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### Roles of performance measurement in local government

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### 3. Research Design

*This chapter documents the plan made to collect data to answer the research questions.*

#### ***Using the research framework***

The research framework can be seen as a fairly open framework of some specific and some generally defined theoretical concepts. The notion that different contexts of organizational control can influence the roles of BPM is used as the starting point for this exploration. This notion must be regarded as a suggestion in order to “*explicate social reality and challenge technocratic wisdom*” (Earl and Hopwood, 1979, p.11). In line with this, this study does not reject the traditional, rational view of using budgetary control, but aims to include the possible influences of both the businesslike rationale as well as the more political rationale on the different roles of BPM.

The relationship between the possible different contexts of BPM and the actual applied roles has as yet been only limitedly researched. Only fragmentary research is currently available, especially on the roles of BPM use in governmental organizations. Usable theory and related hypothesis on the relationship between BPM roles, their assumed context, and possible performance information use appears to be sparse. More insight and knowledge is needed in order to replace suggestions with assumptions. Consequently this study is mostly concerned with exploring and refining existing theory, not with quantitative testing of predefined hypothesis. A contribution to quantitatively-testable assumptions is seen as one of the desirable results of this study.

With the focus on exploration, the production of a high level of statistical generalization is not put at a premium. External validity is therefore mainly approached analytically, which involves an assessment of the extent to which a particular set of research results generalizes to a theory (Brownell, 1995).

Case study research is seen as a suitable methodical choice. Case study is described by Yin (1994, p13) as “*an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and its context are not clearly evident*”.

In analyzing the four archetypical roles of BPM, a minimum of four cases are used in this study. The four cases are intended to produce theoretical replications, using the research framework (see paragraph “Building a research framework”) to produce four different results for predictable reasons (Yin, 1994). In order to produce four contrasting results, case selection aims to include contrasting values of measurable aspects. Research validity is enhanced by checking for pre-defined contextual factors. An open mind is kept on these contextual factors during the research; cases can produce conflicting theory, and initial propositions can be re-evaluated.

Construct and internal validity and reliability are further strengthened by using Yin's (1994) guidelines. In order to improve construct validity, both documents and interviews are used as sources of evidence. Also, with the aim of analyzing the use of "vertical" information flows, both superiors and subordinates are interviewed, about the same unit of analysis. Interviews are held in a semi-structured way. The interviews are guided by the use of case protocols. Experts (such as management consultants, academics, and municipal managers) are involved to calibrate questions to local needs, and key informants are approached to review drafts of the case study reports.

Detailed case study protocols are used. A case protocol contains an overview of the project, the field procedures, the case questions, and a guide for the case study report. The protocol is the main instrument to maximize the reliability of case study research (Yin, 1994). The protocol contains checklists of desirable procedures, semi-structured questionnaires and open questions. These can be adjusted during the project when relevant variations occur.

The focal point of this study is the way BPM is being used to control subordinate management in governmental organizations, with an initial focus on the top of the organization. The main unit of analysis is therefore the control relationship of politicians with top managers (the top civil managers). In order to include more possible contextual details in the exploration, the next lower organizational level is also included in the case study. The embedded unit level of analysis is therefore the control relation of top management with middle management (next level management).

This embedded multiple case study method is chosen to recognize possible refinements of the research framework and to make it more compelling and robust. Embedding is seen as a necessary design choice to "*prevent that the entire nature of the case shifts during the course of the study*" and to use it as an "*important device for focusing a case study inquiry*" (Yin, 1994, p. 51).

The embedded analysis is undertaken with a view towards supporting the analysis conducted at the more aggregated level. Embedded analysis will therefore result in aggregated measures on the main level of analysis. The rationale for this embedded design is the access it can give to multiple data gathering (Brownell, 1995). Semi-structured interviews (using both structured and open questions as predefined questionnaires) and desk research (to serve a role of convergent validation of other data) are used as sources of evidence. Interviews are recorded, and interview reports are confirmed by interviewees.

### ***Selection of cases***

In order to select appropriate cases, a two-step approach is taken. The purpose of the first step is to select those organizational activities for which the roles of the budget are expected to vary the most. The second step is aimed at selection of the most suitable organization(s) for case research.

## **Selection of organizational activities**

The first step in the selection process is the selection of a minimum of four different (groups of) organizational activities that are assumed to relate closely to the four different roles of budget use.

Dutch municipalities use different structures for grouping organizational tasks. Concentrating on structures that are used for defining organizational objectives, three different types of groups are mainly used: program-, product-, and function-related groups. Many municipalities have recently presented integrated outcome-related program budgets to define and refine their political objectives. These programs are often focused on issues which are frequently thought to be interrelated by the local population. Programs can focus, for example, on safety, culture, education, or the local economy. Product structures are in general used to determine the more operational objectives, targets and performances. Product structures often relate to the specific organizational structure, to responsibility centers within the organization, and to specific product managers. The last structure is the organizational function, and consists of pre-defined groups of products. The organizational functions are mandated by central government and applied by all municipalities, in order to facilitate processes of accountability to society and central government, for example, and of inter-organizational benchmarks<sup>34</sup>.

As a consequence of this mandated use, organizational activities in principle cover all organizational functions and are comparable between different municipal organizations. This study therefore uses the structure of organizational functions to select relevant organizational groups of tasks. A listing of organizational functions has been obtained by using the national standard formats for annual reports and budgets for local government (the so called "BBV-format"<sup>34</sup>).

However, the organizational functions can be heterogeneous; they can contain many different types of activities or tasks (with for example different level of routineness of tasks) and can relate to multiple types of objectives (with possible different levels of uncertainty). During the selection process extra attention is paid to identify these possible heterogeneities.

For the selection process, interviews were held with 11 senior managers from various large Dutch municipalities (circa 100,000 inhabitants or more). A specially prepared selection protocol<sup>35</sup> was used, containing several semi-structured questions. The main purpose of the interviews was to identify groups of activities that are assumed to relate to the four archetypal roles. Applying the previously defined research framework, the selection process mainly collected information on uncertainty and ambiguity of objectives and on task uncertainty. The interviews were also used to identify alternative suggestions, insights and practices that could be of importance in conducting the case research later on.

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<sup>34</sup> As a result of the Budget and Accountability Act for provinces and municipalities, in Dutch "Besluit Begroting en Verantwoording provincies en gemeenten" or BBV.

<sup>35</sup> Available on request.

During the interviews, a checklist of organizational functions was used. This list was mainly used by the interviewer, and contained a number of pre-selected functions expected to be mentioned by the interviewees. This list was not limiting and during the interviews functions could be added to it. Interviews lasted approximately one hour, were recorded, and summarized reports of the interviews were communicated to the interviewees.

Interviews were held at the municipalities of Schiedam, Alkmaar, Emmen, Zwolle, Dordrecht, Hengelo, Zoetermeer, Helmond, Apeldoorn, Leeuwarden, and Tilburg. Almost all of the interviews were held solely with the general manager, in some cases the concern controller participated.

The interviews revealed some general observations.

Firstly, all municipalities seem to organize the planning and control process in similar ways. Annually updated medium-term plans (often with a planning horizon of five years) are used to document the objectives, and programs and products are used to structure the objectives. Bi-annual management reports and annual reports are used to inform politicians and other stakeholders. The objectives and desirable performances are described in the medium term plans, in the yearly budget, and in more detail in operational planning documents.

Secondly, the process of setting objectives is generally perceived as being relatively easy. Setting objectives is often a minor concern and given limited effort. Large municipalities (belonging to the group of the 26 largest municipalities in the Netherlands) are also involved in a more mandatory and centrally-coordinated process of setting objectives. This process is part of a national program to allocate special funds to main cities. Discussions become more intense only when specific political issues are highlighted during the process of objective setting, can.

Thirdly, setting clear and measurable objectives for all policy fields or political programs is not always seen as realistic. Objectives can sometimes be vague and difficult to achieve, caused by the heterogeneity and diversity of the underlying activities. The need to make the objectives more specific and realizable is often perceived as a long term improvement process, not as an issue that needs urgent attention. Apparently-unrealizable or not fully-realizable objectives are not always adjusted. This happens for instance when external factors are perceived as the main cause of the failure to achieve.

To recognize the more political perspective of control, ambiguity of objectives is used in the selection phase as a key selection criterion, and is captured by the more externally-oriented aspect of multiplicity. Differences in multiplicity are captured by recording the conflicts over setting and using organizational objectives, as perceived by the interviewees. Managers were asked to name a number of functions considered to relate the most and the least to the conflicting pressures of stakeholders. Interviewees were not asked to evaluate all the functions on the BBV-list, but to name a minimum of four functions (two related to limited conflict and two related to relatively high levels of conflict). A list was made by collecting the scores of the eleven interviewees,

and functions were grouped by the number of times they were named relative to high or low levels of conflict.

Interviewees indicated that the levels of conflict of functions, or parts of functions, differed significantly in their organization. Discussing multiplicity, and the level of dispute that is assumed to be associated with it, it appeared to be easier to name functions associated with high levels of dispute rather than with low levels. High levels seem on average to be associated with changes in political priorities, often by changes in political programs. Significant external uncertainties were recalled, especially uncertainties related to obtaining funds from central government or to national economic trends that can interfere with local social and economical objectives. Activities that involved intensive consultations and negotiations with citizens and businesses were also mentioned.

Analyzing the results of the interviews, perceptions about multiplicity vary considerably between organizations. A number of organizational functions score four or more times on high multiplicity: such as spatial planning (7), housing (6), and public safety (4). The scores for low level of conflicts were less obvious, and contained functions such as: sports, sewerage, and public libraries (see Table 30 in the appendix).

Analyzing the variation in the level of routineness, the observations seem to vary less than those related to multiplicity. Interviewees revealed little difference in the perceived level of routineness between different functions. The routineness of almost all organizational functions was perceived as relatively high. When the routineness of organizational functions appeared to be lower, interviewees explained that this was only a temporary situation. It was suggested that functions were temporarily less routine, due to changes in the organization's structure or organizational processes. Interviewees expected that when these changes were implemented, processes or functions would become more standardized and controlled by procedures. In general, top managers of municipalities seem to prefer high levels of routineness of tasks. When analyzing the results of the interviews, it was taken into account that differences in the level of routineness are less-explicitly articulated. A number of functions can be seen to have relatively high levels of routineness (for example: welfare payment and sewerage), and consequently low levels of routineness (for example spatial planning). Table 31 in the appendix contains the complete list of the named organizational functions.

Combining the two analyses, a set of four (partial) functions were selected for this study. A choice for combination of 'businesslike context and low task uncertainty' and 'political context and high task uncertainty' appeared to be quite straightforward. The interviews pointed to Sewerage and Spatial planning<sup>36</sup> as reasonably clear examples of these two positions. But the interviews resulted in far less straightforward results for the other diagonal of the framework. Welfare Payment<sup>37</sup> was eventually selected as a function that relates to a 'political context and low task uncertainty', but the inter-

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<sup>36</sup> In Dutch: "Riolering en Ruimtelijk beleid".

<sup>37</sup> In Dutch: "Bijstandsverlening".

views also suggested that aspects of a ‘businesslike context’ could be of some importance too. The selection of the last organizational function could not be made by referring to interviews only. Additional consultation with experts in this field was used to resolve this issue. Economic Policy<sup>38</sup> was eventually selected as an example of a function that is related to a businesslike context and low task uncertainty, because it is involved with the function of industry and small business policy.

Table 2 summarizes the four selected functions in relation to the control contexts and the level of task uncertainty.

	<b>Businesslike context</b>	<b>Political context</b>
<b>Low level of task uncertainty</b>	<b>Sewerage</b>	<b>Welfare Payments</b>
<b>High level of task uncertainty</b>	<b>Economic Policy</b>	<b>Spatial Planning</b>

**Table 2** Selected functions

### **Selection of organization(s)**

Four considerations were used in the selecting of an organization: the main purpose of the cases, the organizational size, the variety of organizational functions, and factors to control for.

The desired result of this study is to identify testable hypotheses on the causal relations between relevant dimensions and factors, not to test them. Consequently, this study is not primarily concerned with the reliability of measuring variables, but more with the elimination of errors and biases (Brownell, 1995). Explanation building is used to compare the theory with the case findings and “*revising the propositions to accommodate these data and then re-examining the case evidence from the perspective of this new proposition*” (Brownell, 1995, p. 64).

The number of organizations could be small because the case study is not relying on statistical but on analytical generalization (Yin, 1994). The selection of cases within one organization could even be preferable. Limiting the research to one single organization could eliminate the number of control factors that would otherwise be required to check for organizational differences. The obvious drawback to restricted external validity is the limited use of an objective and replicable selection-process. The limited check on factors that are not directly included in the research framework, but which can significantly influence the analysis, is also a factor.

Organizational size is another relevant factor (e.g. Otley, 1994, Merchant, 1998). Not only is an increase in size assumed to relate positively to the use of formal controls but larger organizations also need to institute controls such as documentation, spe-

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<sup>38</sup> In Dutch: “Economisch beleid”.

cialization of roles and functions, extended hierarchies and greater decentralization down hierarchical structures (Chenhall, 2003).

This study analyzes the use of formal controls in a hierarchical setting; consequently, it is preferable that the selected organization is not too small. The embedded level of analysis imposes another restriction on the size of the organization. The cases aim to capture different roles of budgets and include three different hierarchical levels (between politicians and top managers and between top managers and lower level management). These three hierarchical levels must be directly related, and preferably able to capture possible conflicts in values or interest. These conflicts are in general expected to occur between politicians and top management or between top management and professionals. (Brignall and Modell, 2000). Consequently, the preferred organizational size ought to facilitate an embedded level of analysis between top management and professionals. This restriction excludes very large organizations with multiple management levels.

After consulting Dutch local government experts (both academics and consultants), the preferred organizational size was found to be a municipality with around 100,000 inhabitants or more. This selection criterion eliminates relatively small organizations.

The variety of organizational functions is another selection criterion. The selected organization must, at least potentially, provide services or products matching the aspects which are the subject of this study. Insiders on BBV indicate that municipalities with around 100,000 inhabitants or more differ little in the number and complexity of organizational functions. Therefore variety in function is not included as an extra selection criterion.

The validity of research can be improved by including relevant control factors in the selection process. Contingency literature on management accounting indicates that, amongst other things, environment, technology, size, structure and strategy are relevant factors which can influence the effectiveness of management control (Chenhall, 2003). Differences in these contextual variables are expected to influence the design and the use of the management control system.

Both environment and technology are explicitly integrated in the research framework. Ambiguity of objectives is used as an environmental aspect. An indication for ambiguous or uncertain objectives is derived by using multiplicity as a factor that can articulate the presence of possible conflicting or disputed organizational objectives. Clearness of objectives is a more direct measure of unambiguous objectives, and is used during execution of the cases.

Technology has many meanings in management accounting literature, and can be identified as: complexity, task uncertainty and interdependence (Chenhall, 2003). This study uses routineness of tasks as a substitute for task uncertainty.

Size is already accounted for, which leaves organizational structure and strategy as two important contextual factors to be addressed.

Management accounting literature offers many definitions of organizational structure. Accounting systems are often seen as part of this, and are often investigational as-



pects of centralized or decentralized decision-making in organizations (Chapman, 1997). This study aims to check for differences in organizational structure by addressing this aspect in the selection process.

Decentralization is multi-dimensional by nature, and can be measured in various ways. A general way to characterize decentralization is to differentiate the mechanisms for decentralizing general management decisions, i.e. by differentiating between the use of the functional, divisional, or holding company model (Galbraith, 1994). A more instrumental way to measure decentralization is to measure the relative use of profit, production and cost centers by the next management level (Christie, 2003). This study uses the existence of cost centers at operational level as an indication of a decentralized organizational structure.

Strategy is a concept that is mainly constructed and analyzed within the setting of profit organizations, and is regarded as ill-defined within a governmental organizational context. Transporting this profit-oriented concept of strategy into the governmental environment requires specific in-depth research, which is outside the scope of this study. Therefore, organizational strategy is not included in this study.

However, in order to recognize possible strategy-related factors, some aspects are included in this research. Strategy of profit organizations is often seen as a concept that shows the organizational strategic preferences and focuses, for example on cost control or on product innovation, that are expected to deliver desirable financial “bottom line” objectives (e.g. Miles and Snow, 1978; Simons, 1990). Governmental organizations, however, lack this “bottom line”. The organizational emphasis is often on financial and non-financial performances, on financial budgets and social performances. Aiming to document possible differences, this study researches financial and non-financial performances separately.

In researching organizational control, the possible impact of organizational change must also be considered, at least to some extent. Organizations can develop gradually within a relatively stable environment, or can be involved in sudden and specific changes, and changes in, for example, organizational strategy, organizational size, or organizational structure can influence the design and use of AIS (see for example Shortell and Zajac, 1990).

Recent changes in organizational size (inhabitants and number of civil servants) and organizational structure (i.e. change of the AIS) are measured per municipality<sup>39</sup>. Desk-research and archival data were used for collecting information, and telephone interviews were conducted when data had to be checked or added.

After applying the above-documented selection criteria, and because they were willing to participate, the municipality of Leeuwarden was chosen as a suitable organization within which to conduct the empirical research.

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<sup>39</sup> See Table 33 in the appendix.