportunities and challenges. According to Eurostat, Europe's high-tech industry and knowledge- intensive services are increasing with record levels of investment in 2016 [27]. Many parts of the EU led the world in e-government, demonstrating high levels of electronic engagement with their citizens and in using digital technology to update public services [24]. However, there are high regulatory impediments that do not allow EU Member States to reach the levels of many world economies [26]. More broadly, the EU should emphasise the role of openness and collaboration by providing open access to the results of publicly funded research, promoting open science, engaging more transparently with citizens and endorsing open innovation models to tackle societal challenges and long-term goals [28]. Although the EC promised to create a SDM as one of the Commission's priorities, estimating that it could boost the EU' s economy by 415 billion euros annually [23] there is a little optimism among stockholders about achieving this goal. However, the critics see the digitalisation and DSM measures favouring traditional corporatist old industries despite the fact that high quality public services constitute the backbone of citizens' social welfare as well as a region's competitiveness and entrepreneurship, which currently faces significant challenges. This is acknowledged in the European Digital Progress Report: Review of Member States' Progress Towards Digital Priorities [24]. The challenges of using e-government services are revealed by results of conducted interviews in the framework of the EC H2020 CITADEL project (CITADEL project is being implemented under the "Horizon-2020" programme, Grant Agreement No 726755) and the outcomes of a study on the use of these services.

Another significant factors that influences social development and wellbeing in the digital era and new business environment in the DSM is the social investment and innovation as well as co-creation concepts, which is the subject of current discussions at the EU level. Recent studies [35, 42] have indicated the potential for social investment and social innovation as well as highlighted differences in outcomes across EU Member States that have implemented different welfare state models. The main comparative theoretical approaches employed regarding the emerging of the social investments paradigm are Neo Keynesianism and Neo Liberalism [38]. Social investment should contribute to the development of innovative approaches related to the social innovation and competitive business environment of the digital market in the EU. It also should contribute to regional cohesion. An in-depth analysis of the scientific literature, legal and policy documents of international institutions elucidating the various versions and meanings of social investments, such as the paradigm of New Institutional Economics, the World Bank's Social Capital Initiative and others. The mainstream scholars view social

investment as a strategy highlighting the shifting internal equilibrium between: public expenditure, private expenditure and banking tools that are identified as "social investments". The above approach to social investment is fundamental for the EU social innovation and regional cohesion policies. The most important instruments in reducing regional disparities are the European Commission's funds such as the European Fund for Strategic Investments and the Employment and Social Innovation Programme [22]. However, the contribution of these funds to reduce regional disparities in the current context of digitalisation and high unemployment in EU economies and associated social risks requires new actions by governments and social partners.

Today governments are looking for new sources of growth to boost the productivity and competitiveness of their economies and industries, to generate jobs and to promote the wellbeing of their citizens. As highlighted in the OECD Ministerial Council Statement [59], governments have to respond to the rising inequality as it could endanger social cohesion and hamper the economic resilience and inclusive societies. Furthermore, governments will need to anticipate and address the need for regulatory structures development to minimize disruptive effects of challenges in the digital environment such as privacy, new jobs, intellectual property rights, competition and taxation.

The relationship between information technologies (IT) and economic development of peripheral territories and industrial areas has been of interest for scholars. In this respect, more attention should be given to a digital regional divide existing in many economies. The term "digital divide" refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard to both their opportunities to access information and communication technologies and to their use of the Internet for a wide variety of activities [62]. The digital assessment of regional development has been subject of scholarly articles [41] with the main conclusion that the lack of digitalisation is not necessarily the cause of social and economic under-development phenomena of regions, but is a consequence of low social and economic status in terms of regional geography and wellbeing. The lack of information technologies and digital infrastructure as well as digital literacy such as digital knowledge, skills and practices are likely to reinforce initial social inequalities.

The notion of co-creation emerged in the private sector by motivation to increase high quality service associated with corporate profits. However, the concept is relevant to the public sector. As was noted by scholars [64] the public sector is dominated by the production of services that due to their discretionary and intangible character, the simultaneous process of production and consumption and the service recipient's central role in the process provide excellent conditions for co-creation [64]. Providers and consumers of public services bring together different resources and capabilities in the joint creation of the value of the service in question and both parties have an interest in maximizing public value creation [77]. It is important to stress that the role of a citizen as a client and a partner in the provision of public is known as a concept of co-production and/or a concept of co-creation of public services and is foreseen as the next stage of evolution [72] in the relationship between public administration and society [79]. Both concepts involve active participation of citizens in public service delivery by creating sustainable partnerships with citizens. However, the literature makes a distinction between three types of involvement: 1) citizens as co- implementer of public policy, 2) citizens as co-designer and 3) citizens as co-initiator [80]. According to the scholars, the first type is the most frequently represented.

The post-industrial civil society paradigm is increasingly strengthening in modern democratic public administration system; among other principles, is also characterized by societal equality and participation opportunities; as a result state power is focusing more on the needs of society, is in turn, is reacted in broad public administration reforms [20] carried out to improve the efficiency of the state power implementation according to the needs of society.

To ensure the systematic improvement of the provision of public services it is essential to understand why citizens as clients are satisfied or not satisfied by public services and its delivery, which allows applying the good practices for other services and clients' target groups. The main critique of the concept related to the definition of a citizen as a client of public administration services relay on the diminished role of the citizens' civic participation and thus positioning the individuals of the society as passive services recipients [14]. This situation can be often crucial for better-informed decision-making.

Besides, the often-uncertain variability of the public administration's client's roles has a negative impact on the work motivation of civil servants [5] within the implementation of public functions and delivery of public services.

Public administration reforms are continuously taking place in many countries implementing new ideas, changing and improving policies, processes, structures and other management mechanisms and instruments, boosting efficiency and solving problems and challenges [20]. The concept of co-creation is strongly connected to the concept of co-production and these two concepts complement each other well. The close interaction between these two concepts to a large extent changes the roles of contemporary public service provision system's participants – politicians, officials of the governmental institutions and the recipients of public services. However, most studies focus on the identification of influential factors with little attention given to the results of the two concepts interaction, which needed to be in the centre of future research. Furthermore, quantitative studies are badly needed relying on that more qualitative and case studies approach is prevailed [55].

These changing roles are defined by both the characterizing principles and values of the respective public administration model as well as by the mechanisms of cooperation among the participants of the process of the "producing" and receiving of public services [55].

National and local governments increasingly aim to involve citizens actively in proving public welfare services and in solving social and political problems and challenges. National governments forge networks of public and private actors that produce and monitor regulatory policies and standards and the European Union supports regional partnerships aiming to stimulate growth and employment in rural areas [32]. In addition, the new public governance is based on innovation and the digitalization of public services' provision that ensures wider and easier accessibility of public services as well as saves clients' resources.

4. CASE OF THE CITADEL PROJECT

4.1. The CITADEL project and its objectives

The CITADEL project has been started late 2016 under the EU Research and Innovation programme Horizon2020 under the leadership of the TECNALIA Research & Innovation, which is the first privately funded Applied Research Centre in Spain and one of the leading such centers in Europe. The project consortium involves 12 partners from five different countries, representing Northern, Southern and Eastern Europe including University of Cantabria (Spain), KU Leuven (Belgium), FINCONS Spa (Italy), IMEC (Belgium), Regione Puglia (Italy), InnovaPuglia Spa (Italy), Stad Antwerpen (Belgium), TIME LEX CVBA (Belgium), Ministry of Environmental Protection and Regional Development of Latvia (VARAM), University of Latvia, Stichting ICTU (the Netherlands). For more information, please, see: https://www.citadel-h2020.eu/partners.

The CITADEL project aims to explore, monitor and analyse the drivers, enablers, impact, risks and barriers of open, innovative and collaborative government across a diverse terrain of PAs through an open and scalable platform based on innovative ICTs in order to understand, transform and improve by proposing recommendations to enhance the PAs policies and processes with a view to deliver effective, inclusive and high quality public services across Europe (https://www.citadel-h2020.eu/content/mission-and-objectives).

CITADEL's mission is to achieve the following objectives:

1. To analyse information coming from different sources to improve the effectiveness and efficiency of PAs by providing a set of recommendations to transform its processes and policies.
2. To incentivize the co-creation of digital public services by empowering citizens and PAs.
3. To increase the participation of Citizens in the Public Administration system by improving their experience when using digital public services.

4. To facilitate the use of the digital public services integrating the previous results into the CITADEL Ecosystem, containing the ICT enablers.
5. To validate the CITADEL ecosystem in local, regional and national environments.

According to the description of the CITADEL project and its presentation on the project's website (see Fig. 1) at least one third of the project is devoted for co-creation with a purpose to transform public services.

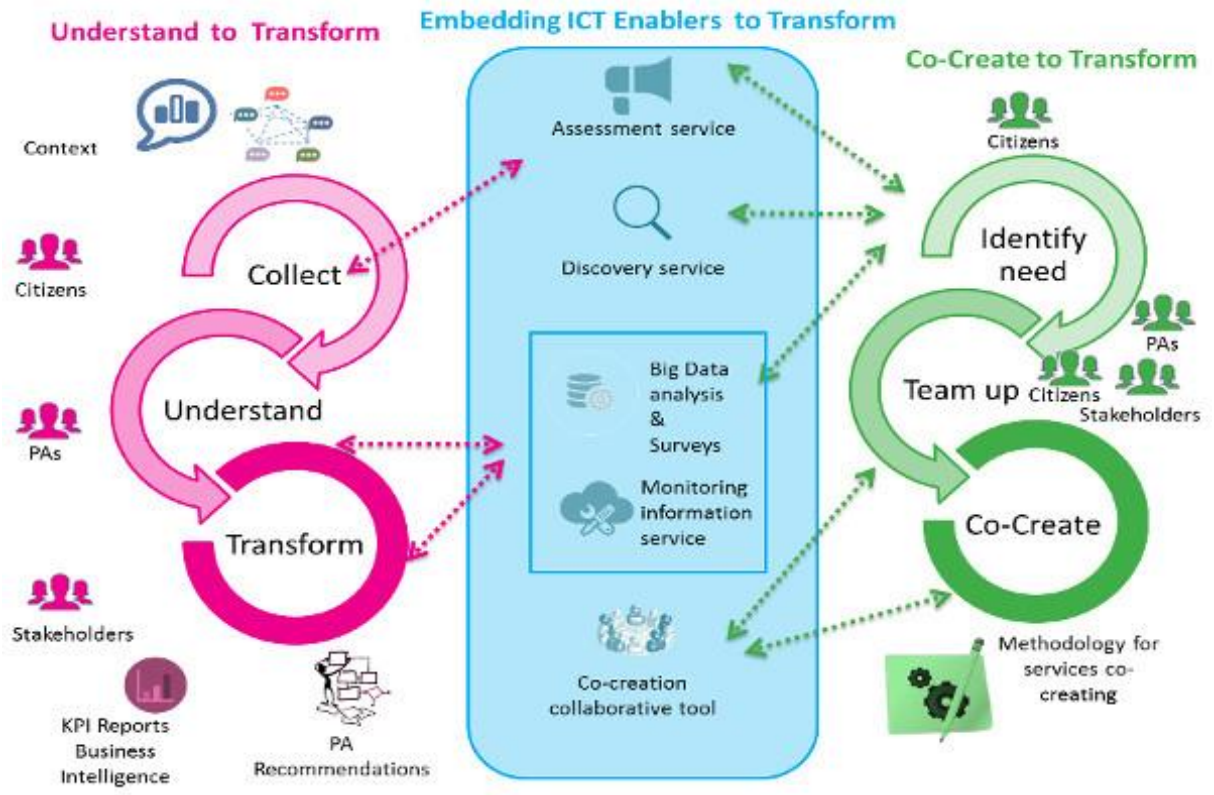

Fig. 1. The CITADEL ecosystem

Source: https://www.citadel-h2020.eu/

4.2. CITADEL co-creation definition and offered results

The CITADEL team offers to provide the CITADEL tool-supported methodology for services co-creation. This is expected that this methodology will guide and support public administrations in the co-creation process. Also, the CITADEL will provide Co-creation collaborative tool that should allow public administrations, private sector and citizens to co-create new public services at a conceptual level. In addition, the CITADEL Co-creation Handbook will be provided.

The CITADEL project supports the principles of collaboration, transparency and participation of the Open Government concept. In the project framework the co-creation is understood as a collective process in which government, organizations and citizens actively share ideas to reap a major benefit of that interaction. Based on the principles of collaboration and innovation systems, the Open Innovation 2.0 paradigm provides relevant insights into the capabilities to create innovation by sharing knowledge. One of the main advantages of this paradigm is the capability to create valuable ideas both inside and outside the company [18]. by placing ideas from non-market institutions and individuals and introducing them into the market. This paradigm is based on the Quadruple Helix Model [18]. This encompasses different stakeholders working together to co-create: government, industry, academia and citizens. This

perspective is focused on co-creating shared value that is consisting of that a specific service does not have any intrinsic value for the user, but this depends on the total value co-created as aggregation during the co-creation of the service [64]; for instance, the experiences acquired by the user during the service provision.

The project proposes a CITADEL definition of co-creation based on this Open Innovation 2.0 approach: Co-creation is defined as an integrated mix of activities through which different stakeholders – government, industry, academia and groups of individual citizens – work actively and directly together towards the provision of public services. Co-creation with citizens may include co-design and co-implementation of core and/or complementary services. It may take advantage of innovation ecosystems and emerging technologies, but is not limited to digital tools.

1. The definition of co-creation adopted here is based on the paradigm Open Innovation 2.0 that is compatible with the CITADEL approach (Public Administration + Private sector + Academia + Citizens) using cultivated innovation ecosystems.
2. This definition reflects the idea of co-creation as a mix of activities [65, 67] in which inputs are supplied by participants as an integrated process comprising both the design and the implementation of public services.
3. This is a broader definition that considers the context of CITADEL use cases and their differences and specificities to address different requirements.
4. Regarding the debate on voluntariness [1, 12, 15, 64], there are several examples in the case studies investigated showing that co-creation is not exactly voluntary. Thus, we the voluntariness term hasn't been introduced in this definition and its preferred to refer to it as an active involvement.

4.3. Main reasons of non-use of public services – findings of interviews of public services users in Latvia

The importance of co-creation has been proven by the research work performed by the University of Latvia and LU Leuven on investigating reasons of non-use of public services. Results of this research have been presented in a joint publication of the University of Latvia and KU Leuven – "Explaining non-adoption of electronic government services by citizens. A study among non-users of public e-services in Latvia" [81].

In the framework of this research a total of 141 people in 7 Latvian Unified State and Municipal Customer Service Centers (CSC) have been interviewed during 2017. Most respondents were between 25 and 65. This is probably because younger people are more used working with computers and Internet. In addition, younger people do not use state or local government services as much as elderly people because they still study and therefore do not need to submit declarations to the State Revenue Service or request assistance from the Social Security Insurance agency. Lower income categories were overrepresented, probably due to the overrepresentation of CSCs in remote rural areas where income levels are relatively low. In addition, more than half of the population of Latvia receives a below average salary. According to the Central Statistical Bureau of Latvia, 57.8% of women and 49.9% of men in 2016 received a monthly salary of between EUR 70,00 to EUR 700,00 [17]. Furthermore, almost three quarters of the respondents are female. This can partly be explained by the active role of women of Latvian families talking the issues related to Social Security Insurance Agency services and State Revenue Service or the precarious position of single mothers.

The size of seven of eight selected regions range from 3444 inhabitants in Strenči to 8884 inhabitants in Carnikava. Only one – the Salaspils region has 23432 inhabitants. Because most of the CSCs included in the study are located in rural areas, results relating to the income and education levels of respondents, as well as on the accessibility of computers and internet, could be biased. In addition, this should be taken into account that Latvia is a small country with a total population of 2 million only. Therefore, rural areas of Latvia are quite unpopulated.

The non-use of public services in Latvia can mainly be explained by the fact that people aren't aware about the existence of such services (17% of respondents); almost one in three respondents reported reasons for non-use related to skills and competence, and the perceived lack of them. Also, many of the

people reporting a lack of skills also mention not having a computer. Respondents find the system too complicated, and in some cases contrasted electronic government service adoption with the simplicity of just visiting the CSC in-person. Yet, we do not find evidence that persons labelling the system as too complicated have already used it before. This means concerns about the complicatedness of the system are likely to be a perception issue rather than an experience-related issue. This is further confirmed by the fact that 16 out of 40 higher educated respondents also mention skills and the complicatedness of the online system as a reason to come to the CSC. Six respondents indicated visiting the CSC in order to obtain information about using the online system.

Several respondents (N=11) mentioned a lack of internet access as a reason for coming to the CSC. Within this group, some respondents cited a lack of access to internet banking. One respondent reported not having access through the bank because of an unpaid loan issue with the bank (one of the most often used options to log in Latvija.lv is through the Internet bank). Three respondents cite a lack of identification devices to use the system, but all three also mention they were currently visiting the CSC in order to obtain a registration to use the system. In total, eleven respondents indicate visiting the CSC in order to obtain a registration to use the system. Just under one out of five respondents cited the lack of a computer or related equipment as a reason to come to the CSC.

The answers of just under a third of respondents included references to a lack of interest or need to use the electronic service: they did not have to use it before, and cite the easy availability of alternatives. In particular, the fact that it was still possible to submit required documents on paper, and that the CSC alterative was available anyway and free, makes that they did not have to bother with using the online alternative. Convenience of the CSCs was cited a lot. This includes the convenience of dropping by at the CSC compared to using an online service that is perceived to be complicated. At the same time going to CSC requires more time and effort than using e-services from home or from office, but it seems that respondents did not acknowledge this. Respondents also mention geographic proximity of the CSC (to home and to the place of work) as a reason for using the CSC.

There are many CSCs and more are planned to be opened in the future, and the easy supply of this alternative makes that many people just find it very convenient to go to the CSC rather than using the service online. The fact that the offline alternative exists and can be used is an important reason to continue using it. Apparently, many people still consider the online alternative to be less convenient than going in person to the CSC. In the Latvian case, the high number of CSCs and easy access may be a factor in stopping people from switching to online services. At the same time, offline services have a support function for making people go online. In-person help appears to be desired also to make the transition to using online services. Offline offices may help citizens to make the step towards online service use.

A related factor is that respondents can receive in-person help at the CSCs. Staff at the CSCs are seen to be specialists and as knowledgeable. Three respondents also explicitly mention they trust the CSCS employees. In-person assistance is appreciated for issues which are perceived to be complex. Respondents also cite the possibility to ask additional questions and to get additional help, both about using the system and about the services sought. In some cases expert assistance and in-person visits are cited in relation to a need to obtain a complex set of services. Such factors are mentioned by almost four out of ten respondents. One respondent, a middle-aged woman, mentioned social reasons to use the CSC – the CSC is close to home and allows her to socialize and have a chat.

The analysis reveals that in some cases the public services also serve a social function. A final factor in rural areas is the desire to discuss the procedure in person and receive help. This is also a way of socializing. People like to go to CSC to find out about news in their area. Especially older people or unemployed, who have more time can meet other people with similar problems and/or interests and discuss. Therefore, CSCs can also be perceived as meeting points for people.

This analysis provides a basic picture of the reasons of non-use of public services in Latvia. Research findings signal about the necessity to improve services and to deal with problems which end-users are facing in everyday use of the portal when they search for information or want to apply for electronic public services. Therefore, during the next project phase on the second half of 2018 the co-creation

sessions were organized jointly by the University of Latvia and the Latvian Ministry of Environmental Protection and Regional Development (VARAM) on its administered portal latvija.lv

4.4. Implementation of the co-creation sessions in Latvia

According to the designed methodology all 6 coproduction sessions were conducted involving 5 focus groups: NGOs; people with special needs (problems of sight); students of LU computing faculty; inhabitants – users of the latvia.lv portal; and employees of the CSC's. The main objective of coproduction sessions was to identify problems of the usability of the portal from a user point of view and to receive practical suggestions and possible solutions.

The 4 priority topics chosen for analysis during the coproduction sessions were the following: 1) life situations; 2) e-services; 3) catalogue of public services; 4) client work place.

The main criteria for defining the usability of the portal in the context of client satisfaction:

1) Convenience of portal's design visual perception – *How visually attractive is the portal's home page? How to improve it?*
2) Structure of information, transparency of placement and convenience for use (navigation) – *How easy it is to understand and what and where is located in the portal? How to improve it?*
3) Speed – *How fast it is possible to make necessary actions in a current information structure? How to improve it?*
4) Clearness of the description of services – *How clear is descriptions of accessible services? Is it possible to understand if there is information that one is looking for? How to improve it?*
5) Convenience of use of the search function – *How convenient is the search function? Is it working precisely? How to improve it?*

The main goal of these sessions was to get insights from the end-users of the national public service portal www.latvija.lv. During these sessions the CITADEL project proved itself to be a perfect environment for collaboration between academia and different levels of public administration to gain the most from the co-creation activities.

The chosen methods used for coproduction sessions with focus groups included the "*Check-in check-out*" methods (http://toolbox.hyperisland.com/check-in-check-out) to ensure precise suggestions and to be able to identify them; the "*Idea Dashboard*" method (https://dschool.stanford.edu/resources/idea-dashboard) and the "*Brainstorm*" (http://www.designkit.org/methods/28) method. The greatest challenge was to choose the right method for a particular focus group, which required a combination of abovementioned methods during the session, and a flexibility for shifting from one method to another to be able to capture the ideas and suggestions in fast and easy manner. Moreover, the size of focus groups varied from five to more than 20 participants, which has to be considered to make sessions efficient. Larger focus groups (students, employees of the United State and Municipal Client Service Centres) were divided into smaller working groups.

The "*Six Thinking Hats*" coproduction method' elements have been used to some extent (http://www.debonogroup.com/six_thinking_hats.php) to enrich the discussion from different perspectives and get alternative opinions – pragmatism (white hat), optimism (yellow hat), criticism and pessimistic view (black hat), emotional and visual (red hat), creativity (green hat) overlooking, but in a controlled manner (blue hat).

Each focus group in a coproduction session was moderated and monitored by external observers to follow carefully the processes during the sessions. The sessions were implemented in an informal working atmosphere and in a dynamic manner by exchanging view, discussing, completing special tasks in computers and also on the paper. In difference from other sessions, during the session with students the mobile phones were used with a thought that young people mainly use electronic services on phone. In every session the CITADEL project was shortly presented and ideas of the project have been addressed.

The participants' surveys with evaluation and comments about each of the tasks they had to fulfil has been collected; these evaluations and comments constituted a basis for drafting the results of the focus group co-creation sessions. Surveys of observers with comments on each of participant's involvement in common activities related to work in groups and sub-groups, as well as in common discussions have been included in the assessment of the focus group co-creation sessions. In addition, all sessions were recorded; fixed comments and observations were added to the overall evaluation. The evaluation was performed in a structured way according to the five criteria for defining the usability of the portal for the four priority areas (life situations; e-services; catalogue of public services; client work place). Based on a set of the structured conclusions, detailed proposals and recommendations were provided (see Figure 2.)

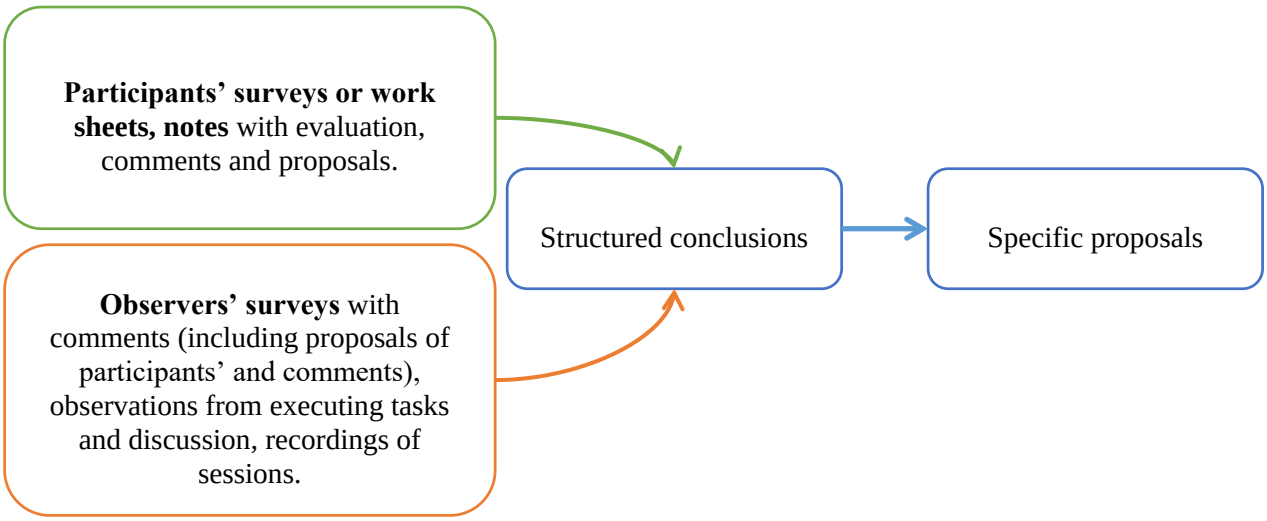

Fig. 2. Methodology of collection and analysis of the coproduction focus group results

Source: designed by the University of Latvia Researcher Dr. Romans Putans in the framework of the CITADEL project, LU, Riga, 2018

During the co-creation sessions appeared that a lot of focus was on the search engine. Results have shown that many users rely on built-in search function in the portal and its functionality was deemed unsatisfactory because usually, when searching by keywords, search provides too many results for users to comprehend. Also, one of the identified problems was too complicated language and disparities between the language and keywords chosen by end-user when searching for a service, and the choice of words / complexity of service descriptions provided by institutions. Unfortunately, this is a very complex issue, which needs time and effort to be solved. In addition, providing services and making them simple for people, one needs to find a balance between legally correct and comprehensive descriptions, and simple way of expression. The sessions also substantiated the need for mobile-friendly version, proactive and personalized service delivery, intuitive design.

5. RESULTS

The results of this research show that the co-creation has been present in political and public management research agendas for about ten years. Also, public administrations have been working on modernizing their performance by integrating solutions provided by ICT and modern technologies for a couple past decades. At the same time, most studies on co-creation are focused on citizens as a co-implementer, while only a few identify the role of citizens as a co-designer. Therefore, this is important to understand the role of citizens in co-creation, especially taking into account that the role of a citizen

as a client and a partner in the provision of public is foreseen as the next stage of evolution in the relationship between public administration and society.

These issues are tackled by the CITADEL project, which has an objective to understand, transform and improve public administration and its services across Europe. It offers to provide the CITADEL tool-supported methodology for services co-creation; Co-creation collaborative tool and Co-creation handbook.

The results of interviews and literature research indicate that main reasons of the non-use of public on-line services remain absence of technologies and internet, the access to the e-services requiring authorization on the portal, lack of knowledge on how to use technologies and/or the portal; too complicated electronic processes and language used; necessity to have a personal contact and to discuss the process, and/or ask questions.

Results of findings of the interview analysis are confirmed by findings during the co-creation sessions performed in Latvia. Also, results of co-creation sessions have shown that the co-creation can serve well for improving public administrations and their provided services, as well as in decision making processes. This has been decided that during the next steps of portal www.latvija.lv improvement, the co-creation session results will be used to define the necessary technical requirements for portal's redesign that will be carried by during the next years.

6. DISCUSSION

The concept of co-creation has firstly appeared in the 1970s as a new attempt to deliver public services with a high degree of citizen involvement. It has been on the agenda for some time and became increasingly interesting for governments in the aftermath of the financial crisis during 2007-2010, when there were considerable budgetary constraints to deal with. Also, in the past few decades an increased use of the ICT and modern technologies in the everyday lives of citizens, businesses and governments has given rise new forms of public engagement which offer opportunities for more collaborative approaches.

Today governments are facing increasing expectation and greater demands from citizens about the quality of public service. To satisfy these demands there is a necessity for public sector to engage in co-creation processes with the private sector providing the central role for the service recipient's. In this way the new public governance can ensures wider and easier accessibility of public services as well as saves clients' resources.

The CITADEL project has undertaken the challenge to design and implement innovative solutions for improving public services by proposing recommendations, solution and tools to enhance the public policies and processes with a view to deliver effective, inclusive and high quality public services across Europe. The co-creation is an integral part of this process and offers new approaches for both, public administrations and citizens.

The analysis of non-adoption motives generally confirms the findings from the existing literature. It did highlight a number of specific findings though, and more in particular drew attention to a difficult dilemma for public organizations wanting to stimulate digitization: should abundant offline alternatives be offered to guarantee broad access, or does this unduly hamper take-up of digital services?

The interviews with non-users in Latvia revealed that not having a computer or internet access remains an important reason not to use online services. This is a finding that has emerged repeatedly in research on non-use of digital series, even in highly developed countries were internet penetration rates are very high [21]. This is especially the case for older people. Also, access to the e-services requiring authorization on latvija.lv remains an issue for a lot of people who don't use and/or don't know how to use Internet bank, e-signature and/or eID card.

Interviews with CSCs clients have indicated that the respondents appreciate the possibility to ask questions and to receive professional advice. They are afraid of making mistakes and seek reassurance, and have a perception that the online system will be too complicated. Even simple systems can be seen

as complicated. The complexity of the electronic system and fear to make a mistake as well as lack of understanding of the procedure have a strong negative impact on the use of the electronic services. www.latvija.lv is quite complicated to follow and there are many steps to do before one can find and access the service. In addition, many people seek to have a personal contact and to discuss the procedure in person. This means that the ease of use of public services needs to be improved.

Further research has been conducted through 6 co-creation sessions organized jointly by the University of Latvia and the Latvian Ministry of Environmental Protection and Regional Development (VARAM) to get insights from the end-users of the national public service on the VARAM administered portal latvija.lv. It should be noted that this was the first time in Latvia, when the co-creation approach was used by the public administration to involve citizens' in the decision making and improvement of public services. The insights from these sessions have revealed that users find the search function and language used too complicated and unsatisfactory. The information obtained during the co-creation sessions was recognized as useful for the further improvement of public services and will be used by the VARAM and other involved bodies.

7. CONCLUSIONS

Development of a concept of the co-creation is increasingly related to the digitalization, which is a core element of the modernization of public administration and digital provision of government services. In the assessment of the current developments related to co-creation, the author concluded that the involvement of citizens in co-creation, as well as the non-use of digital services are not widely discussed. Further research is badly needed to gain a better understanding of why citizens fail to use digital government services and how to improve it, including the application of co-creation tools. This study conducted 141 interviews among users of Latvian CSCs and analyzed results of 6 co-creation sessions in order to enhance this understanding.

The specific focus on non-users revealed a higher than expected importance of hardware and internet availability, as well as convenience factors as important determinants for non-adoption. Furthermore, the study showed that the well-intentioned supply of non-electronic alternatives might hamper the take-up of e-government.

Since emergence of the Internet, the digital divide has become an enormously popular concept. Great inequalities in IT implementation, uses and skills exist. The digital divide has several dimensions: social, economic and political. Poor or less educated people, and people leaving in rural areas show low IT indicators. There is evidence that low-income people, communities and regions are only partially digital. The author highlighted that digitalization and technological infrastructure are considered as fundamental factors in competitiveness of countries and regions. The further digital development is a precondition for diminishing regional and wellbeing divide and a facilitator of administrative processes towards better services and achievements in wellbeing of citizens

The article concludes that efficient decision making for improving economic development, as well as social welfare at regional, national and local levels needs implementation of digitalized services in a process of co-creation as they inevitably become more important due to the increased digital competitiveness of countries

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