BLAME AVOIDANCE IN PUBLIC REPORTING

Evidence from a Provincially Mandated Municipal Performance Measurement Regime

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ABSTRACT: *Public managers operate in an environment characterized by a negativity bias fostering blame avoidance. In public reporting, blame avoidance can take the shape of omission, discretion, and arguments for limiting blame. Unique data on reporting from Quebec's Municipal Management Indicators regime are used to study the occurrence of a reporting strategy of blame avoidance whereby public managers provide justifications with their indicators so as to report their performance in a favorable light. The study tests two hypotheses that the use of justifications in reporting is more frequent with lower-performing public agencies. Municipalities with lower performance (internally benchmarked) tend to provide stakeholders with justifications in their reporting on indicators significantly more often than do other municipalities. Blame avoidance behaviors on the part of public managers are witnessed even in a regime with few incentives, no consequences linked to performance, and limited transparency to citizens.*

KEYWORDS: *benchmarking, blame avoidance, performance regime, performance reporting, Quebec*

Mandatory public reporting is a responsibility bestowed on managers in the public sector. The information contained in public reporting can be marginally helpful to managers in their day-to-day jobs. Public managers have different needs than citizens regarding the level of detail and sophistication of information about their agency's performance (Melkers & Willoughby, 2005, p. 188; Public Administration Select Committee, 2003, p. 10; Rosenström & Kyllönen, 2007, p. 295; Smith, 2005, p. 215). The public reporting of information "doesn't 'do' anything. Rather, it is inherent in the raison d'être of public administration" (Lee, 2006, p. 455).

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Public reporting constitutes one of the functions of the chief executive, as identified by Luther Gulick's POSDCORB (Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting). The promotion of information that citizens can easily understand and care about would also be one of the purposes of performance management (Behn, 2003, p. 593).

Concomitant to the responsibility to inform the public, public agencies operate in an environment characterized by the presence of a negativity bias. A negativity bias is the principle that "negative events are more salient, potent, dominant in combinations, and generally efficacious than positive events" (Rozin & Royzman, 2001, p. 297). This bias derives from the grievance asymmetry of citizens, who "often take good government for granted and pay more attention to insufficient performance" (Yang & Holzer, 2006, p. 116). The result of this negativity bias in the public sector is a risk-averse culture (Norman, 2002, p. 623). Consequently, publicly reporting on poor results has limited appeal in public agencies. The theory of results-based management spells out that selective reporting is a hallmark of the public sector (Try & Radnor, 2007, pp. 668–669).

The research presented in this article is framed by blame avoidance theory. It takes advantage of the natural setting of a mandatory municipal performance regime in the Canadian province of Quebec to study performance reporting. More specifically, the study evaluates predictors of municipal managers' recourse to a *presentational* strategy (Hood, 2002, p. 16; 2007b, pp. 200–202; 2011, p. 18) of using justifications in their public reporting (Hood, 2011, p. 52).

Data from Quebec's Municipal Management Indicators regime (*Indicateurs de gestion municipaux*) are used to establish whether recourse to justifications in reporting is associated with achieved performance.[1] One distinctive aspect of Quebec's municipal performance measurement regime is the availability to municipal managers of a predetermined list of influential factors for their reporting. The recourse to influential factors enables managers to offer justifications in their mandatory reporting of standardized indicators. The case of Quebec offers an opportunity to statistically analyze recourse to presentational strategies in public reporting. This is a novel contribution, since studies on public sector reporting typically use content analysis (e.g., Ellig, 2009; Kloot, 2009; Schatteman, 2010). Quebec's Municipal Management Indicators regime provides a set of data capturing both management behaviors and performance data (Boyne & Walker, 2010, p. s191).

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Review of the Literature

BLAME AVOIDANCE

The presence of a negativity bias in the public sector is well documented in the public management literature (Boyne, James, John, & Petrovsky, 2009, p. 1281; Davies, 2004, p. 43; Gelders, Galetzka, Verckens, & Seydel, 2008, p. 232; Hall, 2007, p. 285; James & John, 2007, p. 575; Martinussen, 2004, p. 250; Plant & Douglas, 2006, p. 43; Van De Walle & Bouckaert, 2007, p. 1129). The essence of a negativity bias is that negative information has greater influence in decision-making and assessment than equally strong positive information (James & John, 2007, p. 571; Hood, 2007b, p. 192). The presence of a negativity bias would explain why blame avoidance is tantamount in the public sector. In the context of the Canadian federal government, Savoie (1999, p. 54) posited that mistake and blame avoidance is a prime difference between the public and private sectors. The idea that private organizations tolerate risk and primarily aim for results, while public organizations primarily aim at avoiding errors (and, eventually, *blame*), is also found in the performance management literature (Johnsen, 2008, p. 172; Moynihan, 2008, p. 33). This is not to say that blame avoidance is exclusive to the public sector. Self-serving proclivities to credit organizational strengths for success and to blame outside forces for failure have been observed when private sector managers evaluate their own situations rather than act as disinterested observers (Wagner & Gooding, 1997, p. 283). The starting assumption of blame avoidance theory is that it is prevalent in the public sector.

When applied to public bureaucracies, blame avoidance theory frames the strategies taken by managers to cope with a negativity bias (Hood, 2011, pp. 14–22). In the context of public reporting, the occurrence of blame avoidance would take away from transparency (Hood, 2007b, p. 202). There are three main strategies for avoiding blame: the *presentational* strategy (spin your way out of trouble), the *agency* strategy (find a scapegoat), and the *policy* strategy (don't make contestable judgments that create losers) (Hood, 2007b, p. 201; 2011, p. 18).

From the perspective of municipal managers in a provincially mandated performance measurement regime, the presentational strategy is the only available one. The presentational strategy consists of "selecting arguments to minimize or avoid blame, for example in choosing between excuses intended to mitigate blame and justifications designed to turn blame into credit" (Hood, 2002, p. 16). The presentational strategy has four declinations in tactics: keeping a low profile, changing the subject, winning the argument, and drawing a line (Hood, 2011, p. 49). An example of winning the argument is to offer persuasive excuses and justifications to win over your audience (Hood, 2011, p. 49).

The winning-the-argument tactic of the presentational strategy is salient in Quebec's municipal performance measurement regime. As discussed in the section

describing Quebec's regime, the transfer of information from all municipalities in the province to the Ministry of Municipal Affairs, Regions, and Territorial Use is fairly strict. Managers need to report information on standardized indicators, before a given deadline, using specific software. The selection of influential factors accompanying the indicators is where municipal managers have complete leeway. As will be seen, the influential factors offer justifications for the reporting of otherwise raw values of indicators. Influential factors are not excuses so much as justifications to limit or avoid blame. From the angle of winning the argument, justifications are "arguments that are designed to turn blame into credit—for example, by persuading people who think they are losers from some act of commission or omission that they should see the matter in a more positive light" (Hood, 2011, p. 52).

The Municipal Management Indicators Performance-Measurement Regime

In part because of its late introduction and incremental application, Quebec's municipal performance-measurement regime was designed to avoid pitfalls commonly found in performance measurement systems elsewhere: no or little practitioner outreach in the design phase (Davis, 1998), impulsiveness in the implementation of the system (Chang & Kelly, 1994, p. 13), absence of comparison subcategories (Foltin, 1999, p. 44), and lack of shared accounting practices (Coe, 1999, p. 114). The Ministry of Municipal Affairs, Regions, and Territorial Use implemented the Municipal Management Indicators in 2004. The initial efforts for the project began in 1999 when consultations took place with stakeholder associations representing municipalities, chief financial officers, and accountants. The system was tried in pilot projects between May 2001 and May 2002. Data collection for 19 mandatory indicators started for all Quebec municipalities in 2003. Since 2005, it has been mandatory for municipalities to make the data available to the public by presenting the values at a council meeting. In 2007, the list of mandatory indicators was shuffled and reduced to 14: one indicator on street maintenance, one on snow removal, four on water treatment and distribution, two on sewage systems, two about global financial health, and four about human resources. In accordance with Quebec's political culture, it is worth noting that the Municipal Management Indicators performance-measurement regime is not tied to financial consequences by the provincial government, as was the case for local agencies in England (Davis, 1998; Game, 2006). The first provincial guidebook for municipalities required comparisons with other municipalities for voluntary performance improvement and reporting purposes (MAMSL, 2004, p. 9).[2] MAMROT produces an annual report that gives municipal managers the opportunity to compare their performance with aggregated data of municipalities of similar population size. Basically, the

annual reports present the quartile values (i.e., first quartile, median, and third quartile) for each indicator by population-size group. The same information, in an interactive form, is available via a government Web portal. Until 2008 and 2009, respectively, managers were encouraged to use the comparative information with quartiles to help inform their set performance targets and to compare their performance with best practices.[3]

In their reporting, the easiest way for municipal managers to offer justifications resides in the specificity of Quebec's performance measurement system–"a set of influential factors." The formally designated influential factors in the province of Quebec can be linked to what is referred to as "changes in external variables that might influence organizational results [that] have seldom been examined" (Boyne & Meier, 2009, p. 800), "factors affecting this indicator" (New South Wales Department of Local Government, 2008, pp. 62, 74), and "contextual factors" (Newcomer, 2007, p. 320). Exempting financial indicators, MAMROT provides a list of influential factors for every indicator. At present, the influential factors are perceptions on the part of managers. For most indicators, the links between factors that can possibly affect the values of the mandatory indicators and the values themselves have not been validated empirically.

The municipal performance regime in Quebec embodies what is called an *intelligence* regime: a system with few built-in incentives for performance (e.g., targets, rankings), and low transparency, where the goal is to offer background information and foster learning (Hood, 2007a, p. 96). An earlier study found that the regime is fairly typical of other performance measurement initiatives in North America, as most managers do not heavily rely on the indicators in their daily activities (Charbonneau, 2010). Until 2011, perhaps because the data set for all municipalities had to be accessed through Freedom of Information requests, the indicator values measured by the regime had not received much attention from mainstream media in the province.

INFLUENTIAL FACTORS IN REPORTING

The indicators were developed with two aims in mind: to help elected officials and managers improve the management of municipal services and to report to citizens (Corporation des officiers municipaux, 2004, p. 3). It is specified in the guide sent to all municipalities at the beginning of the implementation phase of the regime that "any external comparisons make sense only if influential factors are known for each municipality included in the comparison" (MAMSL, 2004, p. 5).[4] Influential factors are profusely mentioned in official reports on the Quebec Municipal Management Indicators. It is specified that "the interpretation of values obtained for the indicators will often be different between municipalities, depending on realities specific to municipalities and the service at hand" (MAMSL, 2004, p. 4).[5]

When using the data-transmission software, municipalities can select from a predetermined list of up to three influential factors to justify the value of each indicator. Table 1 presents the influential factors that the 982 municipalities most frequently selected to report for every indicator in 2009, except financial ones because there were no predetermined influential factors to justify their performance on those indicators.

An example will demonstrate how the reporting of influential factors by managers works: For the *municipal roadway system* indicator, municipal managers could choose from among 11 influential factors in a fixed drop-down menu on the transmission/reporting software (MAMROT, 2008). Managers most often identified the external constraints of investment, traffic patterns, and climate to accompany the value of the indicator about the municipal roadway system. These influential factors are included in their reporting to the provincial government and the public as justifications for the achieved level of performance. There were 12 influential factors to choose from for snow-removal indicators, 10 for water supply, treatment, and distribution, 14 for sewage, 25 for human resources, and none for global financial health. Municipalities have to report on the mandatory indicators once a year to the provincial government, and have until September 30 of each year to transmit the information for the previous year (MAMROT, 2008). For the present case, this means that municipalities had until September 30, 2010, to report on 2009 data. Reporting on a performance indicator is mandatory; reporting on influential factors is not (MAMROT, 2008). In 2009, a total of 24% of municipalities ($n = 240$) did not choose to report influential factors along with their performance data, and 19% ($n = 184$) selected at least one influential factor on all mandatory indicators reported. On average, 51% ($SD = 26\%$) of the indicator values reported by the other 57% of municipalities ($n = 558$) were accompanied by one or more influential factors.

Hypotheses

As mentioned earlier, managers have to report their municipality's performance, but the decision to use influential factors is their own. The present research tries to uncover whether managerial recourse to justifications in performance reporting is influenced by performance. Under Quebec's municipal performance measurement regime, municipalities can content themselves with reporting solely the numeric values of indicators to the provincial government and their citizens. Still, almost half of the indicators reported were accompanied by influential factors.

The general hypothesis of the study is that municipal managers, in their performance reporting, use justifications as a way to avoid blame (Hood, 2011, p. 52) and put their performance in a favorable light (Try & Radnor, 2007, p. 669). The working hypotheses are:

Table 1. Modal Frequency of Influential Factors Selected from Predetermined List by Indicators, 2009

		Justified Reporting (frequency in parentheses)		
Function & Activity	*Indicator*[a]	*Most Common*	*Second Most Common*	*Third Most Common*
Roads Municipal roadway system	Cost of municipal roadway system, per km	Investment (167)	Type of traffic (120)	Climate (112)
Roads Snow removal	Cost of snow removal, per km	Climate (292)	Type of precipitation (200)	Type of plowing activities (136)
Public Hygiene Water supply, treatment, and distribution	Percentage of breaks, per 100 km of pipes	State of system (232)	Obsolescent equipment (91)	Other factor (61)
	Cost of distribution, per km of pipes	State of system (191)	Other factor (91)	Obsolescent equipment (78)
	Cost of supply and treatment of water per cubic meter	Other factor (92)	State of system (84)	Type of treatment (80)
	Cost of water distribution per cubic meter	State of system (141)	Other factor (93)	Obsolescent equipment (64)
Public Hygiene Used water treatment and sewage systems	Cost of treatment of used water per cubic meter	Type of system (86)	Amount of rain (80)	Other factor (77)
	Cost of sewage system per km of pipes	State of system (152)	Type of system (96)	Other factor (77)
Human Resources	Training effort per employee	Volunteer or part-time firefighters (249)	Size of organization (170)	Legislations and rules (128)
	Percentage of training cost, compared to total payroll	Volunteer or part-time firefighters (251)	Size of organization (170)	Legislations and rules (123)
	Average length of health-related leaves of absence	Temporary assignment policy (52)	Other factor (51)	Type of activity (50)
	Potential retirement rate	Mean age of employees (319)	Type or retirement regime (97)	Existence of retirement regime (80)

[a] A total of 982 municipalities sent their results for the mandatory management indicators to the ministry in 2009.

Table 2. Distribution of Quebec Municipalities by Population Size, 2009

Population Size	*Number of Municipalities*[a]	*Percentage of Total Municipalities*	*Percentage of Total Population*
0–1,999, without public sanitation services[b]	238	24.2	2.1
0–1,999	406	41.3	5.6
2,000–9,999	248	25.3	13.8
10,000–24,999	49	5.0	10.4
25,000+	41	4.2	68.2
Total	982	100	100

[a] Quebec had 1,114 municipalities in 2009 for a total population of 7,620,941 inhabitants. A total of 132 municipalities did not submit their management indicators to the ministry in 2009. They represent 4% of the total population (289,706 inhabitants).
[b] Many smaller municipalities do not have water supply and sewage systems. These municipalities are distinguished from those that offer public sanitation services.

Hypothesis 1: External Benchmarking: Municipalities that have low relative performance (i.e., that are in the last quartile relative to other municipalities in the same population-size group) are more prone to use justifications in their reporting.

Hypothesis 2: Internal Benchmarking: Municipalities with lower annual performance than the previous year are more prone to use justifications in their reporting.

Data and Methods

There is approximately a two-year delay in the public releasing of the full provincial data set by the Ministry of Municipal Affairs, Regions and Territorial Use. The 2009 data were the most recent information available for this study. The data for the study include the whole population of municipalities in Quebec. Table 2 summarizes the distribution of the 982 (of 1,114) municipalities that transmitted their data to MAMROT according to population size. Not all municipalities reported data for all 12 mandatory indicators retained for the analyses. Many small municipalities do not provide water supply and sewage services, and therefore cannot report values for the indicators related to these activities.

Collectively, municipalities in 2009 used some sort of justifications to shed light on the performance of 48.9% of the 8,692 indicator values reported. Table 3 presents in more detail the distribution of the number of predetermined influential factors used by municipal managers.

Table 3. Use of Influential Factors, 2009

Influential Factors	*Number of Indicators with Influential Factors*[a]	*Percentage*
From predetermined list:		
No factor	4,438	51.1
Only one factor	2,209	25.4
Two factors	949	10.9
Three factors	1,096	12.6

[a]A total of 8,692 indicator values were reported in 2009 by 982 municipalities for the 12 management indicators listed in Table 1.

JUSTIFICATIONS IN REPORTING: DEPENDENT VARIABLE

The presence of justifications in reporting activities in 2009 is the dependent variable. It was coded in a binary manner for each indicator: 0 for the absence of influential factors, and 1 for the presence of one, two, or three influential factors.[6]

CURRENT PERFORMANCE: INDEPENDENT VARIABLES

Performance for the 12 retained indicators in 2009 is hypothesized to influence reporting behaviors. Defining what performance is can be a difficult task. Because of the research question regarding the reporting behavior of municipal managers, the study defined performance the same way it is presented under Quebec's Municipal Management Indicators. If performance were defined differently than it is in the context in which municipal managers must make decisions, it would be difficult to argue that the definition of performance is what influenced reporting behaviors. Under the Municipal Management Indicators, performance is assessed in two different ways: (1) by comparison to the past performance of a given municipality (i.e., internal benchmarking based on historical records), and (2) by comparison of the municipality indicator value to the appropriate quartile values available in the MAMROT reports for the previous years (i.e., external benchmarking). However, when it comes to the cornerstone of the performance assessment using quartile data, MAMROT's guides and reports are of little help. In both ways of assessing performance, the second objective of Quebec's performance measurement system in 2009 was to "improve the performance of municipal organizations in their service delivery" (MAMROT, 2009). Nowhere in MAMROT's documentation is better performance defined, other than stating that performance usually translates as effectiveness and efficiency (MAMSL, 2004, p. 3). In the annual reports produced by MAMROT and the Web portal where the comparative data are offered to municipal managers, the fourth quartile represents the highest values for the indicators. Thus, for example, higher cost of snow removal per kilometer (km) and higher average length of health-

related leaves of absence are categorized as part of the fourth quartile. In the context of the present research, using the same example as above, values of performance indicators above the third quartile value (i.e., in the fourth quartile) would be higher cost of snow removal per km and a higher average length of health-related leaves of absence than at least 75% of the other municipalities in the same population-size group. It is in this light that qualifiers such as "low relative performance" should be understood. Many municipalities use the default output format of the transmission/reporting software to report to citizens. In 2009, this format included the current values for the data, plus values for 2008 and 2007.

Performance was operationalized as follows in the present study: First, municipalities with indicator values in 2009 below the first quartile value of 2008 were deemed to have relatively good performance and municipalities with indicator values above the third quartile value of 2008 to have relatively low performance compared to the middle 50% of the distribution. As a result, an average relative level of performance was defined broadly as encompassing municipalities in the middle quartiles. It should be recalled that only the 2008 quartiles were available to municipal managers for external benchmarking when they had to report their 2009 performance data to MAMROT. Furthermore, quartiles do not encompass all municipalities together; they are computed according to population-size group. To test H1 on external benchmarking, two dichotomous variables were created for inclusion as independent variables in the statistical model. The first indicated whether the indicator value was in the first quartile, and the second whether the indicator value was in the fourth quartile. Hence, the reference category was the middle two quartiles. Second, the difference in performance for each indicator was computed from the year 2009 to the previous year. To test H2, a dichotomous variable was created that was coded 0 if performance was stable or increasing in 2009 (i.e., equal or lower indicator value in 2009 compared to 2008) and coded 1 if the performance was in decline compared to 2008 (i.e., higher indicator value in 2009). Conceptually, it is reasonable to think that a manager's decision to report influential factors is mainly driven by the sign of the difference (i.e., better or stable or worse performance). However, the study also considered the standardized difference in performance between 2009 and 2008 as a continuous independent variable to test H2.[7]

The coding of the following two management indicators was reversed for the statistical analyses: training effort per employee and percentage of training cost compared to total payroll. A higher value for these two indicators was considered to be better performance. The reason motivating the coding was that the intent behind these indicators is to draw attention to training and foster more training, not less. Therefore the classifications in the first and third quartiles were interchanged so that a classification in the third quartile represents lower performance as for the other indicators, and the sign of the

difference was reversed so that an indicator value lower in 2009 than in 2008 was coded 1 (i.e., in decline).

CONTROL VARIABLES

In keeping with the recommendations of previous research findings (Askim, Johnsen, & Christophersen, 2008, p. 303; de Lancer-Julnes & Holzer, 2001, p. 695), the following control variables were included in the statistical models: the size of the budget in log form, the population size with the same categories as in Table 2, and population density. The administrative regions were added as well. Administrative regions are not like American counties in that they are not responsible for direct services to citizens. The relevancy of including this variable stems from the fact that regional differences in administrative cultures could have an impact on reporting behaviors.[8]

STATISTICAL ANALYSES

Each municipality could provide up to 12 indicator measures in the analysis of all the data. Therefore, the generalized estimating equations (GEE) method (Liang & Zeger, 1986) was used to test the two hypotheses, with a logit link and an exchangeable working correlation matrix to model the binary dependent variable, using justifications in reporting, that is, the presence or absence of at least one influential factor.[9] This method was adopted to take into account the correlations among the within-municipality measurements. Measurements across municipalities were assumed to be independent. In addition, to see which management indicators were driving the findings of the GEE model, each of them was also modeled separately using logistic regression. All statistical analyses were done using SAS software, version 9.2 for Windows. Statistical significance was set at the 5% level.

Results

Overall, influential factors were present in 51.3% of the cases where a decline was observed in the management indicator value between 2009 and 2008, compared to 47.2% in the cases where there was no decline (*see bottom of Table 4*). Justified reporting was present in 50.0% of the cases falling in the fourth quartile, compared to 50.1% in the middle two quartiles and 47.1% in the first quartile.

The results of the generalized estimating equations model are presented in Table 5. Performance did have an impact on justifications in reporting, even when control variables were taken into account. For a municipality, there was an increase in its odds of reporting justified information for a mandatory indicator value of 10.0% (odds ratio = $e^{0.095}$ = 1.100) if its performance decreased between 2009 and 2008. The findings indicate that the null hypothesis could be rejected for H2

Table 4. Use of Influential Factors According to Performance by Management Indicators

				External Benchmarking				
				Internal Benchmarking		*Indicator Value in 2009*		
				Declining Performance between 2009 and 2008				
Function & Activity	*Management Indicator*	*Number*	*Influential Factor Reporting*	*Yes*	*No*	*Below the First Quartile Value of 2008*	*Between the First and Third Quartile Values of 2008*	*Above the Third Quartile Value of 2008*
Roads: Municipal roadway system	Cost of municipal roadway system per km	968	n	601	367	209	503	256
			% with factors	53.1	45.2	46.9	50.9	51.2
Roads: Snow removal	Cost of snow removal per km	965	n	435	530	285	455	225
			% with factors	48.1	61.1	52.6	55.2	58.7
Public Sanitation: Water supply, treatment, and distribution	Percentage of breaks per 100 km of pipes	573	n	220	353	158	260	155
			% with factors	55.5	47.3	38.6	49.2	64.5
	Cost of distribution per km of pipes	656	n	407	249	155	306	195
			% with factors	50.9	39.8	42.6	48.7	46.7
	Cost of supply and treatment of water per cubic meter	538	n	329	209	123	255	160
			% with factors	51.7	45.0	44.7	48.6	53.1
	Cost of water distribution per cubic meter	632	n	380	252	146	315	171
			% with factors	47.9	42.1	45.9	45.4	45.6

Public Sanitation: Used water treatment and sewage systems	Cost of treatment of used water per cubic meter	551	n	339	212	120	274	157
			% with factors	52.2	46.2	45.0	51.1	51.6
	Cost of sewage system per km of pipes	630	n	349	281	141	307	182
			% with factors	50.4	41.6	44.0	45.6	50.0
Human Resources	Training effort per employee[a]	892	n	451	441	211	434	247
			% with factors	49.9	51.9	62.6	50.2	42.1
	Percentage of training cost, compared to total payroll[a]	903	n	490	413	191	426	286
			% with factors	50.2	50.6	60.2	53.5	39.2
	Average length of health-related leaves of absence	233	n	118	115	50	132	51
			% with factors	50.9	45.2	52.0	45.4	51.0
	Potential retirement rate	837	n	186	651	280	315	242
			% with factors	62.4	40.1	31.4	49.5	55.0
Total		8,378[b]	n	4,305	4,073	2,069	3,982	2,327
			% with factors	51.3	47.2	47.1	50.1	50.0

[a]A higher value for these two indicators was considered better performance: therefore an indicator value lower in 2009 than in 2008 was coded as a declining performance; the classifications in the first and third quartiles were interchanged, so that a classification in the third quartile represents a lower performance, as for the other indicators.

[b]The indicator value in 2008 or the budget or the density was missing for 314 observations. Therefore, these observations could not be used and were excluded from the statistical analyses.

Table 5. Results of Generalized Estimating Equations Model with Logit Link for Probability of Justified Reporting According to Performance and Other Control Variables

Independent Variable	*Regression Coefficient*	*Standard Error*	*d.f.*	*Wald Test Statistic (Chi-Square)*	*p-Value*
Internal Benchmarking					
Declining performance from 2009 to 2008—YES	0.095	0.036	1	7.08	0.0078
Declining performance from 2009 to 2008—NO			Reference category		
External Benchmarking					
Indicator value in 2009 below first quartile of 2008	–0.094	0.045	1	4.37	0.0365
Indicator value in 2009 above third quartile of 2008	0.015	0.042	1	0.12	0.7296
Indicator value in 2009 between first and third quartile values of 2008			Reference category		
Log budget size – total revenue 2009	0.243	0.091	1	7.10	0.0077
Density of population by $km^2 \times 10^{-3}$	0.139	0.153	1	0.83	0.3616
Population size			4	2.39	0.6646
Region			12	34.79	0.0005
Constant	–3.766	1.717	1	4.80	0.0283

Number of observations = 8,378[a]

Number of municipalities = 969

[a]The indicator value in 2008 or the budget or the density was missing for 314 observations. Therefore, these 314 observations could not be used in the statistical analyses.

($p = 0.0078$). The hypothesis that municipalities with lower annual performance than the previous year were more prone to use justifications in their reporting was confirmed. However, the findings indicated that the null hypothesis could not be rejected for H1. Overall, municipalities with indicator values in the last 25% of all municipalities (fourth quartile) did not use more justification in their reporting than municipalities with indicator values between the first and third quartiles ($p = 0.7296$). However, municipalities with indicator values in the first 25% of all municipalities (first quartile) were 9.0% less likely to use justification in their reporting (odds ratio = $e^{-0.094} = 0.910$) than municipalities with indicator values between the first and third quartiles ($p = 0.0365$).

When the binary variable indicating the presence or not of a declining performance was replaced by the standardized difference to test the null hypothesis for H2, a statistically significant regression coefficient of 0.109 ($SE = 0.046$; $p = 0.0179$) was also obtained for this continuous independent variable.[10] The regression coefficients for the indicator variables associated with the first and fourth quartiles were similar to the previous model, leading to the same conclusion about H1 (-0.1054 ± 0.045, $p = 0.0183$, and 0.0087 ± 0.044, $p = 0.8414$, respectively, for the first and fourth quartiles).

Separate logistic regression models were run to determine specifically for which indicators the use of influential factors was more contingent on performance. Table 6 presents the main findings of these regressions by indicators. Although all the independent variables from the general model were used for the indicator regressions, only the odds ratio of using justifications in reporting for the independent variables related to the two hypotheses are presented.

The overall tendencies found in the general model still hold except for few noticeable cases where there were significant results in the opposite direction of the hypotheses: cost of snow removal per km, with lower justification for declining performance; training effort per employee and percentage of training cost, compared to total payroll with more (less) use of justification with better (lower) performance. The counterfindings involving human resources indicators could be attributed to the fact that, in the absence of a clear definition of what constitutes good or better performance, they were seen as cost indicators for which the values should be minimized. The explanation for the surprising finding for snow removal activities is more speculative. In the absence of further sophisticated analyses outside the scope of the present article, the different nature of the influential factors for snow removal might explain why the hypothesis was not supported. Contrary to the influential factors for other indicators that explained why costs were higher, the most frequently used influential factors were justifications that could just as easily be applied to explain why costs were lower.

Interestingly, externally benchmarked performance was only a predictor of justified reporting for indicators that were not related to costs. This happened when the value of the indicator suggested performance that left something to be desired, as when there were many breaks in the water distribution system.

Discussion

In the general model, the hypothesis that municipalities that have low relative performance compared to other municipalities in the same population-size group are more prone to use justifications in their reporting was not supported by the analyses. As for the indicator-specific models, H1 and H2 were not supported for every single indicator, but only for a limited few. However, none of the statistically

Table 6. Results of Logistic Regression by Management Indicators for Probability of Justified Reporting According to Performance and Other Control Variables

			Odds Ratio (95% C.I.)		
Function & Activity	*Management Indicator*	*n*	*Declining Performance from 2009 to 2008*	*Indicator Value in 2009 Below First Quartile of 2008*	*Indicator Value in 2009 Above Third Quartile of 2008*
Roads: Municipal roadway system	Cost of municipal roadway system per km	968	1.35*	0.85	0.88
			(1.02, 1.77)	(0.60, 1.20)	(0.63, 1.22)
Roads: Snow removal	Cost of snow removal per km	965	0.64**	0.82	1.05
			(0.49, 0.85)	(0.59, 1.13)	(0.74, 1.51)
Public Sanitation: Water supply, treatment, and distribution	Percentage of breaks per 100 km of pipes	573	0.87	0.65	1.81**
			(0.58, 1.30)	(0.42, 1.01)	(1.16, 2.82)
	Cost of distribution per km of pipes	656	1.39	0.94	0.83
			(0.98, 1.99)	(0.61, 1.45)	(0.56, 1.23)
	Cost of supply and treatment of water per cubic meter	538	1.21	0.74	1.18
			(0.83, 1.76)	(0.45, 1.19)	(0.78, 1.80)
	Cost of water distribution per cubic meter	632	1.12	1.04	0.99
			(0.79, 1.58)	(0.68, 1.59)	(0.66, 1.47)
Public Sanitation: Used water treatment and sewage systems	Cost of treatment of used water per cubic meter	551	1.20	0.75	0.93
			(0.82, 1.76)	(0.47, 1.20)	(0.60, 1.43)
	Cost of sewage system per km of pipes	630	1.47*	1.10	1.07
			(1.04, 2.08)	(0.71, 1.71)	(0.72, 1.60)
Human Resources	Training effort per employee	892	1.08	1.67**	0.67*
			(0.82, 1.43)	(1.18, 2.37)	(0.48, 0.93)
	Percentage of training cost, compared to total payroll	903	1.20	1.44*	0.53**
			(0.90, 1.59)	(1.00, 2.07)	(0.38, 0.73)
	Average length of health-related leaves of absence	233	1.40	1.72	1.19
			(0.75, 2.61)	(0.81, 3.65)	(0.57, 2.47)
	Potential retirement rate	837	1.35	0.66*	1.53*
			(0.93, 1.98)	(0.45, 0.95)	(1.06, 2.21)

Note: Odds ratios for control variables are not reported in the table. *$p < 0.05$. **$p < 0.01$.

significant findings from individual regressions contradicted H1 and H2: they all supported it. All in all, the study found that municipalities with low performance on a given indicator are more likely to justify their reporting than other municipalities. Municipalities with comparatively high performance are less likely to use justifications than municipalities with average values. The results indicate that managers use different reference points to motivate performance justifications in their blame avoidance. As mentioned, the performance regime in Quebec is an intelligence performance regime, not a ranking one. In a ranking performance measurement regime, the results might have been different. These results suggest that a weak emphasis on external comparisons means that possibly unflattering external benchmarking does not shape blame avoidance. The results are different from Tooley and Guthrie's study of New Zealand schools, where they did not find a correlation between informational value scores in annual reports and decile ratings (2007, p. 363).

The results from Quebec's municipal performance regime provide quantitative grounding for the use of justifications to win the argument in the presentational strategy of avoiding blame (Hood, 2011, p. 52). Managers with lower performance will offer justifications in their reporting to win their stakeholders over and will present their results in a more positive light. This study adds to the growing body of research documenting the defensive stance of public sector reporting.

Currently, the influential factors can be described as justifications. Influential factors are alleged influences on characteristics, as perceived by managers. Until every indicator's influential factors have been validated, adding one or more influential factors to the value of an indicator is seen as a justification, as defined earlier in the presentation of blame avoidance theory. The empirical validation of influential factors remains to be done.

An additional point of interest is that the occurrence of a presentational strategy of blame avoidance at the municipal level happened in the wider context of a regime where a policy strategy of blame avoidance is also observable. As mentioned earlier, the essence of the policy strategy is to refrain from making contestable judgments that may create losers (Hood, 2007b, p. 201; 2011, p. 18). It is here argued that the absence of a definition of what constitutes performance, coupled with the password-protected Web portal system that does not allow freely customizable comparative queries and comparisons with identifiable counterparts, embodies a policy strategy of blame avoidance at the regime level.

Despite its public nature, the benchmarking practices in Quebec's mandatory municipal regime share much of its confidentiality ethos with the private sector. They do not lay bare the openness and naming and sharing expected of a public sector benchmarking system (Guven-Uslu & Conrad, 2008, pp. 240–241). From this angle, the staunch defensiveness in a performance regime where little is at stake is a testimony to the efforts deployed by public managers in avoiding blame.

LIMITS

There are limits to the present research. First, the provincial government's definition of performance hindered nuances that could have been examined in the model. This means that available methods of measuring performance, such as adjusted-performance measurement (DesHarnais, Forthman, Homa-Lowry, & Wooster, 2000; Miller, Kerr, & Ritter, 2008; Rubenstein, Schwartz, & Stiefel, 2003) and data envelopment analysis (Cooper, Seiford, & Tone, 2007), were put aside. Second, the labels *low* and *lower* for performance should be considered with caution; they were designed to facilitate comprehension and not as a definitive diagnostic. Mixed combinations—for example, high relative performance with declining historical performance—are more difficult to assess with the measures at hand. Adjusted performance measurement or data envelopment analysis would have proved useful to assess these cases. Third, not all difficulties were addressed in the operationalization. One of them is that the assessment of the variations in yearly performance did not take inflation into account for cost indicators.[11] Fourth, additional variables pertaining to the political affiliations of mayors and the sociodemographic characteristics of administrators were absent from the model. These constitute limitations of the model, but they are not serious limitations. There are few political parties at the municipal level in Quebec. Moreover, the parties are organized around a mayoral candidate and are not affiliated with provincial or federal parties.[12] In any case, it is the managers, and not elected officials, who complete the performance reports. As for the educational attainment of managers, it proved to be nonsignificant on many public servant attitudes (e.g., see Yang, 2007, p. 356). A recent study of reporting behaviors by municipal managers in the province of Ontario found that education of managers does not influence the scope of disclosure in reports (Schatteman, 2009, p. 129).

Conclusion

In 2009, municipal managers across Quebec were in the sixth year of the Municipal Management Indicators regime. Every municipality had to report data on 14 mandatory standardized indicators to the provincial government and the residents of the municipality. Municipalities could decide to only report numerical values for their data. However, for almost half the nonfinancial indicators reported that year, municipal managers took the opportunity given them to add justifications for the values of their indicators in the form of predetermined influences. The performance achieved by municipalities influenced their recourse to justifications in reporting. All things considered, for most indicators, declining performance of municipalities, as measured historically, influenced reporting. This holds true even with the delay granted municipalities by the provincial government. Municipali-

ties with relatively good performance, as measured by quartile, also justified their results less often.

The evidence from Quebec's mandatory municipal performance regime is that performance has an impact on reporting. In the controlled setting of a natural experiment, municipal managers employed the presentational strategy of winning the argument to avoid blame. Research in other settings will be needed to provide empirical support for the occurrence of other strategies used by public sector organizations to avoid blame and shield themselves from criticism.

Notes

1. For more on Quebec's Municipal Management Indicators regime, see Schatteman & Charbonneau (2010).

2. The government of Quebec, as of the other Canadian provinces, operates in a Westminster-style parliamentary system. One consequence is that the portfolios of agencies are subject to change. For example, the Ministry of Municipal Affairs was also responsible at one time for Sports and Leisure (MAMSL), and for Regions (MAMR). It is currently known as the Ministère des Affaires municipales, Régions et Occupation du territoire, which translates loosely as Ministry of Municipal Affairs, Regions, and Territorial Use (MAMROT).

3. Targets and identified best practices were abandoned as official objectives by MAMROT in 2008 and 2009, respectively.

4. Translation by the authors.

5. Ibid.

6. The number of influential factors (i.e., 0, 1, 2, or 3) was also used as the dependent variable with a cumulative logit model for ordinal responses. Relatively similar results were obtained, with unchanged conclusions for the null hypotheses H1 and H2.

7. The standardized difference was obtained by subtracting the mean and dividing by the standard deviation of the difference separately for the 12 management indicators. The standardization of the difference by management indicator removed the unit and level of measurements that were different for each indicator and allowed the inclusion of all observations in the same statistical model with the standardized difference as an independent variable.

8. For example, Chaudière-Appalaches is renowned for harbor entrepreneurial cultures, and Gaspésie–Iles-de-la-Madeleine is better known for relying on provincial social and wealth-transfer programs to complete seasonal working patterns. There are 17 administrative regions in Quebec. Four regions with a very small number of municipalities were grouped with their neighboring regions for modeling purposes.

9. See note 6.

10. Observations with an absolute standardized difference greater than 3 were removed for this statistical analysis: 92 outlying observations were therefore removed.

11. This is not as important a threat to validity as it may seem. First, inflation in the province of Quebec between 2008 and 2009, as measured by the Consumer Price Index, was only on the order of 0.6% (Statistics Canada 2011). Second, one would have to assume that inflation was the same for the price of consumer goods (for which it is calculated) as for the price of tar, pipes, and plow trucks. Third, and more important, one would also have to assume that managers have inflation-adjusted information in mind when assessing their performance, but would neglect to adjust for inflation when reporting to the provincial government and local residents. Inflation is not taken into account in the reporting mechanisms in place, except for the fact that it is offered as one of the influential factors. In more than 7,973 cases of performance indicators having to do with cost, inflation was given as an influential factor to explain performance only six times. In total, managers pointed to inflation as an influential factor on

their performance only 0.07% of the time. For these reasons, after careful consideration, inflation was not included in the model.

12. The political affiliation of mayors simply does not apply to the province of Quebec.

References

Askim, J., Johnsen, Å., & Christophersen, K.-A. (2008). Factors behind organizational learning from benchmarking: Experiences from Norwegian municipal benchmarking networks. *Journal of Public Administration Research and Theory, 18*(2), 297–320.

Behn, R.D. (2003). Why measure performance? Different purposes require different measures. *Public Administration Review, 63*(5), 586–606.

Boyne, G.A., & Meier, K.J. (2009). Environmental turbulence, organizational stability, and public service performance. *Administration & Society, 40*(8), 799–824.

Boyne, G.A., & Walker, R.M. (2010). Strategic management and public service performance: The way ahead. *Public Administration Review, 70*(S1), S185–S192.

Boyne, G.A., James, O., John, P., & Petrovsky, N. (2009). Democracy and government performance: Holding incumbents accountable in English local governments. *Journal of Politics, 71*(4), 1273–1284.

Chang, R.Y., & Kelly, P.K. (1994). *Improving through benchmarking: A practical guide to achieving peak process performance.* Irvine, CA: Richard Chang Associates.

Charbonneau, E. (2010). Use and sensemaking of performance measurement information by local government managers: The case of Quebec's municipal benchmarking system. Ph.D. dissertation, Rutgers University, Newark, NJ.

Coe, C. (1999). Local government benchmarking: Lessons from two major multigovernment efforts. *Public Administration Review, 59*(2), 110–123.

Cooper, W.W., Seiford, L.M., & Tone, K. (2007). *Data envelopment analysis: A comprehensive text with models, applications, references and DEA-Solver software* (2d ed.). New York: Springer.

Corporation des officiers municipaux agréés du Québec. (2004). *Rapport concernant la catégorisation des organismes municipaux et l'utilisation des facteurs d'influence (Phase III)* [Report concerning the categorization of municipal organizations and the use of influential factors (third phase)]. Montréal.

Davies, M. (2004). Performance measurement in the UK public sector: Understanding performance indicators. *Journal of Finance and Management in Public Services, 3*(2), 31–47.

Davis, P. (1998). The burgeoning of benchmarking in British local government: The value of "learning by looking" in the public services. *Benchmarking for Quality Management & Technology, 5*(4), 260–270.

de Lancer-Julnes, P., & Holzer, M. (2001). Promoting the utilization of performance measures in public organizations: An empirical study of factors affecting adoption and implementation. *Public Administration Review, 61*(6), 693–708.

DesHarnais, S.I., Forthman, M.T., Homa-Lowry, J.M., & Wooster, L.D. (2000). Risk-adjusted clinical quality indicators: Indices for measuring and monitoring rates of mortality, complications, and readmissions. *Quality Management in Health Care, 9*(1), 14–22.

Ellig, J. (2009). Federal performance reporting: What a difference ten years makes! *Public Manager, 38*(2), 5–12.

Foltin, C. (1999). State and local government performance: It's time to measure up! *Government Accountants Journal, 48*(1), 40–46.

Game, C. (2006). Comprehensive performance assessment in English local government. *In-*

ternational Journal of Productivity and Performance Management, 55(6), 466–479.
Gelders, D., Galetzka, M., Verckens, J.P., & Seydel, E. (2008). Showing results? An analysis of the perceptions of internal and external stakeholders of the public performance communication by the Belgian and Dutch railways. *Government Information Quarterly, 25*(2), 221–238.
Guven-Uslu, P., & Conrad, L. (2008). Uses of management accounting information for benchmarking in NHS trusts. *Public Money & Management, 28*(4), 239–246.
Hall, J.L. (2007). Implications of success and persistence for public sector performance. *Public Organization Review, 7*(3), 281–297.
Hood, C. (2002). The risk game and the blame game. *Government and Opposition, 37*(1), 15–37.
Hood, C. (2007a). Public service management by numbers: Why does it vary? Where has it come from? What are the gaps and the puzzles? *Public Money & Management, 27*(2), 95–102.
Hood, C. (2007b). What happens when transparency meets blame-avoidance? *Public Management Review, 9*(2), 191–210.
Hood, C. (2011). *The blame game: Spin, bureaucracy, and self-preservation in government.* Princeton: Princeton University Press.
James, O., & John, P. (2007). Public management at the ballot box: Performance information and electoral support for incumbent English local governments. *Journal of Public Administration Research and Theory, 17*(4), 567–580.
Johnsen, Å. (2008). Performance information in educational policy making. In W. Van Dooren & S. Van De Walle (Eds.), *Performance information in the public sector: How it is used* (pp. 157–173). Houndmills, UK: Palgrave Macmillan.
Kloot, L. (2009). Performance measurement and accountability in an Australian fire service. *International Journal of Public Sector Management, 22*(2), 128–145.
Lee, M. (2006). The history of municipal public reporting. *International Journal of Public Administration, 29*(4–6), 453–476.
Liang, K.Y., & Zeger, S.L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika, 73*(1), 13–22.
Martinussen, P.E. (2004). Government performance and political accountability at subnational level: The electoral fate of local incumbents in Norway. *Scandinavian Political Studies, 27*(3), 227–259.
Melkers, J., & Willoughby, K. (2005). Models of performance-measurement use in local governments: Understanding budgeting, communication, and lasting effects. *Public Administration Review, 65*(2), 180–190.
Miller, W.H., Kerr, B., & Ritter, G. (2008). School performance measurement: Politics and equity. *American Review of Public Administration, 38*(1), 100–117.
Ministère des Affaires Municipales, du Sport et du Loisir (MAMSL). (2004). *Les Indicateurs de Gestion Municipaux: Un regard neuf sur notre municipalité* [Municipal management indicators: A new look at our municipality]. Québec.
Ministère des Affaires Municipales et Régions (MAMR). (2008). *Décret de population* [Population decree]. Available at www.mamr.gouv.qc.ca/finances/fina_indi_tran.asp#transmission/, accessed March 29, 2008.
Ministère des Affaires Municipales et Régions (MAMR). (2008). *Foire aux questions (FAQ)* [Frequently asked questions]. Available at www.mamr.gouv.qc.ca/finances/fina_indi_faqr.asp, accessed April 25, 2008.
Ministère des Affaires Municipales et Régions (MAMR). (2008). *Modalités de transmission* [Transmission modalities]. Available at www.mamr.gouv.qc.ca/organisation/orga_donn_popu.asp#, accessed April 25, 2008.
Ministère des Affaires Municipales, Régions et Occupation du territoire (MAMROT).

(2008). "Guide des indicateurs de gestion 2008" [Municipal management indicators: 2008 guide]. Available at www.mamrot.gouv.qc.ca/publications/finances/indi_guid.pdf, accessed May 11, 2008.

Ministère des Affaires Municipales, Régions et Occupation du territoire (MAMROT). (2009). "Indicateurs de gestion municipaux—Objectifs et avantages" [Municipal management indicators: Objectives and advantages]. Available at www.mamrot.gouv.qc.ca/finances/fina_indi_obje.asp, accessed September 8, 2010.

Moynihan, D.P. (2008). *The dynamics of performance management: Constructing information and reform.* Washington, DC: Georgetown University Press.

Newcomer, K.E. (2007). Measuring government performance. *International Journal of Public Administration, 30*(3), 307–329.

New South Wales Department of Local Government. (2008). *Comparative information on NSW local government councils 2005/2006.*

Norman, R. (2002). Managing through measurement or meaning? Lessons from experience with New Zealand's public sector performance management systems. *International Review of Administrative Sciences, 68*(4), 619–628.

Plant, T., & Douglas, J. (2006). The performance management continuum in municipal government organizations. *Performance Improvement, 45*(1), 43–48.

Public Administration Select Committee. (2003). *On target? Government by measurement.* London: House of Commons.

Rosenström, U., & Kyllönen, S. (2007). Impacts of a participatory approach to developing national-level sustainable development indicators in Finland. *Journal of Environmental Management, 84*(3), 282–298.

Rozin, P., & Royzman, E.B. (2001). Negativity bias, negativity dominance, and contagion. *Personality and Social Psychology Review, 5*(4), 296–320.

Rubenstein, R., Schwartz, A.E., & Stiefel, L. (2003). Better than raw: A guide to measuring organizational performance with adjusted performance measures. *Public Administration Review, 63*(5), 607–615.

Savoie, D.J. (1999). *Governing from the centre: The concentration of power in Canadian politics.* Toronto: University of Toronto Press.

Schatteman, A.M. (2009). Public performance reporting: Determinants of excellence. Ph.D. disssertation, Rutgers University, Newark, NJ.

Schatteman, A.M. (2010). The State of Ontario's municipal performance reports: A critical analysis. *Canadian Public Administration, 53*(4), 531–550.

Schatteman, A.M., & Charbonneau, E. (2010). A comparative study of municipal performance measurement systems in Ontario and Quebec, Canada. *International Journal of Public Sector Performance Management, 1*(4), 360–375.

Smith, P.C. (2005). Performance measurement in health care: History, challenges and prospects. *Public Money & Management, 25*(4), 213–220.

Statistics Canada. (2011). Consumer price index, by province (Quebec). Available at www40.statcan.ca/l01/cst01/econ09f-eng.htm, accessed September 29, 2011.

Tooley, S., & Guthrie, J. (2007). Reporting performance by New Zealand secondary schools: An analysis of disclosures. *Financial Accountability & Management, 23*(4), 351–374.

Try, D., & Radnor, Z. (2007). Developing an understanding of results-based management through public value theory. *International Journal of Public Sector Management, 20*(7), 655–673.

Van De Walle, S., & Bouckaert, G. (2007). Perceptions of productivity and performance in Europe and the United States. *International Journal of Public Administration, 30*(11), 1123–1140.

Wagner, J.A.I., & Gooding, R.Z. (1997). Equivocal information and attribution: An investigation of patterns of managerial sensemaking. *Strategic Management Journal, 18*(4), 275–286.

Yang, K. (2007). Making performance measurement relevant? Administrators' attitudes and structural orientations. *Public Administration Quarterly, 31*(3), 342–383.

Yang, K., & Holzer, M. (2006). The performance-trust link: Implications for performance measurement. *Public Administration Review, 66*(1), 114–126.

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