

Accountants' postures under compulsory digital transformation imposed by government oversight authorities

Abstract

Governments are becoming digital; however, a shift towards digital transformation may not always occur voluntarily. For example, despite their willingness or skills, local government accountants are usually forced to adopt a digital innovation to comply with requirements from top-down public financial management reforms — a typical case of compulsory digital transformation. We observe local government accountants' attitudes towards compulsory digital transformation and their effects on the comprehensiveness of the digital transformation linked to accounting reforms in place. We empirically analyzed the public financial management oversight function in Brazil, in which digitalization requires local government accountants to report financial information to external authorities via computerized tools. Relying on interviews and an open-ended survey with local government accountants, our findings revealed how Brazilian government accountants deal with compulsory digital transformation in the context of task overload. Most of the accountants present a resigned posture in which they opt to comply with the oversight authorities' deadlines at the expense of reductions in the reported data's accuracy. However, other accountants assume a visionary posture by adopting a transformative attitude and turning the mandatory digital transformation to their advantage to favor a broader reformist agenda. The implications of such a scenario are discussed.

Keywords: digital transformation; digitalization; mandatory adoption; top-down adoption; local governments

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Introduction

Public financial management reforms involving budgeting, accounting, and accountability have relied on the digitization and digitalization of processes since the 1980s (Bergmann, 2021; Gupta, Keen, Shah, & Verdier, 2017). Scholars have been discussing the early stages of local governments' public financial management digital transformation and have pointed to the central role of information technology in the implementation of several reforms such as the adoption of accrual accounting (Dissanayake, Dellaportas, & Yapa, 2020; Azevedo, Lino, Aquino, & Machado-Martins, 2020; McLeod & Harun, 2014; Cohen, Kaimenaki, & Zorgios, 2007) and the impact of technology on governments' efficiency and effectiveness (Simpson, Tetteh, & Boateng, 2020; Gil-Garcia, Dawes, & Pardo, 2018), transparency, and accountability (Lindquist & Huse, 2017; Pina, Torres, & Royo, 2010).

The literature extensively shows that public financial management reforms in emerging economies are usually top-down, externally designed (e.g., by central authorities), influenced by international donors, and detached from local governments' needs (Vakulenko, 2021; Jayasinghe et al., 2020; Adhikari, Kuruppu, & Matilal, 2013). As local governments have no option but to follow the imposed guidelines and implement the reforms — in spite of their (lack of) skilled personnel and available resources to promote this sort of organizational change (Dissanayake et al., 2020; Harun, Carter, Mollik, & An, 2020) — it comes with no surprise that the implementation of large projects related to digital transformation is far from easy and, to a great extent, unsuccessful (Cohen et al., 2007).

Relying on findings from this literature, it can be expected that externally designed top-down reforms may slow down the prospect that public financial management reforms will change the core processes and achieve a comprehensive digital transformation (Bergmann, 2021), at least in emerging economies. Following Mergel, Edelmann, and Haug (2019), we maintain that local governments facing external pressures to transform processes and routines, instead of being willing to voluntarily implement such changes, are not expected to engage in a more comprehensive digital transformation. We argue that the extant literature has overlooked cases of top-down public financial management reforms that demand the digital transformation of local governments, therefore resulting in the forced adoption of digital innovations by accountants at the local level — i.e., *compulsory digital transformation*. The digital transformation at the individual level requires public servants to have certain competences and a proactive mindset in order to implement the required innovations (Mergel et al., 2019), while the compulsory digital transformation may force public servants to use the innovation regularly in their daily tasks regardless of their capacity or willingness to do so. Such forced adoption of innovations may create barriers to the implementation — or the escalation — of proposed reforms (Heidenreich & Talke, 2020).

We conducted interviews and ran a survey with Brazilian municipal accountants to observe local government accountants' attitudes towards compulsory digital transformation and the effects of their views on the resulting comprehensiveness of the digital transformation in relation to accounting reforms already in place. Brazil has a long-standing history of public financial management reforms being implemented since the 1990s (Gaetani, 2003; Gomes & Lisboa, 2021). Specifically, we directed our attention to Brazilian local governments' oversight in the case of the proliferation of digital artifacts for financial and non-financial data collection. These digital artifacts were implemented by public audit organizations and ministries at central government level over the last few decades (Aquino, Lino, & Azevedo, 2021). Such a widespread strategy to digitally collect data from local governments required accounting

departments to undergo forced adaptation, including frequent adjustments to their financial management information systems (FMIS), as a response to constant imposition by an external oversight authority. It also puts pressure on local government accountants as a result of the frequency and increasing scope of data sets they are responsible for reporting.

We found different postures regarding how accountants deal with compulsory digital transformation. By posture we mean that individuals, under particular circumstances and at a given time, tend to act according to a typical set of attitudes and to prioritize particular choices over others when performing their organizational role. Such posture may influence the capability of a reform to be implemented. In the case at hand, those who adopt resigned and stewardship postures perceive that the tasks required by compulsory digital transformation lack functionality and are useless for local government from a managerial point of view. These accountants feel pressured due to task overload, and the lack of data accuracy that emerges from these postures may have serious implications for public management and its reforms. Another group of accountants follows a visionary posture. Despite being immersed in the same context of task overload, they consider the tasks stemming from digital transformation as a necessary form of bureaucracy — improving the likelihood of successful reforms and taking advantage of the compulsory digital transformation to promote a broader digital agenda within local government. As each posture is not necessarily stable nor pre-determined, but emerges due to situational circumstances, it might change — something that can be useful for promoters of reforms, as proposed in the implications of the paper.

In the next section, we present previous debates on digital transformation and its compulsory nature. The third section details the context of mandatory digital transformation in Brazil. The fourth section describes our methodology. Following that, we present our findings and the emergent accountants' postures in response to the mandatory adoption of technologies. Finally, we discuss our findings in light of the extant literature and the last section presents our conclusions and the main implications of the paper.

Public financial management reforms and the implementation of mandatory digital transformation: resistance and acceptance

Since the 1980s, public financial management reforms have relied on information and communication technology (Bergmann, 2021; Gupta et al., 2017), recently labeled as *digital transformation* (Hanelt, Bohnsack, Marz, & Antunes Marante, 2020). Consensus around the definition of digital transformation is still fragile, but it can be broadly described as an organizational change triggered and shaped by the widespread diffusion of digital technologies (Hanelt et al., 2020). Public financial management reforms relying on digital technologies usually promote openness, transparency, and accountability (Pina, Torres, & Acerete, 2005; Pina et al., 2010), drive accounting and budgeting innovations (Dissanayake et al., 2020; Azevedo et al., 2020; Orelli, Padovani, & Katsikas, 2016; McLeod & Harun, 2014; Cohen et al., 2007), and foster citizen engagement (Kumagai, Bandyopadhyay, & Grandvoinnet, 2019; Agostino & Arnaboldi, 2016).

Digital transformation encompasses not only radical but also incremental changes occurring within public sector organizations. Verhoef et al. (2019) state that digital transformation is achieved through phases. The first phase is *digitization*, characterized by the transition from analogic to digital processes within an organization. *Digitalization* occurs when potential changes to the process go beyond mere digitization and improve users' experiences. Finally, a comprehensive *digital transformation* depends on the digitization and digitalization phases and will be fully achieved when core organizational processes are significantly different from their analogic ancestors.

Despite the pervasiveness of digital transformation and its increasing popularity, in practice, the implementation of large projects related to digital transformation — including those related to public financial management reforms — is far from easy and usually costly (Cohen et al., 2007). The successful implementation of each phase of digital transformation will depend on cultural adaptation, people skills, and overt/covert resistance to the new technologies from organizational members (Heidenreich & Talke, 2020; Czarniawska, 2019). Empirical evidence points to failures in public financial management reforms being due to these factors (Simpson et al., 2020).

Indeed, the low adoption and use of information technology by organizational members is one of the main barriers to the successful implementation of any digital project (Hwang, Al-Arabi, & Shin, 2015), and the usage of information technology has become an important predictor of success for digital enterprises. For example, the technology acceptance model proposes that members of an organization should perceive a particular technology to be useful and easy to use for an innovation to be voluntarily adopted in organizations (Venkatesh & Bala, 2008). An organizational member *perceives the usefulness* of digital technology in line with their performance being increased by the technology, while *ease of use* derives from their belief that using a digital technology will be free of effort (Davis, Bagozzi, & Warshaw, 1989). Importantly, an organizational member's attitude (i.e., positive or negative feelings) is critical to a system implementation project (Hwang et al., 2015).

Furthermore, in compulsory digital transformation, organizational members' lack of voluntary choice also plays a role. Public financial management reforms in governments are a typical example of organizations being required to digitally transform processes and routines due to external demands (Vakulenko, 2021; Jayasinghe et al., 2020; Adhikari et al., 2013). Currently, such reforms often rely on the mandatory adoption of technology (Heidenreich & Talke, 2020; Hwang et al., 2015).

In mandatory adoption, an organization must adopt the new technology regardless of the willingness of employees and other members to use the technology. Following the decision to adopt a new technology, imposed by stakeholders at the field or organizational levels, a forced or symbolic adoption at the individual level takes place (Perera, McKinnon, & Harrison, 2003). On the one hand, symbolic adoption is unproblematic, as it means that the public servant or employee will voluntarily adopt the new technology put in place (Heidenreich & Talke, 2020). On the other hand, forced adoption requires that all members adopt the solution, even those unwilling to do so (Heidenreich & Talke, 2020). Accountants' perceptions of their organizational role are likely to be disturbed by the (forced) adoption of technologies (Heinzlmann, 2018), thus creating a basis for resistance and opposition to digital technology that can lead to negative consequences for the implementation process of those reforms (Heidenreich & Talke, 2020; Quratulain & Khan, 2015). As Hwang et al. (2015, p. 1278) argue, "*an employee might hold a negative attitude toward adopting the new system but will ultimately use the system because s/he has to, and no other options exist.*"

The public financial management literature has already noted that information technology is central to the successful implementation of reforms (Dissanayake et al., 2020; Orelli et al., 2016; McLeod & Harun, 2014), and some forms of resistance to technology are being discussed (Simpson et al., 2020). However, it has not shed light on the issue of such reforms creating a context of the mandatory adoption of technology, which typically involves imposing the forced adoption of digital innovations on accountants — i.e., generating *compulsory digital transformation*. Thus, the way in which compulsory digital transformation affects accountants, and the overall implementation of public financial management reforms, is something that requires empirical analysis.

Compulsory digital transformation in financial reporting in Brazil

Brazil has a long-standing history of public financial management reforms involving some degree of digital transformation that dates to the 1990s (Gaetani, 2003; Gomes & Lisboa, 2021). Here, we focus on reforms concerning the oversight of budgetary and financial reporting within the public financial management cycle. This section describes the emergence of digitalization within Brazilian oversight authorities that triggered compulsory digital transformation at the field level. As we explain, the digitalization of the oversight authorities has created a top-down and compulsory demand for local governments to comply with digital technologies designed and promoted by those authorities. Therefore, the field's digital transformation is imposed by the oversight authorities (promoters) on local governments (consignees).

The digitalization of governmental reporting in Brazil gained impetus as a result of the need to monitor the public policies implemented by state and local governments during re-democratization in the 1980s and the devolution of fiscal autonomy to local governments by the Federal Constitution of 1988. Later in the 1990s, financial and budgetary oversight was amplified to rescue subnational governments from increasing public debt. Following that, a fiscal responsibility law was enacted in 2000.

Oversight authorities were challenged but also empowered following these broader reforms. Courts of Accounts (i.e., Brazilian public audit organizations) secured a preponderant role to enforce the new fiscal responsibility law (Loureiro, Teixeira, & Moraes, 2009). Also, the fiscal responsibility law reinforced the Treasury's responsibility to consolidate the whole of public sector accounts (Aquino, Lino, Cardoso, & Grossi, 2020). Therefore, in the last 25 years, the Brazilian oversight authorities, based on their legal mandate and to cope with the tasks they are required to perform, launched competing digital projects to collect financial and non-financial data from governments, leading to initial steps being taken towards digital transformation in the financial reporting of governments (Aquino et al., 2021).

Such "data collecting systems" adopted in Brazil are digital artifacts (designed and developed by a legitimate authority) imposed on local and state governments to compulsorily report their financial and non-financial data, according to the calendar and scope defined by the oversight authority. Each authority is autonomous and implements its data collecting system according to its interests regarding public financial management. For instance, the more than 30 Courts of Accounts look to automate and expedite their audit process, the National Treasury collects data for preparing the whole of public sector accounts, and the Ministries of Health and Education monitor the performance of national health and education public policies. The data collecting systems of (i) the Health Ministry (launched in 1999) (Teixeira & Teixeira, 2003); (ii) the Education Ministry (from 2005) (Cabral, Bueno, & Sousa, 2010); (iii) each of the 33 Courts of Accounts (from 1994) (Aquino et al., 2021); and (iv) the National Treasury (from 2015) are the most prominent examples currently in place.

Data collecting systems evolve as new technologies become available, and the various authorities may decide to amplify data coverage accordingly. Therefore, the scope, frequency, and granularity of data collection vary among the systems' developers (i.e., various ministries, Courts, and the Treasury) and the period under analysis. For instance, from 2004 to 2012, the Health Ministry had greater coverage and completeness of data when compared to the Treasury (Feliciano, Medeiros, Damázio, Alencar, & Bezerra, 2019), while the more than 30 Courts of Accounts operated systems with a very distinct frequency for data collection and its scope (Aquino et al., 2021). The Treasury's current XML-based system replaced the previous spreadsheet-based version (Neves, 2021; Aquino et al., 2020).

The widespread implementation of data collecting systems by oversight authorities requires local governments to incur costs associated with continuously developing software and

training programs to cope with the compulsory requirements to report fiscal, financial, or performance information. Local governments are pushed towards the mandatory adaptation of their processes and financial management information systems (FMIS) according to the frequency and parameters defined and updated by the oversight authority (promoter). While oversight authority incurs marginal costs to amplify the set of data to be collected, local governments incur major costs while developing their financial management information systems or contracting off-the-shelf solutions (Aquino et al., 2021; Azevedo et al., 2020).

The promoters of compulsory digital transformation in Brazil seek uniformization and define the intensity and timing of the transformation while often not considering the differences among consignees (local governments) regarding the human and non-human resources available to implement new digital processes (Azevedo et al., 2020). At the individual level, however, there is less evidence of how such compulsory digital transformation is affecting local government accountants. Recently, scholars have identified that Brazilian accountants experience learning costs when operating the digital innovations they are forced to adopt (Neves, 2021). Extant literature shows that accountants recognize the need to extend their skills to ensure the successful implementation of reforms (Marques, Bezerra Filho, & Caldas, 2020); however, they rarely receive support from public managers or politicians during the implementation of digital innovations (Azevedo et al., 2020). Compulsory digital transformation is imposed according to rules designed by external authorities; these may affect accountants' attitudes towards fully adopting the reporting systems, as accountants are distant from external authorities and may not be convinced of reporting tasks' usefulness (see Brewer, Walker, Bozeman, Avellaneda, & Brewer, Jr., 2012). In effect, this would decrease their willingness to participate in and support the digital transformation project. Therefore, accountants' willingness to adopt new technologies — which may be impacted by the context in which they operate and their attitudes towards compulsory digital transformation, which is perceived as a forced adoption — might affect the overall implementation of public financial management reforms.

Methodology

We collected and analyzed the perceptions of local government accountants working on reporting fiscal and financial information to oversight authorities. Our empirical material includes interviews, field notes, and open-ended answers to a survey shared with a broad audience of local government accountants. Our perspective is inductive and explores how these professionals interact with the compulsory digital transformation in place.

Data Collection

We first interviewed 60 accountants following a theoretical sampling (Eisenhardt & Graebner, 2007) undertaken in small to large-sized municipalities and varying geographic areas. As we intended to observe tenured accountants' attitudes towards compulsory digital transformation, we selected cities that do not outsource their accounting processes. The outsourcing of accounting tasks is a common feature in some regions of Brazil (e.g., the North and Northeast) due to lack of labor and there being no incentives from the Courts of Accounts to hire tenured accountants (Aquino & Neves, 2019). Regardless, we found suitable cases in all regions of the country (see Table 1). However, we do not claim for generalization nor causal explanations, as our focus is on these professionals and how they interact with the context of digital transformation.

We collected data from June 2018 to October 2019. One of the authors motorcycled more than 10,150 miles and flew to over 60 municipalities to conduct face-to-face interviews

with accountants in the accounting departments at each City Hall. We secured access to the potential participants thanks to our empathetic approach and professional identity (Saunders, 2012) — as one of our authors is a public sector accountant at a federal public agency. A seed sample considered one city in each region of the country, balanced by capital cities and small cities, and was complemented via snowballing. Each participant agreed with a non-disclosure agreement regarding their personal data and a consent statement allowing the audio recording of the interview.

The interviews followed a conversational style (Patton, 1990) in which the participants were invited to share their perceptions of their reporting tasks and systems. We applied an insider/outsider positioning during the interviews to gain professional empathy; this preserves the distance required to observe the local context (Dwyer & Buckle 2009).

Table 1 – Interviewees' Description

Interview	Region	Population [GDP] ¹	Duration	Years of experience	Accounting team size ²
1	Southwest	166.0[39.7]	0:43	25	6
2	Southwest	23.3[21.5]	0:55	17	3
3	Southwest	17.5[20.2]	1:33	19	3
4	Southwest	17.0[40.9]	1:21	20	4
5	Southwest	58.7[26.7]	1:14	22	10
6	Southwest	6,688.9[50.6]	2:25	28	60
7	Southwest	511.7[46.2]	1:36	6	5
8	Southwest	157.7[39.0]	2:29	2	5
9	Southwest	683.2[48.5]	1:48	25	15
10	West	228.8[43.0]	1:23	20	12
11	West	32.7[15.8]	4:06	9	6
12	West	93.8[18.9]	2:00	10	4
13	West	4.8[22]	1:53	3	2
14	West	5[15.8]	0:54	4	1
15	West	101.7[30.6]	0:46	4	14
16	West	6.4[19.4]	1:30	5	3
17	West	9.7[17.2]	1:29	34	4
18	West	21.9[104]	1:37	35	3
19	West	11.2[10]	1:27	5	3
20	Northwest	10.9[7.9]	1:18	2	3
21	Northwest	17.2[7.7]	1:18	1	3
22	South	563.9[33.3]	2:01	5	30
23	South	417[39.9]	2:13	16	11
24	South	4.2[17.4]	1:33	10	4
25	South	53.9[43.8]	1:32	6	4
26	South	8.3[26.1]	2:08	10	7
27	South	5.6[27.2]	1:36	10	2
28	South	3.7[27.6]	1:05	20	1
29	South	2.8[19.4]	1:30	4	4
30	South	54.3[26.8]	1:47	5	5
31	South	56[26.1]	0:59	10	11
32	South	1,917.1[44.2]	2:00	17	26
33	Northwest	803.7[24.8]	1:19	10	6
34	Northwest	135.8[16]	1:00	23	4
35	Northwest	195[31.6]	1:30	10	6
36	Northwest	2,857.3[20.7]	2:25	20	20
37	Southwest	31.6[8.5]	1:26	10	6
38	Southwest	40.5[95.3]	2:39	4	4
39	Southwest	18.9[16.2]	2:07	27	3
40	North	68.6[14.7]	0:44	20	2
41	North	6.6[7.4]	0:42	10	4
42	North	22.8[6.7]	2:10	2	3

43	North	40.4[10.5]	2:35	25	3
44	North	302.6[15.5]	1:22	2	3
45	North	1,802.0[33.5]	2:35	28	10
46	North	1,393.4[20.3]	1:38	30	10
47	Southwest	83.6[30.7]	2:00	32	5
48	Southwest	12,176.8[57.0]	2:19	5	73
49	Northwest	25.6[7.5]	1:53	1	4
50	Northwest	6.9[6.8]	1:44	10	4
51	Northwest	167.9[9.6]	1:34	10	10
52	Northwest	814.2[22.6]	2:03	12	10
53	Northwest	1,014.8[26.1]	1:53	22	4
54	South	421.2[40.2]	1:29	15	20
55	South	156.7[32.0]	1:15	5	5
56	South	22.3[45.3]	1:04	13	4
57	South	261.0[25.7]	2:44	19	7
58	South	1.9[41.4]	2:24	7	3
59	South	2.1[62.7]	1:13	3	4
60	South	2.4[42.1]	1:05	26	4

Source: Authors. **Note:** (1) Estimated population in 2018 by thousand inhabitants and GDP per capita in thousand (R\$). (2) The number of accountants working in the department.

To gain a broad and confirmatory perspective, we shared an electronic survey via an email list of local government accountants in charge of reporting tasks to the Ministry of Health. These accountants hold the same job positions all over the country, which corresponded to our sample of interviewees. About a hundred participants freely expressed their opinions and perceptions of the functionality of the systems they use to report data to the authorities (the data collecting system) and the time they spent on reporting tasks. We triangulated about 100 open-ended answers to the survey, field notes taken in the City Halls, and the transcriptions of 60 interviews.

Data Analysis

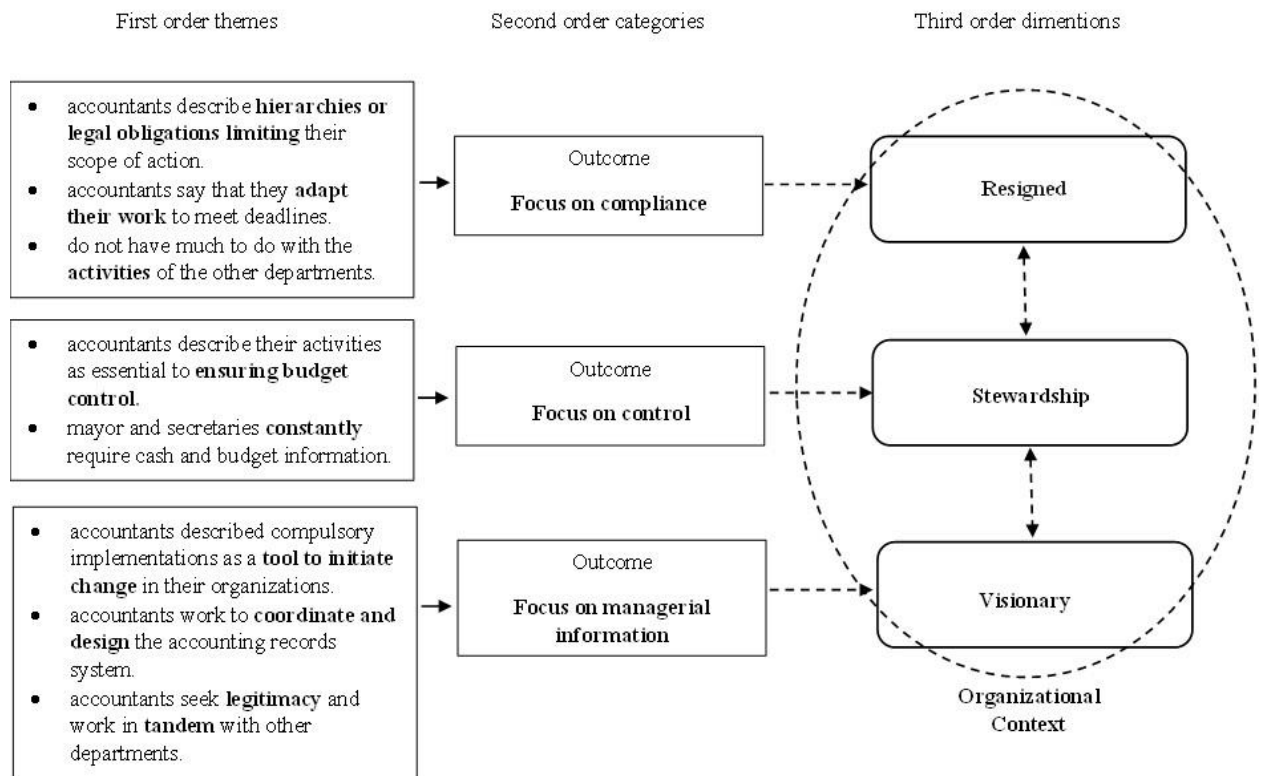
We adopted an inductive research approach (Kennedy & Thornburg, 2018) to identify in our empirical material how accountants perceived and were dealing with the compulsory digital transformation in place on reporting tasks. Looking for theoretical saturation (Saunders et al., 2018), we started with the interview transcriptions and confirmed our emerging categories using the answers to the open-ended survey.

First, the empirical material was organized by geographic representation and urban population (from small communities to metropolitan areas; i.e., 50 thousand or fewer, 50–100 thousand, 100–200 thousand, 200–500 thousand, more than 500 thousand inhabitants and capitals). Depending on the municipality's size, the accounting team may vary from a single accountant up to seventy accountants (which opens up the opportunity to decentralize and distribute the multiple reporting tasks). Additionally, our participants are mainly leading accountants who are responsible for reporting deadlines which, if missed, can result in penalties being imposed on the City Hall or the mayor.

We used the grounded theory coding paradigm (Corbin & Strauss, 1990) for data analysis, including the phases of open, axial, and selective coding. The authors carried out the coding, and the results were regularly discussed and refined in the joint coding sessions. During the open coding phase, the data was broken down into actions and events related to financial reporting (Corbin & Strauss, 1990). The resulting codes were aggregated into themes, categories, and theoretical dimensions for each case. In the axial coding phase, we looked more

closely at the financial reporting and compliance statements. We used them to establish links between the categories and dimensions identified in the first round. In the final phase of selective coding, we reduced our data to the most important categories through which we could explain how accountants deal with the digital transformation context across all organizations. The resulting data structure and the conceptual relationships in the data are illustrated in Figure 1 (Gioia, Corley & Hamilton, 2013). In the end, we identified that accountants assume three different postures regarding digital transformation compulsorily induced by the oversight authorities (see Table 2).

Figure 1. Data Structure



Compulsory digital transformation and accountants' reporting task overload

As pointed out earlier, the compulsory attachment between oversight authorities' data collecting systems and local governments' financial management information systems (FMIS) nurtured the field of compulsory digital transformation. To some extent, the compulsory nature of digital transformation and the emerging reporting overload are a consequence of simultaneous and sometimes conflicting top-down reforms in Brazilian public financial management. Indeed, whenever a public financial reform relying on digitalization is proposed, a cascade effect takes place, generating a sequence of linked changes in the organizations that should operationalize the reform. Interviewees highlight that it is not their choice to adapt and transform features of the government's FMIS and their associated processes; rather, it is a response to constant impositions by an external organization promoting these reforms. Such simultaneous reforms often end at the accounting department; accountants are directly affected by such reforms, as they are responsible for the reporting of fiscal and financial information to the oversight authorities.

One important feature of the digital transformation taking place in Brazil — as highlighted by our participants — is that although the digital transformation is compulsory, it is neither intentional nor coordinated among different promoters. It originates from dispersed promoters that have the (legal) mandate and power to enforce mandatory compliance. These promoters design, develop, and mandate the use of digital devices intended to improve processes according to their interests, a reformist agenda, and associated with their regular operations and duties; thus, they are detached from the local government's needs. For instance, on the one hand, the data collecting systems implemented by the Treasury are focused on information related to accrual accounting reform; on the other hand, the Courts of Accounts' data collecting systems are still associated with demands from the fiscal responsibility law reform (Aquino et al., 2020). Such conflicting demands might result in accountability overload.

In effect, a singular characteristic stemming from the compulsory digital transformation pushed by oversight authorities onto Brazilian local governments is that accountants must report increasing amounts of data to multiple systems that are connected to different top-down public financial management reforms. For instance, related to the fiscal responsibility law reform, accountants report the local government's budget execution to the Court of Accounts (usually monthly), the Health and Education ministries (bimonthly), and the National Treasury (monthly). Additionally, accountants report the local government's fiscal data (on a four-monthly basis) to both the Court of Accounts and the Treasury. Regarding accrual accounting reform, accrual-based financial statements are reported each year—although they are not audited by Courts of Accounts (Azevedo & Lino, 2018). Other reporting tasks completed via data collecting systems may be completed depending on the size of the local government and the grants they receive from central government. The constant updating of data collection systems demands the continuous adaptation of the local government's FMIS, processes, and practices (Aquino et al., 2021), resulting in task overload.

"The bureaucracy only increases, right? The requirements . . . it's a lot of information [to report], and it hasn't changed with technology . . . as technology develops, the demand for information, the volume of data, frequency, everything increases." (Participant 19)

Accountants seem to neither understand the reasons for nor accept the task overload resulting from compulsory digital transformation and the related multiplicity of data collecting systems. For instance, one accountant declared on the survey that *"for most of the reporting activities, the data [to be reported] would be the same . . . thus, a single channel for reporting should be adopted,"* indicating that there is no justifiable explanation for the redundancy of or overlapping data collected by multiple stakeholders. Another accountant answering our survey pointed out that *"several oversight authorities require similar information, but each in different formats and platforms [data collecting systems],"* thereby engendering a perceived waste of time and need for reworking. Our interviews also confirmed that multiple data collecting systems tied to compulsory digital transformation also impact accountants through the imposition of tight deadlines and do not consider local governments' (lack of) resources to comply with such demands.

Accountants embedded in the forced adoption of reporting systems perceive redundancies and inefficiencies to exist. The authorities that promote the use data collecting systems have no concerns about requiring the same data set to be submitted twice, thus duplicating reporting tasks. Apart from political disputes regarding who controls the data (Aquino et al., 2020), there is no straightforward justification for redundancy or overlap. Additionally, there are conflicts between the normative framework from the Treasury and Courts of Accounts for some fiscal matters (Nunes, Marcelino, & Silva, 2019); therefore, the municipalities must report different data to each of them despite the fact that both reports rely on the same set of information.

In sum, as local governments cannot decide whether or not to follow the current demands from the empowered authority, this places accumulated demands and pressures onto accountants. The accountants working on reporting activities complain about the overload imposed by an external reporting agenda. Despite this scenario being similar in all municipalities, we found evidence of accountants having different attitudes towards the digital transformations currently taking place. The next section explores these variations.

Accountants' postures stemming from compulsory digital transformation

Throughout our interviews, we observed variations in local government accountants' attitudes towards the digital transformation of reporting systems. Indeed, some of the

accountants presented a positive perspective of their duties and responsibilities as related to the current demands of digital reporting processes. We inductively identified three different postures of accountants thanks to our empirical material: *resigned*, *visionary*, and *stewardship* (see Table 2). Here we use the term “posture” meaning that individuals, under particular circumstances and at a given time, tend to act according to a typical set of attitudes and to prioritize particular choices over others when performing their organizational role. Such posture may influence the capability of a reform to be implemented.

In the case at hand, the postures identified are characterized by: (i) the accountants’ empathy towards the digital demands; (ii) their perception of the digital demands being imposed as a necessary step in the national project to ensure the digital transformation of reporting and government oversight; and, finally, (iii) accountants’ beliefs about their organizational role. First, empathy is analogous to the technology acceptance model’s premise that people will use digital innovations that they positively evaluate (Hwang et al., 2015). Second, their beliefs in their organizational role as accountants are affected by new technologies; their views of their role range from that of being a typical “bean-counter” to one in which they offer managerial support (Heinzelmann, 2018). Whenever forced adoption incorporates values that are incongruent with accountants’ beliefs, accountants may revise their expectations about their organizational role (Quratulain & Khan, 2015). Thus, accountants’ postures are intrinsically connected to their perceptions of the usefulness of the reporting tasks, as they may value different objectives. Besides, each posture seems to generate different results in terms of the accuracy of the reported information.

We introduce each posture in the following sections. We start with a brief summary of the posture followed by the evidence gathered in our empirical material.

Resigned accountants. Most accountants we interviewed presented a *resigned posture*. They remain immersed in the previously described reporting overload context, and their task focus is on compliance, despite the transformation agenda in place. As resigned accountants, they accept reporting overload without reflexivity and adapt their daily routines to maintain an endless search for superficial compliance with the multiple digital demands, thus threatening data accuracy throughout their reporting. They present an adversarial attitude when trying to make sense of the external authorities’ reporting demands, with no empathy regarding these data requirements’ motivations or usefulness. Due to the increasing demands for reporting (intensified by the digitalization of the oversight organizational field), resigned accountants feel suppressed by the external authorities and that the digital demands move them away from their (expected) core organizational role of supporting decision-making. Therefore, they tend not to completely value the digital reporting tasks implemented to ensure the success of national public financial management reforms and do not engage with or promote digital transformation within their organization.

As resigned accountants’ routines are oriented to comply with the reporting rules, there is a conflict between their beliefs about the contribution they make through their professional role as accountants and what they do in practice. From the interviews with accountants, we notice that such conflicts emerge based on a normative expectation to act on decision-making as a mayor’s advisor. Some members of this group mention that the accountant “should” act in a managerial fashion by contributing to governments’ fiscal and financial decisions. They realize that the use of information becomes important only for external control and that it has no internal relevance (e.g., for managers).

“Besides being a great cost for public administration, mainly due to rework, it [reporting overload] wears out a lot the professional who is at risk of being penalized if they do not comply with this excessive accountability. A lot of red tape, requirements, and little efficiency.” (Survey participant)

Due to reporting overload and the lack of usefulness perceived by the resigned accountant, they undervalue the reporting tasks. Other concrete organizational barriers (e.g., the lower level of integration of financial information systems) and insufficient training programs reinforce such perceptions.

To cope with the multiple digital demands for reporting, accountants usually prioritize one oversight authority and comply with its requirements, templates, and normative framework. Thus, this generates covert resistance to reforms that are linked to data collecting systems from other authorities. As highlighted in the survey, *“the fact that it [reporting to multiple authorities] occur[s] mostly within the same period [e.g., similar deadlines] require[s] the accountant to make choices.”* Accountants would prefer to reduce the risks of potential sanctions being imposed by oversight authorities on them, the mayor, or the City Hall. For instance, accountants prioritize reporting to the Court of Accounts over the National Treasury’s framework:

“Do I publish [fiscal data] according to the Treasury or the Court [of Accounts]? You know what? I will publish according to the Court because the Treasury will not come here and audit, but the Court will” (Participant 38)

As most Courts of Accounts do not yet advocate for accrual accounting implementation in Brazil (Aquino et al., 2020), resigned accountants’ prioritization of reporting information to the Courts might generate negative impacts on the adoption of accrual accounting within the country—i.e., they upload financial information to the data collecting system of the Treasury at a superficial compliance level, thus threatening the data’s accuracy. Indeed, accuracy is not the concern of this group of accountants; they are concerned about complying with deadlines and avoiding sanctions. Some interviewees provided justifications for the lack of accuracy based on current task overload. For example, one accountant who responded to our survey said that *“due to the work overload, we ended up failing on the quality of information for reporting purposes. The essence of our work should be primarily caring for the government accounting, but we spend most of our time filling out reports demanded by external agencies.”* Others, however, also mention gaming the reporting task to comply with templates and system parameters, which leads to a different set of data being reported to different authorities:

“If something does not match, and you must adjust it, make any adjustments to any account . . . The federal, state government programs [account balances] have to match, right? Because what happens when the audit comes, then? . . . Unfortunately, sometimes, when you must make some accounting adjustments, it would be like this, all controlled in spreadsheets, to avoid, like, catching us, fining, and penalizing the municipality.” (Participant 19)

Given the pressure exerted by external authorities that drives local governments’ technological advancements, the mandatory adoption context forces resigned accountants to deal with reporting systems that they are not willing to adopt. This leads to the forced adoption of the new technology. The accountants themselves would prefer to resist and implement other systems more aligned with their values than accept the proposed innovation.

Table 2. Accountants' postures towards compulsory digital transformation

Posture	Empathy towards the digital demands (technological adoption response)	Perceived value of digital demands	Perceived organizational role	Accuracy of the reported information
Resigned	<i>Adversarial</i> No empathy. The accountant feels under external control and suppressed by external stakeholders (forced adoption).	<i>Lack of functionality</i> The accountant does not perceive the digital reporting agenda to be a necessary national project.	<i>Decision-making</i> The accountant faces a conflict between the reporting tasks they are immersed in in daily practice and the expectation to act as a decision-making advisory.	<i>Threaten</i> The accountant prioritizes superficial compliance based on sanctions avoidance. Accuracy is not a concern.
Stewardship	<i>Inertial</i> The accountant is able to see the big picture of the accountability game (as a visionary) but still exhibits resigned behavior (forced adoption).	<i>Lack of functionality</i> The accountant does not perceive the digital reporting agenda as a necessary national project.	<i>Budget guardian</i> The accountant acts as a “guardian” of budgetary institutions, fiscal rules, and—ultimately—cash flow.	<i>Threaten</i> The accountant focuses on budget control and prioritizes superficial compliance based on sanctions avoidance. Accuracy is not a concern.
Visionary	<i>Smart legitimacy</i> The accountant develops empathy, as they attend debates and negotiate the design of upcoming reforms or phases (symbolic adoption).	<i>Necessary rules</i> The accountant plays with the demands of the oversight authorities to translate ongoing demands into political capital and legitimacy gains.	<i>Accounting</i> The accountant experiences no conflicts about roles; all the stages seem meaningful and connected including designing the registering, accumulating, and classifying of logic and systems for economic transactions.	<i>Awareness and increasing accuracy</i> The accountant acknowledges the current accuracy of the data being produced and reported and has plans for how to improve it. They hold a realistic view about motives for information usage.

Source: Fieldwork.

Stewardship accountants. Like the previous group of accountants, stewardship accountants are immersed in various demands from the oversight authorities. However, the stewardship accountant's main concern is protecting the City Hall's financial assets. Faced with conflicting deadlines and demands to report, they understand at least part of the big picture of the reporting game (as visionaries do) but do not advocate for nor comprehend the full extent of the reforms in place—i.e., they do not show empathy towards the digital demands. Data accuracy is threatened due to superficial compliance with the demands associated with the reforms being mandatorily implemented. Indeed, stewardship accountants are not able to link their daily practices to the broader process of the digital transformation of the public financial management cycle. Finally, stewardship accountants also experience conflicts about their professional role. They believe they are the “guardians” of the budget and cash flow; they will eventually become frustrated or annoyed if the mayor decides on budgetary expenses without their consent.

Our interviewees point out that the tasks imposed on accountants by digital transformation via multiple reporting systems do not justify the neglect of other activities (perceived by themselves as more relevant and linked to their core organizational role), such as offering support to leaders' decision-making. One accountant indicated that *“overlapping reporting tasks [create] rework and take a lot of time . . . we [accountants] would be more useful supporting decision-making to avoid mismanagement and, as a result, the public deficit.”* Their perceptions, associated with the time they dedicate to reporting activities, seem to indicate a lack of perceived usefulness related to the reporting systems:

“Considering that the essence of our work should be primarily caring for the entity's accounting, we spend most of our time filling out reports for the external control bodies . . . the professional's knowledge is broad, he could help in several areas [functions] if one had time, such as internal control, property, legal expertise” (Survey participant)

As “budget guardians,” stewardship accountants focus on budgetary control. They see reporting tasks to external authorities as less relevant than advising the mayor and their cabinet about how to plan and organize budgetary execution to protect assets:

“I became an appraiser accountant in the municipality. Once, I made a defense against the federal justice system, I dropped R\$ 710,000 in overpayments . . . The city attorney does not express any opinion involving values from the Public Ministry without asking me [first].” (Participant 44)

This posture also undermines data accuracy. Similar to resigned accountants, stewardship accountants are immersed in reporting tasks and cannot deliver any other types of information than those required by the oversight authorities. Stewardship accountants also prioritize superficial compliance based on sanctions avoidance:

“We generate what meets [the oversight authorities' needs], what is required by law, but if I want to predict . . . how much do I still have to pay, you can get the information, but you have to get one report, then you have to get another one, then you extract them [printing], and set up a spreadsheet to do something.” (Participant 20)

As it does for resigned accountants, the mandatory adoption context leads stewardship professionals to undervalue reporting systems when compared to other information systems.

They feel that the other information systems are more important when it comes to achieving organizational aims.

Visionary accountants. A third group has a *visionary* posture, which emerges despite the various digital demands from oversight authorities. Visionary accountants are smart legitimacy seekers able to play with multiple authorities' demands. They rely on the external authorities' demands to legitimize the relevance of the accounting department within the municipality. They prioritize strategic activities beyond mere data reporting, and the reporting overload context translates into an opportunity to legitimize their department. Despite reporting overload, reporting is perceived as a necessary task to foster organizational changes. Visionary accountants do not experience conflicts about their roles.

Interestingly, visionary accountants follow the strict financial accounting process, i.e., designing the registering, accumulating, and classifying of logic and systems for economic transactions. The boundaries for their role, focusing on accounting information, allow them to specialize both in cash and accrual-based projects such as fiscal reporting and IPSAS-based implementation. They coordinate and monitor such ongoing projects planning to improve the current data accuracy level, despite the accountability overload.

"I want to recognize revenue by accrual . . . revenue records come from another system . . . they [the municipal Treasury] sends the files to us, transferring a file. . . . Currently, human resources does not make provision[s] for employee's benefits, we are asking them to update their system . . . on the assets side (property, plant, and equipment), we are trying to identify the assets . . . [the transactions that] are made only in the equity system" (Participant 45)

Visionary accountants acknowledge that different stakeholders will rely on accounting information for distinct proposes, and they hold a realistic view that, despite the information being compulsorily required or not, one should not take for granted the usage of accounting information by the mayor, auditors, or even citizens. Moreover, visionaries take opportunities to collect resources for the budget of their departments. One interviewee described how they gained respect from their department in the City Hall based on past sanctions imposed by the audit authority on secretaries and previous mayors:

"[The] previous mayor's cabinet got fines [from the Courts of Accounts], some secretaries pa[id] fines because some building[s] and equipment were not registered. [Because of this] the mayor and the [internal] controller were under pressure and started to act, empowering teams with resources. Thus, we start[ed] to work on this [issue, i.e., implementing a system to control permanent assets]" (Participant 45)

Visionaries are usually connected to epistemic communities and relevant stakeholders; therefore, they may anticipate future demands on accounting systems by oversight authorities. One participant claimed that they understood the relevance of information technology devices for IPSAS implementation, and they linked this to their own change agenda. Such movement; that is, anticipating expected demands from oversight authorities, does not depend on technological literacy:

"I [completed] my master's thesis on accrual-accounting convergence, and I realized that the bigger impact would be on ICT systems, then I talked to my boss at the City Hall. They at the end understood that such improvement in accrual-accounting could facilitate . . . access international funds" (Participant 45)

Such visionary accountants are quick to spot opportunities to access resources and to improve the reputation of their area of accounting. One participant implemented a new data center funded by public funds thanks to the mayor's gratitude and recognition of their efforts in reducing the incidence of audit sanctions. This participant was also enrolled by the mayor to support a financial project with an international donor, which required credible accounting information to secure approval for funding. They adroitly encapsulated related accounting systems in their proposal to the mayor, justifying such systems' relevance and outlining the need for support to develop the systems:

"At the end of the month, we assess the fiscal reports to check the municipality's situation. Before the loans and the IBRD [International Bank for Reconstruction and Development], this did not happen, as they were worried only to comply. Not now: all our reports are being evaluated by the accounting and planning departments. The [accounting area] recognition was huge. Until then, the reports were for decorati[ve] purposes only, and from then on, they [the managers] started to analyze the municipality's fiscal situation, which is the main concern of the manager looking for external resources." (Participant 45)

Finally, visionaries consider digital reporting requirements a necessary accounting task; however, they play with such demands from multiple oversight authorities to translate them into legitimacy gains. It thus leads to a clever symbolic adoption (as opposed to the forced adoption) of the new proposed technologies, as the accountants understand that legitimizing the prompt adoption of new reporting rules has political significance for the government.

The previous sections offer a tripartite description of accountants' postures in local government that might undermine or foster digital and managerial innovation. Resigned accountants experience some misfit between what they feel prepared to do (and value as relevant) and the current concrete requirements imposed by the demands of compulsory digital transformation on the accounting department. To cope with that, accountants lower their expectations about their role (i.e., by adopting a more managerial orientation; see Heinzelmann, 2018) and accept ceremonial compliance as integral to their daily tasks—that is, a sort of resigned satisfaction (see Quratulain & Khan, 2015)—which leads to decrease in the impetus for change within local government. Ceremonial compliance is a form of overt resistance to the digital demands put in place, and it seems to occur more prominently when accountants manipulate the data collecting system linked to accrual accounting reform. This may happen because accruals are not consistent with the average budgetary institutional logic of public sector accountants (Feijó, 2013; Aquino & Batley, 2021).

Similarly, stewardship accountants feel suppressed by external stakeholders and perceive a lack of functionality stemming from digital demands. Superficial reporting to external stakeholders is in place, but stewardship accountants view themselves as "guardians" of the budgetary issues, fiscal reports, and cash flow within local governments. These findings corroborate Ferry, Coombs, and Eckersley's (2017) study on local government under austerity in which, although officials were not averse to innovation, they were found to be extremely dedicated to financial issues; they focused on budgetary stewardship, leading to an inability to innovate and promote (public financial management) reforms.

Importantly, previous studies have highlighted the role played by the digital transformation of public financial management systems in improving data accuracy (Dissanayake et al., 2020). However, resigned and stewardship postures—in which consignees do not invest in improving the process of digital transformation but merely superficially comply with external authorities—may lead to a lack of accuracy in the data, which hampers the main objective of this type of digital transformation agenda. As shown, the task overload propagated by multiple competing deadlines, frameworks, and rules requires prioritizing efforts and

resources—including accountants opting to comply with one or another oversight authority at the expense of reductions in the reported data's accuracy. Rather than focusing on data accuracy, resigned and stewardship accountants focus on avoiding sanctions by submitting the accounts within the deadline. They perceive the reporting task as a mere obligation with reduced functionality. As the reported data will subsidize the Treasury or audit bodies' internal processes, they might produce biased evaluations. Similarly, citizens might encounter problems and inconsistencies when using open government data.

However, when accountants at the consignees assume a visionary posture, the mandatory nature of the digital transformation is used to favor a broader transformative agenda. Despite previous studies not addressing individuals confronted with the forced adoption of various work-related innovations, the visionary posture resembles Daff's (2021) argument that financial officers embracing an innovative role could lead to improvements in both financial reporting and operations thanks to their adoption of a more forward-looking approach. This behavior is similar to visionary leaders who can get other people to commit to long-term goals, organizational strength, and new tools and opportunities (Fenton, Judic & Fletcher, 2019). In our case, visionary accountants use levers and their influence to promote local changes. They strategically increase the legitimacy of the accounting department using external demands as elements that highlight accounting's centrality within the municipality (similar to the discussion by Lino, Carvalho, Aquino & Azevedo, 2019).

Conclusions

We examined local government accountants' attitudes to compulsory digital transformation triggered by public financial management reforms in the Brazilian oversight field in recent decades. The transformation began with the introduction of "data collecting systems" promoted by Courts of Accounts, various ministries, and the Treasury, which was followed by the digitization of local governments' accounting processes. This substantially affected the accounting professionals in charge of these processes. As multiple oversight authorities are developing uncoordinated digital projects, local governments keep transforming their information systems and processes according to the frequency of change in each data collecting system and change in the parameters defined by the authority's data collecting solution. In effect, this generates an overload for accountants, who must comply with the requirements of several data collecting systems that are constantly being updated.

A remarkable aspect of the case under analysis, which we encourage the reader to bear in mind, is that digital transformation may not always be voluntary. As shown, external pressures and top-down reforms push for the implementation of public financial management digital transformation despite accountants' or mayors' willingness to start the digitalization project. Thus, unlike previous studies, which have traditionally focused on the positive impacts of digital transformation (Gil-Garcia et al., 2018; Lindquist & Huse, 2017; Pina et al., 2010), we raise concerns (but also identify opportunities) regarding coping with compulsory digital transformation. We argue that extant literature overlooks the fact that compulsory digital transformation in public financial management may be the rule and not the exception; thus, it would be helpful to understand how to prepare leaders and digital transformation staff to accommodate these local demands.

Based on our findings, we offer a threefold contribution to the extant literature on the digital transformation of governments' public financial management. First, we highlight the intertwinement of top-down public financial management reforms and compulsory digital transformation by extending previous literature on accounting change in emerging economies that discusses the critical role of computerized systems and accounting software in the

implementation of reforms by local governments (Dissanayake et al., 2020; Orelli et al., 2016; McLeod & Harun, 2014). We stress the compulsory nature of digital transformation when it is a consequence of (or intrinsically connected to) top-down reforms to financial or accounting rules. The public financial management reform ultimately induces a digital transformation. The case under consideration highlights the fact that, on the one hand, public financial management reform stimulates a digital reform; while, on the other hand, digitalization may produce a sense of the reform's viability. In sum, when intrinsically connected, the compulsory nature of a top-down reform may end up converting digital transformation into a mandatory transformation also.

Second, we answer calls for a deeper understanding of the design of digital transformation projects in specific countries and its effects (Mergel et al., 2019). The reforms in Brazil are standardized to the whole country and do not differentiate between the context of diverse local governments, causing the mandatory adoption to result in extreme cases of a lack of resources, and local governments unwillingness, and preparedness to deal with digital transformation projects. As skills and technical capabilities are central to fostering innovation in organizations (Plesner, Justesen & Glerup, 2018), such cases tend to fail. As shown, most Brazilian municipalities are only implementing the digitization of accounting procedures to comply with external pressures, as accountants (presenting resigned and stewardship postures) appear satisfied with ceremonial compliance with data reporting, and local governments do not increase investment in the next steps of digital transformation. It seems that compulsory digital transformation might lead to a narrow understanding of the potential benefits of this transformation by the consignees associated with the promoters' transformation agenda. As the consignees do not fully engage with the promoters' (i.e., oversight authorities) digital transformation agenda because of the perceived overload and lack of value—which is linked to low or insufficient numbers of awareness programs being run by promoters (Dissanayake et al., 2020; Adhikari et al., 2013)—it reduces the likelihood of other benefits of technology usage emerging, which will affect the willingness to expand the digital agenda. Our results corroborate and add to Mergel et al. (2019) by highlighting that external pressures may lead to minor transformations within the public sector (accounting), mainly when a national digital transformation project lacks a design that considers the consignees of the digital endeavor.

Third, our findings focus on the role of accountants in imbricated mandatory change projects (management reforms and digital transformation projects). As previously discussed in the literature, ICTs mediate processes but do not automatically lead to successful adoption or increased organizational productivity, as these are dependent on the human factor. We expand the literature on the impact of ICT-led innovation on public financial management (Dissanayake et al., 2020; Simpson et al., 2020; Lassou & Hopper, 2016; McLeod & Harun, 2014), highlighting that accountants' postures regarding mandatory digital adoption may contribute to resistance to (or fostering of) the digital transformation of public financial management.

Under mandatory digital transformation, the different postures of accountants regarding this form of organizational change could be taken into consideration by public managers and the promoters of public financial management reforms. These postures should not be seen as static nor depending exclusively on accountants' personal traits or organizational features (such as lack of resources or political support). Indeed, accountants' postures might be transitory and originate from the interaction between the accountant, micro-institutions (such as their job-descriptions, routines, and other organizational features), and the external context of multiple data collecting systems reinforced by the oversight authorities' digitization (Bodenhause & Gawronski, 2013). Thus, the promoters of national projects could reflect on how to improve and amplify the project of digital transformation by extracting benefits from the compulsory approach; for instance, by considering an adequate level of organizing to deal with the digital developments implemented by the consignees. Following Jorge, Nogueira and Ribeiro (2020),

pilot entities could be selected to develop training programs and understand the needs of accountants in the context of the forced adaption of digital technologies. The oversight authorities or international donors interested in pushing for digitalization may rely on compulsory transformation—initially focused on compliance—to foster the emergence of empowered departments and teams, and to promote visionary leaders who look forward to developing a comprehensive digital agenda. As already noted in previous studies, the success of a reform agenda might depend on promoters coordinating their activities and demands (Aquino et al., 2020; Adhikari et al., 2013) to educate and motivate public servants and overcome their resistance in mandatory adoption scenarios (see Heidenreich & Talke, 2020). However, the creation of visionary accountants may require more than training programs; it may require developing people and encouraging them to make sense of a broader perspective regarding digital transformation.

Following this discussion, future studies might explore the antecedents of such postures. For instance, under what scenarios will accountants have a more positive (i.e., visionary) or reactive (i.e., resigned) attitude towards digital-led reform in the public financial management cycle? Understanding such elements might be crucial for promoters if they are to strategically design reforms in a way that encourages and establishes a consistent national digital transformation project.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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