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‘It is always an individual assessment’: A case study on challenges of automation of income support services

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Abstract. Income support schemes are key policies in an inclusive welfare state. To make them legitimate they are strictly regulated. As such they provide good prerequisites for standardization and automation, in theory. The aim of this paper is to analyze a case of municipal administration of income support, where automatization is resisted despite managements’ ambitions. We focus on the case workers’ interpretations of changes conducive to automatization and discuss how different service logics may explain the tensions and resistance of the frontline case workers. Our findings suggest that digitalisation and automatization challenge the balance of two logics and raise concerns of accountability in exercise of public authority; and concerns of value in terms of support towards self-sustainability and social integration of the clients¹.

Keywords: Automatization, Income support, Manufacturing logics, Service logics, e-services.

1 Introduction

Social services are central in Scandinavian welfare systems, supporting the most vulnerable people to get an independent and reasonable standard of living as expressed in the social service legislation [1]. These extensive schemes, managed by local governments and municipalities, are based on a universalistic welfare model that rests upon principles of equality of living conditions, economic and social security and active participation in society. These schemes are thoroughly regulated and detailed regarding what to support, when, how and whom. As such the schemes are clear and provide good prerequisites for standardization and automation of case management, at least in theory. However, by virtue of the same legislation and the Administrative Procedure Act [2, 3], the case workers are guided to be accessible, transparent, supportive and guiding the client to be independent of the income support and empowered by the social workers - a dilemma of accommodating different logics is established that is enhanced by digitalization.

The effects of digitalisation, as is both claimed and demonstrated over time, for improved efficiency, impartiality and the rule of law in public administration (Heeks &

¹ We are humbly grateful to the research council FORTE, for the opportunity to carry this research, through financing of the project: "The computer says no!" – en studie om det offentliga legitimitet och medborgares tillit när e-förvaltningen växer fram. We are also grateful to our informants in the Income Support unit in the municipality who shared their perceptions and experiences in this research.

Bailur, 2007), public authorities are slowly introducing digital and automated processes in their service provision and administration [4, 5]. We argue hereby that social welfare is currently under digital transformation pressures, rife with tensions, where different logics that drive value production in social services clash with the logics of standardization and manufacturing that underlie imminent automation processes.

Scandinavian public welfare services are currently subject to advanced digitalization, in a context rife with diversified population needs and demands, governed by political goals of equal access to high quality services and constrained economic and personnel resources in municipal public administrations. The political ambition is to draw the benefits from technological developments to address the new demands from society [6]. In this context, frontline bureaucrats, as case workers, play a key role in the advanced use of digital systems in managing and administering e-services. Their discretion in case management, now mediated through technology, in relation to legal, organizational, and individual factors like competence, experiences and personal values can explain the outcomes of the welfare schemes [7].

The administrative organization of public services entails both principles of standardization of processes pursuing management goals (NMP) and at the same time involving individualization of decisions based on clients' needs and life situations, pursuing professional ethics and social policy priorities. ICTs and automation are expected to enable and increase the manufacturing types of service production [8].

Aim

The aim of this paper is to analyze a case of municipal administration of income support, where automatization is disputed, by focusing on the case workers' interpretations of these changes and analyze how different logics may explain the concerns to change.

Research Questions

The research questions that will be pursued for this purpose are:

1. What automatization attempts can be discerned in the case of municipal administration of income support?
2. What concerns are raised in connection with automatization in this case?
3. What logics are at work and how they affect automatization in service provision of income support?

2 'Digital First' principle in public administration in Sweden

In line with the European Digital Agenda, the Swedish national digital strategy is establishes the principle "digital first" [6, 9]. It implies that the contact with public authorities should primarily happen digitally. It involves submission of records in one instance, in order to streamline the case management and facilitate decision making. The clients however meet different prospects and challenges to meet the public authority, based on their municipality geographic configuration, demographic landscape and the volume of administrative resources.

2.1 The role of municipalities in the Swedish public administration

The social services in Sweden are a crucial part of the welfare state and it is formed and managed at the cross-road of two main governance principles: universalism and local autonomy [10]. The income support defined in the Swedish Social Service Act [1] has to be delivered impartially to all inhabitants, by all municipalities. National equality is key for the implementation by municipal administrations, which are to follow clear regulations and guides for application of the legislation in practice. On the other hand, the municipalities have constitutional autonomy [11], and act upon self-government powers [3].

2.2 Social service and income support schemes: Promise of automatization

The income support scheme includes two key dimensions: a thoroughly regulated administration of records on living conditions and cost of the client and an individual coaching-support service for the client that aims towards employment and financial independence. The records including living expenses and income are collected in connection to the application to entitlement for Income support and are subsequently reported monthly. Municipalities have well developed digital registries to collect, store and administer such records. The individualized coaching services involve a systematic planning, in collaboration with other authorities - both local and national - of activities to support the client to become fit for work and gain financial independence [12].

Although implementing a heavily regulated scheme, the municipalities have large powers, due to the local autonomy, to choose and develop own case management systems. Although a certain systematics for registration of records is common for the municipalities there are no standardized processes of case management in practice. A few municipalities develop their own systems, but the usual practice is to buy IT-solutions on the market [13]. Such solutions, commonly built on a model developed for one municipality, are subsequently sold to other municipalities with the promise of adaptation to the municipality's needs and case management processes.

Models of automation has already started to be implemented in public administration in Sweden, with a few examples from national agencies [14]. A majority (55%) of the Swedish municipalities report offering e-services with either totally or partially automatized service management [15]. There is an abundance of studies focusing on the effects of digitalization in public sector but less on automatization of processes in social welfare services. There are some examples in human resources-processes, where software robots collect records from several different IT systems and register data rapidly and without bias [16]. In the Swedish municipalities we can find several recent examples. The most known model is from the social services in Trelleborg, that has been described as a success model for automation in social services: extra time and personnel resources could be allocated on coaching the clients towards reintegration on labor market [17, 18]. This model is currently disseminated in 14 municipalities with support from national agencies as Vinnova and SALAR [19].

In other municipalities, this model has been criticized. One of the most discussed cases is from Kungsbacka municipality, where 12 out of 16 social workers resigned in

protest to the plans for automation of income support [20]. The protesting social workers acknowledged that digitalization may save time, but they questioned that a robot can make individual assessments of their clients' needs. Other critique involved the shift to a labor market perspective from social care, the fear for losing the professional identity under an administrative organizational change (from social care unit to a labor market unit in the municipal administration) and the lacking dialog between leadership and the social workers [20]. The two examples of automatization: in Trelleborg municipality and Kungsbacka municipality show that one single model of automation – when copied to other municipalities – got different response and support from the frontline case workers. Thus, it was important for us to follow closely similar implementation practices conducive to automatization changes and examine what tensions and logics guided the process.

3 Implementation barriers for digitalization in public administration

Research on innovation in public administration focusing e-government reforms has specifically and predominantly been concerned with barriers to adoption and advancement [21-23]. But there are also approaches focusing on flexibility and agility in implementation processes [24]. Building on these approaches we will also open for an analysis of logics and values embedded into public administration practices to search explanations of the case workers hesitations to innovate.

3.1 Barriers in implementing digital innovations in public services

Digital government barriers are predominantly studied as technical challenges, discouraging actions, dysfunctional organizations and ambiguous institutional structures that constrain practice, lack of- or unclear policy [25]. Barriers have been systematized according to different models. However, compared to the attention given to technological, organizational and structural barriers, considerable less attention has been attributed to cultural barriers [26]. Cultural barriers in digital government, as studied by Margetts and Dunleavy [27], refer to a scaring image of technology in organizations, according to which minor mistakes in usage may lead to terrible consequences. Such perceptions pose hindrance to implementation of technological change. In a more flexible and agile approach, Gong and Janssen [24] identify four keys for good implementation of digital government processes: separating the process from the service, pre-planned (not event-driven) integration and orchestration of implementation, embedding knowledge and resources into the process of change.

Framing in governance of innovation has shown to play a key part in successful innovation and of government strategies to address resistance to technological change. Meijer [26] has found that connecting technological opportunities to the production of public value are crucial in this respect. In similar ways, Pors [28] found that digitalization fundamentally changed the modes of work of frontline bureaucracy and their interaction with citizens, from providing citizen service to providing citizen support.

Through digitalization and co-production in a ‘digital first’ setting, citizens took over a part of the administrative tasks through digital systems which gave the frontline case workers new possibilities to guide and support the citizens, rather than solve their clients’ cases. This research shows that implementation of digital innovations for services towards citizens in these practices opens for and requires new logics of service provision.

3.2 Logics of digital service provision

Digitalization of public services transform the organization of public sector [8, 29, 30] and challenge the Weberian model of public service production. Cordella, Paletti [8] identify two different logics of value creation: manufacturing logic and service logic.

The *manufacturing logic*, following industrial production and market logics, is reflected in standardization of production processes to create value. The manufacturing logic involves essentially the standardization principle, according to which the organization focuses on improving organizational set-ups and streamlining of production processes and means in order to produce a desired value. Digitalization opens even further for new ways to organize and manage NPM based service production in public sector. Such effects, argue Cordella, Paletti [8] leads to a shift in logics of production in public organizations towards *service logic* of value creation, involving market and civil society actors in co-production of public services. The resources available for such a process complement the in-house resources of public administrations opening the value creation process to external resources, processes, interests and capabilities. The two logics of service production and value creation are summarized as follows, in Table 1:

Table 1. Logics of service production and value creation

	Manufacturing Logic of service production and value creation	Service Logic of service production and value creation
Planning	Centralized	Decentralized
Production cycle	Closed	Open
Production process	In-house, or inter-organizational	Co-production
Resources	Exclusively internal Reduction variation	Combining internal with external Openness for variation
Contribution	Is known, defined and measurable	Is not completely known, fuzzy and only partially measurable
ICT-use	For standardization, optimization and efficiency	For enabling co-production
Value is created based on	Impartiality, standardization, rule of law	Personal interaction, adoption to co-production needs and individual values

Adapted from [8]

Public values such as impartiality, fairness and equality are fundamental for all public services both logics of service production and guide the public administrations. However, within these core values there are different values underlying the two logics. The ‘manufacturing logic’ are more standardized and less flexible, a service logic emphasize values of individualization and flexibility. This model will guide our analysis of

how and why the municipal case workers may address different assignments – controlling or coaching – in their daily working meeting with clients and the automated system.

4 Methods and research design for the case study

Being part of a larger project that focused on understanding of legitimate exercise of public authority in the context of automated case processing and decision making, this study was designed as a single case study of implementation practices in units that were introducing e-services and aiming at automatization. Material collection included elements of action research and abduction in terms of connection to the theory [31]. While working on the case we shared knowledge with the municipality. The research is based on *two planning meetings*, gathering researchers, unit management and municipality digitalisation strategist, where we participated and documented discussions focusing on organizational set up, the change management, implementation process, as well challenges. Observations under *two demonstration workshops* aiming to acquaint all the case workers with the function ‘My Pages’ (*‘Mina sidor’*), and ‘e-Application’ (*‘e-Ansökan’*). *Five semi-structured interviews* were carried with key personnel in the unit: the unit manager, the lead case worker (most experienced in the team), two case workers who were ‘super-users’ of the platform (most knowledgeable IT-users in the unit, who also have qualifications for testing new functions and e-services on their cases before the rest of the case workers start using them). In addition, we coordinated *two knowledge meetings* with the management and *one workshop* with the entire unit, focusing on validation and discussion of our research findings, their organizational implications and practical advice.

The model comparing the two service production logics has been used in the analysis to discern qualitatively the organizational set-up for the change that involves introduction of e-services, as well as to the underlying logics that explained the different experiences and interpretations of the different professionals in the public sector.

5 The income support in the municipality

5.1 Organizational set-up accommodating both manufacturing and service logics

The municipal organizational set-up for the Income support services is following a hierarchical structure where the manager of the unit is accountable to a chain of managers higher up in the administration of social services. The financial resources making up the budget are drawn from the municipal pool of publicly collected taxes. Such an organization, follows centralized municipal planning and by law relies on a close production cycle, thus following a manufacturing logic. The case workers are the sole professionals with mandates to exercise public authority upon income support decisions. However, in the process re-habilitation and re-integration of the client in society, the

case workers must collaborate with other authorities as described below. Such a collaboration between the authorities, involves a pooling of resources across organizations, thus making the production cycle open and employing co-production practices.

5.2 Integrating e-services challenges the accommodation of the two logics

Case management of the income support in the municipality is administered through the internal IT-system, VIVA, where case workers register, follow up and handle all the cases and the pertaining records. When the client submits a paper-application for income support, a new case is opened and the records are manually introduced in VIVA. The records on income and expenses from the application, are currently manually registered in VIVA. Besides place of residence, family members' residence and their employment situation, the records include public social insurance allowances such as unemployment, sick leave and child benefits. The new records are usually incomplete, which always requires a cross-check through the registry systems of the different authorities (Tax Authority, Social Insurance Agency, Swedish Board of Student Finance, Public Employment Service and the Unemployment Insurance Funds). Record registration and their clarification makes up the part of the services that is mostly regulated, standardized and repetitive, is clearly following a manufacturing logic. This part of the service is expected to become more effective and time saving through e-services and automatization.

Following the national digitalization policies and the municipality action plan, the unit is currently introducing the e-services 'e-Application' (*e-Ansökan*) and 'My Pages' (*Mina sidor*) for the income support scheme. This initiative was initiated in 2017 and is still under implementation. It intends to partially digitalize the application process that is currently entirely made on paper. The plan is that the very first application will still be done on paper, while the subsequent ones, from the same client, will be done online through e-Application and My Pages. The e-Application service was integrated in VIVA by e-Lab during in 2018. The ambitions are that the e-services will increase the accessibility for the client and facilitate them to submit more and correct records.

Both management and part of the case workers expected the quality of the records to improve and the process to be more effective, streamlining it towards better decisions and more coaching towards employment and social re-integration. The main risks that were foreseen by the case workers were the clients who could abuse the service and the increase in the number of cases per case worker. Consequently, in terms of improving quality of records and their registration – part of the case workers' and the management - agree that ICTs and automatization can enable time saving and effective processes. In terms of coaching and support, steered by a service-logics, both by law and by professional ethics, the image becomes more complicated.

5.3 Individual micro-assessments the basis of targeted interventions in social assistance and service logics as its core

Upon each application for income support, the case worker needs to get all relevant and correct records on income and expenses, where the latter ones always exceed the former

one. Besides pursuing the calculations entitling the client for financial support, the case worker needs to make individual 'micro-assessments' on whether the expenses are eligible and legitimate to cover through the scheme. In such micro-assessments, the case worker has important discretionary power: how many jobs has the client applied for, participation in rehabilitation activities (ex. practical training, work training). Based on the principle of individually targeted interventions in social assistance, in every assessment, the case worker considers holistically the individual's records and his specific life situation: how do they act to improve their living, do they do what they must, what is reasonable to require from the person, how are their children affected by the decision?

These micro-assessments which underlie the authority decisions to provide income support, in combination with coaching are fundamental in steering the clients' actions towards financial independence. It implies guiding the clients in a desired direction, as a service logic to pursue rehabilitation, re-connect with family, follow doctors' prescriptions and finally apply for jobs. Value production involves meaningful communication with the client to calibrate the demands, to clarify the expectations and to plan for further activities that aim to return the client on the work market and financial independence. This part of the service production and value creation is thus guided by a service logic that builds on an interaction and communication with the individual client on the one side and case workers from other authorities on the other, in order to guide, advice and support toward self-sufficiency and independence.

The accommodation of manufacturing logics that underlies planning and organizational set-up, but also records registration in case work - with a service logic, that underlies coaching and support seems to be challenged by the prospects of automatization, as illustrated by the citation below:

We talk a lot about saving time, specifically concerning applications. We spend a lot of time to process the application, to work with papers... to go through the manual records, bills and invoices. The entire process is very time consuming, but we would like to spend more time with the people, meet them more and spend more time on coaching them to go on and get an own maintenance. Everything that can save time for us is welcome. For example, if the records are matched automatically to the open cases and we skip filling these manually, could save 1 minute per application. If you deal with 70 applications and save 1 hour that can be used on coaching the client or receive one extra visit. (Case worker 1)

At the same time, concerns arise related to responsibility and legality of decisions making based on individual assessment and ambiguities arising from the delegation of exercise of authority to a non-human:

It is difficult for me to imagine that I would not sit at the computer and press the button, because of individual assessments. But say a computer shall make the decision, who is to be accountable for that decision? It should always be a human behind the decision, legally speaking... I feel worried, because all the decisions that I am delegated to, I shall be in charge and knowledgeable of. Shall a computer make decisions that were delegated to me? And if the client would like to enquire on the decision, who is he to call if it was entirely made by a computer? (Case worker 2)

Importantly, for such a management to work and for individual micro-assessments to be possible, it needs personal interaction with the client to understand the individual's

needs and capability, as well as channels of trust and constructive communication that will allow coaching towards financial independence. This is a logic of service provision, where the pursued public value is the independent and socially integrated individual. This logic is contrasting the manufacturing logic of standardization, that would not allow for individual coaching, empowerment and care. It indicates that the case workers are both striving to meet standardization of assessments and control data through automated systems, and to be service minded by coaching and service.

5.4 No drastic changes in terms of case management process and time but hope on better quality of cases and decisions.

Although the automated system will imply introducing new routines in handling the cases, no drastic changes will occur in daily work, according to the interviewed case workers. The experiences of using the e-Application for 12 months, when the case workers had only seen a Beta-version of the system, are raising more questions rather than answers for the them. The following quotations illustrate the pursuit of manufacturing-oriented logic and values such as effectiveness in terms of time saving, legality and correctness of records. The case workers are concerned with ambiguities of the new technical changes in the system and their implication for the routines.

It would be very good if it became more effective, that I saved time so that I can use that time to get them out to work or on motivating them... But I am doubtful that it will do that, because I will anyway need to make the calculations and the inspection just as usual: check that we have received the application, that it is complete, send requests for complementary information. I have difficulties seeing where I can save the time. But it can be that that I don't know too much yet. For example, what about the paper receipts that need to be attached to the application? We need to see the medicine that has been purchased and the doctor visits. Shall they scan these receipts, or shall they submit them on paper?? (Case worker 2)

A similar hesitation was raised by another case worker saying:

We will do the same things that we are doing today... but we won't need a paper-application to inspect. Instead everything will be done on the computer. So, I don't think we will work differently with the applications. Everything will be stored on the computer. It will surely take as much time as it takes today, no more – no less. (Case worker 1)

The manufacturing logics shows up when the case worker reflects upon the legality and correctness of the records that can be improved by the e-Application process.

5.5 An algorithm could not make the job entirely – or?

If record management through the digital platforms - is somewhat positively seen by the interviewees, with potential to increase accuracy of data and facilitate correct decisions. The part involving meaningful communication, coaching and steering cannot be done by the automated processes, according to our interviewees. It proved difficult for the case workers to see how algorithms could make individual micro-assessments, with no meaningful communication with the client and no understanding of the client's

broader life situation that goes beyond the individual records from the application. The interviewees emphasized that there are many circumstances that should be considered. The demands that a case worker posed one month, were not raised the month after due to ex. negative effects on children involved, or death of family member, as illustrated by the utterance below:

We have the rules and the regulations... So to take an example with reimbursing the expenses for a bus card. The rule sets up 3 km as a minimum distance to the destination of the planned activity (f.ex. studies, work, work training). In such a case we also make individual assessments. For example, if we get a medical certificate that proves that the person cannot walk 3 km, then we can grant him the bus card anyway. So, things like that, I think I'm having trouble seeing how it would work. And this is the issue with most of our individual assessments. So, it's difficult for me to see how these can be automated, actually. (Case worker 2)

Again, the service-logic, the responsibility for pursuing the steering of individual towards independence is illustrated in the reflection below – a logic that defies automated decision making and standardization:

You shall see to the human individual that he attains a reasonable standard of living. If the person cannot reach the workplace and cannot manage it in a good way because I denied him this bus card... I think it is my responsibility to offer this prerequisite so that he can manage his work. Otherwise, maybe if I just reject it, I think maybe that person may not be able to get to work, may not manage to do his job and even his mental health may get worse. This then may lead to that he loses his income support because he didn't show up at work. (Case worker 1).

At the same time, the case worker admitted that probably some unambiguous or non-complicated cases could be automatized, although the total exclusion of human contact seemed unreasonable. For example, such cases, that are scarce, would be when the client is not capable of returning to the labor market and no such demands are posed on him, his actual benefits, ex. partial sick leave benefits are fixed and his expenses are more or less the same every month. Consequently, correct and complete formal records is a pre-condition for making rightful assessments, but even when these are present, the more complicated cases involve almost always cooperating with other authorities. It is common that complications arise when the different authorities make different assessments in the same case. For example, when assessing the client's ability to work, the Employment agency can assess that the client as not able to work, while a doctor decides differently. The case worker's role, where the client finally turns to, is then to untangle the problem and such entanglements cannot be fixed automatically, it was explained.

6 Conclusions

The ambitions to make public administration more efficient by using different forms digital support systems and not at least new forms of automatization have clear implications on the legitimacy of exercise of public authority. Importantly, our case study shows that while Swedish social assistance services in Income support are managed in a legal and organizational set-up that accommodates manufacturing logics with service

logics underlying social assistance regulations and professional ethics. Digitalisation and automatization challenge this balance and raises concerns of accountability in exercise of public authority; and concerns of value in terms of support towards self-sustainability and social integration. This points to the need for further studies on le

Our case study has shown that the main hesitation among the professional street-level to towards implementation of automatization is based in their fear that it would bring encompassing manufacturing services logic. They are doubtful and hesitant since the automatization of the income-support builds on high degree of standardizations, hiding the large variation among the clients and thereby also reducing their discretion to coach and support the clients in different ways. Thus, we can see that there is a need to design and manage automatization of public administration in ways that it is seen as keeping and promoting a service logic giving space for values like individual adoption and flexibility.

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