Policymaking in time of COVID-19: how the rise of techno-institutional inertia impacts the design and delivery of ICT-mediated policies

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Abstract

The paper theorizes the emergence of techno-institutional inertia within public organizations. Specifically, it analyses the impact of techno-institutional inertia on policymaking in emergency time. The paper extends the literature on inertia in organizations to shed light on the inertia triggered by both human actors and technology. Techno-institutional inertia provides useful instruments to better understand how imbrications between technology, policies, and institutions, shape the design and the delivery of public policies. The paper builds on the findings from a case study of the Peruvian public sector, analyzing the techno-institutional inertia which shaped the provision of public services to contrast the effects of the COVID-19 pandemic. The paper offers valuable insights for policymakers who aim to adopt ICT-based policies in contexts characterized by scarcity of time and resources.

Keywords: public policymaking, inertia, techno-institutional entanglements, emergency policies, digital government.

1. Introduction

Information and Communication Technologies (ICTs) played a significant role in the design and delivery of public policies in response to COVID-19 pandemic (Eom & Lee, 2022; Faraj, Renno, & Bhardwaj, 2021; Gabryelczyk, 2020; Kummitha, 2020). The benefits of adopting technology to inform policies in pandemic context is largely accounted by literature (Brem, Viardot, & Nylund, 2021; Reniu i Vilamala & Meseguer, 2020). For instance, technology allows governments to overcome constraints caused by scarcity of resources and time (Williams & Shepherd, 2018). Pressured by urgency of intervening, policymakers must design and enable policies that deliver specific, ad hoc public services which are expected to have a tangible and immediate impact on citizens' life.

Yet, in an emergency context – such as the pandemic – the "rising anxiety collides with the patience" (Lanzara, 2016, p. 7). Citizens need immediate sustain and policymakers can't afford to experiment. Hence, public organizations rely on ICT systems that are already in place and design policies upon the existing ICT systems.

However, the readaptation of existing ICT solutions to produce public policies is never an easy task, neither in ordinary times, nor in emergency times. Literature has accounted for the tensions, collisions and distortions that emerge whenever ICTs entangles with policies to inform the design and delivery of public policies in emergency contexts (Mora, Kummitha, & Esposito, 2021). To capture the obstacles that emerge after the adoption of existing technologies to mediate emergency policies, we rely on the concept of inertia.

Inertia is a valuable construct to investigate the reasons why public organizations face challenges and obstacles in the process of designing and delivering ICT-based emergency policies. Specifically, we select inertia for two main reasons: (a) inertia offers a theoretical explanation to why actors within organizations in charge of implementing new policies prefer relying on systems they are familiar with (Kim, Cha, Cho, & Lee, 2020); (b) inertia is a very useful concept to appreciate how technological systems in use within organizations create legacy and patterns that influence the new policies that rely on existing ICT solutions (Schmid, Recker, & Vom Brocke, 2017).

Different disciplines have discussed inertia in organizations: however, the focus on single aspects – such as policies, institutional contexts, human habits – does not allow a thorough understanding of how the sources of inertia influence the design and delivery of ICT-mediated policies. Against this background, we posit that when public organizations rely on ICT systems to design and deliver policies, technology

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entangles with institutional aspects of the organizations – such as norms, habits, laws – and profoundly transforms the organizational context. Hence, these techno-institutional entanglements constitute the source of a new type of inertia, that we label techno-institutional inertia. Literature on inertia has offered several contributions to depict the different sources of inertia and how inertia impacts on organizational contexts. Yet, we believe that the type of inertia that is generated by the entanglement of existing technologies with institutional elements from the organizations carries transformational characteristics that modify not only the organizational context of adoption, but also the policymaking activity that relies on technologies.

In addition, the theorization of techno-institutional inertia provides a specific contribution to the study of policymaking in emergency context. We do not neglect the impact of inertia in the design and delivery of policies in ordinary time (Bezes & Palier, 2018). However, the main difference is that in ordinary time, the design and delivery of ICT-based policies happen through multiple adjustments and corrections (Cordella & Tempini, 2015). Errors and unexpected outcomes generated by inertial mechanisms always happen; however, organizations have the possibility to fix them and to reduce their impact. Against this background, we aim to shed light on the impact of tecno-institutional inertia in emergency contexts where the availability of times and resources is more limited.

The paper offers several contributions. First, it provides a more nuanced theorization of the concept of inertia to account for the multiple dimensions of ICT-based public policies in the pandemic context. Second, it complements existing literature on inertia accounting for the way by which techno-institutional inertia impact on policy design and delivery. Third, it acknowledges the very specific agency of technology within techno-institutional inertia.

2. Theoretical Background

2.1. Inertia in organizations

The Marriam-Webster dictionary offers the following definition of inertia: "A property of matter by which it remains at rest or in uniform motion in the same straight line unless acted upon by some external force". Although valuable, this definition draws mainly from the original field of Physics and doesn't provide a clear understanding of what inertia represents beyond a generic idea of "resistance to change" (Schmid et al., 2017). Building on the concept of resistance to change, scholars from different backgrounds engaged with the study of the role and impact of inertia on organisations. For this paper, we draw on the findings of two main disciplines whose boundaries often blurs: (a) Public Management, (b) Information Systems.

Public management literature has widely discussed the role of inertia in the process of policymaking in the public sector (Tremml, 2021). The contribution of public policy literature to the study of inertia is specifically interesting. The first wave of public policy literature mainly built from institutional theory, rooting its foundations in the seminal work of new institutionalists (March & Olsen, 1983; Powell & DiMaggio, 2012; Scott, 2013). Building on this research, public policy scholars emphasized the entanglement of policies with institutions: institutions tend to generate mechanisms of reinforcement of the status-quo to protect and crystalize existing policies against possible changes and reforms (Pierson, 1996). The imbrication between institutions and policies is a source of inertia (Häusermann, 2009) because the beneficiaries of policies act to maintain the control of the existing institutional-policy entanglement that generates returns and power asymmetries (Pierson, 2000). Hence, institutional inertia plays a key role in preventing government to modify existing policies. According to this view, changes and reforms happen only when the system reaches a "critical juncture" (Pierson, 1996), and the status-quo becomes untenable preluding a policy change. Consequently, policy change is "rare, but revolutionary" (Häusermann, 2009) because it is difficult to overcome the inertia forces. Against this background, however, another stream of research has accounted for a more evolutionary conceptualization of policy change and, consequently, a more nuanced understanding of inertia (Bezes & Palier, 2018; Häusermann, 2009; Palier, 2000). Evolutionary tradition challenges the fact that neo-institutionalism neglects the "structural force" of policies and reforms (Palier, 2000). Evolutionists acknowledge the relevance of institutional inertia as a factor that hinders policy change, yet they aim to balance the influence of institutions with the intrinsic agency of policies (Bezes & Palier, 2018). By so doing, evolutionists make a case for a different conceptualization of inertia that goes beyond the institutional path-dependency (Bezes & Palier, 2018). In their view, inertia can be generated by "the effects of successive, interlocking reforms" that create "opportunities for change or on the contrary, phenomena of blockage or inertia" (Bezes & Palier, 2018, p. 1111). Hence, the policy change that emerges against this conceptualization of inertia is gradual and incremental (Häusermann, 2009) and it happens

through "layering" of different policies and reforms over time (Schickler, 2001; Streeck & Thelen, 2005).

Information systems (IS) literature has framed inertia in the light of a more comprehensive understanding of transformation and evolution of organizations (Ciborra & Lanzara, 1994; Lyytinen & Newman, 2008; Orlikowski, 1992, 1996; Orlikowski & Barley, 2001). In the context of this literature, inertia has been defined as "(…) the strong persistence of existing form and function" (Rumelt, 1995). IS literature has emphasized a concept of inertia that focuses on the barriers that emerge when digital transformation is enabled in organizations (Rinta-Kahila, Penttinen, & Nevalainen, 2016). Specifically, relevant research has investigated what happens when organizations transit from one ICT system to another one (Busch, 2018; Polites & Karahanna, 2012). In the context of IS, inertia can be defined as "user attachment to, and persistence in, using an incumbent system (i.e., the status quo), even if there are better alternatives or incentives to change" (Polites & Karahanna, 2012, p. 24). Once again, IS scholars conceptualize inertia as resistance to change or, as Besson and Rowe (2012) do, "(…) the degree of stickiness of the organization being transformed" (Besson & Rowe, 2012, p. 105). Although valuable, many of these contributions seem to look at inertia in organizations as an outcome of human habits or structural configurations (Schmid et al., 2017). However, the emphasis put on the role of human actors or organizational structures prevents IS literature to account for technological artefacts as a source of inertia (Schmid et al., 2017). In other words, ICT agency has been largely neglected in IS literature focusing on inertia. In very recent years, IS scholars have tried to fill this gap by accounting for a more nuanced approach to inertia introducing a socio-technical dimension (Haskamp, Marx, Dremel, & Uebernickel, 2021; Schmid, 2019; Schmid et al., 2017). Socio-technical perspective aims to unpack the different dimensions that constitute inertia by looking at the dynamic interactions between the social and relational dynamics and the technological characteristics (Schmid, 2019).

The effort is appreciable because it doesn't neglect the structural or individual sources of inertia: rather, it advocates for a proper conceptualization of the technological agency that contributes to inertial mechanisms.

Each of these streams of literature offer interesting elements to analyse the role of inertia which affects the deployment of ICTs within public sector organizations. Public management literature is relevant because it sheds lights on the role of policies to generate inertia, alongside to structural factors. Hence, Information Systems literature offers a specific contribution in the legitimization of ICT agency as source of inertia.

2.2. Inertia and techno-institutional entanglements

Building on these findings, the paper aims to extend the existing knowledge and to account for a more nuanced conceptualization of inertia. We share the belief that depicting inertia only as the emergence of barriers which hinder change is a limiting perspective. We do align with calls for a conceptualization of inertia as the outcome of institutional and technological dynamics (Rinta-Kahila et al., 2016; Schmid et al., 2017). Yet, with this paper we aim to show that the siloed dimensions of inertia (such as policy, technical, institutional) alone do not explain the reasons by which existing ICT-mediated policies impact over the design and delivery of new policies in institutions. Against this background, we posit that it is necessary to understand the nature of the techno-institutional entanglements that emerge when public organizations rely on ICT to design and deliver public policies. Techno-institutional entanglements reflect the combination of the institutional logic already present within organizations (made of norms, culture, policies) and the technological logic inscribed in ICT systems. Techno-institutional entanglements reshape and transform the workflows and structures of the organizational context of adoption (Gualdi & Cordella, 2022; Lanzara, 2009). The emergence of techno-institutional entanglements creates the conditions to identify a new type of inertia, that we refer to as techno-institutional inertia. Techno-institutional inertia goes beyond existing, siloed conceptualizations of inertia and it aims to make a step forward to socio-technical inertia. Techno-institutional inertia complements the public management literature: building on the concept of policy inertia, it entangles the layered evolution of policies with the layered evolution of technologies that mediate the policies. By so doing, techno-institutional inertia allows to theorize a tighter concept of inertia that is generated by the imbrication of policy inertia and technological rigidity. Techno-institutional inertia also complements and enriches the IS literature because it acknowledges the relevance of ICT agency to explain the impact of technological-mediated policies. By so doing, we shift the focus of inertia from the individuals, who try to resist to technological change, to a more complex and nuanced conceptualization. Techno-institutional inertia doesn't neglect the human agency: rather, it calls for a

theorization of inertia that includes the role of both human actors and technological artifacts in the context of public institutions.

3. Research design

3.1. Case selection

The paper has two main purposes. The first one is to offer a more fine-grained theorization of inertia that builds upon the emergence of techno-institutional entanglements within organizations. The second one is to investigate how the techno-institutional inertia impacts on policymaking in emergency context. To study these issues, we shed light on the policymaking processes that underpin the adoption of public policies in the context of the Peruvian Government response to the effects of COVID-19 outbreak. The Peruvian response to the pandemic is an interesting case to investigate the consequences of an emergency policy that builds upon technological systems, organisational practices, and institutional arrangements, already in use in the public administration to design and deliver new public services. The analysis of the Peruvian case is valuable to understand how the existing entanglements between technological systems, institutional logics, policy legacy, and cultural aspects, in the Peruvian public organizations impact on the design of new policies deployed to respond to the COVID-19 pandemic. The Peruvian case helps to illustrate the importance to address how techno-institutional inertia emerge in contemporary public policies design and deployment. The case reveals that existing conceptualizations of inertia are not able to fully account for the effects that techno-institutional entanglements have on how emergency policies are designed and deployed.

3.2. Methodology and data collection

The paper adopts a qualitative case study approach (Yin, 2009). We follow the exploratory case study because we aim to investigate a phenomenon that is not clearly detached from its context (Yin, 2009, p. 13). Additionally, we aim to shed light on a phenomenon that is out of the control of the investigator (Yin, 2009). Qualitative case studies also fit well with the aim of illustrating how actions and workflows are structured within organizations (Symon & Cassell, 2012). The paper aims to offer a more fine-grained theorization of the concept of inertia. Exploratory research offers valuable instruments to understand the emergence of a phenomenon (techno-institutional inertia) that has not been subject of the necessary empirical research. Data collection consists of secondary sources, including: (a) official reports and assessments prepared for and by the Peruvian Government and Parliament bodies; (b) primary legislation enabled by the Peruvian Government and the Parliament (Decrees, Ministerial Resolutions); (c) secondary sources of law (Ministerial documents, technological specifications); (d) Assessments, legal opinions, official inquiries prepared by committees and special control bodies.

4. Case study

4.1. Emergency policy: the adoption of Bono "YoMeQuedoEnCasa"

The outbreak of COVID-19 forced the Peruvian government to enable extraordinary measures to fight the economic consequences of the pandemic. As many other countries, Peru had to impose emergency restrictions to limit the virus transmissibility, which caused severe disruptions to business and workforce (International Monetary Fund, 2021; Jaramillo & Ñopo, 2020). Yet, Peru was one of the first Latin American countries to enter a national lockdown (15 March 2020), significantly earlier than many others.

To respond to the increased needs caused by the pandemic, the Peruvian government enabled an emergency welfare programme to sustain people impacted by the COVID-19 restrictions. Specifically, the government released a plan to provide a subsidy to all citizens who had been forced to stop working and therefore ended up in difficult economic conditions (Cerna Aragon, 2021). The emergency legislation enabled with the Decreto de Urgencia (Urgency Decree) D.U. 027-2020 introduced the Bono "YoMeQuedoEnCasa" (I'm staying at home), a one-shot measure to provide a subsidy worth of 380 soles (110 USD) per household to provide immediate relive to the economic impact of the pandemic to those in in needs.

To implement the policy outlined by the legislation, the key challenge faced by the government was to identify the citizens eligible for the subsidy. The government decided that the subsidy had to go to households whose Socio-Economic Condition (SEC) was classified as "poor" or "very poor", and that lived in "vulnerable health contexts" (D.U. 027-2020). The same legislation charged the Ministry of Development and Social Inclusion (MIDIS) to identify a Registry of Beneficiary Households (Padron de los Hogares Beneficiarios – PHB) out of the General Household Registry (Padron General de Hogares – PGH). MIDIS relied on the Households Targeting System (Sistema de Focalización de Hogares – SISFOH), the

intersectoral and inter-governmental system that was already utilized to provide a wide number of welfare provisions. SISFOH has the fundamental purpose of producing SEC of citizens based on their level of poverty. SISFOH works according to an on-demand logic: it only processes information of those who proactively apply for welfare services.

Two days after, with Resoluccion Ministerial (Ministerial Resolution) R.M. 062-2020-MIDIS, MIDIS approved the proposed PHB outlined by the Directorate DGFIS. To be consistent with D.U. 027-2020 guidelines, the DGFIS set the following list of criteria to determine eligibility for the Bono:

(1) SEC of "poor" or "not poor"

(2) Households living in urban areas

(3) Excluding households with only minors.

(4) Excluding households whose members are public employees

The approved PHB accounted for 2,749,091 households, which included 8,940,045 citizens. The process to identify the households eligible for the subsidy pivoted on the SEC, on top of which further criteria were advanced.

However, while the legislation provided a clear target for the subsidy beneficiaries, the public administration faced a challenge in implementing the emergency policy. The identification of the beneficiaries of the welfare policy resulted complicated due to three main reasons: (a) on-demand logic of the system; (b) lack of data of informal workers; and (c) fragmentation of databases.

(a) On-demand logic of the system

First, according to official statistic provided by MIDIS, more than one Peruvian citizen out of five wasn't enrolled in the system (Ministry of Development and Social Inclusion, 2021). As of 16/03/2020, MIDIS held a PGH with 9,212,338 households and 25,715,174 members (Contraloria General de la Republica del Perù, 2020, p. 22). This means that more than 6 million people are unknown to the system: unless they voluntarily step up to register to SISFOH, they are not included in any welfare service based on the SISFOH database.

(b) Lack of data from informal workers

Additionally, the largest share of Peruvian workforce is not formally employed: 68% of employees are not registered as employees in any public or private company. This means that millions of people are not enrolled or registered in any public scheme (pensions, insurance, taxation, etc.). These pieces of information are key data required by the public administration to verify information provided by the households and to run the SISFOH algorithm to decide whether they are entitled to social welfare or not. Without these data, it is almost impossible for the algorithm to assess key variables such as level of income. In conclusion, Peruvian authorities did not have a complete overview of those who are entitled to receive the subsidy because of their actual SEC.

(c) Fragmentation of databases

Two different official reports (Contraloria General de la Republica del Perù, 2020; Ministry of Development and Social Inclusion, 2017) have flagged that SISFOH does not actually rely on databases to verify the correctness of information about the households. Checking databases is mandatory by law prior to classify a household's SEC, and laws individuate five different databases against which verifying the information: SUSALUD (private health insurance); SUNARP (vehicles possession); SUNAT (incomes); MEF payslips (public employees' incomes); OSINERGMIN (electricity consumption).

As the two official reports have shown, 2 out of 5 databases (SUSALUD and SUNARP) are still not utilized to cross check information, which means that basically two filters are not utilized to determine the CSE (Contraloria General de la Republica del Perù, 2020, pp. 11-12; Ministry of Development and Social Inclusion, 2017, pp. 83-84). SUNAT databases can be accessed in limited way by MIDIS, that is, only at aggregate and comparative level, not individual level due to privacy issues (Ministry of Development and Social Inclusion, 2017, p. 84). As of June 2020, only 2 databases could be accessed in permanent and complete way: MEF payslips for public employees, and OSINERGMIN databases (Contraloria General de la Republica del Perù, 2020, p. 11; Ministry of Development and Social Inclusion, 2017, p. 84). When asked about this issue, the Director General of DGFIS has acknowledged the lack of permanent access to SUSALUD, SUNARP and SUNAT databases as of September 2020 (Ministry of Development and Social Inclusion, 2020). Figure 1 (translated into English by the authors) shows the databases and filters used in the SISFOH algorithm.

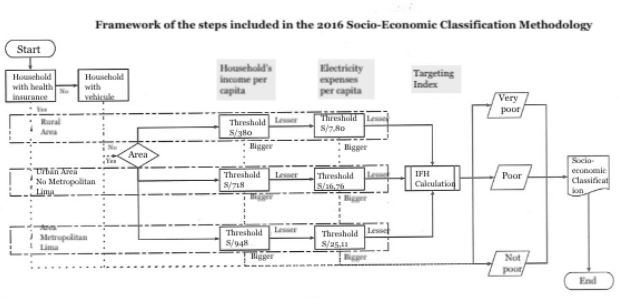

Figure 1. Scheme of databases and filters used in SISFOH algorithm to determine SEC

4.2 Further policies

The "YoMeQuedoEnCasa" subsidy was announced on the 16th of March 2020, just one day after the country entered a national lockdown. However, the government acknowledged that the measure was not able to target as many households as needed. Ten days later, the government released a new measure to target self-employed workers ("Bono independiente") which covered 773 288 households.

Peruvian policymakers later recognized initial limits of the system and announced changes in the methodology to classify households (31st March). For instance, the Minister for Development and Social Inclusion herself admitted that the voluntary enrolment logic of SISFOH was not enough to aid and sustain people in need (Ministry of Economy and Finance, 2020). Accordingly, she advocated "an upgrade" of the system from the on-demand basis to a more inclusive one(Ministry of Economy and Finance, 2020).

Yet, after the adoption of the first two subsidies, the government decided to introduce additional measures to reach a wider share of households. These measures included first a subsidy for poor or extremely poor people living in the countryside ("Bono rural"), approved on the 19th of April (35 days after the national lockdown), with the aim to cover 980 138 households. Eventually, on the 5th of May (government approved another subsidy ("Bono Universal de Familia") with the purpose of sustaining families with limited income. This measure was built according to a universal approach, and it reached 4 126 066 households.

The whole system has been exposed to criticism due to incorrect allocation of citizens and subsidies. It emerged in fact that the algorithm incorrectly classified households. The Peruvian body for Control of expenditures, (henceforth, The Contraloria) has verified the accurateness of information in the PHB for the Bono "YoMeQuedoEncasa". They estimated that 214 758 households (with 657 815 members) who met the eligibility criteria were excluded from the PHB and hence did not receive the subsidy. It accounts for the 7.25% of the total households and for S/81 608 040. This can be defined as an "exclusion error": people who are eligible don't receive the subsidy (Cerna Aragon, 2021).

At the same time, the Contraloria estimated that 68 932 households that were included in the PBH did not met the eligibility criteria. The Contraloria discovered that those households exceeded the electricity consumption thresholds, which means that they could not be included in the "poor" or "very poor" CSE. Yet, 42 772 of those households cashed the subsidy, for a total amount of S/16 253 360. This represents an "inclusion error": some citizens were clustered as "poor" or "extremely poor" despite living in far better conditions (Economica, 2020).

Building on the data worked out by the Contraloria, it is possible to argue that the sum of the error of inclusion and the error of inclusion nearly equals the 10% of the whole target of the policy (9.57%). Beyond the numbers, this means that a huge amount of money has been misallocated by the algorithm.

5. Discussion

In the aftermath of the pandemic, the Peruvian public sector relied on SISFOH to manage the provision of emergency subsidy. SISFOH was chosen because it was (and it still is) the backbone of the delivery of more than ten different welfare programmes and services managed by MIDIS. SISFOH was utilized to provide pensions, subsidies to fight poverty, sustain to families, and many others social measures. SISFOH provided key information to determine citizens' eligibility to many welfare policies belonging to different fields and sectors. Public policymakers designed and delivered policies according to SISFOH classifications.

Hence, in the emergency situation after the outbreak of the pandemic, the Peruvian government relied on the SISFOH system that (a) was already in place and working (b) was highly adopted and known by civil servants (c) had already guaranteed a good standard of information provision. In other words, SISFOH was highly institutionalized within the architecture of Peruvian welfare services, civil servants had reached a considerable level of awareness of the systems functionalities, and the system proved to be very helpful to achieve welfare policies targets. Policy inertia and institutional inertia can explain the choice of utilizing SISFOH: in a context with time and resources constraints, the most adopted and well-known system was believed to represent the easiest solution to design and delivery a new policy. MIDIS, the Ministry in charge of welfare policies, had already orchestrated the design and delivery of several different welfare policies and their refinement and improvement through SISFOH.

When the government had to face the challenge of the COVID-19 crisis, they decided to rely on the expertise and knowledge of a consolidated corpus of policies to obtain a smooth and quick adoption of the new policy. Peruvian policymakers aimed to replicate the pattern of policy design already utilized in other context and for other welfare purposes. Policymakers asked MIDIS to create a registry (PHB) of all the

citizens eligible for the Bono "YoMeQuedoEnCasa", relying on SISFOH classification, and to deliver the public service accordingly.

However, when the Peruvian public administration decided to utilize SISFOH, they adopted not only an established approach to design and deliver a policy, but also the technological system engrained within the policy. SISFOH algorithm was utilized to determine the SEC of the beneficiaries: however, it generated two relevant consequences for the design and delivery of the new policy. First, the on-demand logic that informed the design of SISFOH algorithm created further exclusions in the creation of the PHB. Citizens who did not voluntarily register to obtain welfare services were excluded from those eligible for the Bono. Second, when SISFOH was utilized to respond to COVID-19 challenges, it was already characterized by existing inconsistencies in the databases that fed the algorithm. The adoption of SISFOH introduced in the design of the new policies the limits of the database fragmentation: hence, the creation of the PHB was informed by the inconsistencies already present beforehand.

The consequence of the misallocation of Peruvian citizens produced by SISFOH was that a high number of people was excluded from the provision of the subsidy. To overcome this problem, Peruvian government reacted immediately, designing, and delivering specific subsidies for categories of citizens excluded from the Bono "YoMeQuedoEnCasa": self-employed workers, rural workers, families. Eventually, Peruvian government completely overturned the on-demand, targeted logic underpinned by SISFOH, to design and deliver a policy that provided a subsidy according to a universal welfare logic (that is, the exact opposite of a targeted welfare logic).

As the findings of the case show, some of the choices of the Peruvian government can be explained through the lens of policy and institutional inertia. Yet, a more fine-grained understanding is needed to understand the different logics of the design and delivery of the policy.

Technological inertia can explain why the government relied on SISFOH to identify the beneficiaries of the welfare policy. The algorithm at the heart of SISFOH had already been tested, developed, and refined. Over the years, public sector designers aimed to feed the algorithm with more specific and precise datasets to capture the socio-economic condition of the citizens even better. The algorithmic legacy built by SISFOH informed the development and rearrangement of public institutions in Peru: Peruvian policymakers found no reasons not to adopt the same technology already in use in the public administration.

Taken alone, all the different conceptualizations of inertia provide limited value in depicting the reasons that underpin the choice of the Peruvian government. The findings from the case study show that it is difficult to disentangle the different dimensions of the phenomenon. Policy, institutional, or technological inertia fail to account for the imbrications that take place between the technological artifacts that constitute SISFOH and the organizational actions and practices that are structured around it. Hence, it is questionable whether SISFOH is a source of inertia because of the recurrent adoption of the welfare policies that rely on it, or whether the stratified, layered welfare policies generate inertia because they reinforce the logic and the functionalities of SISFOH at their core. To overcome this conundrum, we posit that the source of inertia is neither the technology alone, nor the policy alone. Rather, the source of inertia is the techno-institutional entanglement that emerges because of the intertwining of technological artifacts and layered policies within institutions.

The emergence of the techno-institutional entanglement generates a techno-institutional inertia, whose boundaries blur as it is not possible to distinguish the impact of the technology on the policy from the impact of the policy on the technology. Accordingly, we need a new concept that provides a nuanced theorization of the composite inertia generated by the influences of the policy dimension on the technological dimension, and vice-versa. The techno-institutional inertia explains how the design and delivery of the new policy in the Peruvian case reinforces already existing practices, habits, and technological functionalities. Techno-institutional inertia offers a valuable lens to account for the transformations that happen when public policymakers aim to design and deliver new IT mediated policies in specific contexts, such as emergency and crisis. Specifically, through the concept of techno-institutional inertia it is possible to account for the following: (a) shedding a light on the often-neglected agency of technology in the creation of inertia; (b) illustrating how inertia plays a role that goes far beyond the simple generation of barriers and obstacles to the adoption of IT mediated policies: it shapes and orientates the design and delivery of new policies; (c) illustrating how the technological component of techno-institutional inertia impacts on the policies in a tighter and more stringent way.

The impact of techno-institutional inertia in the process of designing and delivering the policy of the Bono "YoMeQuedoEnCasa" was relevant because it

forced the Peruvian government to rapidly deploy new policies to overcome the limitations and weaknesses of the first monetary subsidy. The first reaction to techno-institutional inertia was to design and deliver additional policies to provide sustain to those excluded from the original measure. The second reaction was to completely change the approach to welfare measures: the Peruvian government decided to adopt a universal logic that replaced the targeting logic which had been driving the Peruvian welfare policies for decades.

6. Conclusions

The paper has discussed the impact of techno-institutional inertia in the processes of design and delivery of ICT-mediated policies in emergency contexts. Building on the findings from a case study of Peruvian public sector response to COVID-19, the paper sheds light on the imbrications between technologies and institutional factors – that we refer as techno-legal entanglements – and on how these entanglements represent a source of inertia.

Techno-institutional inertia emerges as a powerful force that shapes and modifies the adoption and the outcomes of specific policies that rely on technological systems. The findings from the Peru case show that techno-institutional inertia hindered the expected outcome of the monetary subsidy policy, up to the point the public policymakers had to design and deliver further policies to overcome the limitations and exclusions of the former one.

We acknowledge that in emergency contexts, often policymakers tend to rely on the technologies and policies that are already working, to avoid the wasting of time and resources. However, our research sheds light on the emergence of an additional source of inertia that is generated by the entanglements that govern the evolution of public institutions. The findings of our research offer relevant implications for both theory and practice. The paper adds to the literature going beyond the existing conceptualizations of inertia that do not account for the imbrications of technology, institutional logics, and human action in the context of public organizations. By so doing, the paper theorizes a more nuanced conceptualizations of inertia that accounts for how techno-legal entanglements impact on the design and delivery of emergency public policies. The paper offers also contributions for practice, shedding a light on the impact of techno-institutional inertia on emergency public policymaking. If policymakers aim to replicate existing patterns of ICT-mediated policies, they need also to be aware that the agency of these techno-institutional entanglements might profoundly influence the new policies that are designed and delivered. Accordingly, policymakers need to be ready to adopt measures that correct and overcome unexpected and undesired outcomes of the policies that they enabled.

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