

Public value creation and robotic process automation: normative, descriptive and prescriptive issues in municipal administration

Public value
creation

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Abstract

Purpose – This paper aims to highlight problems and opportunities for introducing digital automation in public administration (PA) and to propose implications for public value creation of robotic process automation (RPA) through the perspective of good bureaucracy as a guiding framework.

Design/methodology/approach – This conceptual paper addresses the purpose by applying three normative ideal types: Weber's ideal type for a bureaucracy, new public management and public value management. This paper synthesizes an analytical framework in conducting case studies of the implementation of RPA systems in municipal administration.

Findings – This paper contributes to new insights into public value creation and digital automation. The following four implications are proposed: the deployment of RPA in municipal administration should emphasize that organizing administrative tasks is essentially a political issue; include considerations based on a well-grounded analysis in which policy areas that are suitable for RPA; to pay attention to issues on legal certainty, personal integrity, transparency and opportunities to influence automated decisions; and that the introduction of RPA indicates a need to develop resources concerning learning and knowledge in the municipal administration.

Originality/value – This paper is innovative, as it relates normative, descriptive and prescriptive issues on the developing of digital automation in PA. The conceptual approach is unusual in studies of digitalization in public activities.

Keywords Weberian bureaucracy, New public management, Public value creation, Public policy, Democratic legitimacy, Organizing variables, Robotic process automation, Digital automation, Public administration

Paper type Conceptual paper

1. Introduction

Politicians and public managers have high expectations on digitalization. Digital automation and artificial intelligence (AI) are estimated to improved bureaucracy through



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increased efficiency and augmented public value creation, e.g. unbiased decisions, new forms of democratic participation, inclusion of users and improved working conditions for employees (Wirtz and Müller, 2019). Digitalization in public administration (PA) is however accompanied by risks concerning integrity, transparency, the rule of law and legal certainty, civil rights, democratic legitimacy, quality and legitimacy of decision-making, moral dilemmas and profession-based uncertainties (Wirtz *et al.*, 2019; Bullock, 2019; Rahwan, 2018; Hanberger, 2009). Hence, prerequisites for creating legitimacy for bureaucracy, PA and the welfare state as such are at stake. This paper illustrates how normative theories of bureaucracy can contribute to understand fundamental challenges and opportunities for implementing digital automation in PA. It contributes to deepened and new insights into public value creation and digital automation (Dunleavy *et al.*, 2006; Jansson and Erlingsson, 2014).

Digitalization is the process of changing practices with adoption and use of digital technologies (Kuusisto, 2017). Digital automation, i.e. the use of digital technologies to perform working tasks with little or no human interference (Groover, 2001), is part of digitalization in the public sector. Digital automation takes many forms, e.g. autonomous systems, cognitive robotics, virtual agents, predictive analytics, speech analytics and robotic process automation (RPA). In this paper, we focus on RPA. In PA, RPA is a common way to automate repetitive work tasks. RPA means that software robots perform tasks that previously were performed by human workers (Lacity and Willcocks, 2016). More specifically, RPA is digital automation of tasks performed on information systems such as operate the mouse, click, cut and paste, send e-mail, fill in forms, search data, etc. (Hallikainen *et al.*, 2018).

RPA incrementally reshapes PA; this by automatically executing repetitive routine tasks previously done manually (Lacity and Willcocks, 2016; Osman, 2019; Ranerup and Henriksen, 2020). This paper represents methodological efforts to create an analytical framework in conducting a case study of the implementation of RPA systems in a Swedish municipality. Although illustrations and conclusions highlight politics and administration in a municipal context, the analytical framework is applicable even in other kinds of contexts in public policy. In this paper, we make no principal distinction between state and municipal activities. Though, it should be noted that there may be differences in the legal framework between state government and local government agencies.

However, in many countries, municipalities are responsible for organizing and implementing the main part of public services. For example, in Sweden the major part of public value creation occurs at the municipal level (Lidström, 2015; Montin, 2014). There is currently no comprehensive statistics of the extent to which Swedish municipalities have implemented RPA. In our study, conducted in a medium-sized Swedish municipality, initially 30 RPA processes were identified. For example, in the human resources (HR) department, processes were identified for finding anniversaries (staff who worked for 25 years), terminating employment contracts, writing employment certificates and employment contracts, automating calendar bookings and administering government grants.

Public value creation through innovative digital technologies is at center in public sector reforms and reform proposals. In research on public value creation, there have been growing expectations that the development of digital technologies has the potential to strengthen public values such as efficiency, fairness, trust and legitimacy (Criado and Gil-Garcia, 2019; Cordella and Bonina, 2012). Still, implications for bureaucracy, public managers and employees are under-researched and empirical support is insufficient (Lindgren *et al.*, 2019; Loberg, 2021). Given the challenges and opportunities accompanying this trend, and the fact

that value is never neutral, we believe there is a need to deepen the understanding of normative or value-laden aspects of PA (Wirtz *et al.*, 2019).

This paper sets the stage for a case study of digital automation in PA at the municipal level in Sweden. In the case study, we explore the question:

How can RPA in municipal administration contribute to good bureaucracy?

This paper is linked to political considerations about how the practical implementation of RPA should be managed in municipal administration. In the case study, in a medium-sized Swedish municipality, the development of strategies and the organizing of RPA are characterized by several uncertainties. This applies in particular to value-based considerations on quality, transparency, equal treatment, ethical dilemmas and professional skills among employees. A main idea with this paper is to develop a framework that provides guidance for both politicians and officials to deal with this type of uncertainty when implementing RPA.

This paper addresses the question by applying three normative ideal-types: Weber's ideal type for a bureaucracy, new public management (NPM) and public value management (PVM). The aim of this conceptual paper is two-fold: first, to highlight problems and opportunities for introducing digital automation in PA, and second, to propose implications for public value creation of RPA through the perspective of good bureaucracy as a guiding framework. For this purpose, we integrate normative, descriptive and prescriptive elements of analysis (Lundquist, 1987; Bell *et al.*, 1988). In the following, we will first outline three normative principles for what good bureaucracy means in Section 2. A second section presents some descriptive starting points for opportunities and challenges in achieving the normative principles in Section 3. In conclusion given in Section 4, we discuss normative principles and empirical conditions for the deployment of RPA in municipal administration. Future research and concluding remarks are given in Section 5.

2. Normative analysis – the good bureaucracy

The point of departure for our analysis is the idea of good bureaucracy. So, what is a good bureaucracy?

This question has kept researchers diligent since the end of the 19th century. The dominant approach has been based on Weber's ideal type for a bureaucracy. The ideal-type represents a way of doing social science research in a heuristic way, i.e. a process of making abstractions of reality in its purest imaginable form by capturing the essential characteristics of an empirical phenomenon. An ideal type is, by definition, a reduction of reality that aims to serve as a yardstick or a framework to facilitate comparisons in a changing societal environment. In this paper, the ideal type is an instrument for analyzing and understanding basic principles (Lundquist, 1987; Barberis, 2012; Byrkjeflot and Engelstad, 2018), i.e. different normative starting points for digital automation in PA. Thus, the idea of using ideal types is not to evaluate effects or other values associated with the normative models. It is also worth noting that the use of normative approaches does not aim at reaching conclusions on which model is most efficient in efforts to achieve a good bureaucracy. It is purely an instrument to develop methodological tools and widen the understanding of policy issues in implementing RPA in PA.

Theory on good bureaucracy is often delineated as a simple sequence; first Weber, then NPM and finally PVM. Although several researchers (Stoker, 2006; O'Flynn, 2007; Bryson *et al.*, 2014) regard PVM as the synthesis of normative aspects derived from Weber and NPM. In the following, we contrast Weber's ideal type to NPM, respectively, PVM.

2.1 Weberian bureaucracy

Weber's ideal type is a refinement of characteristics for an organizational form based on legal and rational principles. Fundamental to Weber's bureaucratic model is *legality*, defined as the exercise of power by rules that have been enacted in a formally correct manner. Formally correct means that those affected by the decisions themselves have developed the rules or been introduced by an authority *t* to perceived as legitimate by those concerned (Weber, 1978). Following Weber's characterization, bureaucracy as a legal-rational system of political control (Muellerleile and Robertson, 2018; Fukuyama, 2013; Pollitt, 2009; Weber, 1978, chapter XI), can be described as follows:

- bureaucrats are personally free and subject to authority only within a defined area;
- they are organized into a clearly defined hierarchy of offices;
- each office has a defined sphere of competence;
- candidates are selected on basis of technical qualifications;
- bureaucrats are remunerated by fixed salaries;
- the office is treated as the sole occupation of the incumbent and constitutes a career;
- there is a separation between ownership and management; and
- officials are subject to strict discipline and control.

The Weberian ideal protect the state from interest groups or lobbyist organizations. The bureaucracy stands for clarity, equality, security and predictability (Pollitt, 2009). However, the ideal has been extensively and critically discussed in social science research. Part of this criticism concern the model's lack of flexibility – *governing by rules is sometimes unmanageable to apply to complex societal problems*. Another critique has been devoted to issues on specialization, i.e. issues that come in between the gaps in hierarchically and vertically organized departments. In dystopian interpretations, faceless and excessive red tape have been imagined rather than creativity or compassion (Alvesson and Thompson, 2006). Regardless of whether this critique fundamentally misinterprets Weber's ideas about the significance of the ideal type from a methodological point of view (cf. Bartels, 2009), the critique itself has led researchers to propose alternative approaches to Weberianism.

2.2 New public management

Towards the end of the 1970s, a new trend arose in many the Organization for Economic Co-operation and Development countries to characterize the good bureaucracy, namely, the emergence of NPM. The main idea was to reduce costs and introduce marketing and entrepreneurial ideals to PA (Hansen and Lindholm, 2016). NPM was coined by the British social scientist Christopher Hood. Hood (1991) regarded NPM as a marriage of two streams of ideas. The first, new institutional economics, emerged in the 1950s–1960s as a critique of traditional principles of good administration linked to Weberian bureaucracy as an organizational form. The leading concept was public choice, emphasizing that PA should be guided by ideals of being competitive, an emphasis on customer perspectives, transparency and the importance of developing different types of incentive structures. The second stream of ideas is based on traditions within theories on managerialism, based on Taylorism and scientific management. It emphasizes that PA should develop independent leadership, professional expertise and a focus on creating results and efficiency. Hood (1991, p. 4) defines NPM in seven doctrinal components (see Table 1).

Criticism of NPM has been massive, even though the principles have gained acceptance in many countries as part of the mindset and methods of operation in PA (Hansen and

Table 1.
Doctrinal
components in NPM
(Hood, 1991)

Normative doctrine	Meaning, justification
1. <i>Hands-on professional management</i> in the public sector	Active, visible, discretionary control of organizations from named persons at the top; free to manage
2. Explicit <i>standards and performance measures</i>	Definition of goals, targets, indicators of success, preferably expressed in quantitative terms, especially for professional services. Accountability requires clear statement of goals
3. Greater emphasis on <i>output controls</i>	Resource allocation and rewards linked to measured performance; breakup of centralized bureaucracy-wide personnel management. Need to stress results rather than procedures
4. Shift to <i>disaggregation</i> of units in the public sector	Create corporatized units around products operating on decentralized 'one-line' budgets and dealing with one another on an 'arms-length' basis. Need to create 'manageable' units, separate <i>provision</i> and <i>production</i> interests. Use of contract inside as well as outside the public sector
5. Shift to greater <i>competition</i> in public sector	<i>Rivalry</i> as the key to lower costs and better standards
6. Stress on <i>private sector styles of management</i> practices	Move away from military-style 'public service ethic' to greater flexibility in hiring and rewards; greater use of PR techniques. Need to use private sector management tools in the public sector
7. Stress on greater <i>discipline and parsimony</i> in resource use	Cutting direct costs, raising labour discipline, resisting union demands, limiting 'compliance costs' in business. 'To do more with less'

Lindholst, 2016). The debate in recent years has dealt with attempts to either develop the model or present alternative philosophies. Some critics have spoken of the emergence of a post-NPM paradigm in which critical elements of Hood's principles have been challenged in various ways (Christensen and Lægreid, 2011). Over the past two decades, alternative thinking has been concentrated on PVM.

2.3 Public value management

PVM was introduced as a concept by Moore (1995). The debate on what public value means has since been intense (see e.g. the critique by Rhodes and Wanna, 2007). Nevertheless, PVM emphasizes core values for good administration, such as democracy, commitment, user perspective, trust and transparency. Commonly, researchers (Yeboah-Assiamah *et al.*, 2016) regard PVM as the development of normative principles for PA in a sequence with first Weber, then NPM and then PVM. Examples of founding principles for PVM are as follows: *focus on how the public sector creates public value; show social and economic value creation; value is determined through participation and deliberation with relevant actors* (Meynhardt, 2009; Bryson *et al.*, 2014; Bozeman, 2019).

Jørgensen and Bozeman (2007) list 72 concepts used in research to describe what is meant by public value. In the analysis of the concepts, public value represents complex constellations and, in some cases, also contradictory values (*ibid.*). Public value creation emphasizes that citizens, users, caretakers and other actors affected by the decisions need to be involved in organized ways to participate in relevant policy-making processes. Thus, value creation is associated with specific ethical approaches, including the following:

- performance culture – officials with the task of providing high-quality service;
- focus on demanding responsibility with transparency;

- universal principles of equal treatment and justice;
- officials who value competence, professionalism, and integrity; and
- the administration is based on a commitment to creating well-being through partnerships between the public, private and non-profit sectors.

Finally, the creation of public values is conditioned by the ability to adapt flexibly to changing and complex situations. Officials in the public sector need continually to evaluate outcomes and develop learning activities in processes of public value creation. Compared with the Weberian model and NPM, PVM emphasizes allowing decision-making in public activities to be designed contextually on locally based values, emphasizing trust, quality of life and community.

In the foregoing, we have outlined three normative models for good bureaucracy. The models condense three fundamental values: *legality*, *efficiency*, *value creation*. The next step in our analysis is to describe challenges and opportunities when digital automation with RPA is implemented at the municipal level. Finally, we relate the normative models with the empirical conditions for designing guidelines in a prescriptive analysis for introducing RPAs in local government. The prescriptive analysis also forms the basic conclusions of this paper (Figure 1).

It should be noted that the integrated elements of analysis (Lundquist, 1987; Bell *et al.*, 1988) are partly overlapping. Normative approaches are associated with descriptive issues, and prescriptive guidelines constitute a synthesis between what is desirable and what reality allows for. Still, it is for analytical purposes that the elements are kept apart to enable the aim of the paper, i.e. to propose implications for public value creation in introducing RPA in municipal administration.

3. Descriptive analysis – challenges and opportunities

Municipalities have been characterized as multi-organizations (Montin, 1993). A municipality conducts policies within a wide range of activities with significant variations in how they are organized. A municipality also works with several forms of legitimacy. First and foremost, the citizens appoint the municipality's decision-makers in general elections. Still, in addition to this, legitimacy is created through, among other things, parliamentary legislation, professionalism and user participation. The first fundamental conclusion is that digital automation with RPA in municipalities needs to recognize this multifaceted character. In the following, we intend to deepen the understanding of opportunities and challenges for digital automation with RPA in municipal administration by using three conditions: policy-design, variables of organizing and issues on legitimacy (Rothstein, 1998).

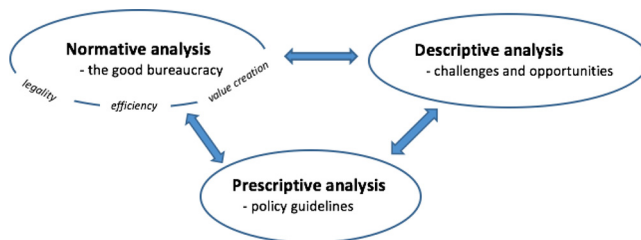


Figure 1.
Normative,
descriptive and
prescriptive elements
of analysis

3.1 Policy design

The first condition applies to policy-making and the municipalities' various tasks. The most dominating expenditures are care for the elderly, care for the disabled, primary and secondary schools. The municipalities in Sweden are also responsible for emergency services (except policing), environmental protection, urban planning, leisure and cultural policies, public housing, sanitation and water supply. Finally, it should be noted that a significant part of the municipalities' expenditures is used for a growing administration with elements of traditional bureaucracy (e.g. HR services and economic administration) and organizational management tasks (Evetts, 2009).

The municipal multi-organization indicates that the potential for introducing RPA varies between different policy areas. Thus, we need to develop a frame of reference linked to considerations about the nature of the policy tasks that can be automated. In this part, the conditions for RPA are related to the complexity of the policy tasks. There are two main types of complexity in public policy; technical and political complexity (Peters, 2015). The technical complexity is defined as *when the underlying causal processes in the problem are not understood fully, or they involve a number of interactions of individual and social factors* (Peters, 2015, p. 23). In other words, it is difficult to assess the cause and effect between a particular measure and the desired outcome. The technical complexity can also be associated with adapting the efforts to the prevailing situation and to personal interaction with the actors involved. Policy tasks carried out under a high degree of technical complexity can be described as dynamic and require a significant degree of discretion for those who are to carry out the tasks (Rothstein, 1998).

Political complexity refers to *multiple and conflicting interests involved in the policy domain* (Peters, 2015, p. 23). Political complexity expresses the degree of politicization as conflicts of interest within a policy field. The policy tasks can be more or less politically controversial. In cases where the political complexity is high, it is also likely that the actors involved make different assessments of the technical complexity, i.e. which type of intervention is best placed to solve the current policy problem. The two types of complexity should be understood dimensionally between high and low values (Table 2):

Policy tasks in Cell 1 have the highest degree of complexity, and examples are social care interventions, such as caring for people with abuse problems or young drug users. Here, we can also classify measures for climate adaptation, migrant integration and combating criminality. The complex nature of the tasks means that individual officials need to make profession-based assessments and consider political conflicts and values concurrently. The opposite is found in Cell 4, consisting of detailed decisions that are neither politically

		Technical complexity	
		High	Low
Political complexity	High	1. • Politicized and conflictual • Dynamic; contextual • Discretionary; high degree of autonomy for bureaucrats	2. • Politicized and conflictual • Static; non-contextual • Mandatory; low degree of autonomy for bureaucrats
	Low	3. • Depoliticized and consensual • Dynamic; contextual • Discretionary; high degree of autonomy for bureaucrats	4. • Depoliticized and consensual • Static; non-contextual • Mandatory; low degree of autonomy for bureaucrats

Table 2.
Technical and
political complexity

controversial nor technically complex. In this case, we find a dominance of uncomplicated administrative tasks that concern, for example, payment of wages, parking fees, requisitions of food rations to care centers.

Cell 2 are tasks similar to those in Cell 4 but can be considered politically controversial. In this cell, the main problem is that the policy field is often value-laden, but the tasks are rule-based and independent of context. Examples are building permits in urban planning in areas described as having high conservation value. Decision-making on building permits is based on relatively uncomplicated rules and process descriptions. Still, it is complex because a building permit can challenge values linked to, for example, preserving sites of cultural heritage. Another example could be payments of housing allowance that can be made routinely according to uncomplicated criteria but where the form of allowance is politically controversial. Political interests may want to see a comprehensive control of payments in asserting ideological reasons that generous grant systems weaken the incentives to enhance individual responsibility.

In Cell 3, the skills of the professional groups are significant. The technical complexity is high, whereas the efforts are rarely politically controversial. Examples are teachers' assessments of pupils' knowledge, nurses' assessments of health conditions or measures to prevent environmentally hazardous industrial emissions. Similar to Cell 1, in most of these decisions, it is probably necessary for individual officials to make independent assessments. The difference is that these assessments do not have to consider political value conflicts.

In sum, the variation of policy tasks in the municipal multi-organization needs to be at the center of considerations when deciding how RPA should be introduced in a municipality. In some areas, the difficulties of implementing RPA seem to be many, while it seems more unproblematic in other areas.

3.2 Organizing

The second condition is linked to how the municipality organizes its activities. Organizing resources (money, capital, personnel, information) is linked to instruments for action. Organizing processes consist of five variables (Lundquist, 1987):

- (1) *Structuring* indicates how the internal allocation of resources and power takes place. It is a structuring according to democratic principles, to hierarchy or to network principles.
- (2) *Roles* are units in the division of labor in an organization and determine what certain persons may and should do in the organization and can be a managerial role, expert role and administrative role.
- (3) *Procedures* regulate and coordinate the interaction of the roles and consist of the methods used in managing activities in the organization.
- (4) *Culture* are the norms that bind the actors together and consist of values and perceptions of reality among the involved actors.
- (5) *Space* affects the geographical aspects of the organization and may apply to the geographical scope of the activity, the locality or the organization's premises.

Put simply, it can be said that organizing is based on individual preferences to bring about change. The basic idea is that the organizational variables are channels through which the actors' preferences are transformed into action. In the municipal administration, automation with RPA should be tailored in relation to the diversity of the organized system. Administration of schools requires other kinds of automation compared to what is needed in, for example, administering technical assistance in urban planning, administration of

social care requires different types of automation compared to managing facilities for sports and leisure and so on. Moreover, we propose that when automating with RPA, organizational variables require anchoring and participation from citizens, users, employees and others involved.

3.3 Legitimacy

The third condition concerns the issue of whether the municipal activities are legitimate to citizens, users and other stakeholders. The notion of legitimacy is complex and multidimensional. It comprises rules, normative beliefs and actions that establish some framework for proper authorization and performance of power (Beetham, 2013). In the following, legitimacy will be developed in three main forms: input, throughput and output (Schmidt, 2013; Grimmelikhuijsen and Meijer, 2022).

The single most important source of legitimacy in the municipalities is that the responsible decision-makers are appointed in general elections. We can talk about this as *input legitimacy*, i.e. politicians are elected by the citizens and are thus given the responsibility to make decisions on behalf of the citizenry. In connection with the next election, citizens will be allowed to evaluate and demand accountability for the decisions made during the election period. However, the problem is that a significant part of municipal activities take place either on behalf of the politicians or as an expression of national legislation.

The *throughput legitimacy* focuses on how the PA can create neutral and rule-based governing. One of the main features of Weberian bureaucracy regards rule-based and transparent administrative processes as a significant source for maintaining legitimacy in PA. The bureaucracy's procedures are in themselves a guarantee of maintaining legitimacy and clear responsibilities, i.e. the system has been designed so that the decision-making processes appear neutral and rule-governed.

The third form of – *output legitimacy* – is associated to that the welfare systems are based on activities carried out by politically independent professionals (Rothstein, 1998). The professionals at the front level receive support from citizens, pupils, caretakers or business sector actors should be continuously given public and critical attention. These functions can apply to legitimacy expressed as trust in professional skills, that decisions are made legally, that users and other stakeholders are involved in decision-making processes, and that employees do not abuse their position.

Digital automation with RPA seems to have the potential to change the legitimacy values in PA significantly. It can use systems for support and control mechanisms in relation to citizens, handling user requests, designing automated processes for consultation in urban planning, etc. We can also imagine that RPA contributes to legitimacy through shortening lead times and consistency in law enforcement. There are also aspects related to how digitalization contributes to enhancing professional skills, which can lead to strengthened or weakened legitimacy. In Table 3, we summarize the normative theories and the empirical conditions in nine outcomes.

The results in Boxes 1–3 show how policy design issues vary between the three ideal types and clarify their differences, from the rule-based and detail-driven Weberian bureaucracy to context-dependent and trust-based value creation. Boxes 4–6 show different types of organizations of PA, and Boxes 7–9 show different values of legitimacy, from legitimacy based on legal hierarchy or freedom of choice or through networking. In the next concluding part of this paper, we will add a third layer in the analysis to weigh together the normative and descriptive aspects (Table 3).

Table 3.
Normative ideal
types and empirical
conditions

	Weberian bureaucracy	NPM	Public value management
<i>Basic value →</i>	<i>Legality</i>	<i>Efficiency</i>	<i>Value creation</i>
Policy design	1. Value free Regulating Governing in detail	2. Economic incentives Measurability Evaluation/auditing	3. Context dependent Framework laws Quality of life, trust
Organizing	4. Separating politics and administration Hierarchies Career systems	5. Separating politics and administration Privatization/ entrepreneurship Management	6. Integrating politics and administration Networks/partnerships Communities
Legitimacy	7. Throughput Legal hierarchy Professional skills	8. Output Freedom of choice Efficiency	9. Input and output Corporative networks User participation

4. Prescriptive analysis – conclusions – robotic process automation in municipal administration

The idea is now to synthesize the normative and empirical analyses in the prescriptive analysis. In the following sub-sections, we present four main conclusions from the analysis and potential implications guiding the deployment of RPA in municipalities.

4.1 First

A basic premise is that the municipality is a democratically governed organization. The municipality’s responsibility and leadership of digital automation and RPA rest exclusively on the elected politicians. The deployment of RPA in municipal administration includes dealing with the complexities of automation that primarily require deliberations and assessments based on political decisions. It is worth noting that digitalization processes in PA, often tend to be articulated as merely a technical issue and downplaying its political contents and controversies (Löfgren and Sørensen, 2011; Hall, 2008). For example, it is inappropriate for elected representatives to delegate decision-making to officials. Instead, politicians should take an active part in following up and evaluating the implementation of RPA systems. Guidelines for the deployment of RPA in municipal administration *should emphasize that organizing administrative tasks is essentially a political issue.*

4.2 Second

Guidelines for introducing RPA should also include considerations based on a well-grounded analysis of which policy areas can be suitable for introducing RPA (Nagtegaal, 2021). We have previously concluded that policy areas have different political and technical complexity. An analysis of the nature of the policy tasks means that for tasks with high political and high technical complexity, RPA should be introduced with caution. However, and on the other side, there seem to be reasons to suggest the introduction of RPA as a first choice when introducing policies with a low degree of political and technical complexity. RPA, in this case, can contribute to improved efficiency, legal security and work environment.

When the political complexity is high and the technical low, the fundamental question is to what extent RPA can be applied to consider politically expressed values. In some cases, decision-making processes are both repetitive and rule-based but politically conflict-laden.

We can call this a *value-based RPA*, and introducing RPA needs to clarify how political responsibility can be organized. When the policy tasks are characterized by high technical complexity but low political complexity, we can talk about *profession-based RPA*. The handling of policy tasks and decision-making is, to a large extent, profession-based and not ideologically value-laden. In this case, we can imagine systems designed by the professional groups themselves as a guide for handling certain matters. An essential feature of this type of system is to switch between an automated mode to a manual one, i.e. the automated function must always be able to hand over the continued handling to an individual official.

4.3 Third

There is also a need to pay attention to guidelines linked to the municipality's legitimacy. Increasing elements of RPA lead to an accentuated need to problematize, reflect on and clarify the design of basic value issues. In value-creating automation, guidelines need to be secured regarding several ethical requirements, primarily issues of legal certainty, personal integrity, transparency and opportunities to influence automated decisions. A critical problem in AI research has been termed a black box problem (Hayes *et al.*, 2020; Wirtz *et al.*, 2019; Peeters and Widlak, 2018). The black box problem occurs because the systems are technically complicated. The software development is often owned by private companies who, for business reasons, do not want to publish the design of the algorithms (Lind and Wallentin, 2020). There is thus a need to consider how to manage transparency issues regarding the content of the RPA systems.

In profession-based activities, the municipal administration's meetings with users, students, care recipients and citizens are perhaps the single most crucial basis for legitimacy for public actions (Rothstein, 1998). In policy research, concepts such as the responsive listener (Jansson and Erlingsson, 2014) and the public encounter (Bartels, 2013; Lindgren *et al.*, 2019) are used, which capture ethical aspects in the relationships between PA and affected people. Some scholars have associated a growing problem with street-level bureaucrats being transformed into screen-level bureaucrats or systems-level bureaucrats (Bovens and Zouridis, 2002; Busch and Henriksen, 2018). The municipal administration needs to consider how the systems should be designed to minimize the risks of increasing the digital divide and digital inequalities (DiMaggio *et al.*, 2001; van Deursen and van Dijk, 2014). The problem is that knowledge, resources and access to technology are unevenly distributed between different social groups. Another legitimacy problem is that clients may be anonymized, and the caretaker's specific life situation is lost. Some researchers analyze this with concepts such as digital rigidity or digital anonymity. RPA operating procedures tend to be directed towards specified algorithms that cannot comprehend the wholeness of each individual and make proper adaptations of decisions (Andersen *et al.*, 2020).

4.4 Finally

The analysis in this paper indicates that the introduction of RPA needs to develop resources concerning learning and knowledge in the municipal administration. Implications on organizational learning regarding, for example, digital leadership and profession-related skills need to be elaborated. However, we will also assert that municipalities need to manage risks with "organizational forgetting" or "institutional amnesia" (Stark and Head, 2019; Pollitt, 2009). When robot colleagues perform an increasing part of the management work, there is a risk that the organization loses its "memory" regarding the ability to handle both operating procedures and knowledge of problem-solving. Knowledge and practices developed over a long period can be lost when the activities are robotized. Therefore, our analysis indicates that the introduction

of RPA should include considerations on how to secure documentation of norms, routines, evaluation results and conflict areas in the organization.

5. Future research and concluding remarks

We believe that the research on the introduction of RPA in PA has developed significantly as a specific research field over the past two decades (Wirtz *et al.*, 2019; Lindgren *et al.*, 2019). However, we believe that only a few analyses have been able to link normative, empirical and prescriptive analyses in research on the introduction of RPA in PA. This paper presents a comprehensive framework to contribute to the introduction of studies that draw attention to the values associated with good PA and what empirical conditions characterize policy development. We can envisage several types of future studies:

- Analyses of the relationship between normative values and empirical conditions in the political and democratic governing of advanced technology in a context characterized by the interaction between administrative management, professional groups and users. There is scope to conduct more analyses of the problem of the public encounter and the emergence of digital discretion among street-level or, rather, systems-level bureaucrats.
- Analyses of how normative values regarding equality in accessing public services are affected by the introduction of RPA in PA. We can revise the question in this paper to instead focus the analysis on how RPA can contribute to fairness and equality in public value creation.
- Analyses of organizational learning (or amnesia) regarding how normative values and empirical conditions can be managed in a PA characterized by increasing elements of automated decision-making. Fundamental issues to highlight concern how the PA can safeguard both the ability to take advantage of established norms and routines and to be able to develop and change the way PA works through learning.

In sum, we have tried to deepen our understanding of how increasing digital automation can contribute to value creation in PA. PA is founded on different normative ideas, and the organization of welfare policy varies between policy areas and political tasks. We believe that digital automation certainly has significant potential for strengthening the PA's legality, efficiency and value creation. However, it presupposes a broad political discussion in society about normative conditions. Similarly, our analysis shows the need for social research to analyze the consequences of digitalization for PA to a greater degree than hitherto. In this paper, we have approached problems associated with strategies and the organizing of RPA initiatives that have been articulated in the Swedish municipality of this case study. In the above proposals for future research, it is mainly practical considerations that are taken into account, to deal with uncertainties linked to public value creation concerning quality aspects, transparency, equal treatment, ethical dilemmas and professional issues.

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