

# **Association between perceived level of autonomy and perceived behavioural control over resolving ethical dilemmas: A large N cross-sectional survey of Canadian civil servants**

## **La relation entre les perceptions d'autonomie et de contrôle dans la résolution des dilemmes éthiques : analyse du sondage auprès des fonctionnaires fédéraux**

Steve Jacob et Mathieu Ouimet

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Résumé de l'article

En s'appuyant sur la théorie du comportement planifié (Ajzen 1991), cet article analyse la relation qui existe entre le degré d'autonomie que perçoivent les fonctionnaires et leur perception de contrôle lors de la résolution de dilemmes éthiques qui surgissent dans leur travail. Pour cette étude, nous avons utilisé des données du sondage réalisé, en 2008, par Statistique Canada auprès des fonctionnaires fédéraux (SAFF). Cette enquête a été administrée entre le 3 novembre et le 12 décembre 2008. Environ 170 000 employés du gouvernement fédéral ont répondu au sondage, ce qui représente 66 pour cent des 258 000 employés invités à participer. En résumé, comme nous nous y attendions sur la base de la théorie, l'indice d'autonomie perçue est corrélé positivement avec le sentiment de contrôle dans les processus de résolution de dilemmes éthiques.

# Association between perceived level of autonomy and perceived behavioural control over resolving ethical dilemmas: A large N cross-sectional survey of Canadian civil servants

By Steve Jacob and Mathieu Ouimet

## **Introduction**

While the general public's trust in public organizations remains particularly fragile (Newton and Norris 2000; Alford 2000; Cook and Gronke 2005), government ministries and organizations are seeking to equip themselves with instruments that promote good practices. This is done in the hopes of promoting ethical behaviour that would re-establish the seriously precarious popular confidence in public institutions.

When we observe the behaviour of civil servants, we remark that this group is guided by two contradictory ambitions. On the one hand, with the advent of "new public management", public administrations in most Western countries have undertaken reforms aimed at breaking from the traditional model of a pyramid-like or hierarchical organization (i.e., the Weberian model). New public management theorists advocate for an increase in administrative discretion and the broadening of leeway for civil servants. The famous motto "Let the managers manage" sums up the essence of the quest for greater autonomy. On the other hand, to prevent or overcome political and administrative scandals, elected officials and leaders of public organizations also tend to favour the adoption of ethical codes aimed at restraining employee decisional leeway (Boisvert 2009).

The principles of new public management have been implemented in Canada for many years. At the same time, new developments in public administration ethics have resulted in the "Values and Ethics Code for the Public Sector", adopted in 2003 and for which an updated version was brought into effect in 2012. This document stipulates that the code "will serve to maintain and enhance public confidence in the integrity of the Public Service. The Code will also serve to strengthen respect for, and appreciation of, the role played by the Public Service within Canadian democracy" (Treasury Board of Canada Secretariat 2003: 6). The code was developed to assure that the public employee behaves with integrity and effectively in all circumstances. As stipulated in a document produced by the United Nations addressing ethical issues in the public service, "with the advent of the modern state, government officials have been and are seen as stewards of public resources and guardians of a special trust that citizens have placed in them. In return for this confidence, they are expected to put public interest above self-interest" (United Nations 2000: 1).

However, despite the increasingly customary integration and promotion of these tools, studies show that beyond ethical codes, numerous other factors may influence the behaviour of employees in a given organization (Benson 1989; Anderson 1992; Adam and Rachman-Moore 2004; Genard and Jacob 2004; Schwartz 2004; Jacob, Imbeau and Bélanger 2011). Examples of

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these factors may include “individual factors such as gender, nationality/culture, age, religion, type of education, type of employment, years of employment, personality, beliefs and values, as well as situational factors, such as peer group influence, top management influence, rewards and sanctions, type of ethical decision, organization size and industry type” (Ford and Richardson 1994, as cited in Schwartz 2004: 324). Thus, the effects of these ethical codes are limited if, for example, they are not enforced by the leadership or if these codes are not adequately promoted within the organization (Benson 1989).

This being said, despite the care taken to draft a policy, a code or a regulation, it is obvious that one can never anticipate all foreseeable situations, which then leaves certain issues to the discretion of civil servants. This is especially the case when civil servants are confronted with an ethical dilemma: i.e., in the absence of an obvious and unambiguous solution, civil servants could find themselves in an uncomfortable situation where they would need to make decisions and arbitrate taking various invested interests into account (Van Wart 1996).

Theorists with a self-regulatory vision of ethics (Boisvert *et al.* 2003) believe that providing awareness and training to civil servants is primordial so as to allow them to use their autonomy advisedly. Ethics are played out in a context where the civil servant exercises his/her responsibilities in a relatively autonomous framework (Anderson 1992) and where he/she is required to exercise his/her own judgment (SCT 2003). In a study on the Norwegian public service, Christensen defines professional autonomy as bureaucrats who “freely put forward their professional premises and opinions, even if these are contrary to the opinions and programs of political leaders” (Christensen 1991: 310). The sense of autonomy can thus be understood as a context where the employee feels comfortable using his freedom to arbitrate, a reality intimately linked to a work-culture of trust.

Research shows that policymakers cannot identify every single issue that might arise at the implementation stage (Gow 2008). As a result, “the notion that public servants can legitimately solve all tough value choices by blindly following the relevant law or their supervisor’s interpretation of policies or traditional principles of behaviour is unacceptable” (Kernaghan and Langford 1990: 21). In this context, several authors argue that it is paramount to develop moral sensitivity among public servants (Cox, Hill, and Pyakuryal 2008).

In this research, we are interested in this sense of autonomy among civil servants and in its effect on their trust in themselves when decisions are made at work. On this topic, some studies highlight the positive link between the sense of autonomy and productive actions and decisions: the “autonomy anchor identifies individuals who resent bureaucratic restraints such as those that are to be found within public sector organizations; as anticipated, it is negatively related to organizational commitment, though positively related to exit designs and counterproductive behaviours” (Lemire and Rouillard 2005: 154). This notion of organizational commitment predicts the proximity of concepts of autonomy, devotion and trust. Moreover, many authors believe that the valorization of autonomy is in perfect harmony with the principles of new public management, “which emphasizes managerial autonomy and, hence, empowerment as enhancing the three Es (effectiveness, efficiency and economy), implicitly substantiates the notion that greater managerial autonomy should result in increased loyalty and, consequently, a stronger sense of belonging to their organizations among civil servants” (Balfour and Wechsler 1990; Hoy and Sousa 1984: 157, quoted in Lemire and Rouillard 2005: 157).

However, though the sense of employee autonomy and its effect on trust in their own decisions and their organizations is a subject of great interest, the studies that directly relate to this topic are scarce. We share this diagnosis with Brower *et al.* (2009) who underlined that studies focusing on the trust employees placed in their organization are indeed rare: “In fact, we were unable to locate any published studies that examined the effects of managers’ trust in subordinates on subordinate outcomes” (Brower *et al.* 2009: 330). In fact, more often than not, the question studied was to examine if employees who trust their employer would be more motivated in their work environment (Colquitt *et al.* 2007; Dirks and Ferrin 2002; Holly *et al.* 2009). Brower *et al.* also studied the reverse situation and allowed us to make a first link between the sense of autonomy (i.e., trust in the employer) and its effect on employees and their trust in their own actions: “In short, a manager’s trust in the subordinate should lead to high-quality interactions that convey a sense of empowerment and confidence to the subordinate. Consequently, subordinates should be motivated to exert greater effort within and beyond their prescribed roles” (Brower *et al.* 2009: 331). In fact, this is the first postulate of Brower *et al.*’s study: “Managers’ trust in the subordinate will be positively related to subordinate organizational citizenship behaviour” (*Ibid.*). Ultimately, their work corroborates this initial hypothesis and shows that there is a link between a sense of autonomy and the level of trust employees place in their organization.

The objective of our study was to examine the effect that civil servants’ level of autonomy has on their perceived ability to act when confronted with any type of ethical issue or dilemma at work. To this end, we used a theory that was developed in the field of applied psychology, namely the “Theory of Planned Behaviour”. Let us now briefly describe this theory and present the research hypothesis that was derived from it.

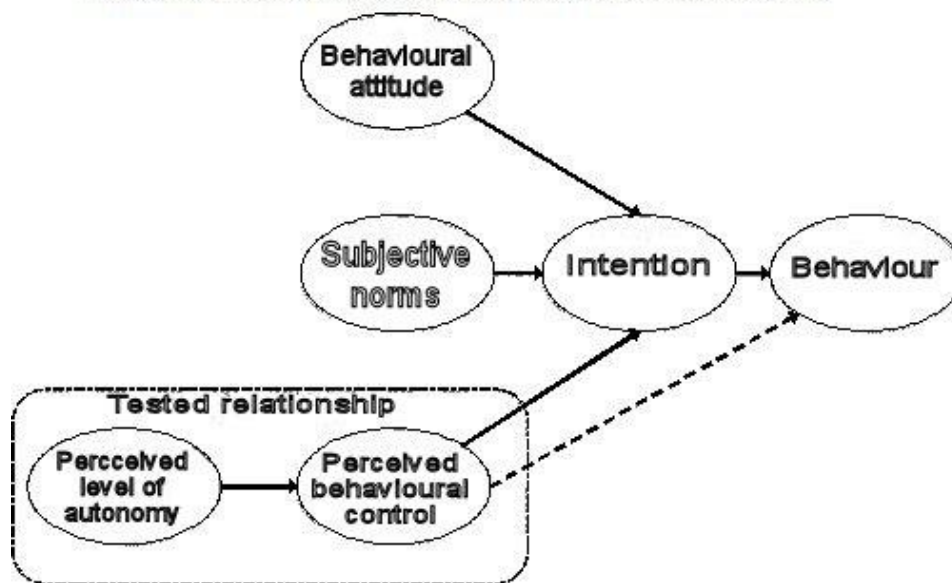
### ***Theoretical framework and research hypothesis***

Over the past two decades, there have been intense theorizing activities among scholars interested in predicting individuals’ behavioural intentions in many different contexts. First developed by Ajzen in 1991, the theory of planned behaviour (TPB) has now received major attention from academics (e.g., 23,083 citations in Google Scholar, January 14, 2013, 11:12 am). Despite the fact that this theory has been widely echoed throughout professional academic fields such as medicine and psychology, to the best of our knowledge, much less attention has been paid to this theory in the field of public administration. Godin *et al.* (2008) systematically reviewed studies that aimed at predicting healthcare professionals’ behavioural intentions, that specifically relied on a social cognitive theory. They found 78 empirical studies. The TPB was the most often used theory in this set of studies. The popularity of TPB in disciplines such as psychology and medicine might be due to the fact that individuals working in liberal professions are more likely to be autonomous than individuals working as employees in hierarchical organizations (an implicit axiom of the TPB is that the individual is highly autonomous).

According to the TPB, an individual behaviour is directly determined by its behavioural intention, which logically presupposes autonomy. Although the concept of autonomy is not formally included in the TPB framework, the variable “behavioural intention” would make no sense if the goal was to predict the behaviour of someone who has no autonomy at all and who always behaved according to orders from his superior. The main theoretical innovation brought by the TPB is to posit that behaviour is also directly influenced by the “perceived behavioural

control”, which “refers to people’s perception of the ease or difficulty of performing the behaviour of interest” (Ajzen 1991: 183). This last construct is really what makes the TPB an improvement as compared to previous behavioral theories such as the theory of reasoned action. We posit that as with behavioural intention, a logical prerequisite for perceived behavioural control is the person’s level of autonomy. Someone who has no autonomy of action could not possibly perceive himself/herself as having even some control over a behaviour that he/she cannot intend to adopt. Finally, “attitude toward the behaviour” (i.e., “the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question”) and “subjective norm” (i.e., the perceived social pressure to perform the behaviour or not) are the two remaining factors that influence behaviour (indirectly via intention) under the TPB model (Ajzen 1991).

Figure 1: Graphical visualization of the theory of planned behaviour and of the tested relationship



Our study aims to examine the relationship between civil servants’ perceived level of autonomy and their perceived behavioural control over resolving ethical dilemmas at work. The decision to limit the investigation to this relationship and to exclude other components of the theory of planned behaviour was practical, as we did not have the data (nor the resources to collect them) to measure the other variables included in the TPB framework. Therefore, the study tests an “extended” sub-area of the theory of planned behaviour that can be seen in Figure 1. This study tests the following research hypothesis:

*The more there is perceived autonomy, the more there is perceived behavioural control over resolving ethical dilemmas at work.*

To the best of our knowledge, the relationship between the two phenomena has never been examined before.

## Methods

### Data

We used a subset of the data from the 2008 Statistics Canada Public Service Employee Survey (PSES), which provides information about civil servants' self-reported opinions on leadership, workforce and work environment. All of the target population were employees of the federal public service employed under Schedule I, Part I of the *Public Service Staff Relations Act* (PSSRA 1-1) and employees of separate agencies who agreed to participate. This was a population-based, cross-sectional survey. Data collection was conducted using an electronic questionnaire from November 3 to December 12, 2008. More detailed information about the survey procedures is available on the Statistics Canada website.

Approximately 170,000 of the 258,000 employees responded to the survey (response rate of 66 percent). Approximately 47,744 observations were excluded from the analysis due to the impossibility of classifying them into an employment category. As a consequence, the sub-sample used in this study included 122,256 (non-weighted) participants. The variables included in the dataset were categorical nominal and categorical ordinal. Ordinal variables were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

### Measures

The dependent variable considered in this study is the perceived behavioural control over resolving ethical dilemmas. This variable was measured by question 49 of the 2008 PSES questionnaire, which reads as follows: "If I am faced with an ethical dilemma or a conflict between values in the workplace, I know where I can go for help in resolving the situation" (*strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, strongly agree, don't know, not applicable*). In the data analysis, *don't know* and *not applicable* answers were coded as missing data.

The independent variable of interest in this study is the civil servants' perceived level of autonomy. The perceived level of autonomy was measured by an index created by taking the mean score on the following four five-point ordinal variables: (1) I have a say in decisions and actions that have an impact on my work, (2) I am encouraged to be innovative or to take initiative in my work, (3) I feel that I can disagree with my immediate supervisor on work-related issues without fear of reprisal, and (4) if I were to suggest ways to improve how we do things, my immediate supervisor would take them seriously. The maximum score on the perceived autonomy index is 5 (corresponding to *strongly agree*), while the minimum score is 1 (corresponding to *strongly disagree*).<sup>1</sup>

In order to reduce bias in the statistical estimate for the relationship between perceived level of autonomy and perceived behavioural control over resolving ethical dilemmas, the following control variables were used as fixed effects: (1) employment category (i-Executive, ii-Scientific & Professional, iii-Administration & Foreign Service, iv-Technical, Administrative Support, v-

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<sup>1</sup> An exploratory factorial analysis (principal component) was conducted to verify the unidimensionality of the index. All items loaded on a single factor and the lowest commonality was 0.79 (item 3). The principal component model explains 68.08% of the factor's variance. As for the internal consistency, Cronbach's Alpha for this index is 0.84.

Operational, or vi-Other), (2) Service to the Public (i-Provide service to public, ii-Do not provide service to public), (3) Supervision role (i-supervision role, ii-no supervision role), (4) Experience working for the public service (i-less than three years, ii-3-10 years, iii-11-20 years, iv-more than 20 years), (5) Professional designation (i-professional designation, ii-no professional designation), (6) Completed level of education (i-Secondary/high school or less, ii-College/CEGEP/Trade or less, iii-University – below Bachelor’s degree, ii-University – Bachelor’s or more), and (7) Gender.

### Data analysis

To test the research hypothesis, we estimated an ordered logistic regression equation. Due to the very large sample size, it was highly likely that the research hypothesis is confirmed (i.e., large sample increases the capacity of the statistical test to detect very small relationships between variables). Therefore, we estimated the model using a macro implemented in STATA named CLARIFY (King *et al.* 2000). This tool allowed us to estimate the regression model and simulate predicted probabilities for each category of the ordinal dependent variable (i.e., *strongly disagree*, *somewhat disagree*, *neither agree nor disagree*, *somewhat agree*, *strongly agree*).<sup>2</sup>

## Results

### Descriptive statistics

All statistics reported in this study were calculated using weighted data (i.e., based on a weight variable created by Statistics Canada to correct for non-response bias). The descriptive statistics for all variables considered in the study are presented in Table 1. As can be seen in Table 1, perceived behavioural control over resolving ethical dilemmas in the workplace is relatively high. Nearly 70 percent of the respondents *somewhat agree* or *strongly agree* with the statement capturing perceived behavioural control over resolving ethical dilemmas, while a little more than 17 percent *somewhat disagree* or *strongly disagree* with the same statement. After adjusting for all independent variables considered in the study, these percentages are 73 percent and 14 percent, respectively (see “overall adjusted probability” in Table 3).

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<sup>2</sup> Predicted probabilities were calculated simulating for each value of the perceived autonomy index. These predicted probabilities were post-estimations. Therefore, the calculated predicted probabilities were adjusted for the adjustment variables’ fixed effects. We also simulated the predicted probabilities for each category of the dependent variable for each value of the adjustment variables in order to explore the magnitude of the association between these variables and the dependent variable, while controlling for the other variables (including the perceived level of autonomy index).

**Table 1: Descriptive statistics for the variables considered in this study**

Variable	Variable type	Weighted observations	Mean	Std. Dev.	Median	Percent-age	Min	Max
<b>Dependent variable</b>								
Perceived behavioural control over resolving ethical dilemmas	Ordinal	115,779			4	1 = 7.16 2 = 10.58 3 = 12.87 4 = 37.20 5 = 32.19	1	5
<b>Independent variable</b>								
Perceived level of autonomy index	Interval	121,079	3.73	.95		-	1	5
<b>Adjustment variables</b>								
Employment category:								
<i>Executive</i>	Binary	3,033				2.48	0	1
<i>Scientific &amp; Professional (reference)</i>	Binary	18,836				15.41	0	1
<i>Administration &amp; Foreign Service</i>	Binary	55,134				45.10	0	1
<i>Technical</i>	Binary	10,660				8.72	0	1
<i>Administrative Support</i>	Binary	17,471				14.29	0	1
<i>Operational</i>	Binary	13,023				10.65	0	1
<i>Other</i>	Binary	4,098				3.35	0	1
Service to the public	Binary	45,224				37.07	0	1
Supervision role	Binary	28,779				23.60	0	1
Experience working for the Public Service:								
< 3 years	Binary	21,022				17.36	0	1
3-10 years	Binary	43,784				36.15	0	1
11-20 years	Binary	25,577				21.12	0	1
> 20 years (reference)	Binary	30,724				25.37	0	1
Professional designation	Binary	14,133				11.60	0	1
Completed level of education:								
<i>Secondary/high school or less (reference)</i>	Binary	24,442				20.08	0	1
<i>College/CEGEP/Trade</i>	Binary	36,066				29.63	0	1
<i>University – below</i>	Binary	6,364				5.23	0	1



<i>Bachelor's degree University Bachelor's or more</i>	Binary	54,835	45.05	0	1
Gender	Binary	67,007 (Women)	55.71	0	1

The respondents' perceived level of autonomy is not as high. Ranging between 1 and 5 (integer and non-integer values), the perceived level of autonomy index has a mean of  $3.73 \pm 0.95$ , which corresponds to a mean score between "neither agree nor disagree" and "somewhat agree", considering the four 5-category items that were used to create the index.

As for the control variables considered in the study, nearly half of the respondents were classified in the *administration and foreign service* employment category. About 37 percent provided services directly to the public and less than a quarter of the respondents had a supervision role. About 17 percent of the respondents had less than 3 years of experience working for the public service, 36.1 percent had between 3 and 10 years of experience, 21.1 percent had between 11 and 20 years of experience and about one quarter of the respondents had more than 20 years of experience. Few respondents (11.6 percent) had a professional designation (e.g., MD, LLB, etc.). As for the completed level of education, 45 percent of the respondents had completed a Bachelor's degree or more, nearly 30 percent had a non-university college degree, 20 percent had secondary/high school or less, and only 5.2 percent of the respondents had a university degree below Bachelor's degree. Finally, 55.7 percent of the sub-sample were women.

### Regression results

The regression coefficients are presented in Table 2. The regression model was estimated on 106,759 observations and missing data was handled using list-wise deletions (i.e., observations with a missing value on at least one variable in the model were excluded from the analysis).<sup>3</sup>

<sup>3</sup> The Likelihood Ratio (LR) Chi-Square test was significant at the .000 level showing that at least one of the predictors' regression coefficients was not equal to zero in the model. The ancillary parameters refer to the cut points that differentiate the adjacent levels of the five-point response dependent variable. Cut Point 1 is the estimated cut point on the latent variable used to differentiate low perceived behavioural control over resolving ethical dilemmas from other levels of the same variable when values of the predictor variables are fixed at zero. Subjects that had a value of 1.10 or less on the underlying latent variable that gave rise to the dependent variable would be classified as low perceived behavioural control over resolving ethical dilemmas given they had zero perceived level of autonomy, were *scientists & professionals* (the variables *executive, administration & foreign affairs, technical, administrative support, operational* and *other* evaluated at zero), did not provide service to the public, did not have a supervision role, had more than 20 years of experience in the Public Service, had no professional designation, had completed a secondary/high school or less and were male. Cut Points 2, 3 and 4 are the estimated cut points on the latent variable used to differentiate higher levels of perceived behavioural control over resolving ethical dilemmas from other levels from the same variable when values of the predictor variables are fixed at zero.

**Table 2: Ordered logit estimates**

	<b>Dependent variable:</b> Perceived behavioural control over resolving ethical dilemmas					
	Coef.	Std. Dev.	Z	p	95% Conf. Interval	
Perceived level of autonomy index	1.01	.01	146.12	.000	.99	1.02
<b>Adjustment variables</b>						
Employment category						
<i>Executive</i>	.92	.04	21.48	.000	.83	1.00
<i>Scientific &amp; Professional (reference)</i>	NS	NS	NS	NS	NS	NS
<i>Administration &amp; Foreign Service</i>	.21	.02	11.46	.000	.17	.25
<i>Technical</i>	-.09	.02	-3.40	.001	-.14	-.04
<i>Administrative Support</i>	.32	.02	12.99	.000	.27	.37
<i>Operational</i>	.20	.02	7.62	.000	.15	.25
<i>Other</i>	.21	.03	5.77	.000	.14	.28
Service to the public	.10	.01	8.69	.000	.08	.13
Supervision role	.24	.01	16.67	.000	.22	.27
Experience working for the Public Service						
< 3 years	.16	.02	8.30	.000	.12	.20
3-10 years	-.13	.01	-8.20	.000	-.16	-.10
11-20 years	-.10	.02	-6.02	.000	-.13	-.07
> 20 years (reference)	NS	NS	NS	NS	NS	NS
Professional designation	.11	.02	6.06	.000	.08	.15
Completed level of education:						
<i>Secondary/high school or less (reference)</i>	NS	NS	NS	NS	NS	NS
<i>College/CEGEP/Trade or less</i>	-.07	.02	-4.35	.000	-.10	-.04
<i>University – below Bachelor's degree</i>	-.02	.03	-.89	.372	-.08	.03
<i>University – Bachelor's or more</i>	-.13	.02	-7.63	.000	-.17	-.10
Gender	.11	.01	9.31	.000	.09	.14
<b>Ancillary parameters:</b>						
Cut Point 1	1.10					
Cut Point 2	2.30					
Cut Point 3	3.15					
Cut Point 3	5.03					
<b>Model information:</b>						
Pseudo R2	0.09					
LR chi2 (df=17)	27,179.26			.000		
Log likelihood	-137,942.98					
Number of obs. (list wise deletion)	106,759					

The results show that the perceived level of autonomy variable is positively and statistically associated with the variable capturing perceived behavioural control over resolving ethical dilemmas, as was expected in the research hypothesis. Later, we present evidence regarding the strength of this association.

As for the control variables, the results show that the professional category is significantly associated with the perceived behavioural control over resolving ethical dilemmas. More precisely, it was found that, on average, participants classified as Executives, Administration & Foreign Service, Administrative Support and Operational, scored higher than Scientists & Professionals on the variable capturing perceived behavioural control over resolving ethical dilemmas, when the other variables in the model were held constant. However, technicians scored lower than scientists & professionals.

The results presented in Table 2 also show that participants who provided service directly to the public, who had a supervisory role or who had a professional designation, scored higher on the perceived behavioural control variable than those who were not in these situations.

The number of years of experience working for the public service is also associated with the perceived behavioural control over resolving ethical dilemmas. More precisely, the results show that participants with either less than three years of experience working for the public service scored, on average, higher than those with 20 years or more of experience on the variable capturing the perceived behavioural control over resolving ethical dilemmas. However, participants who had from between 3 to 19 years of experience scored lower on the same variable than those who had 20 years or more of experience working for the public service.

As for the completed level of education, the results presented in Table 2 show that compared to participants with a secondary/high school diploma or less, those whose highest completed level of education was a college/CEGEP/trade scored on average lower on the variable capturing the perceived behavioural control over resolving ethical dilemmas. Participants whose highest educational level was a completed Bachelor's degree or more scored on average lower on the dependent variable than those with a secondary/high school diploma or less. However, the results show no statistically significant difference with regard to the score on the dependent variable between participants who reached a university programme without getting a Bachelor's degree and those with a secondary/high school diploma or less. Finally, the results show that, on average, women scored higher on the variable capturing the perceived behavioural control over resolving ethical dilemmas than men.

As shown in Table 2, all regression coefficients but one are statistically significant. This large number of significant coefficients is not surprising given the large number of observations in the dataset. Having such a large statistical power, even very small effects would test significant. It is particularly in this type of situation where statistical simulations are helpful in examining the magnitude of the effect of explanatory variables on the dependent variable. Table 3 presents the simulated adjusted predicted probabilities for the two highest values of the dependent variable (i.e., *somewhat agree* and *strongly agree*).<sup>4</sup>

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<sup>4</sup> These probabilities are post-estimations calculated with CLARIFY (King et al., 2000). These probabilities were calculated for all independent variables in the model. Each calculated probability was adjusted, as it was calculated while fixing the other variables at their mean value. The use of CLARIFY allows for testing of the

**Table 3: Simulated adjusted predicted probabilities for the two highest values of the dependent variable**

	<b>Dependent variable:</b> Perceived behavioural control over resolving ethical dilemma: <i>If I am faced with an ethical dilemma or a conflict between values in the workplace, I know where I can go for help in resolving the situation</i>			
	<i>Somewhat agree</i>	<i>95% CI</i>	<i>Strongly agree</i>	<i>95% CI</i>
<b>Overall adjusted probability</b>	.44	.43 - .44	.29	.28 - .29
<b>Perceived autonomy (5/17 values)*</b>				
1 (Minimum value)	.12	.11 - .12	.02	.02 - .02
2	.25	.24 - .25	.06	.06 - .07
3	.39	.39 - .40	.16	.16 - .16
4	.43	.43 - .43	.34	.34 - .34
5 (Maximum value)	.31	.31 - .32	.59	.58 - .59
<b>Employment category</b>				
Scientific & Professional	.43	.43 - .44	.25	.24 - .26
Executive	.39	.38 - .40	.46	.44 - .47
Administration & Foreign Affairs	.44	.43 - .44	.29	.29 - .30
Technical	.43	.43 - .44	.23	.23 - .24
Administrative Assistant	.43	.43 - .44	.31	.31 - .32
Operational	.44	.43 - .44	.29	.28 - .30
Other	.44	.43 - .44	.29	.28 - .30
<b>Service to the public</b>				
Provide services to public	.44	.43 - .44	.30	.30 - .30
Do not provide service to public	.44	.43 - .44	.28	.28 - .28
<b>Supervision</b>				
Supervision role	.43	.43 - .44	.32	.32 - .33
No supervision role	.44	.43 - .44	.27	.27 - .28
<b>Experience working for the Public Service</b>				
Less than 3 years	.43	.43 - .44	.33	.32 - .33
3-10 years	.44	.43 - .44	.27	.26 - .27
11-20 years	.44	.43 - .44	.27	.27 - .28
More than 20 years	.44	.43 - .44	.29	.29 - .30
<b>Professional designation</b>				
Professional designation	.44	.43 - .44	.31	.30 - .31
No professional designation	.44	.43 - .44	.28	.28 - .29
<b>Completed level of education</b>				
Secondary/high school or less	.44	.43 - .44	.30	.30 - .31
College/CEGEP/Trade or less	.44	.43 - .44	.29	.28 - .29
University-Below Bachelor's degree	.44	.43 - .44	.29	.29 - .31
University-Bachelor's or more	.44	.43 - .44	.28	.27 - .28

second research hypothesis regarding the strength of the association between level of autonomy and perceived behavioural control over resolving ethical dilemmas.

**Gender**

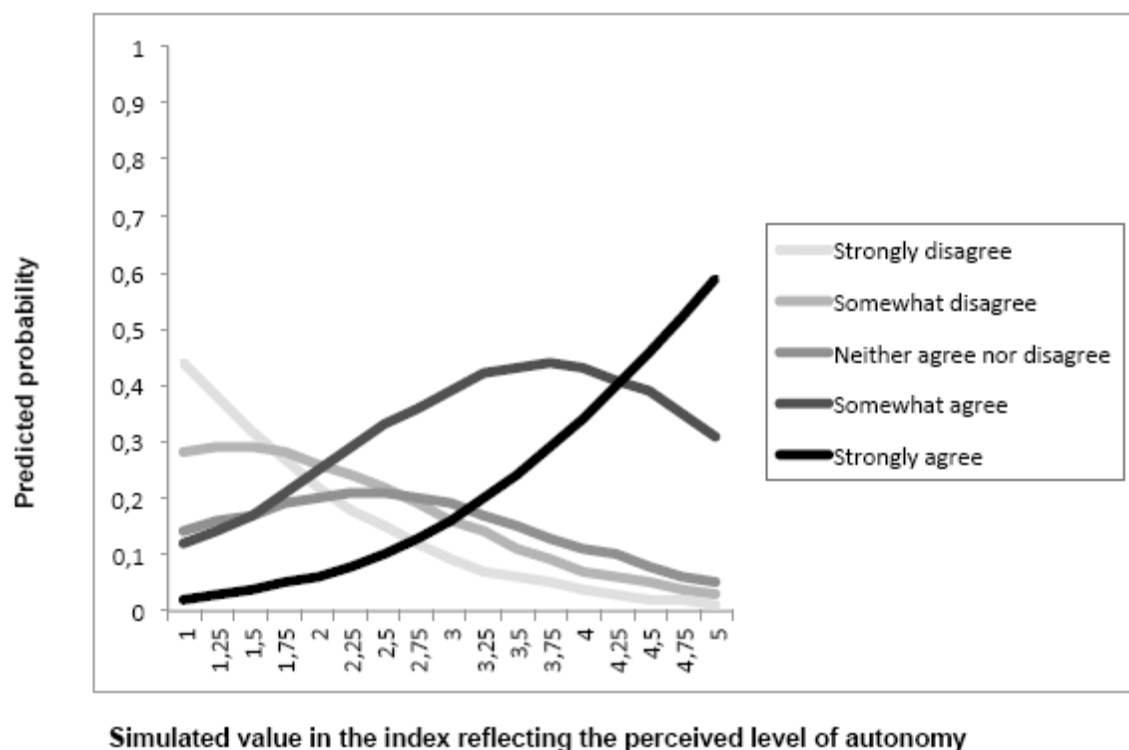
Men	.43	.43 - .44	.25	.24 - .26
Women	.44	.43 - .44	.27	.27 - .28

\* Predicted adjusted probabilities for non-integer values of the perceived autonomy index are not shown for space reason.

Simulating the perceived level of autonomy index at its lowest value (i.e., 1) while keeping the control variables in the model at their mean value generates a two percent probability of scoring in the “strongly agree” category of the five-point ordinal scale capturing the perceived behavioural control over resolving ethical dilemmas. However, this probability increases to 59 percent when the perceived level of autonomy index is fixed at its highest value (i.e., 5) while keeping the control variables fixed at their mean value. Therefore, the results presented in Table 3 suggest that the relationship between the perceived level of autonomy index and the variable capturing the perceived behavioural control over resolving ethical dilemmas is strong and robust.

As can be seen in Table 3, only one of the control variables has, from a practical point of view, an important effect on the dependent variable, i.e., being an *Executive* rather than occupying another employment category. In effect, fixing the employment category at the *Executive* value generates a probability of 46 percent of scoring in the “strongly agree” category of the scale measuring the perceived behavioural control over resolving ethical dilemmas, while fixing the employment category at other values produces probabilities ranging from 25 percent (*Scientific & Professional*) to 31 percent (*Administration & Foreign Affairs*). The probabilities calculated for the categories of the other control variables are very similar (differences ranging from 0 to 5 percentage points), thus showing that these variables have a small effect on the perceived behavioural control over resolving ethical dilemmas.

**Figure 2: Graphical visualization of the adjusted predicted probability for each value of the dependent variable\***



\*Notes: Simulations were adjusted for all independent variables included in the regression model.

## Conclusions and discussion

The research objective was to explore the association between civil servants' perceived level of autonomy and their perceived behavioural control over resolving ethical dilemmas at work. The research hypothesis was: the more there is perceived autonomy, the more there is perceived behavioural control over resolving ethical dilemmas at work. The research hypothesis was tested using a large dataset of Canadian civil servants. The study findings provided corroborate this research hypothesis.

Recent research on public administration reforms and modernization teach us that civil servants are increasingly integrating the precepts of new public management. It is true that the level of integration varies from one country to another and even from one organization to another. It would be erroneous to believe that leeway has been considerably broadened for civil servants throughout the public sector. However, in a context where civil servants wield more and more latitude to act, it is important to understand the effects of an increase of their autonomy.

For those who promote an ethics culture based on self-regulation, these findings suggest that when faced with the uncertainty of ethical dilemmas, civil servants do not seem paralyzed nor too deprived to face such challenges.

The main strengths of this study are the large sample size, a satisfactory response rate, and the fact that it provides the first empirical test of the relationship between the level of perceived autonomy and perceived behavioural control over resolving ethical dilemmas at work. Another strength of the study is to have demonstrated that the level of perceived autonomy can affect the perceived behavioural control. In its current form, the theory of planned behaviour does not formally posit that autonomy influences perceived behavioural control.

Like any empirical study, ours has multiple limitations that should be highlighted. First, the research hypothesis was tested using secondary data, that is, data that were not collected with the aim of testing the research hypothesis. Second, the study is observational rather than experimental (i.e., this is why the term “association” was preferred over “causation”, although both the theoretical framework and the research hypothesis were clearly causal). The observational nature of the study design increases the risk of facing endogeneity problems caused by omitted explanatory variables.<sup>5</sup> However, conducting a field experiment in which civil servants would be randomly allocated different doses of autonomy would be highly unrealistic.

Another risk of bias in our study as well as in many studies that use self-reported survey data is related to the so-called common-method variance (CMV) phenomena. CMV is recognized as a source of concern for studies involving self-reported measures. CMV can produce biased correlations between two variables that were measured by using the same method (e.g., questionnaire) as was the case in this study. CMV has multiple sources including common raters (same individuals assessing the two variables), item ambiguity, priming effects, grouping of items, simultaneous measurement of predictor and criterion variables, etc.

A longitudinal analysis of the cross-sectional data collected from past surveys would permit us to measure the progression of the sense of autonomy and behavioural control felt by civil servants when faced with ethical dilemmas. Finally, in future studies, researchers might wish to use and test the whole theory of planned behaviour to explain different types of behaviour among civil servants.

*Steve Jacob and Mathieu Ouimet are teaching in the Department of Political Science at Laval University.*

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<sup>5</sup> We attempted to prevent this problem by estimating an instrumental variable probit regression model (IV probit, not reported). A good instrumental variable is one that is both highly correlated with an endogenous X variable and the dependent variable. An instrumental variable should also be ‘genetically’ determined to ensure its exogenous character. Gender and first official language were the only potential instruments at our disposal. These instruments were far from being perfect, as they were not strongly correlated with the perceived level of autonomy index and our dependent variable. IV probit models allow for the testing of endogeneity by performing the Wald test for exogeneity. The result of this test indicated endogeneity (i.e. 14.43;  $p$  0.000). Furthermore, the results show a nearly two-fold increase in the perceived level of autonomy’s regression coefficient (1.04; CI 0.88-1.20) as compared with the coefficient estimated with a regular probit regression model (0.53; CI 0.52-0.54). This result suggests that the ordered regression estimate for the perceived level of autonomy might be biased downward.

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