The Influence of the Organizational Structure, Environment, and Resource Provision on the Use of Accrual Accounting in Municipalities

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Abstract Despite its benefits, municipalities frequently struggle to take advantage of accrual accounting as a basis for managerial decisions. We assume that the reason for this is that municipalities technically implement accrual accounting but sometimes keep it decoupled from daily decision making. To identify factors that facilitate a more sophisticated usage of accrual accounting in German public administrations, we examined the influence of the municipality's contextual situation, organizational structure, and resource provision on the degree of sophistication in the use of accrual accounting. We found that the most relevant driver for a more sophisticated use of accrual accounting is the contextual situation in which the municipality is embedded. In our research model, a municipality's contextual situation consists of fiscal stress, its political competition and culture, and the relevant legal system. Another important factor is the adequate provision of resources, such as an IT system that delivers easily accessible and accurate accounting information. Notably, the specific organizational structure of the municipality, which is often regarded as highly bureaucratic and the main obstruction to reforms, is not significant.

Keywords Accrual Accounting · Institutional Theory · Municipalities · Change Management · PLS-SEM

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1 Introduction

The search for managerialism and professionalism in the financial management of municipalities continues in European countries (Pollitt 2016; Hyndman and Lapsley 2016; Hood 1995). In this context, the implementation of accrual accounting is considered a cornerstone for achieving a higher level of managerial orientation by presenting a wider range of fiscal information beyond cash flows (Christiaens et al. 2010; Ridder et al. 2006; Hyndman et al. 2018). The traditionally used cameralistic accounting regime accounts for revenues only when money is received and for expenses only when money is disbursed. In contrast, the accrual accounting approach allocates revenues and expenditures to the period in which they are earned or used (Bushman et al. 2016; Arnaboldi and Lapsley 2009). Hence, accrual accounting delivers more time-appropriate information based on depreciation and provisions (Lüder 1993; Cortès 2004). In this way, municipalities account for the provision of resources and the entire amounts of debts and assets from a much broader view. Hence, accrual accounting enhances the information basis for evaluating assets and more clearly discloses debts (Arnaboldi and Lapsley 2009; Nogueira and Jorge 2012).

Jagalla et al. (2011) categorize the benefits of implementing accrual accounting in municipalities into the aspects of better actions, better knowledge, and mind-set changes. Nevertheless, the literature also argues that these promised benefits of implementing accrual accounting are not self-evident (Lapsley et al. 2009). The potential advantages of accrual accounting are not simply obtained when governments technically introduce accrual accounting systems in municipalities through legal enforcement (e.g., Guthrie 1998; Monsen 2002; Barton 2005; Kuhlmann et al. 2008). The main risk of such a technical introduction is that a municipality may implement accrual accounting but keep it decoupled from daily decision making (Christiaens and Rommel 2008; Christiaens and Van Peteghem 2007). We assume that various municipalities have technically implemented accrual accounting—because they are obliged by law to do so—but that the degree of usage and the sophistication in using the system vary. Hence, we ask which factors influence the sophistication of accrual accounting use within municipalities. To identify factors that explain the sophistication of accrual accounting, we draw on different aspects of institutional theory (Battilana and D'Aunno 2009; Hiebl 2018; Thornton et al. 2012).

With our study, we make two contributions to the ongoing debate about accrual accounting in municipalities. First, we not only investigate whether a municipality has implemented accrual accounting, but we also examine how far internal and external factors, such as the municipal administration, contextual situation, and level of resources provided to the accrual accounting system, influence the degree of use of this new accounting system. We found no effect of the organizational structure of the municipal administration on the degree of use of accrual accounting. In contrast, however, we identified an impact of the municipality's contextual situation on the use of accrual accounting. Additionally, the level of resource provision also has an important influence on the degree of use of accrual accounting. Second, our results show that when municipalities use accrual accounting in a more sophisticated way, they perceive clear benefits from accrual accounting in a sense that better deci-

sions are made and more transparency about the municipality's financial situation is provided.

In our study, we focus on German municipal administrations in cities and counties. In Germany, the switch to accrual accounting has been one of the most intensive, expensive and widespread reforms in recent years at the local level. The federal states of Germany have high autonomy and exert legislative power to regulate and set the general conditions for local governments' financial management (Pina et al. 2009). In contrast to other European countries, Germany can be considered a late adopter of accrual accounting, as municipalities were decreed to implement accrual accounting in twelve of the sixteen federal states beginning in late 2009 (Hirsch et al. 2015). In three of the sixteen federal states—Bavaria, Schleswig-Holstein, and Thuringia—municipalities can voluntarily decide to adopt accrual accounting, but it is not obligatory. Only the state of Berlin is frozen in the cameralistic regime and refuses to switch to accruals.

The remainder of the paper is structured as follows. In Sect. 2, we derive a framework to determine which factors influence the use of accrual accounting and how a more sophisticated use of accrual accounting influences a municipality's perceived performance. In Sect. 3, we describe our survey design and operationalize the different factors as composite constructs that constitute the main drivers behind these factors. In Sect. 4, we present the statistical results. Finally, in Sect. 5, we discuss the implications of our empirical findings, consider the limitations of our study and offer suggestions for future research.

2 Theoretical Framework and Hypothesis Development

In recent years, researchers have drawn on institutional theory to investigate both the accounting routines after certain routines have emerged and are embedded in an organization and the process of accounting routine changes (e.g., Scapens 2006; Burns and Scapens 2000; Quinn 2014; Ahrens 2018; Abernethy and Chua 1996; Quinn and Hiebl 2019). In the following discussion, we draw on different aspects of institutional theory to explain the sophistication of accrual accounting which has been implemented in municipal administrations.

Within the wider field of institutional theory, *institutional logics* have been used to explain the interactions between normative societal structures and the behaviours of individual and organizational actors. In this context, society is understood as an inter-institutional system comprising theoretically distinct normative institutional orders. Western-centric institutional orders are described to cover, e.g., market capitalism, state bureaucracy, democracy, nuclear families, and Christian religions (Friedland and Alford 1991; Skelcher and Rathgeb Smith 2015; Thornton et al. 2012). Friedland and Alford (1991, p. 248) state that “each of the most important institutional orders of (...) society has a central logic—a set of material practices and symbolic constructions—which constitutes its organizing principles, and which is available to organizations and individuals to elaborate.” Each institutional order of the inter-institutional system covers unique organizing principles, practices, and symbols that influence individual and organizational behaviour. The principles, practices, and

symbols of each institutional order affect the reasoning and the rationality of actors. Institutional logics represent frames of reference that give identity and meaning to actors (Thornton et al. 2012). Legitimate behaviour, taken-for-granted conceptions of what goals are appropriate, and what means are legitimate for use to achieve these goals are also constituted by institutional logics (Lounsbury 2007; Thornton and Ocasio 2008).

In this research project, we analyse the implementation and use of accrual accounting in German municipal administrations. In Germany, municipal administrations have been affected by a strong Weberian administrative logic that is still influential in many organizations (Pina et al. 2009; Meyer and Hammerschmid 2006). This influence means that in these organizations, administrative behaviour is oriented towards a highly mechanistic approach and that these governmental organizations can be characterized as hierarchical, highly bureaucratic, highly complex, and having centralized decision making (Torres and Pina 2004; Pollitt and Bouckaert 2004). In such legalistically controlled public administrations, directives are widely used (Pina et al. 2009; Pugh et al. 1968; Kuhlmann et al. 2008). Hence, German public administrations are traditionally driven by a legalistic-bureaucratic logic that is strongly oriented toward rules and processes, and in such bureaucratic organizations, legal and procedural correctness are typically considered more important than organizational performance (Meyer and Hammerschmid 2006). This tradition stands in contrast to managerial logic, which has been introduced to the public sector by the new public management (NPM) movement. It is dominated by an emphasis on consequences and outcomes, such as organizational performance (Verbeeten and Speklé 2015). In the process of shifting the culture of public institutions towards a quantifiable, managerial, marketized public sector, accounting has become a particularly important element (Steccolini 2019). In particular, accrual accounting supports the managerial orientation of a municipal administration (Hyndman et al. 2018) and is therefore expected to conflict with the traditional values and belief systems of Weberian bureaucratic logic (Friedland and Alford 1991).

Becker et al. (2014) have shown that the Weberian tradition of German public administrations is a factor that prevents the development of enthusiasm for an accrual accounting system. Because institutional logics are “organizationally structured, politically defended, and technically and materially constrained” (Friedland and Alford 1991, pp. 248–249), we expect that a legalistic-bureaucratic logic will negatively influence the acceptance and, as a consequence, the level of usage (i.e., sophistication) of accrual accounting in German municipalities, which much better fits the managerial logic of steering public institutions. We therefore propose the following hypothesis:

Hypothesis 1 *A more bureaucratic organization has a negative impact on the level of sophistication of accrual accounting in a municipality.*

Neo-institutional theory assumes that structural constraints shape actors’ behaviours and that actors adapt to structure. This viewpoint emphasizes the primacy of structure over action (Battilana and D’Aunno 2009; DiMaggio and Powell 1983; Greenwood and Hinings 1996; Hiebl 2018). Accordingly, organizations are expected to respond

to isomorphic pressures from their institutional environments and adopt structures, practices, and routines that have high social value. Therefore, organizations provide answers to external changes in expectations and formal rules (DiMaggio and Powell 1983; Oliver 1991). In the sense of *neo-institutional theory*, the adoption and use of accrual accounting can be viewed as a process of formal compliance of municipal administrations with the expectations of their external environment and influential stakeholders (Pina et al. 2009; Hyndman and Connolly 2011). Ahmed and Scapens (2000), for example, identified several patterns, such as economic, political, and legal factors, that have influenced the development of cost accounting routines in Britain. These factors can be considered as contextual situations that affect accounting within an organization.

In Germany, the contextual situation of municipalities has changed substantially in recent years (Ridder et al. 2005). Municipalities have been confronted with increasing responsibilities but have not been fully compensated by the federal government (Ridder et al. 2005). In such a context of substantial financial pressures and high levels of uncertainty, politicians are expected to become increasingly accountable for sound budgetary management and for debt repayment (Evans III and Patton 1987). In addition, as new parties have entered the political system in recent years, political competition has increased. As with fiscal pressures, increased political competition has heightened the pressure to change accounting rules (Ridder et al. 2005). Establishing an accrual accounting system and using its financial reports as a monitoring system might help reduce information asymmetry between politicians and citizens. Government policy developed under financial pressure and high levels of uncertainty has prompted a desire for information that more accurately reflects this new situation (Lapsley and Wright 2004). Accordingly, we posit the following hypothesis:

Hypothesis 2 *Greater contextual pressure positively influences the level of sophistication of accrual accounting in municipalities.*

New institutionalists view actors and actions as the primary sources of change and attribute a high degree of agency to them. Therefore, from this perspective, actors play the key role in explaining institutions and changes in institutions (Battilana and D’Aunno 2009; Green and Li 2011). From a new institutionalism perspective, actors who seek to change existing beliefs and practices are referred to as institutional entrepreneurs. For the establishment of new beliefs and practices, institutional entrepreneurs must overcome resistance by institutional defenders (DiMaggio 1988; Hiebl 2018). In this context, sufficient resources are seen as a necessary factor facilitating the ability of institutional entrepreneurs to question existing beliefs and practices and to implement new institutional settings (DiMaggio 1988). Burns and Scapens (2000, p. 10) note that “conscious change is likely to occur only if actors are able to assemble the resources and rationales necessary to collectively question the existing rules and routines.”

The notion of resources here signifies all intangible and tangible assets, such as human, financial, political, administrative, and reputational resources, that enable an organization to improve its performance (Bryson et al. 2007; Barney 1991). Organizational change requires the redistribution of scarce resources to the change

project and includes such activities as employee training, effective IT support, and support from the administration's top management (Ridder et al. 2006, 2005). For example, training to improve individual skills plays an important part in routinizing behaviour (Nelson and Winter 1982; Ahmed and Scapens 2000). Support for professional competency provided by accounting professionals and legitimated by consultants and the actions of top management may also play an important role in routinizing new accounting rules (Scapens 1994; Burns and Scapens 2000). Accordingly, if a municipal administration is expending a large amount of financial and non-financial resources (e.g., top management support and know-how) to support a change project to successfully implement accrual accounting, we expect greater sophistication of the accounting system. Therefore, we formulate the following hypothesis:

Hypothesis 3 *Greater resources dedicated to the implementation of the accrual accounting system positively influence the level of sophistication of accrual accounting in municipalities.*

As an input-orientated system, the traditional set of cameralistic rules focuses on budgetary compliance with regard to an administration's expenditures. Because budget fulfilment is controlled by the (local) parliament and treasury (Lüder and Jones 2003), its relationship with the output is neglected. By contrast, in an accrual accounting system, the budgeting process is much more results-oriented; thus, output-oriented measures are integrated into information, planning, and control processes. When using such an output-oriented accounting system, it is expected that better decisions will be made and that more transparency regarding the municipality's financial situation will be provided (Ouda 2004; Hilgers 2011; Hirsch et al. 2015). According to Lüder (1992), a modern accounting regime in public administration delivers the basis for better financial control of public activities. For example, accounting information can support choosing the best option among several investment options based on clearly defined criteria (van Helden 2016). Hence, an accrual accounting system is regarded as a support system for those charged with decision making within public entities (Hyndman 2016).

Based on this reasoning, we assume that decision makers in municipal administrations (such as treasurers, public managers, and politicians) who are using accrual accounting information that is more intensive (i.e., sophisticated) will be able to exploit a better information base and take better actions that are more in line with the public interest (setting a balanced budget, avoiding senseless expenditures, fostering efficient public administration, etc.). Therefore, we formulate the following hypothesis:

Hypothesis 4 *More sophisticated use of accrual accounting positively impacts the performance of accrual accounting use in municipalities. (Fig. 1).*

Fig. 1 Framework of factors and consequences of a more sophisticated accrual accounting use

3 Research Method, Sample and Measurement

We collected our data by means of a postal survey. The survey was sent to the public financial managers (“Kämmerer”) of all German cities and counties with more than 20,000 inhabitants. We assumed that only in municipalities of a certain size does a person exist with a financial manager function in the municipal organization. Financial managers are the key informants responsible for introducing accrual accounting into municipal administrations (Saliterer and Korac 2014; Verbeeten and Speklé 2015). Participants were assured that the survey was strictly confidential and anonymous. In addition, the questionnaire was pretested by both practitioners and scholars. After minor adjustments of the items based on their feedback, we sent the questionnaire to 1006 municipalities. The final survey was conducted in autumn 2016. We received 255 completed questionnaires, yielding a response rate of 25.3%. Considering the high hierarchical position of financial managers in German municipalities, this response rate is very good and comparable to those of studies with a similar background in accounting (Hiebl and Richter 2018; Van der Stede et al. 2005).

Using a survey in our study might be criticized because the participants’ evaluations are subjective (Hirsch et al. 2015). Subjective measures have been criticized on the grounds that they are more predisposed to common method bias and are possibly affected by a positivity bias of “social desirability” regarding performance measurements (Song and Meier 2018). Nevertheless, subjective performance measurement is often the only way to receive internal information from organizations (Van der Stede et al. 2005; Speklé and Widener 2018; Moers 2007). Asking for subjective evaluations in a survey (e.g., regarding the performance of municipal

Table 1 Responses by number of inhabitants and respondent age

Number of Inhabitants	
20,000 to 50,000	140
50,001 to 100,000	38
100,001 to 200,000	38
200,001 to 300,000	20
300,001 to 400,000	9
More than 400,000	8
Missing values	2
<i>Sum</i>	255
Age of the Participants	
18 to 29 years	7
30 to 39 years	42
40 to 49 years	62
50 to 59 years	104
Older than 60 years	36
Missing values	4
<i>Sum</i>	255

administrations) provides a better understanding of how decisions about the use of accrual accounting are made in municipal administrations (Kroll 2015). Prior research indicates that subjective measures strongly correlate with objective measures in an organizational context (Abernethy and Stoelwinder 1991; Dess and Robinson 1984; Verbeeten and Speklé 2015; Song and Meier 2018). In addition, a number of additional actions were taken to reduce the common method bias. We ensured the respondents anonymity to mitigate the possible effects of social desirability. Nevertheless, anonymity causes us to be unable to mirror the findings with annual financial statements. We also incorporated negatively formulated survey questions. Finally, we included public service motivation as a marker variable to control the effects of common method bias and social desirability.

Two hundred and twenty-four municipalities had already adopted accrual accounting (meaning that they presented at least an opening balance sheet), whereas 29 municipal administrations had not. Two hundred cities and 51 counties participated in the survey. Four municipalities did not answer the question of whether they are a city or county. Notably, 43 of the municipalities had the choice to opt for accrual accounting. Forty-three of the responding financial managers were women, and 208 were men. The average work experience of the financial managers was 27.2 years in a public administration context and 1.5 years in a private company. In Table 1, we show more descriptive information about our sample.

We operationalized all constructs in the following way. We call the constructs of the first layer “dimensions” (first-order constructs) and those of the second layer “factors” (second-order constructs). The factors consist of different dimensions. All dimensions of the first-order constructs are measured reflectively with seven-point Likert scales, whereas at the factor level, the second-order constructs are modelled as formative measurements (Becker et al. 2012; Wetzels et al. 2009). To measure the dimensions, we referred to the previous literature and made adjustments for the

context of municipalities. The questions from the German questionnaire, which have been translated into English, are reported in the appendix.

The first factor, “organization,” consists of three dimensions, i.e., *formalization*, *vertical differentiation*, and *centralization* (cf. Pugh et al. 1968). These dimensions were defined to capture the organizational structure of a municipal administration and have been widely used in the context of adopting accounting systems (Gosselin 1997; Lee and Yang 2011). According to Pugh et al. (1968), *formalization* is the “extent to which rules, procedures, instructions, and communications are written.” The four items we used to measure *formalization* are also based on Pugh et al. (1968). *Vertical differentiation* involves the hierarchical levels below the mayor, who is the chief executive officer of German municipalities (Ridder et al. 2005). This item reflects the depth of the organizational structure (Gosselin 1997). We measure vertical differentiation with three items based on Lee and Yang (2011). *Centralization* describes the concentration of decision making at a certain level in an organization (Gosselin 1997), which is expected to be strongly pronounced in mechanistic organizations. The three items we used to measure *centralization* are also based on Lee and Yang (2011).

The second factor, “contextual situation,” consists of the dimensions of *fiscal stress*, *political competition*, *political culture*, and *legal system*. *Fiscal stress* is understood as the main reason for changing organizational routines in public administrations (Hood 1995). We used four items to measure fiscal stress, which are based on Anderson and Young (1999). *Political competition*, according to Lüder (1992), is about “votes,” with the political incumbent striving to win the next election. Such competition promotes the use of more informative accounting systems (Baber and Sen 1984; Evans III and Patton 1987; Ridder et al. 2006). The four items of *political competition* are based on the operationalization of a competitive environment developed by Anderson and Young (1999). According to Lüder (1992), *political culture* reflects the “patterns of political behaviour” in the sense of voter involvement and citizen participation. Lüder (1992) argues that the higher the public participation is, the greater the expectations for meaningful financial information. Based on this definition and on expert interviews, we developed four items to operationalize *political culture*. The last dimension that we consider as a specific contextual factor is the *legal system* that is valid for the corresponding municipal administration (Lüder 1992). German law is highly detailed. However, legislation on accrual accounting varies among the German federal states, as policy makers at the federal state level have some scope for preparing laws; for this reason, there is no uniform accrual accounting system among German municipalities (Harms 2004; Mühlenkamp and Glöckner 2009). Based on Barton (2005) and Lapsley et al. (2009), we assume that in contrast to an un-reflected adoption of private sector accounting, public accounting regimes that more effectively consider the specificities of municipalities (or that allow room to do so) positively affect the degree of sophistication of accrual accounting in a municipality. Based on this definition and on expert interviews, we developed four items for the operationalization of the *legal system*.

The last exogenous factor, “resources,” consists of the dimensions of *support*, *consultancy*, *IT*, and *training*. Previous research has shown that the most important resource dimension, which determines the degree of sophistication of the newly im-

plemented accounting rules, is the support provided by top management, which, in municipal administrations, is the mayor (Ridder et al. 2006; Lüder 2013; Kuhlmann et al. 2008; Anessi-Pessina et al. 2008). In Germany, the mayor is the elected representative of the community and is its chief executive officer (Saliterer and Korac 2013). The questions involving the operationalization of *support* are based on the items developed by Anderson and Young (1999), Shields (1995) and Bouckennooghe et al. (2009). Support from external *consultants* for changing a municipal administration can also have a considerable impact on the success of public reform projects (Kuipers et al. 2014; Christiaens and Van Peteghem 2007). We operationalize *consultancy* based on Shields (1995). Moreover, Lüder (2013) argued that the *IT system* is an important resource factor in a municipal administration. The *IT system* measurement is based on the operationalization of the quality of information systems developed by Anderson and Young (1999). The *training* dimension covers the knowledge and experience of accrual accounting involving the relevant staff in a municipal administration. We derive our operationalization of *training* based on Shields (1995).

The “sophistication” factor (of accrual accounting) consists of the dimensions of *usefulness (of accrual accounting) for the municipality*, the *intensity of use (of accrual accounting)*, and the *accuracy of values*. These three dimensions of sophistication are based on the study by Anderson and Young (1999), who measured the sophistication of the implementation of an activity-based costing system, which they labelled “evaluation measures of ABC implementation.” The “*usefulness for the municipality*” (originally named the “overall value of ABC” by Anderson and Young 1999) dimension is measured by how strongly the use of accrual accounting is perceived as beneficial and appropriate for the municipality (cf. Kuhlmann et al. 2008; Barton 2005). The “*intensity of use*” (originally named the “perceived use of ABC data” by Anderson and Young 1999) dimension reflects the extent to which accrual accounting is used in decision-making processes in the municipal administration (cf. Burth and Hilgers 2014; Arnaboldi and Lapsley 2009). The “*accuracy of values*” (originally named the “perceived accuracy of ABC data” by Anderson and Young 1999) dimension captures how reliable the information based on accrual accounting in a municipality is and reflects the fact that accrual accounting is frequently perceived as a fluid technique in municipal administrations (Arnaboldi and Lapsley 2009; Pina et al. 2009). The dimensions of the “performance” factor are *better actions*, *better knowledge*, and *mindset changes* and are based on the categorization of the perceived benefits of accrual accounting by Jagalla et al. (2011). This approach has similarities with the categorization of Pollitt and Bouckaert (2004). The latter authors distinguish between input changes, output and process changes, and system and culture changes. We operationalized the three dimensions of *better actions*, *better knowledge*, and *mindset changes* based on Jagalla et al. (2011) and Burth and Hilgers (2014). *Better actions* is defined as the implementation of enhanced actions and decisions or the avoidance of bad actions and decisions. This dimension includes better resource allocation and better coordination and control. *Better knowledge* is defined as enhanced transparency, which includes better visibility of the long-term effects of political actions. *Mindset changes* is defined as changes in employees’ cognitive frames and represents a change in the view from an input to an output

logic, which is in line with more business-like thinking about performance (Jagalla et al. 2011).

By including a marker variable, we controlled for the common method variance (CMV) of the single informant approach in this study (Meier and O'Toole 2013; Favero and Bullock 2015). Thus, we included public service motivation (PSM) as a latent marker construct (Chin et al. 2013). PSM is an independent factor and is not used to answer our research question. Chin et al. (2013) show that 72% of the effect of CMV can be controlled by including a marker variable in partial least squares structural equation modelling (PLS-SEM). We used the five items enumerated by Perry (1996) to operationalize PSM. Using PSM as a marker variable also enabled us to control for the possible effect of questions being rated higher only because someone is more highly motivated. In addition to PSM, we included several control variables in our model, such as age, gender, education, tenure of work experience, tenure of work experience in a private company, size (inhabitants), free option choice for accrual accounting, year of the opening balance sheet, late adoption (median split), hierarchical position, and county vs. city. We employed the approach developed by Liang et al. (2007) to incorporate these control variables. Furthermore, Table 4 in the appendix shows that for almost all questions, the full range of possible answers (1 to 7) was used by the respondents; this result indicates that there is high heterogeneity in the answers.

For the data analysis, we used partial least squares structural equation modelling (PLS-SEM) because it offers a high level of flexibility for testing complex models with direct, indirect, and moderator effects (Hair et al. 2017). At 1.1%, the proportion of missing values in the survey was relatively low. Therefore, we used the mean replacement procedure to resolve the missing values (Hair et al. 2019). The required sample size is 125 for detecting a statistical power of at least 0.8 at an α -level of 0.05. Thus, the relevant effects in our research model can be detected with the sample size of 255 (Nitzl 2016). For the calculations, we used the SmartPLS 3 software and the path-weighting scheme setting (Ringle et al. 2014). Furthermore, we used the bias-corrected and accelerated bootstrapping procedure with 5000 bootstraps without sign changes for calculating the p -values (Hair et al. 2020).

4 Results

A two-stage process was applied to evaluate the model. In the first step, we evaluated the measurement model, and in the second step, we evaluated the inner path model (Chin 2010). The results of the first-order construct measurements are summarized in Table 2.

At the first-order level, all items are reflective measurements. To evaluate the reflective measurements, we conduct a confirmatory composite analysis (CCA) (Hair et al. 2020, 2019). We used the indicator loading, which should be higher than 0.7; composite reliability, which should be higher than 0.6; and average variance extracted, which should be higher than 0.5. Some items were deleted because of a low loading or because the same number of items is necessary to measure a second-order construct as are associated with the same second-order construct. The deleted

Table 2 Evaluation of the First-order Constructs

Items	Loading	Composite reliability	Average variance extracted
<i>Critical values</i>	<i>>0.7</i>	<i>>0.6</i>	<i>>0.5</i>
<i>Centralization</i>			
Cent1	0.794	0.874	0.699
Cent2	0.835		
Cent3	0.877		
<i>Vertical Differentiation</i>			
Diff1	0.917	0.909	0.769
Diff2r	0.929		
Diff3r	0.777		
<i>Formalization</i>			
Form1	0.832	0.847	0.648
Form2	0.820		
Form4	0.762		
<i>Fiscal</i>			
Fiscal1	0.801	0.823	0.608
Fiscal2	0.803		
Fiscal4	0.732		
<i>Legal System</i>			
Legal1	0.883	0.852	0.660
Legal2	0.843		
Legal3	0.699		
<i>Political Competition</i>			
PComp1	0.696	0.867	0.687
PComp2	0.894		
PComp4	0.881		
<i>Political Culture</i>			
PCult1	0.767	0.818	0.601
PCult2	0.834		
PCult4	0.721		
<i>Consultancy</i>			
Cons1	0.952	0.941	0.841
Cons2	0.907		
Cons4r	0.891		
<i>IT</i>			
IT1	0.878	0.876	0.703
IT3	0.857		
IT4r	0.778		
<i>Support</i>			
Supp1	0.942	0.966	0.905
Supp2	0.962		
Supp3	0.950		

Table 2 (Continued)

Items	Loading	Composite reliability	Average variance extracted
<i>Critical values</i>	<i>>0.7</i>	<i>>0.6</i>	<i>>0.5</i>
<i>Training</i>			
Train1	0.900	0.879	0.708
Train2	0.766		
Train3	0.853		
<i>Accuracy of Values</i>			
Accu1r	0.833	0.909	0.716
Accu2	0.906		
Accu3r	0.789		
Accu4	0.852		
<i>Intensity of Use</i>			
Inte1	0.798	0.876	0.639
Inte2r	0.825		
Inte3r	0.805		
Inte4r	0.767		
<i>Usefulness</i>			
Usef1	0.911	0.881	0.653
Usef2	0.673		
Usef3	0.896		
Usef4r	0.724		
<i>Better Action</i>			
Act1	0.805	0.875	0.638
Act2	0.735		
Act3	0.861		
Act4	0.788		
<i>Mindset Changes</i>			
Chan1	0.856	0.936	0.786
Chan2	0.875		
Chan3	0.929		
Chan4	0.885		
<i>Better Knowledge</i>			
Know1	0.849	0.872	0.631
Know2	0.853		
Know3	0.688		
Know4	0.775		

Note: r indicates that the item was reverse coded in the questionnaire

items are also reported in the appendix. Although some loadings are slightly below the critical value of 0.7, we keep them for the construct measurement because they show the acceptable values for composite reliability and the average variance extracted.

In the next step, the second-order construct measurements were evaluated. All of these second-order constructs are formative measurements. In the second-order con-

Table 3 Evaluation of the Second-order Constructs

Second-order Construct	Weight	<i>p</i> -value	Variance inflation factor
<i>Critical values</i>		<i><0.05</i>	<i><5</i>
Centralization	0.761	0.014	1.084
Vertical Differentiation	0.467	0.065	1.089
Formalization	−0.401	0.273	1.035
Fiscal	0.012	0.899	1.082
Legal System	0.851	0.000	1.067
Political Competition	−0.067	0.503	1.086
Political Culture	0.357	0.000	1.071
Consultancy	0.057	0.422	1.029
IT	0.367	0.000	1.138
Support	0.600	0.000	1.180
Training	0.369	0.000	1.270
Accuracy of Values	0.372	0.000	1.561
Intensity of Use	0.436	0.000	1.389
Usefulness	0.417	0.000	1.829
Better Action	0.355	0.000	2.517
Mindset Changes	0.359	0.000	2.886
Better Knowledge	0.416	0.000	1.880

structs, different aspects are captured that do not necessarily have to be correlated. This is one of the main aspects in modelling formative measures; in contrast, reflective measurements have to be highly correlated (Becker et al. 2012). For formative measurements, an evaluation of discriminant validity using the Fornell-Larcker criterion or correlation loadings is not applicable (Hair et al. 2017; Chin 2010). Table 3 summarizes the results of the evaluations of the formative measurements.

To evaluate the formative measurements in the second order, once again, we conduct a confirmatory composite analysis (CCA) (Hair et al. 2020, 2019). We use the weights, *p*-values, and variance inflation factor (VIF), which should be less than 5 (Diamantopoulos et al. 2008). All variance inflation factors were below the critical value of 5. Although some of the weights were not significant (*p*-value > 0.05), we kept them in the measurement model because we derived all dimensions from literature, as illustrated in the operationalization chapter above. Hence, even though some of the dimensions of the contextual situation construct were not significant, we retained them because the conceptual foundation strongly supports them (Hair et al. 2017).

Fig. 2 summarizes the results of the inner path model and the influences of the control variables.

Fig. 2 shows that the control variables play a minor role in evaluating the model. However, some of these control variables show significant effects (*p*-value < 0.05). The municipalities that later adopted an accrual accounting rated their performance higher than did those that adopted this method earlier (0.132; *p* = 0.015). Counties rated the results somewhat lower (−0.110; *p* = 0.029) than did cities. The other control variables had no significant influence on the model. Including these control variables

Fig. 2 The results of factors and consequences of a more sophisticated accrual accounting use

in the research model also means that other path relationships in the model are not affected by this effect. For example, the influence of sophistication on the results is not higher or lower because of the common measured variance (CMV) (Chin et al. 2013). The results of the inner path model do not change when we use “sophistication” as a focal variable for the control variables.

The high R^2 values for “sophistication” ($R^2=0.458$) and “performance” ($R^2=0.616$) indicate that the model has high predictive relevance. In addition, the global model fit standardized root mean square residual (SRMR) of 0.066, which is below the critical value of 0.085, indicates that the model has good

explanatory power (Henseler et al. 2016). The satisfactory critical SRMR value indicates that the correlation matrix estimated by the research model appropriately replicated the empirical correlation matrix. However, a global model fit index such as the SRMR has to be seen as critical to evaluate PLS-SEM models (Hair et al. 2020).

The path coefficient of “organization” to “sophistication” is not significant (-0.054 ; $p=0.319$). Hence, we must reject hypothesis 1, in which we assumed that a more bureaucratic (mechanistic) organization has a negative influence on the level of sophistication of accrual accounting. By contrast, the path coefficient of “context” to “sophistication” is highly significant (0.431 ; $p=0.000$), which supports hypothesis 2, in which we assumed that greater contextual pressure has a positive influence on the level of sophistication of accrual accounting. In connection with evaluating the formative items (Table 3), we can identify the main driver behind this effect. The strongest effect can be observed from the legal system (0.851 ; $p=0.000$). Another significant but smaller effect is attributed to the political culture (0.357 ; $p=0.000$). Because of the highly significant path relation between “resources” and “sophistication” (0.366 ; $p=0.000$), we can accept hypothesis 3, in which we formulated that greater resource provision has a positive influence on the level of sophistication of accrual accounting. Once again, with the information regarding the formative measurements (Table 3), we can identify the main driver behind this effect. The most important driver is leader support (0.600 ; $p=0.000$). Other important drivers are training (0.369 ; $p=0.000$) and IT (0.367 ; $p=0.000$). Finally, we accept hypothesis 4 (0.756 ; $p=0.000$), which predicted that more sophisticated use of accrual accounting improves performance.

We performed various robustness checks of our results. We were not able to identify any relevant difference between early and late adopters of accrual accounting in our path model. Additionally, we tested further group differences, such as voluntary versus obligatory implementation of accrual accounting, counties versus cities, and whether or not the municipalities adopted the new accounting system. For all these groups, we did not find any relevant differences. In the literature, there is a discussion regarding whether it is legitimate to use formative measurements as endogenous construct measurements (Rigdon et al. 2014). However, defining the endogenous constructs “sophistication” and “results” as reflective constructs would have no impact on the path coefficients in our research model. All these tests indicated stable results over time across groups and measurements.

5 Discussion and Conclusion

Implementing new information systems and using accrual accounting information are integral for effective public financial management. However, implementing new information systems in an organization implies the risk that the new system is not really used and decoupled from daily decision making (Christiaens and Rommel 2008; Christiaens and Van Peteghem 2007). In this paper, we have explored which factors drive the use of accrual accounting in German municipalities.

Our analysis shows that the most important factor influencing a more sophisticated use of accrual accounting in municipalities is the context of the municipal administration. This assertion is consistent with neo-institutional theory, which assumes that organizations respond to isomorphic pressures from their institutional environments (DiMaggio and Powell 1983; Oliver 1991). In particular, we can show that the relevant legal system exerts an extremely important influence on the degree to which accrual accounting is used in municipal administrations. Laws for accrual accounting that provide an individual application range for municipalities and that fit the special characteristics of a municipality positively affect the sophistication of accrual accounting use. Furthermore, the political culture in the municipality is identified as an important context factor that influences the sophistication of accrual accounting in municipal administrations. We also found that accrual accounting is used more intensively when participants in the political system are more active. This is in line with the findings of Kioko et al. (2011), who show that public managers are challenged to act as translators of the technical terms of accrual accounting and of civic engagement when they are confronted with a highly active citizenry. By showing the impact of isomorphic pressure from political culture on the degree of usage of accrual accounting, we contribute to work based on neo-institutional theory. We therefore give indications for policy makers at the federal state level indicating that the way in which they prepare laws about accrual accounting in local public administrations really matters. We further illustrate that stakeholder pressure and the political culture in a municipality have an impact on the use of accrual accounting, as well.

In contrast, neither fiscal pressure nor political competition significantly influences the sophistication of accrual accounting implementation. One explanation for these results could be that under fiscal constraints or in situations with high political competition, public officials feel that they are under more pressure to defend against political opponents than to use accounting information to make better decisions from a managerial perspective. Researchers in political science and public administration state that public officials are strongly motivated to avoid blame (Hood 2011; Hood and Lodge 2006; Sulitzeanu-Kenan 2010; Weaver 1986).

The adequate provision of resources for use in accrual accounting shows high relevance. We find that greater resources dedicated to the implementation of the accrual accounting system positively influence the level of sophistication of accrual accounting in municipal administrations. In particular, we are able to show that leader support is strongly relevant to the sophistication of accrual accounting use. Another resource dimension that plays an important role in the sophistication of accrual accounting implementation is the provision of an IT system. Technically sophisticated and user-friendly IT systems are required to supply meaningful reports (e.g., budgets, financial statements) and to enable decision makers in public administrations to acquire a managerial view of organizational activities. Hence, IT systems are important factors for a sophisticated use of accrual accounting. In addition, having trained staff influences the degree of sophistication of accrual accounting in municipalities, which implies that municipalities must invest financial and time resources in training initiatives for accrual accounting to realize the poten-

tial benefits of the new system. These findings propose that resource provision is an important factor for enabling a sophisticated use of organizational practices.

Our data analysis does not indicate that external consultants affect the degree of sophistication of accrual accounting. This finding could be explained by the bureaucratic background of German municipalities, in which the demand for external consulting is low compared to that in private companies or other countries like the U.S.

We find that the organizational structure has no significant impact on how sophisticatedly an accrual accounting system is used in German municipal administrations. Thus, the characteristics of a bureaucratic organization—whether a high level of formalization of decision making (formalization), the fact that decision making is based on persons who act on a higher hierarchical level (centralization), or the number of hierarchical levels below the mayor (vertical differentiation)—do not influence the level of sophistication of accrual accounting in a municipality. This finding is surprising because for Germany, a country with a strong Weberian understanding of how to steer public administrations, researchers have argued that reform projects in public administrations are difficult to implement because of the remaining power of the legalistic-bureaucratic organizational logic (Kuhlmann et al. 2008; Kioko et al. 2011). However, this (non-)effect of organization can be explained by the concept of hybridization. The corresponding literature shows that different institutional logics can coexist within a single organization. In such a setting, organizations can decouple different institutional logics by implementing practices representing one logic while actually using practices promoted by another logic (Pache and Santos 2013; Skelcher and Rathgeb Smith 2015). This means that for municipal administrations, accrual accounting has been formally implemented, but the old legalistic-bureaucratic logic and its corresponding cash accounting system are still used for monitoring the legal compliance of the administration and as a basis for decision making in the administration. Both remain institutionalized in the routines of these municipal organizations.

Finally, our study shows that a more sophisticated implementation of accrual accounting supports the unfolding of an accounting reform's potential. We find evidence that using an output-oriented accounting system can increase the performance in the sense that better decisions are made and more transparency regarding the municipality's financial situation is provided (Ouda 2004; Hirsch et al. 2015; Hilgers 2011). Accordingly, scholars and practitioners need to be aware that to perceive the benefits of accrual accounting in municipal administrations, it is important to enable the sophistication of accrual accounting practices.

However, our results suffer from the classic limitations of survey-based studies, as previously noted. The conclusions are necessarily based on average evaluations. Hence, we provide an overview of the systematic trends, not the idiosyncratic organizational factors. For example, although a consultancy may not significantly influence the implementation of accrual accounting systems, it might be important in a specific municipal administration in the implementation phase. Nonetheless, on average, our findings indicate that it does not exert a significant influence. The analysis is based on subjective evaluations of the respondents. This approach may lead to the misrepresentation of some key constructs in our survey.

In summary, by revealing that the contextual situation and sufficient resources are important drivers of accrual accounting use in German municipalities, our study enriches research on accounting practices in the public sector. From an institutional theory perspective, our results strengthen the idea that institutional change towards a new (accounting) regime is fostered by the isomorphic pressure of the corresponding context (Battilana and D'Aunno 2009; DiMaggio and Powell 1983; Greenwood and Hinings 1996; Hiebl 2018). We therefore give new empirical evidence about the concrete drivers of change in the context of German municipal administrations. Our data also show the relevance of actors and actions for the implementation of the new regime (Battilana and D'Aunno 2009; Green and Li 2011; Hiebl 2018) in a public sector context. Our analysis presents detailed knowledge indicating that providing sufficient resources—including management support—really matters in public sector organizations. Moreover, we can show that a more sophisticated use of accrual accounting fosters managerial decision making, even in the public sector.

Due to the strong relationship between “sophistication” and “performance,” from our perspective, it is even more important to understand what concrete drivers have an impact on the level of usage of accrual accounting to strengthen the performance of municipal administrations. Accordingly, we encourage future research to investigate additional variables that could positively influence the accrual accounting sophistication in municipalities. It seems especially promising to consider individual variables, such as experience, education, or prior beliefs of public officials, as drivers of accrual accounting sophistication in municipalities. Beyond that, scholars could concentrate on the complementarity between the various factors driving the sophistication of accrual accounting in municipalities, while through interdependencies, the value of one factor could depend on the value of another factor, and vice versa. Grabner and Moers (2013) propose and discuss complementarity theory to impose structure on multiple-choice variables to account for interdependencies.

In our study, we concentrate on the sophistication of accrual accounting usage by administrative staff. Future research could examine the persons who have the responsibility to make final decisions on accrual accounting usage: politicians. When doing so, it is important to bear in mind that politicians may play different roles and have different degrees of power in the various stages of the policy cycle (Giacomini 2019; Giacomini et al. 2016).

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Appendix

Table 4 Descriptive Statistics

	Mean	Min	Max	S. Deviation	Kurtosis	Skewness
Form1	3.008	1.000	7.000	1.319	0.044	0.724
Form2	3.166	1.000	7.000	1.278	−0.001	0.589
Form3	3.524	1.000	7.000	1.217	−0.205	0.131
Form4	4.925	2.000	7.000	1.238	−0.610	−0.221
Diff1	4.675	1.000	7.000	1.498	−0.520	−0.608
Diff2	3.308	1.000	7.000	1.668	−0.550	0.711
Diff3	3.393	1.000	7.000	1.369	−0.542	0.338
Cent1	3.937	1.000	7.000	1.320	−0.580	−0.059
Cent2	4.542	2.000	7.000	1.252	−0.632	−0.247
Cent3	4.877	2.000	7.000	1.132	−0.094	−0.482
Fiscal1	2.451	1.000	7.000	1.314	−0.117	0.745
Fiscal2	3.838	1.000	7.000	1.535	−0.683	0.077
Fiscal3	5.751	1.000	7.000	1.312	0.541	−1.064
Fiscal4	3.640	1.000	7.000	1.620	−0.867	0.119
PComp1	5.453	1.000	7.000	1.458	0.381	−0.987
PComp2	4.264	1.000	7.000	1.771	−0.963	−0.211
PComp3	6.096	1.000	7.000	1.431	3.244	−1.925
PComp4	4.238	1.000	7.000	1.761	−0.933	−0.255
PCult1	4.088	1.000	7.000	1.467	−0.643	−0.092
PCult2	4.616	1.000	7.000	1.286	−0.275	−0.379
PCult3	3.266	1.000	6.000	1.259	−0.553	0.232
PCult4	4.606	1.000	7.000	1.458	−0.785	−0.028
Legal1	4.067	1.000	7.000	1.490	−0.664	0.193
Legal2	3.937	1.000	7.000	1.470	−0.927	0.191
Legal3	3.961	1.000	7.000	1.360	−0.732	0.147
Legal4	4.248	1.000	7.000	1.444	−0.714	−0.275
Supp1	3.129	1.000	7.000	1.781	−0.748	0.607
Supp2	3.441	1.000	7.000	1.774	−0.932	0.408
Supp3	3.640	1.000	7.000	1.720	−0.947	0.335
Supp4	4.639	1.000	7.000	1.823	−1.029	−0.478
Cons1	3.684	1.000	7.000	2.202	−1.421	0.219
Cons2	4.456	1.000	7.000	1.969	−1.269	−0.159
Cons3	3.429	1.000	7.000	1.980	−0.929	0.577
Cons4	5.339	1.000	7.000	2.276	−0.698	−0.993
IT1	3.238	1.000	7.000	1.463	−0.103	0.720
IT2	2.397	1.000	7.000	1.273	0.820	1.057
IT3	3.351	1.000	7.000	1.516	−0.448	0.632
IT4	5.896	1.000	7.000	1.356	1.305	−1.423
Train1	2.302	1.000	7.000	1.370	1.709	1.426
Train2	3.024	1.000	7.000	1.483	−0.080	0.775
Train3	2.598	1.000	7.000	1.342	1.051	1.152

Table 4 (Continued)

	Mean	Min	Max	S. Deviation	Kurtosis	Skewness
Train4	4.020	1.000	7.000	1.907	−1.132	0.131
Inte1	4.587	1.000	7.000	1.584	−0.861	−0.190
Inte2	4.079	1.000	7.000	1.700	−1.053	−0.061
Inte3	4.123	1.000	7.000	1.823	−1.189	−0.065
Inte4	3.832	1.000	7.000	1.785	−1.145	−0.016
Usef1	2.878	1.000	7.000	1.788	−0.281	0.909
Usef2	3.748	1.000	7.000	1.840	−1.112	0.295
Usef3	2.757	1.000	7.000	2.047	−0.469	0.982
Usef4	5.079	1.000	7.000	1.647	−0.149	−0.848
Accu1	5.161	1.000	7.000	1.637	−0.358	−0.847
Accu2	2.855	1.000	7.000	1.502	−0.054	0.919
Accu3	5.189	1.000	7.000	1.591	−0.410	−0.785
Accu4	3.251	1.000	7.000	1.495	−0.409	0.584
Act1	4.757	1.000	7.000	1.440	−0.674	−0.178
Act2	4.051	1.000	7.000	1.776	−1.208	0.087
Act3	4.686	1.000	7.000	1.560	−0.957	−0.241
Act4	5.167	2.000	7.000	1.413	−0.859	−0.434
Know1	3.655	1.000	7.000	1.678	−0.950	0.486
Know2	3.441	1.000	7.000	1.556	−0.626	0.616
Know3	4.533	1.000	7.000	1.710	−1.093	−0.064
Know4	3.138	1.000	7.000	1.583	−0.291	0.761
Chan1	4.224	1.000	7.000	1.542	−0.957	0.137
Chan2	4.188	1.000	7.000	1.648	−1.089	0.066
Chan3	4.447	1.000	7.000	1.632	−1.033	−0.145
Chan4	4.631	1.000	7.000	1.533	−1.050	−0.099
CMV1	2.068	1.000	7.000	0.916	3.676	1.277
CMV2	2.618	1.000	7.000	1.024	0.810	0.592
CMV3	3.032	1.000	7.000	1.229	0.573	0.615
CMV4	2.560	1.000	7.000	1.113	1.023	0.863
CMV5	3.113	1.000	7.000	1.171	0.155	0.280
Adopted	2009	2001	2017	2.110	1.420	0.542
Age	3.494	1.000	6.000	1.050	−0.318	−0.244
County vs. City	0.203	0.000	1.000	0.402	0.204	1.484
Education	5.121	3.000	7.000	0.685	2.593	−0.614
Free	0.171	0.000	1.000	0.376	1.112	1.762
Sex	1.171	1.000	2.000	0.377	1.089	1.755
Late Adoption	1.540	1.000	3.000	0.689	−0.425	0.898
Position	1.563	1.000	2.000	0.496	−1.951	−0.256
Privat Sector	1.560	0.000	25.000	3.645	10.205	2.967
Size	2.953	1.000	7.000	1.397	0.736	1.197
Work Tenure	27.194	1.000	48.000	11.184	−0.820	−0.349

Survey Items

The following questions are retranslated from the German questionnaire.

- *r* = Reverse-coded items
- * = Items were deleted after scale purification

Table 5 Organization

Centralization

<i>Cent1</i>	Employees must generally seek the approval of a superior before making any decisions
<i>Cent2</i>	Individual decision makers have little freedom in choosing the means to fulfil their tasks
<i>Cent3</i>	Employees have little freedom to do their jobs

Vertical Differentiation

<i>Diff1</i>	Our municipality has many hierarchies between the lowest level and the mayor
<i>Diff2r</i>	There are relatively few hierarchical levels in our municipality
<i>Diff3r</i>	We are a rather lean administration organizationally

Formalization

<i>Form1</i>	Responsibilities in the administration are strongly dictated by written job descriptions
<i>Form2</i>	The process of decision making is largely defined by rules
<i>Form3*</i>	The rules of procedure are always followed strictly
<i>Form4</i>	Internal communication takes place only in standardized forms (e.g., minutes, reports)

Table 6 Contextual situation

Fiscal Stress

<i>Fiscal1</i>	Financial savings are urgently required in our municipality
<i>Fiscal2</i>	Financial savings are the most important goal in our municipality
<i>Fiscal3r*</i>	Financial expenditures do not play a major role in our municipality
<i>Fiscal4</i>	We cannot finance many of our citizens' wishes

Political Competition

<i>PComp1</i>	The political future of the mayor is uncertain
<i>PComp2</i>	Political power struggles are very strong in our municipality
<i>PComp3*</i>	In recent election periods, there has often been a change in the elected local government/ municipal council
<i>PComp4</i>	The mayor must often defend himself against the political opposition

Political Culture

<i>PCult1</i>	There is a high degree of citizenship in our municipality
<i>PCult2</i>	The broad public is interested in what is occurring in our municipality
<i>PCult3*</i>	Many topics are discussed intensively in the municipal council
<i>PCult4</i>	Citizens' meetings on local topics show a comparatively high number of visitors

Legal System

<i>Legal1</i>	The special characteristics of municipalities are sufficiently taken into account in the legislation on the new public budget and accounting in our federal state
<i>Legal2</i>	The laws about accrual accounting are well understood
<i>Legal3</i>	The laws about accrual accounting enable an individual application range for our municipality
<i>Legal4r*</i>	Laws leave little scope for adapting accrual accounting to the individual needs of our municipality

Table 7 Resources*Support by Mayor*

- Supp1* The mayor is fully behind the introduction of accrual accounting
- Supp2* The mayor supports the intensive implementation of accrual accounting
- Supp3* The mayor places a high priority on the implementation of accrual accounting
- Supp4r** The mayor is only slightly interested in information from accrual accounting

Consultancy

- Cons1* External consultants have assisted in the introduction of accrual accounting
- Cons2* External consultants provided a significant contribution in the transition to accrual accounting
- Cons3** There were sufficient resources to buy consultancy services
- Cons4r* No consulting services have been used at all

IT System

- IT1* The information from accrual accounting is very accessible via our IT system
- IT2* Our IT system provides the values in accordance with legal requirements
- IT3** From our IT system, the values of accrual accounting can be found with little effort
- IT4r* Our IT system for accrual accounting is highly faulty

Training

- Train1* Employees in the finance department were trained extensively in the application of accrual accounting
- Train2* There are detailed documents in our municipality in which someone can find information about the correct application of accrual accounting
- Train3* There was sufficient time given to employees in the financial department for training in accrual accounting
- Train4** New employees have been recruited in the financial department who already have knowledge regarding accrual accounting

Table 8 Sophistication*Usefulness of Accrual Accounting*

- Usef1* I am convinced that despite the challenges, accrual accounting is the right tool to manage the budget in our municipality
- Usef2* Overall, the benefit of accrual accounting exceeds the cost of the reform in our municipality
- Usef3* Were I asked whether accrual accounting should continue to be applied, I would say yes
- Usef4r* The benefits of accrual accounting are overestimated in our municipality

Intensity of Use

- Inte1* Information from accrual accounting is often used (use of key figures, etc.)
- Inte2r* The use of information from accrual accounting is very cautious compared to the use of information from cameralistic accounting
- Inte3r* The information of accrual accounting has caused quite a stir, without finding a genuine use
- Inte4r* We use accrual accounting only to the extent required by law

Accuracy of Values

- Accu1r* Values from accrual accounting do not reflect the actual financial situation of the municipality
- Accu2* Values from accrual accounting accurately reflect the financial situation of our municipality
- Accu3r* Values from accrual accounting often seem arbitrary
- Accu4* Values from accrual accounting are meaningful

Table 9 Performance**Through the use of accrual accounting in our municipality***Better Action*

- Act1* ... the actions of the administrative staff, departments and offices are better coordinated
- Act2* ... long-term financial efficiency can be ensured
- Act3* ... budgetary resources are better used in the sense of the political objectives
- Act4* ... senseless expenditures are better avoided

Mindset Change

- Chan1* ... a better output orientation is achieved
- Chan2* ... motivation to act more commercially is increased
- Chan3* ... a higher level of accountability is achieved
- Chan4* ... the meaning of certain expenses is better discussed

Better Knowledge

- Know1* ... there is more transparency regarding the purposes and the amount of resources used
- Know2* ... there is more meaningful information
- Know3* ... comparison with other municipalities is more possible
- Know4* ... a better generational equity

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