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Policy analysis and policy work in federal systems: Policy advice and its contribution to evidence-based policy-making in multi-level governance systems

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Abstract

In most cases, policy scholars interested in the role of policy analysts in promoting and practicing evidence-based policy-making rely on very partial survey results, or on anecdotal case studies and interview research. Despite the existence of a large body of literature on policy analysis, large-scale empirical studies of the work of policy analysts are rare, and in the case of analysts working at the sub-national level, virtually non-existent. There has been very little research on this level of policy workers despite the significant powers they exercise in prominent federal systems such as the USA, Germany, Australia, Mexico, Russia, Brazil, Malaysia and Canada. This paper reports on the first comprehensive survey of the work of policy analysts at the provincial and territorial levels conducted in Canada in 2008–2009. It examines the background and training of provincial and territorial policy analysts, the types of techniques they employ in their jobs, and what they do in their work on a day-by-day basis. The resulting profile of sub-national policy analysts presented here reveals several substantial differences between analysts working for national governments and their sub-national counterparts, with important implications for policy training and practice, and for the ability of nations to improve their policy advice systems in order to better accomplish their long-term policy goals through the practice of evidence-based policy-making.

1. Introduction: the supply and demand for policy analysis in government

Policy analysis is a subject that has not suffered from a dearth of attention. Many journals and specialized publications exist on the subject and specialized graduate schools operate in many countries, states, and provinces (Geva-May & Maslove, 2007; Jann, 1991). Anecdotal or case study research have examined many hundreds of examples of policy-making in numerous countries and many texts describe in detail both the various analytical techniques expected to be used in public policy analysis (Weimer & Vining, 2004) and the nuances of the policy-making processes (Howlett, Ramesh, & Perl, 2009). However large-scale empirical works examining the actual ''supply and demand'' for policy analysis in government are much rarer. And where these exist they almost always focus on the ''demand'' side of the policy advice market, examining the strengths, weaknesses, and other characteristics of the knowledge utilization process in government (Beyer & Trice, 1982; Innvaer, Vist, Trommald, & Oxman, 2002; Pollard, 1987; Rich, 1997; Weiss, 1992; Weiss & Bucuvalas, 1980; Oh, 1997). Work on the behavior

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and behavioral characteristics of in-house policy analysts in supplying advice to government, let alone those working outside it, are exceedingly rare (Aberbach & Rockman, 1989; Binz-Scharf, Lazer, & Mergel, 2008; Bushnell, 1991; Nelson, 1989; Radin, 1992; Thompson & Yessian, 1992; Wollmann, 1989).

The personal and professional components of the policy advice supply system, along with their internal and external sourcing, are combined in different ratios in different countries and jurisdictions.[1] However, as Halligan (1995) has noted:

> The conventional wisdom appears to be that a good advice system should consist of at least three basic elements within government: a stable and reliable in-house advisory service provided by professional public servants; political advice for the minister from a specialized political unit (generally the minister's office); and the availability of at least one third-opinion option from a specialized or central policy unit, which might be one of the main central agencies (p. 162).

As Halligan also notes, however, ''the emphasis on elements such as the role of political operatives.... depends very much on whether [they] are accorded seniority within the system of government,'' a practice that is a feature of the U.S. system but ''less so in other countries'' (p. 162). In other words, the primary component of the policy advice supply system in many countries is comprised primarily of what Meltsner (1975) first identified as ''bureaucratic policy analysts.''[2]

Given the significance of these public sector analysts in the policy advice system of most governments, and the important role they play in efforts to promote 'evidence-based' policy analysis (Nutley, Walter, & Davies, 2007), studies of their work activities, background, behavior, and impact should be a staple of the study and evaluation of policy analysis and evidence-based policy-making. However, while there is certainly no lack of studies that urge certain techniques or practices on professional bureaucratic policy analysts (see for example, Dunn, 2004; Patton & Sawicki, 1993; MacRae & Whittington, 1997 and many others), in most countries empirical data on just about every aspect of the actual policy analytical practices followed by bureaucratic policy analysts in government are lacking.[3] And where they exist, these studies have tended to employ partial or unsystematic surveys (Page & Jenkins, 2005), or to have followed only anecdotal case study and interview research techniques (Hoppe & Jeliazkova, 2006; Noordegraaf, 2000; Radin, 2000; Rhodes, Hart, & Noordegraaf, 2007).

Comparative and synthetic studies of the supply and suppliers of policy advice are even rarer (Gregory & Lonti, 2008; Halligan, 1995; Hawke, 1993; Malloy, 1989; Mayer, Bots, & Daalen, 2004; Thissen & Twaalfhoven, 2001; Wagner & Wollman, 1986; Weible, 2008). The existing data are so poor that in most cases it is not clear even if the job classifications and titles typically used by public service commissions to categorize professional policy analysts in government for staffing purposes are accurate or reflect a true sense of what policy analysts actually do on a day-to-day basis. As Colebatch and Radin concluded in their 2006 survey of international practices, much of the basic information required to assess the role played by policy workers in policy processes – evidence-based or otherwise – is lacking:

[1] The policy advice system that supplies information to governments is, of course, very complex and includes many sources of information, from friends to spouses and close advisors (Meltsner, 1990). However, alongside personal opinion and experience exists a more formal policy advice system which purports to deliver knowledge and expertise to governments. This supply network is composed of sources both within government such as professional policy analysts employed in departments and agencies and political advisors attached to minister's offices and central agencies and external to government ranging from private sector consultants to experts in think tanks, universities, political parties, and elsewhere (Boston, Martin, Pallot, & Walsh, 1996).

[2] Very little is known about the nature of non-governmental policy analysis supplied through think tanks, political parties, and especially the growing legion of consultants who work for governments in the ''invisible public service'' (Speers, 2007). On think tanks, business associations, political parties, and the press in Canada see Abelson (2007), Stritch (2007), Cross (2007), Murray (2007).

[3] This situation has led many observers both inside and outside government to decry the lack of even such basic data as how many policy analysts there are in government, working on what subjects, and with what techniques (Bakvis, 1997; Behm, Bennington, & Cummane, 2000; Hunn, 1994; State Services Commission, 1999, 2001; Uhr & Mackay, 1996; Waller, 1992, 1996; Weller & Stevens, 1998). In many cases observers have continued to rely on only one or two quite dated works in justifying their observations and conclusions, especially the early work of Meltsner (1975, 1976) and Durning and Osama (1994). In Meltsner's case, his observations remain astute over 30 years later, but were based on 116 interviews he conducted in the U.S. in 1970–1971 (Meltsner, 1975, p. 14). While some data exist in these older studies, they covered only a relatively small number of countries, mainly the U.S. (Meltsner, 1976; Durning & Osama, 1994; Radin, 2000). More recent studies on ''policy supply'' have looked at the U.K. (Page & Jenkins, 2005), Australia (Weller & Stevens, 1998); New Zealand (Boston et al., 1996); the Netherlands (Hoppe & Jeliazkova, 2006), France (Rochet, 2004), and Germany (Fleischer, 2009), but in most jurisdictions the answers to basic questions, including how many people are in these positions or what they do, remain unknown.

(1) ''We need more empirical research on the nature of policy work in specific contexts: how policy workers (and which sort) get a place at the table, how the question is framed, what discourse is accepted as valid, and how this work relates to the outcome at any point in time.
(2) What sort of activity do practitioners see as policy work, and what sort of policy workers do they recognize?''

2. The sub-national case: provincial policy analysts in Canada

This general situation is true of most countries. However, as we have seen, even where some little work has been done on the subject, serious gaps remain in our knowledge of bureaucratic policy analysts and their work. And, if information on national or central governments is weak, the number of studies that focus on sub-national units in countries with multi-level governance systems can be counted on one hand (Hird, 2005; Larsen, 1980).

This latter point is a substantial issue for the study of evidence-based policy-making and the functioning of policy advice systems and professional policy analysis in many federal countries, such as Brazil, Canada, Mexico, Australia, and the U.S., where as many as 50% of traditional bureaucratic policy analysts may work for sub-national state or provincial-level governments. In these multi-level systems, sub-national governments control many important areas of policy-making, including health, education, social services, local government and land, resources, and the environment, and exercise controlling interest over policy development and implementation in these areas (Bache & Flinders, 2004; Hooghe & Marks, 2001, 2003).

Both these situations are true in Canada, where studies of policy analysts have traditionally focused almost exclusively at the federal level despite the fact that the provinces control many important areas of social, economic, and political life (Hollander & Prince, 1993; Prince, 1979; Prince & Chenier, 1980; Voyer, 2007). This situation only began to change in 2006–2007 when studies of non-governmental policy analysts (Dobuzinskis, Howlett, & Laycock, 2007) and of regional and central policy analysts employed in the federal civil service appeared (Wellstead, Stedman, Joshi, & Lindquist, 2007; Wellstead, Stedman, & Lindquist, 2009). These studies have revealed a very different set of policy supply practices than those suggested by studies of the national level in other jurisdictions, highlighting, for example, significant differences in the attitudes and activities of federal analysts in Ottawa vs. those in the regions, and the generally poorer policy capacity of regional organizations (Wellstead et al., 2007, 2009).

Regionally based policy analysts working for the federal government, for example, were found to be more commonly engaged in ''street-level'' advice oriented towards day-to-day firefighting, while the analysts in Ottawa engaged in more ''high level'' and long-term strategic planning. The kinds of skills and information sources required for evidence-based policy-making (Howlett, 2009; Riddell, 2007; Zussman, 2003) were thus found to vary substantially between the two levels of analysts. Such findings have refined and called into question many of the assumptions that went into policy capacity enhancement activities undertaken in the country since the publication of the Fellegi Report in 1996 which urged the development of improved analytical capacity throughout the federal government (Anderson, 1996; Aucoin & Bakvis, 2005; Bakvis, 2000; Fellegi, 1996; Riddell, 2007).

However, while these are important insights, given Canada's very de-centralized federal system of government, approximately half of the more than ten thousand bureaucratic policy analysts employed in the country work at the sub-national level in the civil services of the ten provinces and three territories and have been left out of such studies. Information on analytical activities and the supply of policy advice at this level remains extremely rudimentary, generated exclusively from personal reflections and anecdotes of former analysts and managers, or from a small number of single-province interviews or surveys (Hicks & Watson, 2007; McArthur, 2007; Policy Excellence Initiative, 2007; Rasmussen, 1999; Singleton, 2001).

In order to correct these problems, in 2008–2009 a survey similar to Wellstead et al.'s 2007 federal survey was undertaken of policy analysts working at the provincial and territorial level. This survey was specifically designed to examine the background and training of provincial policy analysts, the types of techniques they employed in their jobs, what they did in their work on a day-by-day basis and how this related to the needs and prerequisites of evidence-based policy-making. It was intended to assess the extent to which, following Wellstead et al., provincial and territorial analysts like regionally based federal analysts, too, fell into the category of troubleshooters vs. planners in terms of their day-to-day activities and orientations. The results of the survey are presented below in the form of a profile of provincial policy analysts, following a brief discussion of the methodology employed in the survey work.

3. Methods

The survey of policy analysts employed by provincial civil services was carried out in November and December of 2008 using an online commercial software service. It involved the completion of a 64-item survey questionnaire sent to over 4000 provincial and territorial civil servants situated in all 13 Canadian provincial and territorial jurisdictions. Mailing lists for the 10 provinces and three territories surveyed were compiled wherever possible from publicly available sources such as online government telephone directories, using keyword searches for terms such as ''policy analyst'' appearing in job titles or descriptions. In some cases additional names were added to lists from hard-copy sources such as government organization manuals. In other cases lists or additional names were provided by provincial public service commissions, who also checked initial lists for completeness and accuracy.[4] Over 1600 survey completions were gathered from close to 3500 valid e-mail addresses for a total response rate of 43.3% (see Table 1). Due to the use of a different (snowball) survey methodology in Quebec, the 130 responses from that province are excluded from the analysis which follows. However a separate analysis of the results from the Quebec survey found a similar pattern of responses to those found in the other 12 provinces and territories (Bernier & Howlett, 2009).

4. The profile of provincial policy analysts

The data collected from the survey allowed a profile of provincial public servants to be constructed for the first time. Data were divided into five topic areas: demographic characteristics and job experience; education and training; day-to-day duties; and techniques and data employed. Combined, these provide the basis for the first large-scale empirical analysis of the background and activities of sub-national government policy analysts and provide important information concerning their capabilities and capacity to undertake evidence-based policy-making.

4.1. Demographics and job experience

Basic demographic data was collected on provincial policy analysts in terms of characteristics such as gender and age. The responses revealed that provincial analysts are predominantly (57.5%) female and fairly young in that more than 70% are under 50 years of age and more than 40% under 40 years old. By comparison, only 61.3% federal policy analysts are under the age of 50 and are majority male (51.9%), reflecting the hiring patterns and demographics of an earlier era of recruitment and hiring (Wellstead et al., 2009) Additional questions confirmed that provincial analysts have tended to come to their present career path and positions fairly recently as over 40% of provincial analysts had been involved in professional policy analytical activities for five years or less (Table 2).

Almost 60% had also been in their present organizations for less than five years, including 14% for less than one year. This contrasts sharply with the federal situation described by Wellstead et al. (2007) where a sizable number (28.4%) have been in their positions for over 20 years. Finally, these analysts also do not expect to stay very long in their current positions, with two-thirds expecting to stay less than five additional years.

This pattern accords closely with Meltsner's (1975) observation that the typical policy analyst believes he or she is upwardly mobile and ''believes he (sic) is a short-timer, so he does not worry about maintaining the agency or conserving its jurisdiction'' (p. 117), and instead is able to be more ''problem-focused'' in orientation and approach. However it also suggests that unlike their federal counterparts, provincial and territorial analysts lack a great deal of

[4] Provincial public service lists often included political appointees who had been left off public lists. However in most cases public lists and internal lists were very close in size and coverage, with about an 80% or higher overlap rate. The lists revealed a roughly proportional per-capita pattern of the size of the policy analytical community in Canadian provincial governments, with 1800–2000 individuals in Ontario, 400–500 in British Columbia, and about 100 in the smallest jurisdictions. The total number of policy analysts at the provincial and territorial level therefore is probably about 5200 (3000 in Quebec and Ontario; 1000 in BC and Alberta; 500 in Saskatchewan and Manitoba; 400 in the Atlantic provinces and 300 in the territories). It is expected that this number would be matched by the federal government (Wellstead having identified about 1300 operating outside Ottawa, the remaining 4000 being located in the National Capital Region), bringing the total number of policy analysts actually employed in Canada to around 11,000. This is roughly the same per capita ratio as reported by Boston et al. (1996) in New Zealand, where of 35,000 core civil servants in a country of 3.6 million people at the time, 1450 person-years were devoted to the provision of advice to departments and ministries in 1993 (p. 124).

Table 1
Provincial survey sample sizes and completion rates.

Province	Initial mail list size	Refusals and rejected e-mails	Valid partial completions	Complete	Response rate
BC	513	51	30	194	48.5
Alberta	368	23	8	112	34.8
Saskatchewan	246	27	13	80	42.4
Manitoba	161	20	6	98	73.7
Ontario	1613	162	52	557	41.9
Québec[a]	250	0	44	86	52.0
New Brunswick	162	15	4	62	44.9
Nova Scotia	181	20	15	83	44.1
PEI	27	6	1	4	23.8
Newfoundland	139	24	16	55	61.7
Yukon	75	8	6	58	95.5
NWT	80	2	2	41	55.1
Nunavut	41	8	2	13	45.4
TOTAL (excluding Quebec)	3856	366	155	1357	43.3

[a] Snowball sample methodology – data excluded from totals and from subsequent tables.

job experience and, combined with their high level of mobility, may not be able to develop and bring a great deal of on-the-job derived expertise to the consideration of policy problems.

4.2. Education and training

A second set of questions examined the background education and training of provincial analysts to see what kinds of pre-occupationally derived expertise and knowledge they could mobilize in their work. Table 3 highlights the generally very high level of formal education attained by this group of civil servants, with 56% having attained at least some graduate or professional education and fully 90% attaining college or university-level credentials. This bodes well for evidence-based policy-making except that despite their often working in natural resource and science-based policy areas, provincial analysts' study areas of expertise are heavily oriented (about 80%) towards the social sciences.

The five leading degree fields were Political Science with 16%, followed by Business Management with 14.2%; Economics with 11.7%, Public Administration with 9.9% and Sociology with 7.8%. These five fields accounted for about 60% of degrees (allowing for multiple degrees) conferred, while a wide range of other social science, law and humanities accounted for another 40% of credentials.

Health Sciences, Computing Science, Engineering and Natural Science degrees made up only 14.1% of credentials held. These findings suggest the predominance of legal and process-related expertise among provincial and territorial policy workers and a shortage of substantive expertise in high-profile policy problem areas. However, this pattern is not atypical in Canada and resembles the pattern found by Wellstead et al. (2007) at the federal level.

Table 2
Length of time.

	Employed as a professional policy analyst		Employed in present organization		Expected to remain in present position	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Years						
No response	31	2.1	21	1.4	38	2.5
00–01 years	78	5.2	214	14.2	179	11.8
01–05 years	537	35.5	652	43.1	809	53.5
06–09 years	297	19.6	229	15.1	214	14.2
10–14 years	191	12.6	119	7.9	157	10.4
15–20 years	181	12.0	126	8.3	67	4.4
20 or more	197	13.0	151	10.0	48	3.2
Total	1512	100.0	1512	100.0	1512	100.0

Table 3
Education and degree subject area.

	Frequency	Percent
Level of education		
No response	120	7.9
High school	30	2.0
College or technical	69	4.6
University	448	29.6
Graduate or professional	845	55.9
Total	1512	100.0
Degree subject area		
Business management	214	14.2
Education	72	4.8
Engineering	32	2.1
Humanities or fine arts	71	4.7
Law	98	6.5
Natural sciences	106	7.0
Planning	70	4.6
Public administration	150	9.9
Political science	242	16.0
Economics	177	11.7
Sociology	118	7.8
Geography	97	6.4
Other social sciences	155	10.3
History	87	5.8
English	69	4.6
Other arts or humanities	34	2.2
Public policy	100	6.6
Medicine	6	0.4
Other health sciences	45	3.0
Computing science	24	1.6
Languages or linguistics	31	2.1
Communications or journalism	36	2.4
Environmental studies	98	6.5
Natural resource management	51	3.4

Another source of expertise and knowledge, of course, is previous work experience. As Table 4 shows, provincial analysts have varied backgrounds but tend to be recruited directly from academic institutions (22%) or to have come up through their own provincial government, with 44% citing previous work experience in this area. Less than 13% claim experience in the federal government and 10% in another provincial government. Another 11% cite experience at the municipal level and 5% experience in another country. While more than 60% cite experience outside government, with 26% in the not-for-profit sector, only 17% cite private sector experience. This is a much lower figure

Table 4
Previous work experience.

	Frequency	Percent
Academia	332	22.0
Municipal government department or agency	167	11.0
Aboriginal government (Yukon)	7	0.5
Not-for-profit sector	394	26.1
Private sector	253	16.7
Other department or agency in your current province	668	44.2
Department or agency in another provincial government	146	9.7
Federal government	195	12.9
Department or agency in another country	82	5.4

Table 5
Policy courses and training.

	Frequency	Percent
Policy-specific courses at the post-secondary level		
No response	156	10.32
0	604	39.95
1	141	9.33
2	142	9.39
3 or more	469	31.02
Total	1512	100
Policy analysis courses at the post-secondary level		
No response	139	9.19
Yes	545	36.04
No	828	54.76
Total	1512	100
Formal internal training courses		
No response	132	8.7
Yes	556	36.8
No	824	54.5
Total	1512	100

for private sector experience than is found at the federal level, where nearly 40% of federal analysts cite previous private sector employment (Wellstead et al., 2007). In general, then, provincial and territorial analysts are likely to have the most knowledge of their own government's policies and processes and are less likely to have a great deal of knowledge of external organizations, either governmental or non-governmental in nature. As Page and Jenkins (2005) suggested, this fits the pattern of analysts being internal 'process-related' experts rather than having a great deal of 'substantive' expertise which they can devote towards the collection and presentation of significant amounts of 'evidence' in policy-making.

It is also telling that regardless of their work experience and academic background, provincial and territorial analysts tend to have had little formal training in technical policy analysis, either in their post-secondary educational career or in post-employment training. As Table 5 shows, nearly 40% of analysts never took a single policy-specific course at the post-secondary level and close to 70% have taken two or fewer policy-related courses. Moreover, close to 55% of analysts never completed any post-secondary courses specifically dealing with formal policy analysis or evaluation. Again, this is unlike the federal situation where rates of formal policy training are higher. Another possible source of training, of course, is internal, government-provided training; however, roughly the same percentage of provincial analysts have also never completed any formal internal governmental training on these subjects.

And, as Table 6 reveals, by far the most common form of post-employment training is attendance at policy-related conferences, workshops or forums. Only 10% cited completion of policy courses with government-run or sponsored

Table 6
Sources of post-employment training.

	Frequency	Percent
Attended policy-related conferences	941	62.2
Attended policy workshops or forums	1125	74.4
Completed public administration, political science, economics or other policy-relevant courses at a university or college	320	21.2
Completed policy courses with the Canada School of Public Service or any other government-run or government-sponsored training institute	149	9.9

Table 7
Work.

	In provincial capital		Within own government	
	Frequency	Percent	Frequency	Percent
No response	23	1.51	29	1.92
Daily	1186	78.44	338	22.35
Weekly	39	2.58	527	34.85
Monthly	66	4.37	318	21.03
Quarterly	81	5.36	156	10.32
Annually	59	3.90	70	4.63
Never	58	3.84	74	4.89
Total	1512	100.0	1512	100.0

training institutes while another 20% cited completion of policy-relevant courses at a university or college. The former figure, in particular, is much lower than at the federal level.

4.3. Day-to-day duties

What do these sub-national analysts do in their day-to-day jobs? First, they tend to work in small groups, as almost 90% work in formal policy units. This is in keeping with the recommendations of many government reports that analysts should be clustered rather than separated or isolated in departments (Fellegi, 1996; Hawke, 1993; State Services Commission, 1999). As for the activities carried out in these units, most analysts are still quite isolated in that policy units are located overwhelmingly in the provincial capital with 78% of respondents indicating a very high frequency of daily activities in the capital (see Table 7). Eighty percent of analysts report no daily interactions on issues related to international government, 60% few or infrequent interactions with local governments, and 50% infrequent interactions with the federal or other provincial or territorial governments. Fifty-six percent, however, report very frequent, daily, or weekly interactions with other ministries within their own government. Again, these patterns are different from those found at the federal level where interactions at the international, intergovernmental and intra-governmental levels are much higher (Wellstead et al., 2007).

These units are also very small at this level of government. As Table 8 shows, almost 65% of analysts work in units of less than 10 employees and about 30% in units of less than five full-time equivalent employees. And, as Table 8 also shows, almost 55% of these units have fewer than five people actually working on policy issues.

As for the nature of the issues upon which they work, about 40% of provincial and territorial analysts report fairly frequently working on issues that are ongoing for more than a year, slightly less than the proportion that report frequently working on issues which are ongoing for between 6 and 12 months and between 1 and 6 months. Almost 60%, however, report frequently working on issues which can be resolved in less than a month, while 66% report working on issues and problems which demand immediate attention (i.e. ‘‘firefighting’’) (see Table 9). Again, this is a

Table 8
Number of full-time equivalent employees.

	In work unit		In work unit and working on policy issues	
	Frequency	Percent	Frequency	Percent
FTEs				
No response	32	2.12	33	2.18
1–5	448	29.63	787	52.05
6–10	500	33.07	458	30.29
11–20	341	22.55	172	11.38
21–50	157	10.38	48	3.17
>50	34	2.25	14	0.93
Total	1512	100.0	1512	100.0

Table 9
Frequency of work on short-term issues.

	Frequency	Percent
No response	169	11.18
Daily	361	23.88
Weekly	535	35.38
Monthly	220	14.55
Quarterly	120	7.94
Annually	56	3.70
Never	51	3.37
Total	1512	100

higher level than at the national level, although similar to that of federal analysts working in the regions (Wellstead et al., 2009).

This finding about the prevalence of short-term work at this level of government is one that is often decried in the existing literature on the subject (Gregory & Lonti, 2008), but can also be considered to be a primary ''raison d'etre'' of the policy bureaucracy. As Hawke (1993) put it:

> ''Fire-fighting is part of the job of any manager and is especially prominent in the public service because of the pressures on ministers. *It is worth remembering that a key reason for having departmental policy advice agencies rather than distinct contracts for each piece of policy development is the desirability of immediate and unplanned access to informed advice* (p. 64) [italics added].''

Nevertheless, when coupled with a lack of substantive knowledge of the subject areas in which they are working, their small numbers and their lack of formal training in policy analytical techniques, it suggests that provincial and territorial analysts may not have the capacity required to practice a high level of evidence-based policy analysis and policy-making.

4.4. Techniques and data employed

This view is reinforced by the answers provincial and territorial analysts provided about what analytical techniques they employed and with what information sources. First it is important to note that provincial policy analysts think of their jobs as involving the development of analytical services in order to provide advice (analysis) to governments. As Table 10 shows, 82% of analysts describe their role as either ''analysis'' or ''advice provision.'' Only 46% think of themselves as ''researchers,'' slightly more than the percentage who think of themselves as ''coordinators.'' These findings are very similar to those reported by Radin (1992) in her study of role descriptions found in the U.S.

Table 10
Description of policy role(s).

	Frequency	Percent
Advisor	1031	68.2
Analyst	1134	75.0
Communications Officer	189	12.5
Coordinator	544	36.0
Director	164	10.8
Evaluator	352	23.3
Liaison Officer	245	16.2
Manager	278	18.4
Planner	426	28.2
Researcher	737	48.7
Public Participation Expert	123	8.1
Program Analyst	401	26.5
Program Manager	158	10.4

Table 11
General policy tasks undertaken.

	Frequency	Percent
Department or agency planning	704	46.6
Environmental scans/Issue tracking	1030	68.1
Legal analysis	388	25.7
Preparing Budget/Treasury Board submissions	608	40.2
Ministerial briefing	1077	71.2
Networking	1000	66.1
Preparing briefing notes or position papers	1302	86.1
Providing options on issues	1269	83.9
Undertaking research and analysis	1304	86.2
Providing advice	1289	85.3

Department of Health and Human Services, and highlight the existence of several general types of analysts working at this level: researcher/analysts, evaluators, coordinators, and managers; with the former three groups each equal to about half the size of the cohort of researcher/analysts.

This structure is borne out by the general kinds of tasks conducted at this level, with less formal duties such as environmental scans and issue tracking outweighing more technical financial or legal tasks, and with almost all analysts involved in the development of ministerial briefing notes that outline options and provide advice to governments (see Table 11).

The primary analytical techniques used in these activities are more informal than formal. Eighty-three percent of respondents (Table 12) claimed to be involved in ''brainstorming,'' followed by about 70% in ''consultation'' and 60% in using ''checklists.''

Cost benefit analysis is the only formal technique to attain use by over 50% of respondents, only slightly higher than other less formal techniques such as expert elicitation (48%) and scenario analysis (50%). While this pattern goes against the instructions and admonitions of many textbooks, it is in keeping with the findings of many utilization studies which have found a distinct preference for the use of ''simple'' tools vs. complex ones on the part of both the producers and consumers of policy analysis (Nilsson et al., 2008; Sabatier, 1978). It also suggests, again, that analysts fall into several distinct types which favor the use of specific analytical techniques, but that the most commonly used

Table 12
Specific analytical technique(s) used.

	Frequency	Percent
Brainstorming	1248	82.5
Consultation exercises	1021	67.5
Focus groups	571	37.8
Free-form gaming or other policy exercises	93	6.2
Problem-mapping	470	31.1
Check lists	908	60.1
Decision/probability trees	347	22.9
Expert judgments and elicitation	723	47.8
Development of sophisticated modeling tools	169	11.2
Markov chain modeling	12	0.8
Monte Carlo techniques	23	1.5
Process influence or social network diagrams	122	8.1
Scenario analysis	760	50.3
Cost-effectiveness analysis	630	41.7
Cost benefit analysis	810	53.6
Environmental impact assessment	418	27.6
Financial impact analysis	579	38.3
Preference scaling	106	7.0
Risk analysis	882	58.3
Robustness or sensitivity analysis	241	15.9

techniques at this level of government are less formal, 'subjective' analytical techniques involved in the development of briefing notes and papers.

5. Conclusion

Empirical research into the sub-national level in the Canadian case presented here suggests that like at the regional level in the federal government, many more analysts fall into the category of short-term, project-oriented ''troubleshooters'' than the long-term strategic ''planners'' textbook accounts have thought them to be, based on incorrect inferences drawn from studies of national officials in other countries. Provincial and territorial analysts, like their federal counterparts, are highly educated, relatively young and mobile. But they do not tend to have a great deal of formal training in policy analysis and mainly work in small units deeply embedded in provincial and territorial ministries in the provincial or territorial capital. They lack substantive knowledge of the areas in which they work and of formal policy analytical techniques and tend to bring only process-related knowledge to the table. They also tend to work on a relatively small number of issue areas, often on a ''firefighting'' basis and, like their federal counterparts in the regions, a large percentage of analysts can be thought of as a kind of cadre of internal experts who can be brought into problem areas as a free floating ''brain trust'' of internal ''consultants'' available to work on a wide range of pressing and troubling policy issues (Weiss, 1991).

In terms of the six styles of policy analysis identified by Mayer et al. (2004) in their comparative study of policy analytical styles, the predominant sets of analysts identified in the sub-national analysis reported above can be thought of as working in an interactive ''client-advice'' style somewhat removed from both the traditional ''rational'' style promoted by textbook and policy schools (Adams, 2004; Baehr, 1981; Banfield, 1977; Lindblom & Cohen, 1979; Shulock, 1999). Their short-term orientation, relative inexperience, higher levels of job mobility, lack of private sector experience, and lack of training in formal policy analytical techniques sets them apart from their national counterparts and has significant implications for their ability to influence policy deliberations in the direction of enhanced evidence-based policy-making.

Additional new sets of comparative studies based on large-scale surveys at both the national and sub-national levels, such as the Canadian ones reported here, are needed to bring more light to this topic. More accurate assessments of policy analytical activities in government, especially those governments operating within multi-level governance frameworks, are needed to inform any moves expected to enhance the operation of this important component of policy advice systems through the promotion of evidence-based policy-making activities (Colebatch, 2005).

However, even as they stand, these findings from the Canadian case are important not only to critics and theorists outside of government institutions who wish to better understand the operation and functioning of evidence-based and other kinds of policy advice systems, and especially these systems' professional bureaucratic component (e.g. Koliba & Gajda, 2009; Kothari, MacLean, & Edwards, 2009), but also to those inside the system who wish to better assess and evaluate such activities in order to improve training and recruitment practices, enhance analytical capacity (Howlett, 2009; O'Connor, Roos, & Vickers-Willis, 2007; Preskill & Boyle, 2008) and, ultimately, improve analysis and policy outcomes (ANAO, 2001; Di Francesco, 1999, 2000; Mintrom, 2003; Nicholson, 1997; Policy Excellence Initiative, 2007; State Services Commission, 1999).

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