Using ICT to Patch the Shortcomings of New Public Management in a Post-Communist Welfare State

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Abstract. New Public Management approach in the welfare sector led to outsourcing and disaggregation of the services, which makes it difficult to implement new ICT technologies into such context. In this paper, I analyse the case of Electronic Care System (ECS) implemented in selected municipalities in Poland. These municipalities carry different characteristics of inhabitants and service provision. Additionally, Polish welfare system is a case of transformative system which is a mix of diverse European systems. I analyse secondary data (documents, strategies), interviews and observations regarding the implementation of ECS. Based on that, I draw the main conclusions regarding how context of welfare provision impedes the successful implementation of the ICT within the public institutions. I argue that introduction of ICT in fragmented institutions needs to include diverse perspectives of stakeholders and take into account the values important for the system users. Especially, I focus on how diverse modes of care provision need to be mirrored in the systems, how political and managerial pressures make it more difficult for other actors to navigate through the change. At the end, I ask the question about organisational and cognitive costs of implementing innovations.

Keywords. algorithmic/automated decision making (ADM), elderly care, New Public Analytics (NPA), New Public Management (NPM), welfare state
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1. Introduction

Currently, new technologies are increasingly being introduced into the sphere of social support and welfare policies (Alston, 2019). They are designed to improve administrative efficiency and facilitate the functioning of citizens-beneficiaries, among other things, through automated decision-making (ADM). However, the implementation of such solutions is highly dependent on the context in which a given institution operates (Broomfield & Reutter, 2022), including the approach of the involved stakeholders. In this paper, I analyse the case of the Electronic Care System (ECS) introduced in selected Polish municipalities to support the process of granting and providing care services for the elderly and people with disabilities. I argue that ECS, functioning in the context of Poland's mixed welfare state model, exemplifies thinking described as **post-New Public Management** (NPM), in which the state institutions try to regain control over the privatised elements of public services (e.g. Howard, 2015; Anttiroiko & Valkama, 2016), and I will outline post-NPM features of the researched system. In doing so, I pay attention to context-specificity of the researched case.

The importance of welfare and social security is mirrored in the content of recent EU strategies and budgetary plans (Frączkiewicz-Wronka et al., 2024). European welfare state models are the subject of analysis and categorization, though these studies are largely focused on Western Europe (e.g. Esping-Andersen, 1990; Titmuss & Abel-Smith, 1990). With the ongoing digitization of various aspects of Europeans' lives, welfare states are also integrating new technologies into their daily operations. The so-called **"digital welfare state"** (Dencik, 2022) has become an increasingly discussed subject of research (e.g. O'Neil, 2016; Eubanks, 2017; Gantchev, 2019), particularly due to its direct impact on citizens' well-being. However, there is scarce literature connecting implementation of new technologies with wider context of welfare institutions, including research on countries of

Central and Eastern Europe, which was called by Esping-Andersen "the most under-defined region, a virtual laboratory of experimentation" (Esping-Andersen, 1996, p. 267).

This article aims to fill this gap by describing the case of digitalisation in care services through the ECS in selected Polish municipalities and introducing it in the context of welfare assistance. Poland is an example of a post-communist country where state institutions (including welfare assistance) and society are undergoing a transformation from a centrally planned economy with a strong bureaucratic presence to a market economy in which state administration plays a less dominant role (Golinowska, 2009b; Księżopolski, 2013). I aim to answer the following research questions: 1) What are **the goals delineated by policy-makers** for the ECS and **how do they relate to the idea of NPM**? 2) What is the **role of new technologies** in this case, considering the concept of **New Public Analytics** (NPA; Yeung, 2023)? The presented case study is a part of broader project AUTO-WELF: Automating Welfare – Algorithmic Infrastructures for Human Flourishing in Europe.

The paper is structured as follows. First, I describe the organisation of welfare assistance system in Poland with special attention to current social problem – ageing population. Consequently, I introduce the concepts of New Public Management, post-New Public Management and New Public Analytics that will be a theoretical framework for the analysis. Next, I present the methods of the research and analysis of the data. After that, I describe the main findings from the analysis divided into three main categories: diverse mode of service provision, managerial pressure for innovation and costs of innovation spread among stakeholders. I sum up with remark that implementation of new technologies in the welfare service need a close and thorough analysis of possible future scenarios from different perspectives of involved actors.

1.1 Organisation of Welfare Services in Poland

Social security system in Poland is divided into several pillars, which include health insurance, employment agencies, social insurance and welfare assistance (social services and benefits, mostly directed to families) (Rusiecka, 2023). In this paper, I will focus on the last element of the system, which is also responsible for provision of care services.

As a unitary state with three-level system of administrative division, the control over the welfare assistance and services in Poland is mainly in the Ministry of Family, Labour and Social Policy (MRPiPS). However, the greatest responsibilities to provide social assistance to citizens is in the smallest administrative units – gminas (communes, municipalities). The social assistance system provides support in form of financial or material benefits and services, such as legal and psychological support, social work or care provision for the elderly. Each gmina has a Social Welfare Centre (SWC) that is obliged to provide direct support to gmina's inhabitants in order to fulfil their basic needs (Ministry of Family, Labour and Social Policy, 2019; Dz.U. 2004 Nr 64 Poz. 593, 2004). As a result, gminas define their own strategies and plans for the development of social policy, which is largely decentralized but operates within a uniform legal and institutional framework. Recently, big social programmes were introduced (e.g. 500+ benefit for families with children, "Active Parent" programme for employed parents), which are an example of central social policies. However, the responsibility for such programmes is laid on central Social Insurance Institution (ZUS) rather than on local SWCs.

In the wake of the departure from communism and the systemic transformation of the 1990s, the main focus was on labour market issues and social assistance (Golinowska et al., 2009). The "shock therapy" proposed by Leszek Balcerowicz also involved a significant reduction in funding for social support (Księżopolski, 2011) and such a rapid and dynamic transition to a free-market economy was unprecedented in Europe, carrying high social costs. Marketisation of the economy produced "winners" and "losers" of economic transformation (Debicki & Debicka, 2008) and led to deepening social inequalities (Księżopolski, 2011).

Due to the ambitions of the ruling elites to integrate Poland into the structures of the European Union, social policy goals were largely subordinated to economic development, including activation policies, the flexibilization of employment forms at the expense of workers' rights (Golinowska, 2018), as well as low amounts of social benefits (Księżopolski, 2013). These changes were facilitated by prevailing public sentiments, which embraced the liberal rhetoric of the need for low taxes and a reduction in state interventionism (Rae & Piotrowska, 2022) and insufficient spendings in this domain.

The main focus of social assistance in Poland is on family rather than on individuals. This is also expressed in "familisation" (Esping-Andersen, 2003) of the support system: the relatives have the primal responsibility to support family members and in case of its insufficiency or denial, institutions provide support. Some of the services are subsidiary, meaning that they are partially paid, based on the material situation of the beneficiaries and their families. The welfare state model in Poland is described as "mixed" (Siemieńska & Domaradzka, 2016) between conservative and liberal models. The former is because of great significance of the family obligations within the system. The latter is due to strong orientation of some of the institutions towards employment activisation and to using market mechanisms, such as outsourcing, when institutions are unable to provide services. Moreover, during

the transformation period, the existing social infrastructure was often privatised due to lack of resources (Siemieńska & Domaradzka, 2020).

Mirosław Księżopolski describes **Poland's welfare state model as a "paternalistic-market hybrid"** (2011, p. 16), which combines elements of state-guaranteed social security with capitalist economic principles, rarely constrained by the state. Private entities have been incorporated into the provision of certain services—such as healthcare, elderly care, and education—to compensate for the shortcomings of the state. The word "paternalistic" denotes not only the degree of state interventions, but also specific mindset about passive citizens: "*The modern Polish state is still largely perceived as an external entity that acts ‹*instead of*› citizens rather than as a service-oriented institution that acts ‹*for*› them*" (Księżopolski, 2011, p. 32). Additionally, this system remains inconsistent, leading to mixed public perceptions (Rae & Piotrowska, 2022). Despite dynamic economic growth, particularly after Poland's accession to the European Union, no significant reforms or increased investments in social assistance followed. Instead, the welfare system remains closely tied to the dominant capitalist economy, with citizens' livelihood largely dependent on their position in the labour market (Księżopolski, 2013). Even the introduction of big social programmes as 500+ (later increased to 800 PLN per month) and "Active Parent" are examples of direct cash benefits respectively to families or to private entities, which limits the role of the state in the family policy and service provision (Siemieńska & Domaradzka, 2020). Additionally, the latter is an example of strong connection between social policy and employment goals.

One of the biggest challenges for European welfare states (Anttiroiko & Valkama, 2016; European Commission. Statistical Office of the European Union., 2020), including the Polish welfare system (Golinowska, 2009a; Księżopolski, 2011; Siemieńska & Domaradzka, 2016) is **ageing population**. This is a result of decrease in both fertility and mortality, as well as increasing life expectancy of European societies. In 2023, the Polish society consisted of **more than one quarter of people aged at least 60 years old**[1]. The senior population is relatively young, with the most numerous group aged between 65 and 69 years old (app. 25% of seniors). Almost two thirds of seniors live in cities or towns. The average life expectancy for males is 75 years, whereas for females – 82 years. In household consisting of solely older persons, the most frequent basic source of income are social benefits, with the highest share coming from retirement pay and pensions. However, 5,7% of households in which lived older person reported rather bad or bad material situation (Wyszkowska et al., 2024). Considering projected decreasing population in the working age (Stachura & Strzelecki, 2023), **one of the challenges in the future would be to provide care and fulfil basic needs of dependent elderly**.

1.2 From New Public Management (NPM) to New Public Analytics (NPA)?

The beginning of changes in public institutions that indicated the adoption of **New Public Management (NPM)** thinking can be traced back to the 1980s, particularly in countries of the so-called Global North, where political leaders came to power advocating reforms. These leaders promoted the need for changes inspired by neoliberal and free-market principles, aiming to reshape the functioning of public institutions that had been weakened by the financial crisis of the 1970s. As a result, public institutions adopted a more managerial approach, characterized by cost-cutting measures in public services, primarily through outsourcing to non-governmental sector entities (Hood, 1991).

NPM has manifested in several political decisions that were aimed at mimicking the managerial style of private entities in public sector, which included marketisation of the services. The hidden underpinning of these reforms was the belief that competition among several service provider would lead to lower prices and increased service quality. In many instances, NPM also brought decentralisation of the existing institutions and introduction of mostly quantitative-based performance measurements and auditing. Inefficient institutions faced budget cuts or top-down pressure to improve the performance (Gruening, 2001). Noteworthy, the implementation of NPM principles was perceived as non-political (Yeung, 2023), allegedly separating politics and administration. However, as presented by Samier, efficiency, effectiveness and focus on economic performance were the organising ideas for NPM institutions (Samier, 2005).

In Central and Eastern European (CEE) countries, **the principles of NPM were adopted during the systemic transformation of the 1990s**. This was largely due to the widespread popularity of this approach in the public administration of Western European countries, and most notably, in the United States. Post-communist states, which lacked sufficient experience and knowledge regarding the functioning of NPM, were more likely to adopt this model rather than the social-democratic approach used in neighbouring Scandinavian countries. This choice was also influenced by international financial institutions, particularly the International Monetary Fund (IMF) and the World Bank. These institutions demanded rapid reforms, primarily aimed at reducing public spending, as a prerequisite for debt negotiations and development aid (Randma-Liiv, n.d.; Randma-Liiv & Drechsler, 2017). This context lead to adaptation of **cost-effectiveness accountability** rather than accountability for the social outcomes

[1] The retirement age in Poland is 60 years for women and 65 for men.

of the reforms (Parker & Gould, 1999).

Empirical research on NPM reforms has identified key problems with this approach. Reliance on the market and outsourcing of services caused **control and accountability deficits** in public administration. Fragmentation of institutions and, in some cases, agencification **hampered managerial responsibilities** of public servants and could have the effect on delivery of **disjointed and inconsistent services** to citizens (Howard, 2015). In the context of CEE, especially Poland and Hungary, there is no strong civil service, which leads to **politicization of administration** and hampers its development (Randma-Liiv & Drechsler, 2017). Fragmentation of the institutions results in diverse dynamics of development. Also, as shown during the COVID-19 pandemic, institutions are forced to response to crisis situation without much prior preparedness (Sosnowski et al., 2021). However, implementation of NPM had positive impact by providing ideas for modern administration and highlighting the importance of administration reforms (Dan & Pollitt, 2015; Debicki & Debicka, 2008).

Public administration has sought to adapt to identified issues through a process of service reintegration and coordination. Changes NPM were also influenced by negative assessments of its effectiveness, the erosion of political control, and a growing sense of insecurity in the modern world. Christensen and Lægreid refer to this trend as the "rediscovery of bureaucracy" (Christensen & Lægreid, 2011, p. 141) or **post-New Public Management** (post-NPM; 2011, p. 132), though it has led to the emergence of complex and hybrid organizational forms. The authors argue that linear or cyclical perspectives on administrative development should be rejected. This shift is particularly driven by the fragmentation of public administration, where different institutions implement changes independently, at their own pace and according to their own priorities. Additionally, the expectations of service users are changing, especially regarding its quality. Nonetheless, the demographic changes and curbing public spendings are the reason that bureaucracies seek to improve performance in order to assure quality increase (Kinder, 2012).

Karen Yeung (2023) introduced the term **New Public Analytics (NPA)** to denote new approach in public administration in the age of digital transformation. NPA manifests in reliance on datafication and automated decision-making, which is supposed to make governance seamless. Disregarding varying degree of sophistication of ICT solutions, NPA approach offers improvement in procedures rather than ideological change in the functioning of administration. ICT is therefore treated as a tool to achieve better measurable outcomes than new paradigm. Yeung highlights the continuity between NPM and NPA, especially in orientation towards market solutions and reliance on evidence-based policy making, allegedly neutral in political implications (Kempeneer, 2023).

However, NPA is built on ideological foundations, which Yeung describes as **"neoliberalism with a techno-solutionist makeover"** (Yeung, 2023, p. 16). Just like NPM, NPA is market-driven and oriented toward competition. Solutions implemented in social policy and welfare often adopt market-based solutions, which are rarely adjusted to the specific organizational context (e.g. O'Neil, 2016). Social problems are perceived as opportunities for technological innovation, but the primary goal remains profit generation. Nevertheless, Shirley Kempeneer argues that the cause of the problem in possible algorithmic injustices is not a new paradigm, rather it is deeply rooted in NPM logic of disaggregation, competition and incentivisation for improvements (Kempeneer, 2023).

In case of Polish welfare assistance, the institutions seem stable. Since the local self-government reform in 1990, the smallest administrational units (gminas) are responsible for the implementation and provision of social assistance to their inhabitants through Social Welfare Centres using material benefits and services. Despite the definition of eligibility criteria for support are defined in the Social Assistance Act from 2004, social workers have discretionary power, e.g. by withholding documentation or "creaming" clients, meaning serving mostly a promising group of individuals (Sosnowski et al., 2021; Trochymiak, 2018). In 2019, the Act on Provision of Social Services by Social Services Centres has created a possibility for local authorities to introduce such Centres (SSC). The aim of this change was to integrate and coordinate fragmentised net of services and dividing social assistance from social services (Szarfenberg, 2021). This aligns with the logic of both NPM (decentralisation and discretionary to manage) and post-NPM (attempt to reintegrate institutions and creating hybrid and complex organisations).

From almost 2500 gminas in Poland, all of them vary in terms of their economic and political development, disfavouring less economically developed ones to develop administrational structures and implement innovations (Debicki & Debicka, 2008). Stanisława Golinowska points out that NPM was largely accepted in Polish administration, mostly because of replacing the burden of service provision and, in some cases, of guaranteeing its good quality (Golinowska, 2018). Parallelly, the decreasing quality of public services created a demand for privately provided ones, especially in education, health and long-term care. Even if private suppliers are subsided by the authorities, the possibility to control the service is limited. As stated by Golinowska:

> *"The functioning of social services, a fundamental pillar of the welfare state, in Poland is **varied and chaotic, with unequal access** contributing to social disparities. However, the general belief among Polish society persists—that access to these services can somehow be ‹arranged›, either through informal means or by having the necessary*

funds to pay for them. As a result, individuals facing higher risks (e.g., people with disabilities) tend to demand direct ‹cash› rather than services, such as rehabilitation, caregiving, or specialized equipment." (Golinowska, 2018, p. 127-128)

The digitization of public services in Poland is also fragmented, primarily due to the decentralization of institutions. Aside from the existing ministerial statistical system, SWCs use various solutions, all of which must receive ministerial certification (Frączkiewicz-Wronka et al., 2024). The Social Assistance Act specifies, among other things, the scenario for standardised community interviews (pl. *wywiad środowiskowy*), but it does not define whether they should be conducted using new technologies or simply written on paper. In some SWCs, a dual document circulation system is in place: paper-based personal files are maintained for beneficiaries, while at the same time, these documents are scanned and stored digitally.

1.3 Electronic Care System (ECS)

The ECS is one of the examples of using new technologies in welfare assistance in Poland. It is introduced in almost over 20 gminas that are geographically neighbouring, nevertheless caring different characteristics of inhabitants. Almost two thirds of them have big city characteristics (hereinafter: urban gminas). The rest is rural or small-town (hereinafter: rural gminas). Due to involvement of numerous administrative units, the case involves complex network of public organisations (including SWCs and SSCs and municipal authorities) and private companies (responsible for provision of care services and IT infrastructure and software).

Care services for partly independent citizens are provided in-house to help them accomplish daily routines. As described above, the primary obligation to support the elderly is on family members, however in case of their lack of resources, social workers from SWCs may decide to allocate care services also to persons living with their families. The financial aspect of the service depends on the gmina's regulations. If family has sufficient incomes, beneficiaries are obliged to financially contribute to the service. SWC has a discretion to exempt beneficiary from the payment in case of documented circumstances.

The process of granting the service begins with an application from the possible beneficiary, their family members or persons from community. After that, social worker from SWC is obliged to conduct community interview with either the applicant or other household members. During the interview, a lot of personal information, including financial status, health condition or existing relationships, are collected. Based on the information from the interview, social worker issues an administrative decision, which needs approval from the SWC director. The decision includes the information about care services scope, meaning performed tasks and number of hours prescribed to the beneficiary.

The ECS consists of a few components. Social workers responsible for conducting community interviews use Digital Interview app to record them on laptops. Caregivers, employed either by private companies (mostly in urban gminas) or by SWCs, use mobile app of ECS (hereinafter: mobile ECS) to access the information about beneficiaries and assigned tasks to perform during work hours. Mobile app also uses near-field communication (NFC) for caregivers clock-in and clock-out from their beneficiaries apartments. The managers in the SWCs, SCCs and private care companies use software allowing them to create timetables, control the punctuality of the service (based on NFC log-ins) and exchange documentation, including fiscal documents.

The additional features of the system is the profiling algorithm and remote care component. The former is designed based on a data collected in additional questionnaire during the community interview. The algorithm takes into account physical and "mental" autonomy of the service beneficiary and based on assessment allocates them in one of nine profiles of autonomy. Based on this assessment, the software suggests social workers the possible scope of prescribed care services (in weekly hours of the service).

The remote care uses indicators either installed in the apartments of beneficiaries or wearable technologies. The component includes wristbands monitoring the life functions and equipped in emergency button. Wristbands can also detect if the person has fallen down and connect the beneficiary with monitoring centre, which can further call the emergency services. The other technologies used in the remote care are detectors of smoke and carbon oxide, as some of the houses in rural gminas use heating stoves. One of the element are also key boxes used by caregivers and emergency services.

2. Research methods

In this research, we implemented case study approach combining several research methods, including secondary data analysis (existing documentation, policy strategies etc.), in-depth interviews and organisational ethnographic observations. These activities were taken by two team members, including the author. The research received

approval from the Research Ethics Committee of the Institute of Philosophy and Sociology of the Polish Academy of Sciences.

As the researched system is an example of public-private partnership, there is a rich documentation of the procurement procedures, design plans and descriptions of the ECS. Also, we paid attention to municipalities' policy documents, especially regarding welfare assistance and their development strategies. This stage helped us to better understand local specificity of the policy area and map the possible interviewees for the further stage of the research.

We conducted several interviews with various stakeholders involved in the process of design and implementation of the system. Among our interviewees are management-level employees of municipalities' offices, employees of private companies, namely IT company commissioned to develop the software and companies providing care services in numerous of researched municipalities, and employees of the social assistance institutions (SWCs and SCCs).

Additionally, we participated in the testing meetings of workers of SCCs and private care companies, which happened in the care services beneficiaries' places of residence. These testing meetings were mostly focused on teaching caregivers how to log in to the mobile app and to use the NFC technology within the app. From these meetings, we collected fieldnotes based on the observations of researchers (Emerson et al., 2011).

Audio recordings of the interviews were transcribed and anonymised. All collected data – documents, fieldnotes, interview transcriptions – were uploaded in the shared workspace in Qualitative Data Analysis (QDA) software. For data analysis, we used a standardised coding system, which was developed and discussed with the team. We also used memos to describe analysis insights.

Case study research are perceived as valuable in the context-dependent environments (Flyvbjerg, 2006), especially when using several research methods and data sources. In this paper, I use case study to "elicit the strategic structure of an event" (Widner et al., 2022, p. 8), namely to describe interactions leading to deployment of ICT systems in the welfare assistance area in "paternalistic-market hybrid" (Księżopolski, 2011, p. 16).

3. Results

In this section I describe the main findings from the analysis of data. I divided it into three main categories: the differences between how gminas deliver the care service (outsourcing or hiring caregivers in SWCs), political and managerial pressures to implement the system, and the last part asks the question about the costs of introducing the innovations. All of the sections describe the implications of these contextual problems for the design and use of technology.

3.1 Diverse modes of care service provision

In the researched gminas there **are different modes of care service provision**. Urban gminas tend to outsource the provision to private companies due to greater number of inhabitants requiring care. In rural gminas social workers reported app. 30 beneficiaries of care services. In urban gminas those numbers were at least ten times bigger. In some cases there are even more than one company operating in an urban gmina. Rural gminas tend to hire the caregivers on employment contracts or more flexible commissioned job contracts.

Nevertheless, irrespective of the type of gmina, social workers and managers in the social assistance institutions highlighted problems in hiring caregivers. They point out to low earnings for physically demanding work and outflow of young people to better paid occupations due to proximity of urban gminas, which give such perspective. Very often the caregivers are female close to retirement age or already older than 60 years old who wants to earn more money. Also, as the researched gminas are attractive for migrants, work in companies is often done by Ukrainian migrants. Age and nationality background is often perceived as something that impedes the successful implementation of the system among caregivers. Additionally, social workers point out to challenges in their own work at SWCs, namely low wages (below the average salary in Poland), high demands to enter the job (especially educational – studies in social policy or social work) and great workload, especially bureaucratic. The described problems are of the systemic nature.

In case of outsourced care service, there are additional actors involved in the provision of the service. Except caregivers employed by the private company, there are coordinators of the service who are responsible to ensure unproblematic cooperation between caregivers and beneficiaries. This takes some of the work of social workers who become mediators only in cases of conflicts between beneficiaries and the company. Social workers are also

expected to visit the beneficiary of care service at least every half a year. During this visit they conduct follow-up community interviews and reassessment of the diagnosed needs, in case one is needed.

Despite the introduction of Digital Interviews, social workers are not obliged to conduct it using the computer. Some of the interviewees report that they still go to their beneficiaries with pen and paper forms because they either prefer it this way or conducting the interview on the laptop is not possible. One interviewee mentioned that her beneficiary is a hoarder and it is impossible for her to "find even a place to sit, not mentioning to put a laptop". However, if the social worker wants to use the ECS, they have to provide the data from the community interview into the system, which doubles the work.

Gminas include various activities in their caregiving services, depending on the living conditions of their residents. In one of the smaller municipalities, the scope of services sometimes includes lighting a heating stove in beneficiaries' homes. SWCs' managers point out that in smaller gminas, where caregivers are employed directly by the centre, negotiating the scope of duties is easier. In one municipality, there was a change in service providers - responsibilities previously handled by a local company were taken over by a nationwide firm. The manager of this centre noted that the company's employees began rejecting previous practices and adhering to standards set by urban gminas, despite such stipulations were not included in the contract with smaller gminas. One such example was beneficiaries' hygiene - caregivers refused to lift individuals into bathtubs, as it posed a risk of accidents. In this case, the family of beneficiary decided to individually hire previous contractor – the local company.

> "*They said that if a person is bedridden and there is a bathtub, then changing a diaper is considered a specialised service. And I said, 'But girls, hold on, we signed a contract, and there was nothing like that in it. You didn't mention anything, did you?' Because, you know, we really deal with the most difficult cases.*" (Director of local SWC in a rural gmina)

This shows that dynamic of the relations between gminas and companies is defined mostly by standards set out by bigger and wealthier players. As urban municipalities played a dominant role in designing the system, it did not include experiences of social workers from smaller gminas. This leads to standardising the service from the perspective of institutions, but for inhabitants and beneficiaries it might be a reason to opt out from the public service and decide to get the service in the private company. In this case financial situation of the family plays important role. As put by one of our interviewees:

> "*And when you have a choice, it's very different. And such rich people say: 'oh, thank you, we'll go straight to commercial', yes? And people who save every penny will say: 'we want you'. And it's clear*" (Director of local SWC in a rural gmina)

Nevertheless, the ECS is designed strongly with idea of outsourcing the server, which mirrors the dominant position of urban gminas, which initiated the process of digitalization and are wealthier than rural gminas. It influences the potential use of technology by social workers. During some of the interviews social workers expressed that they will opt out from the system as soon as it will be possible, because the system does not serve their purposes and often doubles the work.

3.2 Political and managerial pressures

One of the goals explicitly expressed by policymakers is to improve the quality of caregiving services. They point out issues related to the current service delivery model, particularly the lack of control over caregivers' punctuality and fulfilment of assigned tasks. One proposed solution was the creation of caregiving service standards by some of the larger municipalities - documents defining the scope of duties and the manner in which caregivers should perform them.

However, this did not solve the issue of monitoring working hours. According to policymakers and SWCs' managers, the solution to this problem would be NFC-based logging, requiring caregivers to clock in upon arrival at the beneficiary's home and clock out before leaving using designated sticker. The system allows logging without scanning the designated stickers, thus depriving decision-makers of real control over the caregivers' location at the time of logging.

From the policymakers' perspective, caregivers manipulate the system by performing certain tasks incompletely or not in accordance with the regulations. One example, highlighted by an interviewee, is the issue of shopping:

> *"So, for example, one caregiver has two recipients and she has to go shopping here and here, she gets paid for this and that, so she goes shopping and shops for these two people at once. And she's paid separately, so that's why they resist. (…) The municipality wants to have control over its money, we want to know what we pay for."* (Urban gmina policymaker)

In the eyes of the interviewee, shopping simultaneously for both beneficiaries is cheating the system, because the caregiver has assigned hours to shop for both of them in separate periods. The issue of shopping was also present in the interviews in rural gminas' SWCs:

> *"On Saturday morning, she goes shopping. We also have caregivers who look for the best prices so that the client doesn't spend too much money - they shop here for a discount etc. If they're shopping for themselves, they'll pick up groceries for their client at the same time. And sometimes, they don't even count those hours at all. They say, 'If I was already shopping for myself, what does it matter to grab a loaf of bread for my Marysia?' So they don't include that time in their working hours."* (Rural gmina SWC director)

In this case, interviewee highlighted the importance of mutual trust in the community. Director and social workers allow caregivers to have more personal relations with beneficiaries and state clearly that they do not feel the need to control the time of the service. The same director said they considered outsourcing the provision of care services, but their calculations have shown it would be more costly than employing caregivers directly in the SWC. These interviewees strongly criticised the idea and implementation of ECS in their SWC. In their opinion, the system works good in case of bigger number of care services, when the control over caregivers is complex due to the number of beneficiaries. In small communities, control over caregivers' work is done either directly or through contacts with neighbours.

> "*We didn't need it at all. The only thing left from it are these laptops, which, honestly, employees don't take with them into the field… And for office work, they're not really suitable because they're so tiny [laughs]. So, they were really expensive—almost 8,000 PLN* (app. 1900 EUR, 1970 USD) *[laughs]—and now they're just lying around somewhere…*" (Rural gmina SWC director)

The other goal expressed in the interviews was attaining data to manage the care services. One of urban gmina policymaker complained that statistical software used by the ministry does not produce easily quantifiable data. This is needed to "*be able to correlate them with other phenomena*". Digital Interview introduced changes into the way community interview is conducted. Namely, IT designers and policymakers decided to include check-boxes instead of text inputs to describe the social, economic and health conditions of the beneficiaries. This entailed categorisation of possible life situations.

Policymakers perceive this change as favourable for social workers:

> "*So, our goal was to make life easier for social workers by automating whatever could be automated - but not at the expense of human interaction. People need more time to work with clients, not to fill out unnecessary, not to use unpolite words, tables that no one needs. That should be done by a computer, a system, an app. A person should be able to ask questions, smile, and complete the form. We also proposed modifying the community interview as much as possible, but it turned out to be impossible. So, we came up with the idea of using checkboxes. If the ministry insists on plain text, then fine - the plain text will be generated from the checkboxes. They'll get what they want, but they won't be able to extract any real insights from it because plain text isn't manageable. Meanwhile, with checkboxes, I can manage the data, segment and group people with similar issues, and create targeted, cost-effective solutions for specific clients.*" (Urban gmina policymaker)

From their perspective, the goal of the ECS is to collect quantifiable data to "*segment and group people with similar issues*". This fragment also shows NPM approach to policy making – the interviewee is using the language of targets, tailor-made services and cost-effectiveness. Nevertheless, the profiling mechanism implemented into the system is an object of critique of social workers (more about it in the next section).

The implementation of ECS also entailed changes in other ICT systems used in SWCs. Before ECS, SWCs used at least 3 different systems. In order to cut the budget of ECS, one of SWCs was forced to change the main ICT system into one of other two used in the majority of centres. These main systems were further changed to be compatible with the software of ECS and to be able to exchange data on beneficiaries. Policymakers emphasised that the decision to switch the system in one of the SWCs was purely budgetary, as in the budget of ECS project there were money only for changes in two systems. As this decision seem rational, it creates organisational problems (social workers need to get accustomed and learned the new ICT system) and creates unclear decisions on how ICT systems are chosen. There is a possible conflict of interest, as one IT company behind ICT systems for SWCs was also commissioned to design and implement the ECS software.

3.3 Who carries the costs of innovation?

This question is asked not only in the financial aspect, but also in the aspect of effort to adjust to the change and learning new system. Noteworthy, the project was supported financially by the EU funds, meaning that system needs to be used at least for the time specified in the agreements. However, some directors of SWCs and social

workers already expressed frustration and guaranteed they will opt out as soon as it will be possible.

In the financial sense, the costs of the remote control is split between gminas and beneficiaries, however gmina's council may decide to exempt beneficiaries from the payment and cover 100% of the costs. Social workers pointed out that at first beneficiaries and their families were keen to using remote technologies. The obligation to pay for the service had not been explained clearly, as some of the beneficiaries later were surprised to be asked for payments for the service. Remote wearable technologies could be either bought by the SWCs or rented from the company with a monthly subscription pay.

> "*However, for them, it was already a burden. They pointed that out. Even though their income was, for example, two thousand or just slightly over two thousand, it still made a difference. At the beginning, the ECS and remote control were introduced gradually - there was a project, and it was implemented step by step. First, people received the devices, and later, the payment system was established, which is where the issue stemmed from.*" (Social worker from a rural SWC)

The elderly often fear the technology, as one of the main reasons to opt out from the remote control was concern they might unintentionally destroy the device. As the device resembles a watch, some of the beneficiaries take care of it as if it was a watch – they only wear it occasionally and most of the time they take it off. In such case, families often decide to return the device as it is not used properly. The other reason were mistakes made by technology. In one of the SWCs, social worker told us that one beneficiary opted out from the service because the device mistook leaning over with falling down, which triggered the mechanisms calling the monitoring centre.

> "*Because we assumed that all individuals receiving caregiving services would have wristbands. But what turned out? That wasn't the case—only one-third of them did. You see, the service provider is a private company with a set budget. We wanted to make everyone happy, and on the project level, it all seemed to add up. But when it came to implementation and we went to the people, it turned out that only a third would actually use them.*" (SWC director)

Another issues are with profiling algorithm suggesting the scope of care services assigned to the beneficiary based on collected data. Social workers emphasised missing one of the key elements important to their beneficiaries, namely the financial situation in the household. The algorithm suggest much more hours of care work than beneficiaries are able to afford. The documentation of the ECS also shows that such aspects were not taken into account when designing the algorithm. Because of that, social workers disregards the suggestions from the algorithm and review it as useless element.

Also, the questionnaire used for profiling is described by social worker as complicated and too long. According to the program's assumptions expressed in documentation, social workers should ask specific questions to the beneficiaries. Nevertheless, in the interviews they confessed to either filling this part based on their own assessment of autonomy level or asking different and, in their opinion, easier questions to the beneficiaries and based on the answers filling in the corresponding check boxes.

> "*Yes. Sometimes not directly, because there are many questions with many possible answers. Older people also sometimes perceive things differently and may have difficulty communicating, so I explain everything in very simple language.*" (Rural SWC social worker)

The other aspects of costs in innovation is with cognitive work to learn the new system. It seems that all groups of stakeholders involved in the system have to involve in learning new technology. However, during the observations of caregivers' work with the mobile ECS app, it seemed that it is often too much of technical information they have to learn.

One of the issues is clearly technical language used to explain instructions to caregivers regarding the ECS and app. Upon entering the beneficiary's home, the caregiver is supposed to select the appropriate function on their phone to activate NFC and scan the sticker. During one observation, a caregiver confused the term "NFC" with "NFZ", which is the abbreviation of the National Health Fund (pl. *Narodowy Fundusz Zdrowia*).

Another problem is with the additional work that is asked from caregivers to learn the new app. The observations conducted by us are focused on the logging into the app and scanning the NFC sticker to begin the work hours of a caregiver. However, the app has much more functionalities that are not learned during this meetings. Instead, caregivers are asked by coordinators and social workers to learn the app by "swiping through it" in their free time. Caregivers, despite being potentially digitally excluded due to demographic characteristics or have problems with language due to migratory status, do not have additional training in how to use the app.

4. Summary

The neoliberal political reforms also entailed changes in welfare institutions. NPM preferred outsourcing and cost-effectiveness, especially when implemented in post-communist countries during the transition period. NPM focused also on the performance measurement and led to disjointed and inconsistent service provision. Karen Yeung introduced the term New Public Analytics to describe implementation of new technologies into the NPM thinking or as she called it "neoliberalism with techno-solutionist makeover" (Yeung, 2023). However, the cause of the problem with implementation of new technologies in public administration are rather systemic and stems from the issues caused by NPM approach – disaggregation, competition and incentivisation (Kempeneer, 2023).

This can be seen in the case of ECS in selected Polish municipalities. The underpinning of the program is clearly bureaucratic, as policymakers want to refine data about care service provision and based on them manage the service over the municipalities. However, the implementation of ECS is hampered by disaggregated services. Diverse modes of care provision were not taken into account and the system is focused on the interests of bigger and wealthier gminas. This leads to domination of "big players" – e.g. care companies that can afford to implement the service because of the scale, or IT companies which has adjusted their software to be compatible with ECS. The question what will be the stake for smaller players to entre this domain is still open. However, this domination presents risk to one of very core principles of NPM – competition of market entities.

One of the driving factors behind the implementation of ECS is the pressure from social welfare system managers and political decision-makers at the gminas level. Their assumption is that ECS will give them a sense of control over the tasks performed by caregivers, even though the system is designed solely to measure punctuality. However, the narrative presents it as a significant improvement in service quality. This reflects the typical NPM focus on measurable achievements, even though obtaining quantifiable results in social policy remains ambiguous.

The last issue presented in the paper is the question of costs of technology implementation. As I have shown, the incomparable cognitive costs are put on the caregivers. Their work is underpaid, often done by women close to retirement age or with migratory background. This may make it more difficult for them to learn and understand the new system, and as a result – they will have limited abilities to argue with its outcomes. Additionally, there is not enough work done with beneficiaries regarding clear communication about the financial costs of the system and the aims of wearable technologies.

From the perspective of social workers, caregivers and beneficiaries, it seemed that their experiences were not taken into account when designing the system. Social workers point out that often they are unable to conduct Digital Interviews using computers due to the conditions in the households. Caregivers are not accustomed with technical language used in the mobile app. Beneficiaries are more accustomed to taking good care of the objects they posses and treat the wristbands as precious watches.

In this paper, I shown the importance of including diverse perspectives and experiences in successful implementation of ICT systems in public administration. Policymakers need to think forward about social and political-economic results of their decisions in the field of digitalisation. New ICT systems should not make it difficult new players to enter the market and learn how to use it. It is exceptionally important in the field of public services which are often provided to less favoured populations that may have difficulties with understanding their rights and possibilities in digital welfare states.

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