

## Usefulness of Accrual Information in Non-mandatory Environment: the case of Japanese Local Government

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## Abstract

There are intense debates about the effects and usefulness of accrual information in the public sector. Even in adopting accrual based accounting and budgeting into the government entities, diverse views are found. Some innovative local government in Japan prepared an accrual based financial reporting in the late of 1990s, and recently the national government recommended to every local government to adopt accrual accounting as a supplementary documents of legal accounts. In other words, the accrual information system is considered a non-mandatory dual system and has varied experiences in adopting into financial management, since the budgeting and accounting is in cash based institutional system. The case is therefore appropriate to examine whether and to what extent accrual information would be used in decision-making and more useful than cash information.

This paper analyzes the usefulness of accrual information on decision making and compares with cash based information through a postal survey for finance department in all cities of Japan. The response rate was approximately 60% and ensured its representativeness. Our study extends previous research by examining how the time and the principal actor in adopting accrual accounting impact on the usefulness. The result shows that accrual information was less used in decision making on budgeting, evaluation, assets and debts management, while finance officials recognize more benefits of accrual information than cash based information in some fields. In addition, we neither found “experience effect” which the acceptance has grown over time, nor “leadership effect” that the mayor as principal actor in introducing accrual accounting has significantly contributed to usefulness in decision-making. By contrast the national government was the most influential promoter. These findings show that the usefulness of accrual information in the dual system needs to be enhanced through strengthening ownership and complemented by other related systems.

Keywords: accrual accounting, utility, dual system, accounting role, outcomes by reform

## **INTRODUCTION**

The transformation from cash accounting to accrual accounting in the public sector has been implemented around the world, despite the critics by some scholars (Jones, 1992; Ryan, 1998; Guthrie, 1998; Newberry, 2003; Barton, 2005; Ellwood and Newberry, 2007). This trend is caused by introducing the New Public Management (NPM) doctrine emerged in the 1980s, which adopts market mechanism and business management tools into public sector reform (Hood, 1991, 1995).

Accrual accounting is a crucial instrument in application of NPM, since it could provide a more comprehensive figure of activities than cash accounting and contribute to improving internal management by providing full cost information. In other words, it is assumed that accounting would enhance transparency and accountability for the citizens and improve decision making: accrual information may be used in budgeting, contracting decisions, evaluation and internal control. Although the benefits might be expected, it is accompanied by the costs such as adoption, implementation. Accordingly, the utility has to be determined in terms of costs and benefits, especially from the result-oriented perspective of NPM. However, as Pollitt and Bouckaert (2004) indicated, NPM reform has several trajectories, and implementation process of accrual accounting has variations across nations or among levels of government. Some countries and local governments have adopted accrual accounting in financial reporting while budgeting still has been regulated by cash accounting, i.e. dual system. By contrast, in New Zealand, Australia and United Kingdom, accrual accounting is used in budgeting and accounting. It is therefore understandable that a significant part of research has studied in adoption or introduction of accrual accounting.

Recently the focus has shifted from adoption to implementation (Ellwood, 2003; van der Hoek, 2005; FEE, 2007; Christiaens and Peteghem, 2007; Arnaboldi and Lapsley, 2009), although there is the debate on the usefulness, merits and demerits, roles of accrual accounting for the public sector. There are few empirical studies on impacts or outcomes of accrual accounting despite the endorsement on enhanced improvement in decision making and accountability, while some scholar insist the need (Lande and Rocher, 2011). Even though impact studies, they were based on anecdotal evidence or case studies or survey of small samples in public entities without considering contextual or interrelated issues. It is unable to separate the outcomes through accounting system reform from public sector reform, because accrual accounting is just an instrument for improving performance and accountability, the outcomes would be caused by the related systems and tools other than accrual accounting.

From this perspective, through a survey to financial officials for all cities in Japan, we

will investigate the impacts by accrual accounting in the Japanese local government, where accounting innovation started in the late 1990 and flourished in the early 2000s. The implementation stage is in a voluntary based on the dual system, although the central government has recommended local government to prepare and use accrual based financial reporting. This situation is quite appropriate to analyze the outcomes by accrual accounting owing to be able to take into account of not only varied extent of adoption and using in management but also other environmental factors like financial conditions, population of municipality through multivariate analysis.

This paper continues by describing the background of accounting reform of local government in Japan. Then the theoretical framework is presented. Thereafter the empirical analysis results are shown and discussed. Finally the conclusion and future research are drawn.

## **BACKGROUND**

### *Introduction of Accrual Accounting in Japan*

The Constitution gives local government autonomy in policy making and execution within the governing area, although central government has a power to direct or subsidize local government. The head and council members for local government are separately elected by the democratic vote. The former implements policy, while the latter determines the budget and proposal by the administration. In this regard, the political system of local government is considered a dual representation by contrast to a unitary representation system in central government.

Often Japan is regarded as latecomer in public sector reform including transforming into accrual accounting (Kokubu et al., 1998). However, the discussions on accrual accounting in the public sector have a long history. Firstly in the Meiji Era, more than a century ago, accrual accounting was implemented in operations of the central government, though in a quite short period. After the world war, in the 1960s, at the Special Council for Administrative Reform and the Council for Local Government System the merits and demerits of accrual based accounting in public financial management were discussed. Besides, some local governments in the 1980s prepared the financial statements as an experiment by using or modifying the model which Research Institute for Local Government, a public funded institute, developed for local government. However, the adoption or preparation was implemented just once, never continued.

The situation was changed by the innovative political leaders in the 1990s. The Governor in Mie Prefecture, Mr. Kitagawa, definitely introduced accrual accounting into the public sector: he well understood the concept of NPM and identified accrual

accounting as an important instrument for NPM. Kitagawa acknowledged the usefulness of accrual accounting in enhancing transparency and comparability in service cost. The first financial statements based on accrual accounting were prepared in 1996.

#### *Development of Accrual Accounting in Local Government*

The innovation in Mie Prefecture was fast diffused into the country, coupled with performance measurement system for local public services. The movement drove the central government to set the guideline for preparing financial reporting in an accrual basis. The Ministry of Internal Affairs and Communications (MIC) established a research committee to develop the guideline. In 2001, the standard reporting model similar to the antecedent style was published. The financial reporting is prepared by adjusting cash based accounts into accrual based accounting at the end of fiscal year. Consequently neither accrual accounting nor double entry bookkeeping was introduced in daily transactions in the local government. The financial reporting is a supplement to final accounts which are the legal mandated documents in public finance. The dual system in which financial reporting is prepared in accrual while maintaining cash based control surely lubricate to adopt accrual based business accounting into the public sector. The exceptional approach is adopted by the Tokyo Metropolitan Government whose governor, Mr. Ishihara decided to introduce accrual based and double entry bookkeeping system in daily transactions. The Governor believes government management system is obsolete compared to corporate system using accrual accounting in consistent with proponent of NPM. In 2006, the accounting standards which basically adopt the IPSAS in a full accrual basis were set up. In the same year the central government also promoted public sector accounting system reform in which national and local government would adopt the identical accounting standards in order to identify the amount of assets and debts as the whole of government. The accounting information through consolidating financial reporting was expected to figure out disposal assets and redeemed debts which were useful in planning fiscal reform.

In 2007 MIC developed the new accrual based financial reporting model which was harmonized with the central government model. However respecting a smooth transformation into new model, MIC prepared two types of model: the one is full accrual based in transaction level, the other is the minor modification of the year end adjustment model. Although MIC's models are accrual based, Tokyo Metropolitan model also adopts accrual accounting. In addition, the central government so far does not intend to change formal accounting system from cash to accrual basis: the traditional cash accounting in public finance shall be maintained while accrual accounting could be adopted as supplementary information in financial management. In

other words, the local government in Japan it might be said that a voluntary or non-mandatory dual system has been introduced. The loose control based on the recommendation however swiftly moved local government to prepare accrual based financial reporting. Table 1 shows that all prefectures already prepared or are in preparing accrual financial reporting for FY 2008, and more than 90% of municipalities are in similar situation.

Accrual accounting for local government was therefore institutionalized in a short period, although there are variations in utilization and environment like experience, political, economic, social and demographic factors. This means that in this case we are able to explore the causes and results for utilization of accrual accounting taking into account of individual environmental conditions beyond adoption or implementation studies.

Table 1. Adoption of Accrual Financial Reporting for FY 2008

Item	Prefecture	Municipality	Municipality having more than 30,000 people
Prepared	42 (89.4%)	1,119(63.9%)	626 (84.1%)
In preparing	5(10.6)	474(27.1)	112(15.0)
Nor prepared	0(0)	157(9.0)	7(0.9)
Total	47(100.0)	1,750(100.0)	747(100.0)

## **THEORETICAL FRAMEWORK**

### *Literature Review*

Studies on public sector accounting until recently have been devoted to transformation from cash to accrual accounting and implementation. In research focused on transformation, accounting changes are considered accounting innovation and analyzed by contingency model (Lüder, 1992, 1994) and innovation process model (Hussein, 1981). The main theoretical approaches are institutional theory and positive accounting theory or rational theory. The former assumes that organizations within a social framework of norms, values, and conformity to social expectations contributes to organizational successful survival (DiMaggio and Powell, 1983; Oliver, 1991,1997; Carpenter and Feroz, 2001). The latter assumes that the choice of accounting solutions is affected by the relative power between agent and principle acting in their own self-interest (Zimmerman, 1977). Recently, a mixed approach or eclectic approach of institutional theory and rational theory has appeared in accounting choice research

(Falkman and Tagesson, 2008; Collin et al., 2009; Pina et al., 2009).

However, there are few empirical studies on the utility or usefulness of accrual accounting in the public sector, although accrual accounting is placed on the instrumental basis for NPM in which accrual accounting is presumed to contribute to enhancing transparency and improving decision making. Many critics of adopting accrual accounting into the public sector has been presented from the perspectives of accounting theory, democratic or political theory and public management (Pallot,1997; McCrae and Aiken, 2000; Christiaens, 2001; Carnegie and West, 2003; Blöndal, 2003; Chan, 2003; Robinson, 2000). Some scholars examined the impacts or outcomes by accrual accounting. Connolly and Hyndman (2006) found accrual information did not necessarily influence decisions for managing fixed assets through a case-based research. Also Mellett et al. (2008) indicated that the introduction of accruals accounting had no positive impact on decision making. However, the studies are largely based on anecdotal evidence like interviews. On the other hands, using a survey method, Jones and Puglisi (1997) found that in Australian government departments accrual accounting information did not satisfy users' needs, while suggesting an 'experience effect' which means greater use of accrual accounting over time. Although the experience effect was not found in later studies, recently Kober et al. (2010) examined the usefulness of accrual accounting for Australian public sector using a postal survey. They suggested that acceptance of accrual information has grown over time for internal and external users from the notions of institutionalism (Scapens, 1994; Burns and Scapens, 2000): practices by accrual accounting are repeated, as a result, become routine and accepted. Paulsson (2006) also examined the use of accrual information in Swedish central government and found less usage in financial management. Besides Yamamoto (2008) analyzed the utilization of accrual information from the perspective of qualitative characteristics composing of relevance, reliability, understandability and comparability in case of Tokyo Metropolitan Councilors. He found that utilization was significantly associated with understandability of accrual information. Further, Cohen et al. (2009) tested whether accrual accounting could lead to better financial management in Greek municipalities which adopted dual system. They found that using the using the concept of accounting roles introduced by Ansari and Euske (1987), accrual accounting had a positive effect on cost consciousness only through its technical-rational role while cash accounting still dominated in the major roles in decision making. Focusing on natural and rational uses which accounting roles are recognized in terms of dual nature of rational and natural perspectives, they examined the impacts or outcomes by accrual accounting comprehensively, not just from rational or institutional approach. However, their research concentrated into

accounting roles in dual system, neither experience effect nor other individual or environmental factors are examined. Therefore, we will develop a theoretical framework for analyzing the impacts of accrual accounting through integrated approach.

Since the outcomes or impacts are caused by adoption and implementation of accrual accounting, the predicted model for accounting choice or implementation could be adopted while other environmental effects shall be considered.

#### *Theoretical Hypotheses*

The effectiveness of accrual accounting, as Kober et al. (2010:294) suggested, would depend on users' level of experience in using the system through routine behavior from institutional approach. Also users have learnt over time to recognize the benefits of the new accounting system, that is, a learning effect might result in enhancing the usefulness. From rational or resource based theory, the experience in using accrual accounting system could decrease the operating costs for new information system through learning. It may naturally lead to improve the ratio of costs against benefits over time, even though the recognized benefits would not change. Consequently we hypothesize (H1) that:

*H1. The utility of accrual information increases with time or experience.*

According to Oliver (1997), organizational competitiveness or effectiveness will be realized through acquiring or making optimal use of valued resources when they have the political power. In other words, transformation from cash to accrual accounting requires resources in addition to culture change in public financial management. It means that political support is a crucial driving force to successfully implement the transformation. From the perspective of rational theory, political support of the top may decrease obstacles or barriers to transform the new system. As a result, it is expected to diminish obstacle costs in operating the new system (in this case, accrual accounting information system). Public management theory also indicates that political support influences organizational performance (Long, 1949; Wilson, 1989; Pandey and Moynihan, 2006; U.S. GAO, 2011). Accordingly the following hypothesis (H2) is led:

*H2. The utility of accrual information increases with political influence in management by the leader.*

Technical-rational role of accounting information is driven by considerations of efficiency in organizations (Ansari and Euske, 1987:553). The role is related to the traditional approach of accounting functions on usefulness in decision making. Evidently it is caused by rational theory. Proponents of NPM insist that accrual accounting could produce more fruitful information in decision making, for example, in resource allocation or evaluation, service costs are more comparable among

organizations or sectors and accurately measured than cash based accounting. Accordingly we hypothesize (H3a) that:

*H3a. The greater accrual plays in technical-rational role, the utility becomes larger.*

The socio-political role which is natural perspective of accounting is the pursuit of power and influence. The role focuses on rationalizing and justifying organizational actions to members, and influencing the attitudes and belief of participants to gain negotiating advantage (Burchell et al., 1980). From the perspective of financial management in the public sector, the situation which accounting information is used is budgetary or planning process: budgeting is a political process and negotiations among related stakeholders on who are beneficiaries and by whom costs are born. The concept of NPM is likely to be harmonized with accrual accounting in budgeting (Pollitt and Bouckaert, 2004; Hepworth, 2000; Paulsson, 2006), because accrual based resource allocation is based on full costs which are measured in consumed resources, not cash. Consequently, we assume that socio-political role in accrual accounting information systems well functions when the accrual information is appropriately placed on political process like budgeting. This leads to the following hypothesis (H3b):

*H3b. The greater accrual information plays in socio-political role, the utility becomes larger.*

Institutional role of accounting system serves to legitimize the organization and support its decisions (Ansari and Euske, 1987). The role is derived from institutional theory. In practice many researchers adopt institutional theory to explain the diffusion of accrual accounting in the public sector. According to Meyer and Rowan (1977), as the formal structure confirms to external beliefs about proper behaviors, it is more likely to survive the organization. Accounting roles of rational and natural perspectives are interactive (Boland and Pondy, 1983) and, as Cohen et al. (2009) assumed, institutional role is presumed to be negatively related to techno-rational role. This means that the natural perspective of accrual accounting systems could be strengthened in institutional role even though it would not be effective in the rational use on decision making. Therefore we hypothesize (H3c) that:

*H3c. The greater accrual information plays in institutional role, the utility becomes smaller.*

Size of organization will affect the outcomes of adopting new information system like in compliance with new rules or choosing new system. From the perspective of rational theory, larger municipalities are likely to have more skilled staff and knowledge in new system. Consequently larger local government would have more advantage in operating new system than small sized government. Also the operating costs in large

municipalities might be decreased owing to scale merit, in addition, the effectiveness could be enhanced through higher skills and knowledge in using accrual information. The situation is different from the compliance with new accounting system recommended by central government, which political costs opposing the recommendation increase with size (Watts and Zimmerman, 1978). From institutional theory, as Falkman and Tagesson (2008) assumed, in large municipalities there are more skilled officials. However, in Japan, employees for the public sector and the private sector are clearly separated each other. Also professional groups are not organized in the public sector. Even officials working in public finance have no professional qualification like CIPFA in the United Kingdom. Accordingly, larger municipalities are more likely to have better net benefits by using new information system rationally and we hypothesize thus (H4):

*H4. The utility of accrual information increases with size.*

Professional skills and experience are related to not only size but also human resource management policy for officials. Especially in local government where there are few professional groups in the sector, professional skills in public finance departments are not ensured through qualifications of professional groups, rather likely to be established or enriched through experiencing in financial management practices including accounting. Laegreid and Christensen (2010) showed that NPM was more relevant for financial management tasks such as budgeting, accounting and auditing than for other tasks in case of the Norwegian government using dual system like in Japan. Consequently we hypothesize (H5) that:

*H5. The utility of accrual information increases with speciality of financial department staff.*

## **ANALYSIS AND DISCUSSION**

### *Research Methods*

As mentioned before, previous studies focused on implementation process. Even though taking into account of outcomes, most research just examines the association between usefulness and other factors like size or time. Hence we have to examine the outcomes by introducing accrual accounting in terms of utility taking into account of influential factors. In order to test the theoretical hypotheses, there needs the data on utility and related information. However, the measures indicated in the theoretical framework are not found in published statistics. While MIC has surveyed on the adoption of accrual based information on financial reporting every year, the outcomes have not yet been investigated even by scholars in Japan. Accordingly we implemented a postal survey for this research. Questionnaires on utility of accrual information and related issues

including basic information about the city were disseminated to officials for public finance department in all cities. The names and mailing addresses were obtained from the handbook of municipalities. A follow-up mailing was sent to encourage answering, one month after initial distribution, 694 responses out of 1200 were received. The response rate is approximately 58%.

First, utility is measured in five-point Likert scale. In this study, the utility is classified into use in budgeting, evaluation, assets management, and debts management. Second, experience effect is rated according to the time of introducing accrual based financial reporting, ranging from 1= 'before 1999' to 3= 'after 2004 (including planning)'. Third, political support or influence is measured in dummy variable by whether or not the adoption of introduction of accrual based reporting was led by politician or mayor. Fourth, the accounting uses composed of techno-rational, socio-political and institutional roles are measured in a five-point Likert scale through the answers of questionnaire on accounting functions, which was developed Cohen et al. (2009) in accrual accounting. Fifth, size is rated according to the population ranging from 1= 'less than 10 (thousand)' to 6= 'more than 300'. Lastly, speciality of financial department staff is rated according to the personnel policy in a Likert scale ranging 1= 'to a great extent' to 6= 'not at all' on career development policy concentrating to finance management. Consequently the operationalization of testing elements is summarized in Table 1.

Table 1. Definition of Variables

Utilization

Use in budgeting

Use in evaluation

Use in assets management

Use in debts management

agree=1, somewhat agree =2, neutral =3, somewhat disagree =4, disagree=5  
(reverse)

Experience

Introducing accrual based reporting before 1999=1

Introducing accrual based reporting from 2000 to 2004 =2

Introducing accrual based reporting after 2004 =3

Political support

Introduced by political leadership (politician or mayor) =1

Others =0

Accounting roles

Technical-rational role = average point of answering for 7 statements

Socio-political role = average point of answering for 7 statements

Institutional role = average point of answering for 5 statements

Each statement is rated in a five-point Likert scale ranging from 1=disagree  
to 5=agree

Size of population

less than 10 (thousand) =1

From 10 to 30 =2

From 30 to 50 =3

From 50 to 100=4

From 100 to 300=5

From 300 and more =6

Specialty of staff on career development concentrating to financial management

To a great extent =1

To some extent =2

Neutral =3

Little extent =4

Not at all =5

### *Analytical Results*

Regression analysis on the utility of accrual accounting information was conducted to test the hypotheses including independent variables. The results using step-wise method are shown in Table 3, while the descriptive statistics are indicated in Table 2. All regression models are significant ( $p < 0.01$ ). In the first model, technical-rational role and professionalism of financial department staff are significantly associated with the use of accrual information on budgeting. In the second model, only technical-rational role is significantly related to the uses in evaluation. In the third model, technical-rational role and socio-political role are significantly associated with the uses in assets management. Likewise in the fourth model, there are significant correlations between technical-rational or socio-political roles and the uses in debts management. In neither model, we could not find there was significant correlation between the adoption time and the utilization of accrual accounting. This means that the experience effect was not supported. Thus we must reject Hypothesis 1. Similarly in none of the models, the variable of political leadership showed any significance in the utilization of accrual accounting system. Hence Hypothesis 2 also is rejected.

On the contrary, the accounting roles of system are statistically significant relationship with the utility of accrual information. Especially there is significant correlation between the technical-rational role and the utility in every model. Consequently Hypothesis H3a is completely supported. Besides, the regression shows a significant association between the socio-political role and the utility of assets/debts management. Hence, Hypothesis 3b is generally supported. On the other hand, there is no significant association between the institutional role and the utility on all models, although the institutional role shows significance in the use of financial reporting. Accordingly, Hypothesis 3c is rejected.

The regression analysis also indicates that size does not have a significant effect on the utility of accrual accounting in either model. This means that experience effect having longer history in using accrual information system does not necessarily contribute to improving effectiveness or decision making. Therefore, Hypothesis 4 that the effectiveness will be increased over time is not supported. Finally, professionalism in financial department staff impacts the extent of the utilization in budgeting through accrual accounting system. By contrast, the analysis shows in other models professionalism is not connected to the utilization of accrual accounting information. Hence, Hypothesis 5 which presumes the necessary skill for implementing new accrual accounting system is partly supported.

The explanatory power of the regressions is 0.1460 to 0.3429 in adjusted  $R^2$ . It might

be said that the analysis therefore slightly explains the variations. Our research however aims to examine whether or not internal and external environment of the municipality, and contextual issues would impact on the utilization of accrual information system, not fully identifying the factors. From this perspective, we use step-wise method in the regression analysis and checked the possibility of collinearity. The tolerance value of every independent variable was more than 0.1. It therefore appears that multi-collinearity problem is not caused in the analysis.

### *Discussion*

Experience or learning effect in using accrual accounting information was not confirmed in case of Japanese local government. The result is consistent with the level of accounting roles in decision making. Every accounting role rated less than 3.0 (neutral), which means negative evaluation for accounting function. Among the three roles, the technical-rational role (mean =2.453) has minimum value compared to the socio-political (mean=2.707) and the institutional role (mean=2.846). The phenomena might be explained by shortage of skill or knowledge on accrual accounting and changing the recommended original model in 2006 other than being non-institutionalized in financial management. It might be also explained by the lack of the systematic consideration about how to link the accrual based information with the performance measurement system. The background of fiscal department staff is basically law, therefore they have little knowledge in accounting, especially accrual accounting. Political leadership also does not impact the utility against the hypotheses. Although the introduction of new system is attractive to politicians, they are less interested in the outcomes owing to taking a longer time than their term to be successful.

Among the accounting roles, the technical-rational role does not dominate in the uses of accrual accounting. It is generally consistent with Ansari and Euske (1987), however, the role is significantly associated with the utilization of accrual information. Also, the institutional role does not affect the utilization of accrual accounting. The somewhat different result from the expected (Hypothesis 3c) is caused by unembedness of accrual accounting in public financial management practices. Government regulation and daily work on financial management are still based on cash accounting due to the dual system, hence, accrual accounting is separated from routine work or decision making. In addition, assets in local government are institutionally managed in the property ledger which has basically no linkage to the financial reporting. Accrual accounting just plays a symbolic role and does not direct linkage to other institutional systems. For example, the Fiscal Consolidation Act for Local Government in 2007 asks every local

government to publish the several financial indicators including stock-based measures to the residents and the central government since FY 2007. However, the indicators are calculated by using fiscal statistics based on cash or budget accounting, as a result, there is no linkage between the mandated measures and non-mandated accrual information. This means that effectiveness of accrual accounting in this situation could be accomplished by rational behaviors, not adopting institutional or systematic procedures. The decoupling of new system with the traditional institution would result in non-significance of size on the utility and somewhat significant impact by professionalism.

Table 2. Descriptive Statistics of the variables

	Mean	Standard Deviation
Dependent variables		
Use in budgeting	4.141	0.920
Use in evaluation	4.195	0.893
Use in assets management	3.615	1.169
Use in debts management	3.717	1.125
Independent variables		
Political leadership	0.057	0.232
Adoption time	2.384	0.788
Size (population)	4.059	1.072
Professionalism	4.105	0.994
Technical-rational role	2.453	0.710
Socio-political role	2.707	0.689
Institutional role	2.846	0.519

Table 3. Multivariate Analysis (Stepwise method)

Variable	Utilization in budgeting	Utilization in evaluation	Utilization in assets management	Utilization in debts management
Adoption	0.0141	0.0268	-0.0093	0.0474
Political leadership	-0.0489	-0.0346	0.0801	-0.0820
Technical-rational role	-0.6931**	-0.5949**	-0.3454**	-0.6032**
Socio-political role	-0.0617	-0.0968	-0.3692**	-0.2612**
Institutional role	0.0620	0.0098	-0.0003	-0.0562
Size (population)	-0.0317	0.0139	0.0038	0.0225
Professionality	0.1002**	0.0411	0.0072	-0.0133
Adjusted R2	0.3429	0.2768	0.1460	0.2469

\*\*p<0.01

## CONCLUSION

There are few empirical studies on impacts or outcomes by introducing accrual accounting in the public sector, despite of the diffusion around the world. Many research focused on the process of adoption or implementation of accrual accounting. This study has examined the impacts on financial management through adopting an accrual based accounting in the dual system of Japanese local government. Using a postal survey to all cities in Japan, we explored the factors on the effectiveness or utilization of accrual accounting information system under a dual and non-mandatory accrual situation. Some studies are conducted to examine the relationship of the experience and the effectiveness, however, they do not control other factors like size, political leadership which are supposed to be influential. Accordingly, we used regression analysis in which the dependent variable is the utility of accrual information.

From the perspective of synthesized approach, five theoretical hypotheses were derived and tested. The analytical results are partly consistent with the theoretical expectations. The technical-rational role of accrual accounting showed significant influence on the utilization in the decision making, on the other hand, the institutional role has no significant impact on the usefulness in decision making. Likewise, although political leadership is presumed to be influential on the effectiveness, we could not find

any significant relationship between political leadership and utility of accrual information. Also the experience effect does not affect significant impact on the utilization by contrast to the expectation.

The above results indicate that neither prior theory even dialectic theory can fully explain the outcomes or impacts of accrual information in the dual system. At the same time, it was confirmed that enhancing the technical-rational role of accrual accounting would contribute to increasing usefulness in decision making for internal users. The mixed analytical results might suggest that the experience effect and political leadership would moderately affect the utilization, not directly. In other words, the professional skills or knowledge may interact with experience or political leadership.

Thus our study provides insights into what factors would influence the effectiveness or utility of accrual information and how the impacts could be explained. In adoption and implementation processes, institutional theory, rational theory or dialectic theory could be useful, however, in outcomes level, we need to develop another different approach. We acknowledge limitations to our study. First, the explanation power of regression analysis is not enough large. The other elements could affect the utilization of accrual information. We further therefore have to explore the determinants. Second, our study was conducted in the dual system and non-mandated situation for accrual accounting. The specific condition might influence the analytical results. Accordingly, international or comparative study has to be implemented. Third, the effectiveness or utilization was measured in perceived ratings by respondents. As many studies showed, these soft measures are not necessarily consistent with hard or objective measures like financial indicators. Consequently, further research using financial or performance indicators shall be conducted on the utilization of accrual accounting provided taking into account of other related factors.

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