



Public Service Commission
of Canada

Commission de la fonction publique
du Canada




The educational profile of appointees

A statistical study by the
Public Service Commission of Canada

October 2008

Canada



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This paper is also available on our Web site at www.psc-cfp.gc.ca

Cat. No. SC3-135/2008E-PDF
ISBN 978-1-100-10456-0

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Highlights

This statistical study examines the educational profile of recruits appointed to the public service from the general public (external appointees) and employees appointed within the public service (internal appointees) through competitive processes.¹ The study is based on the Public Service Commission of Canada's (PSC) Survey of Appointments data from July 2000 through March 2005.

What did the Public Service Commission find?

The study found that recruits had higher education levels than appointees already in the federal public service. It also found that employees appointed to the permanent public service work force from outside the public service had higher education levels than those from the temporary (term) work force.

The study also found that overall education levels were higher for appointees in knowledge-based categories compared with other categories; for younger appointees compared with older appointees; and for male appointees compared with female appointees.

- Fifty-five percent of those appointed to indeterminate (permanent) positions, external and internal appointees combined, had a university degree. More than two-thirds of those recruited externally had a university degree, compared with only half of internal appointees. In a similar vein, 29% of external appointees had a post-graduate degree, compared with 18% of internal appointees.
- Differences in the levels of education varied significantly across occupational categories. Virtually all appointees in the Scientific and Professional category had a university degree, compared with 54% in the Administrative and Foreign Service category, 40% in the Technical category, 21% in the Administrative Support category and 15% in the Operational category.
- While these differences in educational levels persist for both external and internal appointments, external appointees to the Administration and Foreign Service category have significantly higher levels of education than their internal counterparts. Within this category, 78% of external appointees had a university degree and 24% had a post-graduate degree. For internal appointees, the comparative figures are 48% and 11%, respectively. It is worth noting that this occupational category represented over half (51%) of all survey respondents over the study period.

¹ All appointments made over the study period were made under the previous *Public Service Employment Act* (PSEA). Since the coming into force of the current PSEA, the term "competitive" is no longer used to refer to staffing processes. The current PSEA refers to "advertised" and "non-advertised" processes. External appointment processes were restricted to those resulting in an indeterminate (permanent) appointment. Internal appointment processes were restricted to those resulting in an indeterminate promotion or a change in employment tenure from specified period (term) to indeterminate.

- For those newly appointed to the indeterminate work force, 69% of external appointees, and 46% of appointees from the temporary work force had a university degree. Similarly, 29% of external appointees had a post-graduate degree, compared with 16% of those appointed from the temporary work force.
- Overall, younger appointees had higher levels of education than their older counterparts. Sixty-eight percent of appointees aged 25 to 34 have a university degree, compared with 48% of those 35 to 44 and 43% of those 45 to 54.
- Overall, male appointees had higher levels of education than female appointees. Almost two thirds of male appointees had a university degree, compared with nearly half of female appointees. These differences are less pronounced in the case of external appointments.

What is next?

The PSC will communicate the study findings to deputy heads and heads of human resources. It is our hope that managers and human resources planners will find this information useful as they look at their future staffing needs.

Introduction

The role of the Public Service Commission of Canada in staffing

The Public Service Commission of Canada (PSC) is an independent agency reporting to Parliament, mandated to safeguard the integrity of the public service staffing system and the political neutrality of the public service. In addition, the PSC recruits qualified Canadians from across the country. The PSC develops policies and guidelines to ensure that appointments are made according to the core value of merit and respect the staffing values of the *Public Service Employment Act* (PSEA). The PSC conducts evaluations, audits, studies and investigations to confirm the effectiveness of the staffing system and to make improvements when necessary. The PSC also provides staffing and assessment services to departments and agencies on a discretionary basis.

Background

The level of educational attainment is a variable of considerable interest to human resources analysts. It is one component of the human capital that employees and prospective employees bring to the job. As these data are not available from centralized administrative systems, the PSC has added questions about education to the Survey of Appointments (SOA). This study provides a summary of the data collected through the SOA from July 2000 through March 2005.

Within the appointment process, it is managers who are responsible for setting the level of education required for each position, based on their knowledge of the requirements of the job. However, in most cases, the *Standards for Selection and Assessment* set out the minimum levels of education required for the occupational group to which the position being staffed belongs (see **Appendix 2**).² The minimum level of education required varies by occupational group and reflects the basic requirements deemed essential to perform the duties of the position. For example, for appointment to the Psychology (PS) group, the minimum requirement is “graduation with a master’s degree from a recognized university with specialization in personnel psychology, psychometrics, industrial psychology, clinical psychology or some other specialty relevant to the position.”

² The responsibility for setting these standards passed from the Public Service Commission of Canada to the Canada Public Service Agency with the coming into force of the current PSEA on December 31, 2005.

About the study

Study objective

The objective of this study is to examine the educational profile of recruits appointed to the public service from the general public (external appointees) and employees appointed within the public service (internal appointees) through competitive processes.³ External appointment processes were restricted to those that resulted in an indeterminate (permanent) appointment. Internal appointment processes were restricted to those that resulted in an indeterminate promotion or a change in employment tenure from specified period (term) to indeterminate.

Source of data

This study is based on data collected from the PSC's Survey of Appointments (SOA) during the period from July 2000 to March 2005. The period under study preceded the coming into force of the current *Public Service Employment Act* (PSEA) in December 2005.

The SOA is a semi-annual survey based on a random sample of appointments made in the previous six-month period. Over the study period, survey questionnaires were sent to 7 476 indeterminate appointees who were randomly selected from the PSC Job-based Analytical Information System (JAIS). Of the 7 476 indeterminate appointees surveyed, 3 992 provided information on their level of education and are included in this study. Twenty-five percent of respondents (1 016) were appointed to the public service from the general public (external appointment) and 75% (2 976) were employees appointed within the public service (internal appointment).

Study approach

This study provides a descriptive analysis of the level of educational attainment of survey respondents over the survey period. The analysis examines the level of educational attainment using the following variables:

- Type of appointment: external *versus* internal appointments
- Occupational category
- Age
- Gender
- Region of appointment: National Capital Region *versus* regions
- External appointment *versus* term to indeterminate movement
- Field of study

³ All appointments made over the study period were made under the previous PSEA. Since the coming into force of the current PSEA, the term "competitive" is no longer used to refer to staffing processes. The current PSEA refers to "advertised" and "non-advertised" processes.

The minimum level of educational attainment required for most occupational groups is set out in the *Standards for Selection and Assessment*. These minimum requirements have an effect on the resulting educational profiles of appointees within occupational categories. For example, nearly all positions classified as part of the Scientific and Professional category require a university degree. Therefore, a *priori* appointees in the Scientific and Professional category would be expected to be more highly educated than other employees. Consequently, while much of the following analysis is at the aggregate level, in all instances, the data have been grouped by occupational category. Significant exceptions to the aggregate trends are noted.

This study discusses three types of appointment processes (see **Table 1**): appointments of non-public servants to indeterminate (permanent) positions (external appointments); appointments from specified period (term) positions to indeterminate positions (term to indeterminate movement); and promotions from indeterminate positions to indeterminate positions (promotions). Other types of appointments, such as indeterminate-to-indeterminate lateral movement, deployments, acting appointments and term-to-term appointments, are beyond the scope of this study.

For most of the discussion that follows, the last two appointment types, term to indeterminate movement and promotions, are aggregated and labelled “internal appointments.”

Table 1: Total survey respondents by type of appointment

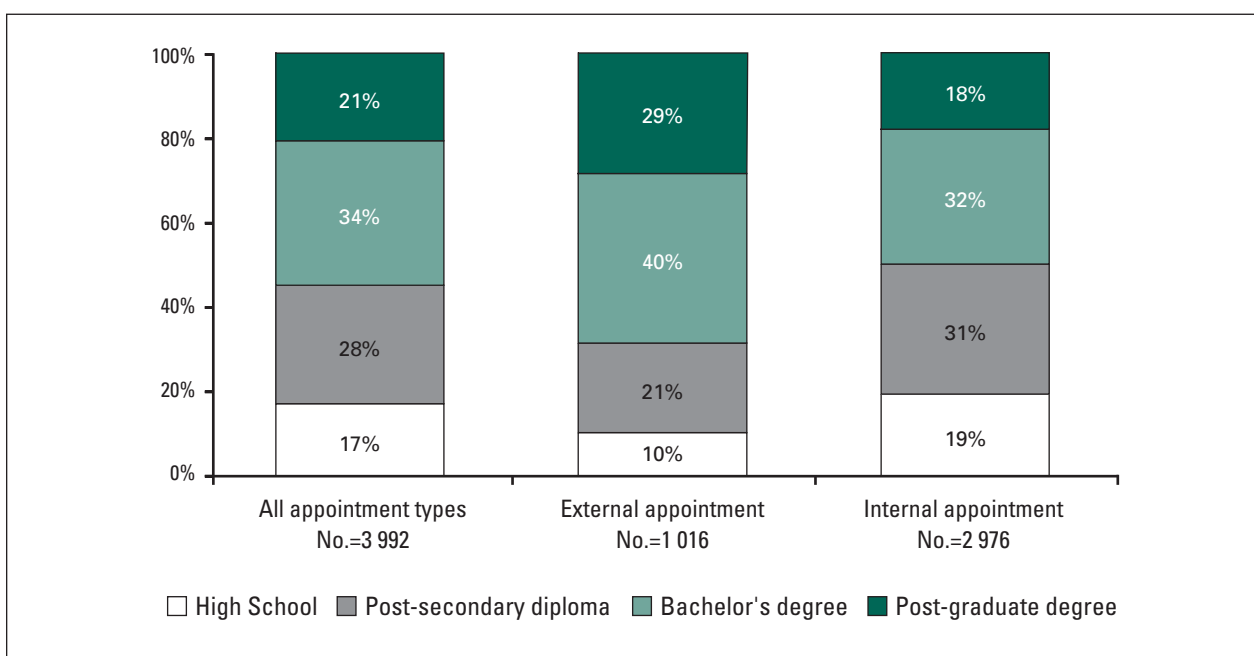
	No.
Appointments to the public service – external appointments	1 016
Appointments within the public service – internal appointments	2 976
Appointments from specified period to indeterminate positions (term to indeterminate movement)	
Indeterminate to indeterminate positions (promotions)	
Total appointments	3 992

Study findings

External appointees have higher levels of educational attainment than internal appointees

As indicated in **Figure 1**, 55% of survey respondents have a university degree. However, over two thirds (69%) of those recruited externally have a university degree compared with half (50%) of internal appointees. Furthermore, 29% of external appointees have a post-graduate degree compared with 18% of internal appointees.⁴

Figure 1: External appointments and internal appointments by level of education



Source: PSC Survey of Appointments, July 2000 to March 2005

Note: Percentages shown in graphs may not add up to 100% due to rounding.

The highest level of educational attainment for 28% of appointees is a post-secondary diploma and, for 17%, high school graduation. The share of appointees with post-secondary diplomas or high school as their highest level of educational attainment was significantly higher for internal appointees at 31% and 19%, respectively, than for their external counterparts (21% and 10%, respectively).

⁴ Throughout this study, the reference to post-secondary diploma refers to post-secondary credentials other than university; post-graduate degree includes professional degrees beyond a bachelor's degree (e.g. medicine or dentistry).

Educational attainment varies significantly by occupational category

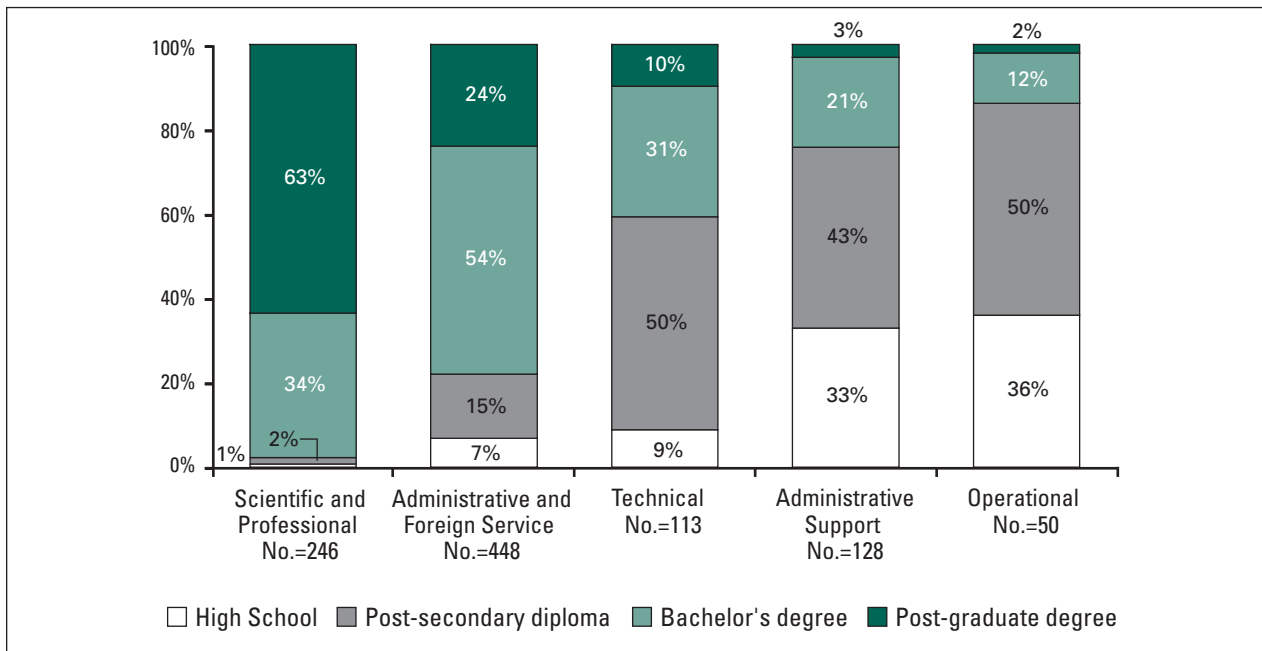
As would be expected, the level of educational attainment varies significantly across occupational categories. Appointees to the Scientific and Professional category, for which a university degree is almost always required, are the most educated, with 98% having a university degree; 35% a bachelor's degree; 44% a master's degree; and 13% a doctorate.⁵ The Administrative and Foreign Service category follows, with 54% of appointees having a university degree. For the Technical category, this percentage falls to 40%, showing a shift in favour of other post-secondary education, such as community college or technical training (46%). A significant share of appointees in both the Administrative Support and Operational categories also have a university degree — 21% and 15%, respectively. In these latter two categories, about a third of candidates have a high school education (34% and 32%, respectively) and about half have a post-secondary diploma (45% and 52%, respectively) [see **Figures 2** and **3**].

It should be noted that more than 90% of appointees in the Executive category have a university degree and over half have a post-graduate degree. The survey responses for this category are too minimal to analyze further.

While these differences in educational attainment persist for both external and internal appointments, external appointees to the Administration and Foreign Service category have significantly higher levels of education than their internal counterparts. Within this category, 78% of external appointees have a university degree and 24% have a post-graduate degree. For internal appointees, the comparative figures are 48% and 11%, respectively. It is worth noting that this occupational category represented over half (51%) of all survey respondents over the study period.

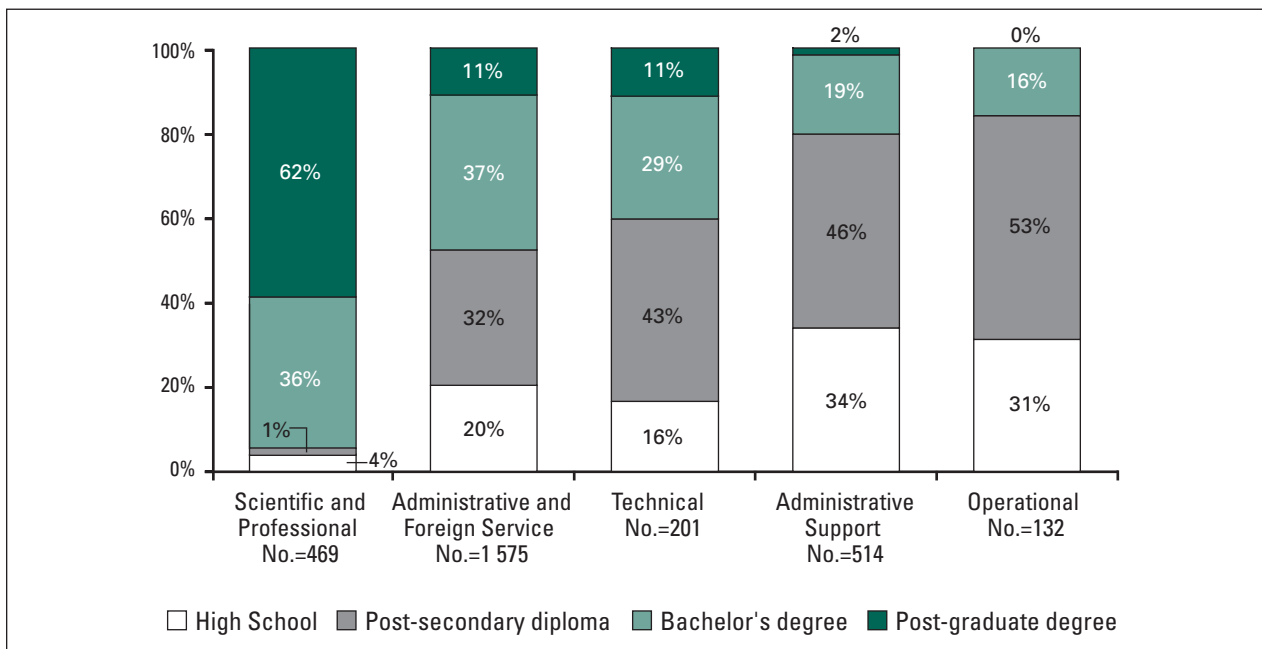
⁵ The residual is made up of other professional degrees (e.g. medicine).

Figure 2: External appointment by level of education and occupational category



Source: PSC Survey of Appointments, July 2000 to March 2005

Figure 3: Internal appointments by level of education and occupational category



Source: PSC Survey of Appointments, July 2000 to March 2005

Younger appointees have higher levels of educational attainment

Younger appointees have higher levels of educational attainment than their older counterparts. Sixty-eight percent of appointees aged 25 to 34 have a university degree, compared with 48% of those 35 to 44 and 43% of those 45 to 54. As would be expected, the age profile of external appointees is biased towards younger appointees (see **Table 2**). This factor contributes to the higher level of educational attainment for external appointees compared with internal appointees.

Table 2: Distribution of survey responses by appointment type and age

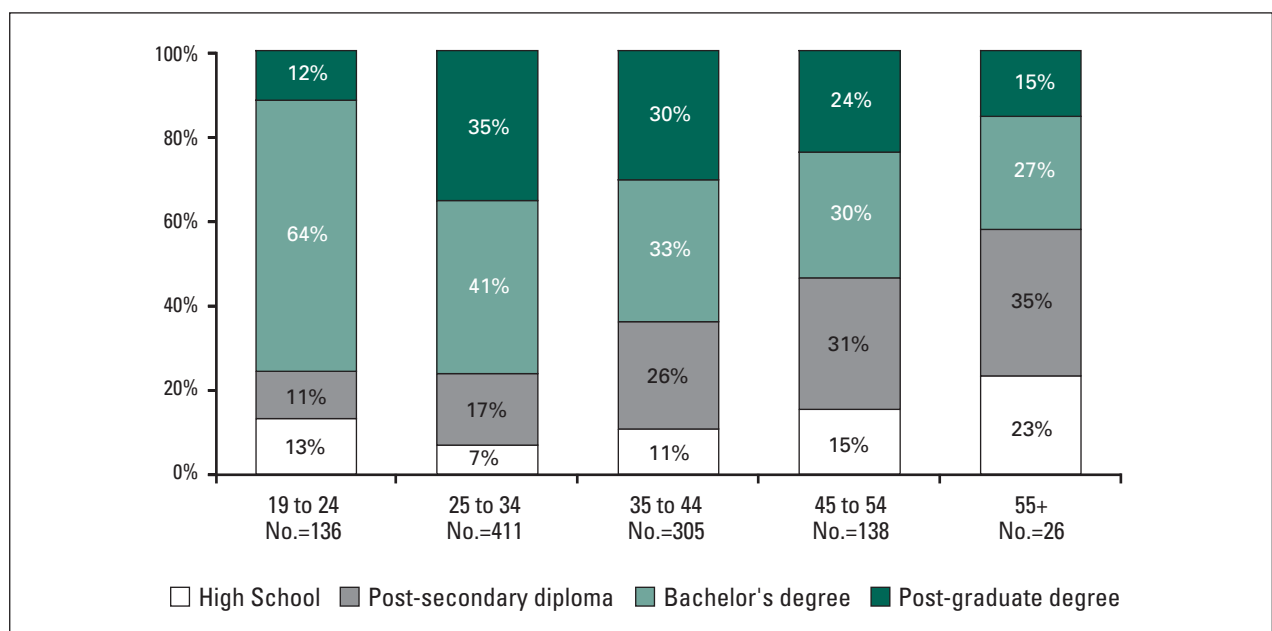
	Ages 19 to 24	Ages 25 to 34	Ages 35 to 44	Ages 45 to 54	Ages 55+	Total
External appointees	136 (13%)	411 (40%)	305 (30%)	138 (14%)	26 (3%)	1 016 (100%)
Internal appointees	118 (4%)	976 (33%)	1 091 (37%)	710 (24%)	80 (3%)	2 975 (100%)

Source: PSC Survey of Appointments, July 2000 to March 2005

Excluded: One observation with invalid date of birth.

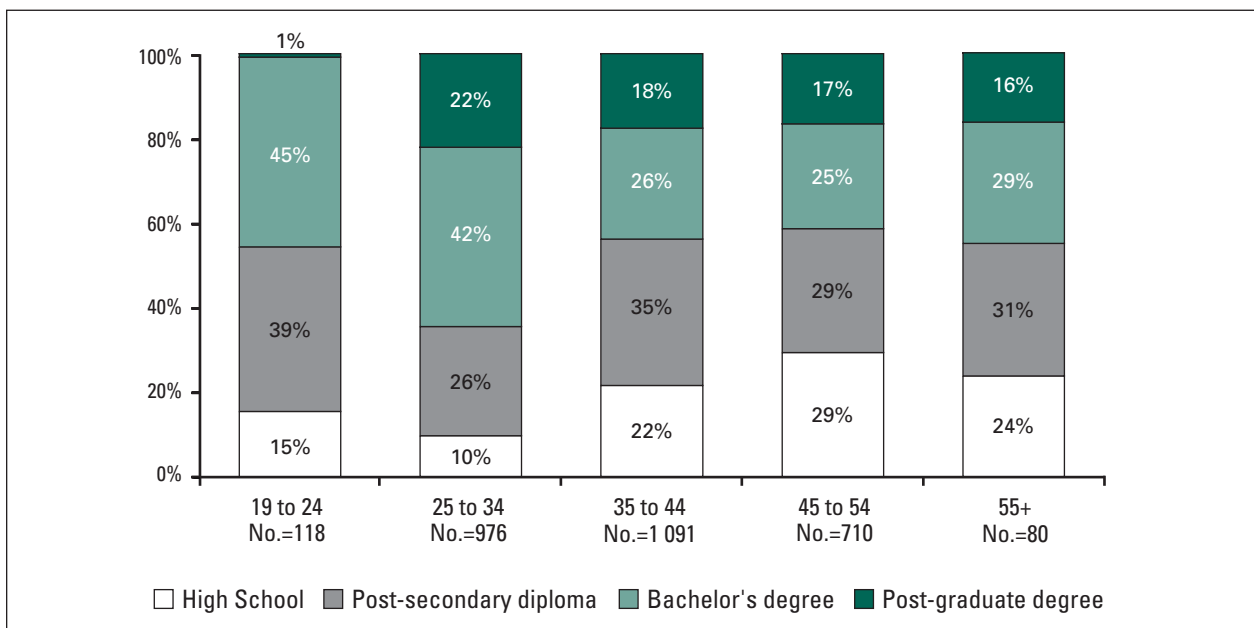
With the exception of the oldest age cohort, external appointees in each age cohort have higher levels of educational attainment than their internal counterparts. As shown in **Figures 4** and **5**, 76% of external appointees aged 19 to 24 and aged 25 to 34 have a university degree. The comparable figures for internal appointees are 46% and 64% respectively. Similarly, it is noted that 63% of external appointees aged 35 to 44 and 54% of those aged 45 to 54 have a university degree compared with 44% and 42%, respectively, for internal appointees. It is notable that, for all but the oldest cohort, external appointees are much more likely than internal appointees to have a post-graduate degree.

Figure 4: External appointments by age and level of education



Source: PSC Survey of Appointments, July 2000 to March 2005

Figure 5: Internal appointments by age and level of education



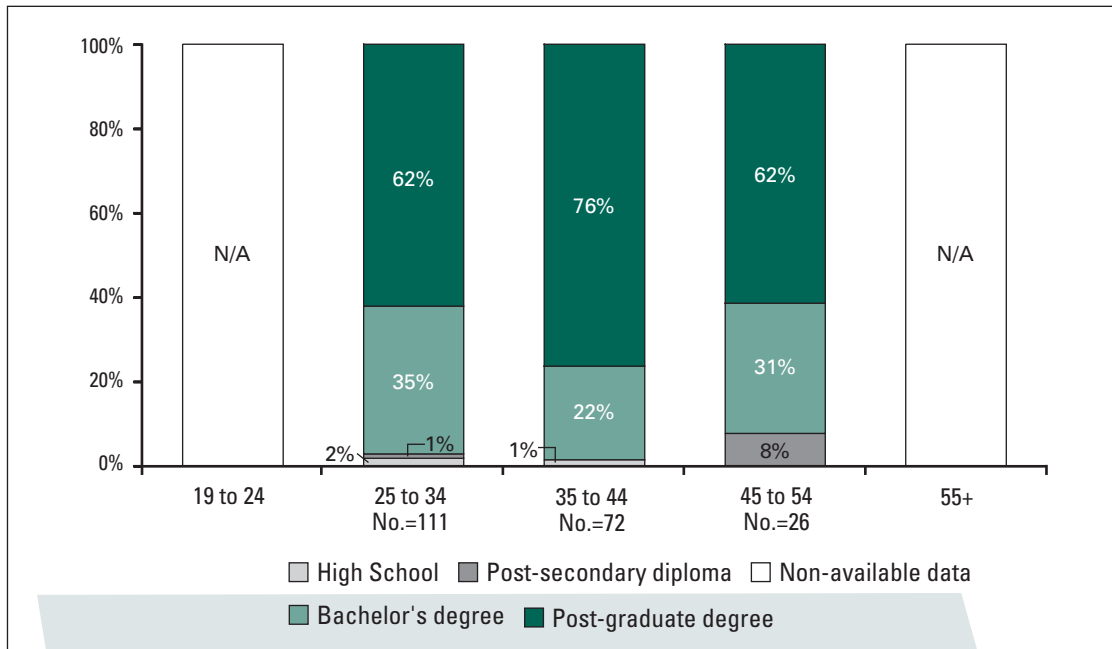
Source: PSC Survey of Appointments, July 2000 to March 2005

Excluded: One observation with invalid date of birth.

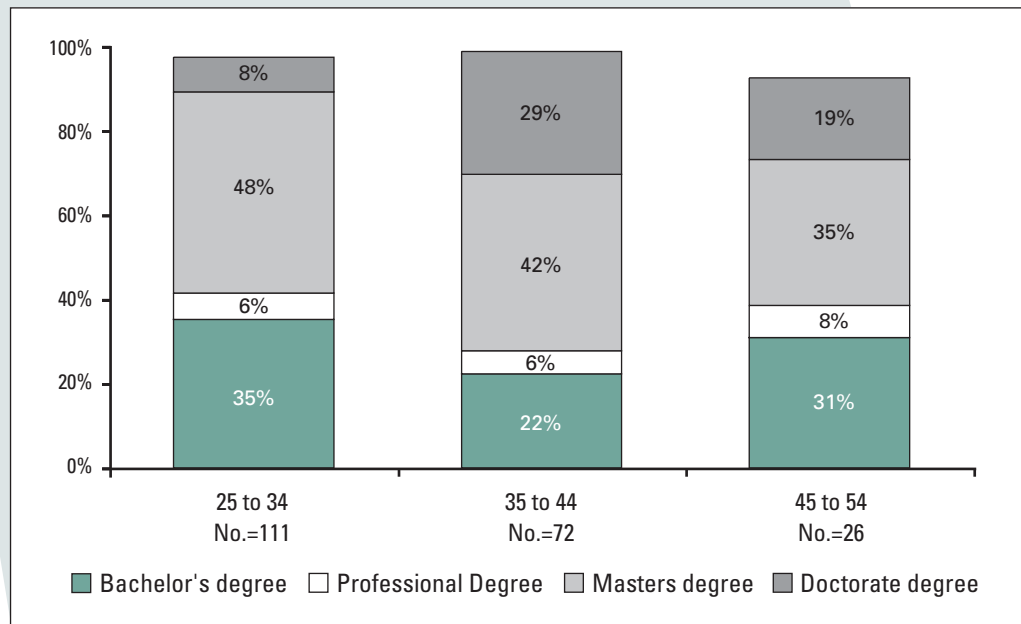
For the most part, the findings by occupational category are consistent with those described above. The single exception is the Scientific and Professional category. Within this category, study results show only small differences in the levels of educational attainment between external appointees and internal appointees. As might be expected, this category also boasts the largest number of post-graduate degrees.

In the case of external appointees, 48% of those aged 25 to 34 have a master's degree and another 8% have a doctorate (see **Figure 6**). While the share of external appointees with a master's degree decreases slightly to 42% for those aged 35 to 44, the share of doctorates climbs to 29%. Even within the 45 to 54-year age cohort, the share of post-graduate degrees remains over 50%. Important to understanding these findings is the fact that the Scientific and Professional category includes groups such as Medicine (MD) and Scientific Research (SE), which demand high levels of educational attainment as a prerequisite to entry into the group.

Figure 6: External appointments – Scientific and Professional category by age and level of education



Breakdown of university degree by type

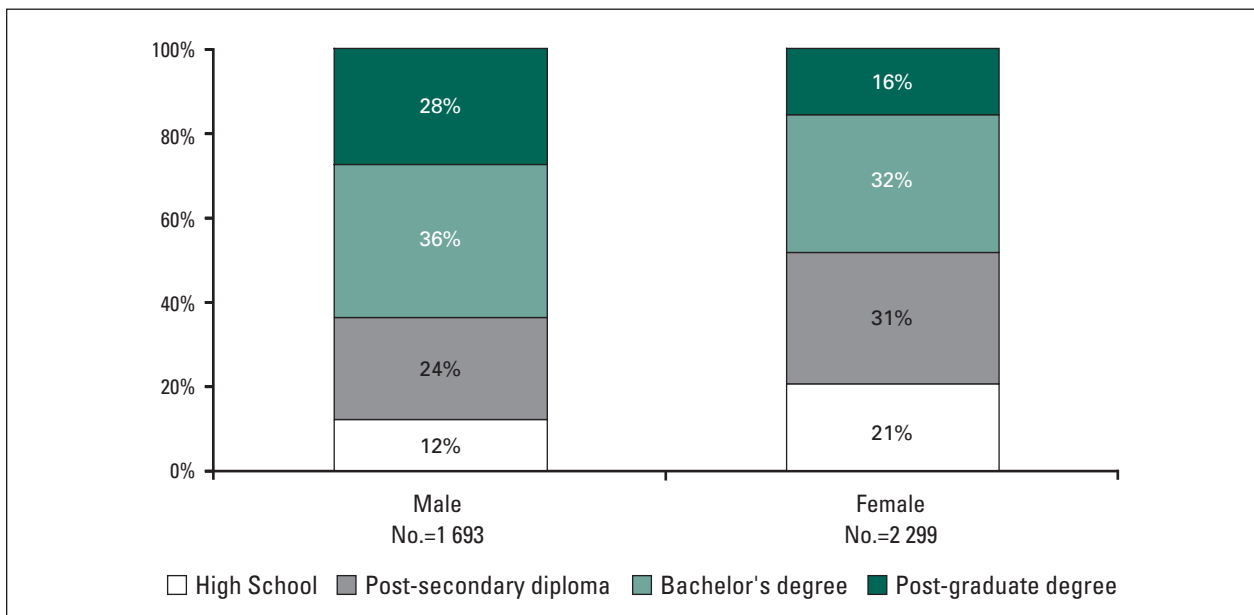


Source: PSC Survey of Appointments, July 2000 to March 2005

Male appointees have higher levels of educational attainment

Sixty-four percent of male appointees have a university degree. The comparable figure for their female counterparts is 48% (see **Figure 7**). Similarly, 28% of male appointees have a post-graduate degree, compared with only 16% of female appointees.

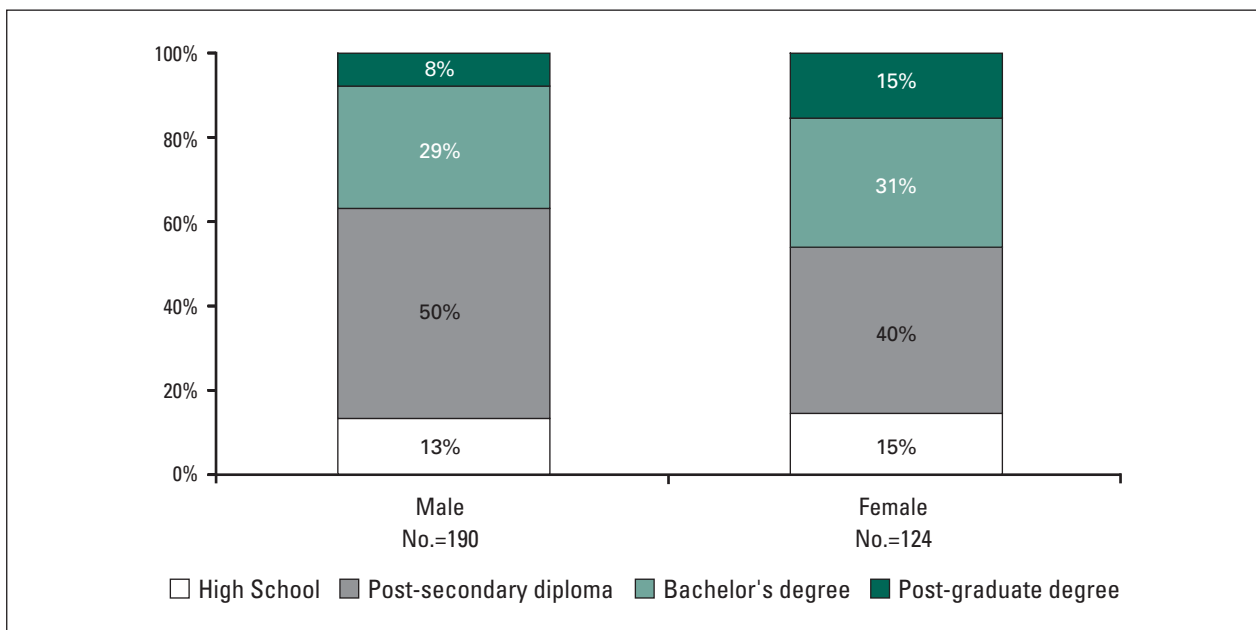
Figure 7: All appointees by gender and level of education



Source: PSC Survey of Appointments, July 2000 to March 2005

While these findings generally hold true across occupational categories, within the Technical category, the opposite is true. In this category, a larger percentage of female appointees (46%) than male appointees (37%) have a university degree (see **Figure 8**). Similarly, 15% of women, compared with only 8% of men, reported having a post-graduate degree.

Figure 8: All appointments in the Technical category by gender and level of education

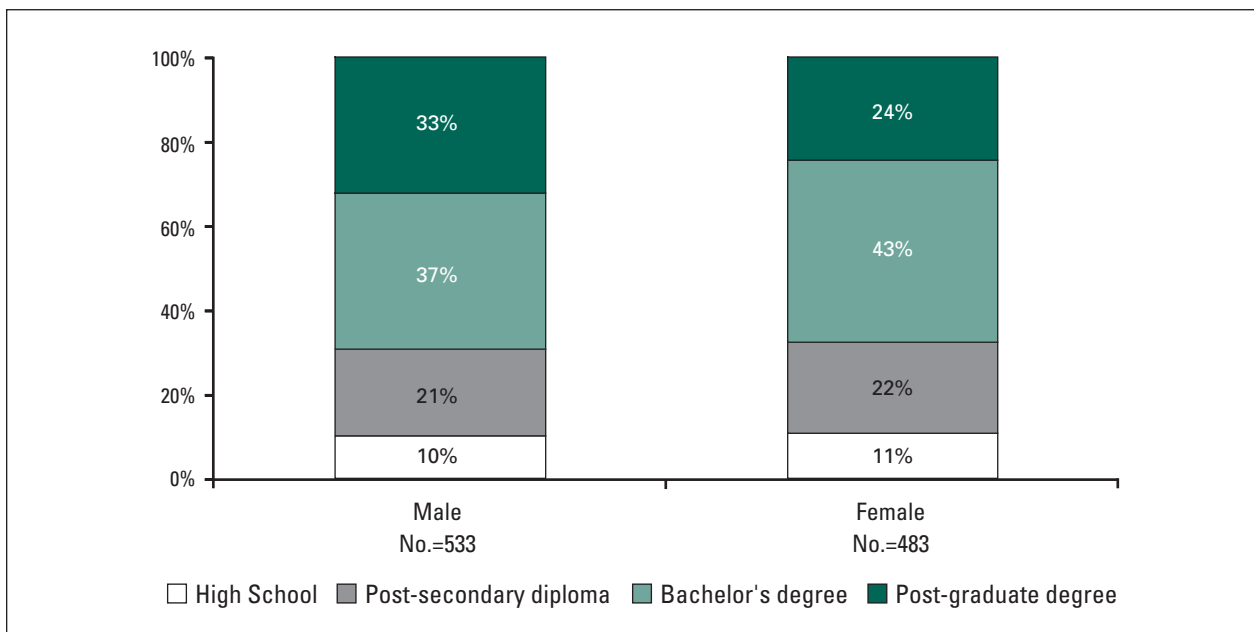


Source: PSC Survey of Appointments, July 2000 to March 2005

Male recruits are more highly educated than female recruits, but the difference is at the post-graduate level. Seventy percent of men have a university degree, 37% have a bachelor's degree and 33% have a post-graduate degree. Sixty-eight percent of women have a university degree, 43% have a bachelor's degree and 24% have a post-graduate degree (see **Figure 9**).⁶ For internal appointments, the differences are more extreme. Sixty-one percent of male internal appointees have a university degree, compared with only 43% of female internal appointees (see **Figure 10**). Twenty-five percent of male internal appointees have a post-graduate degree, compared with 13% of female internal appointees.

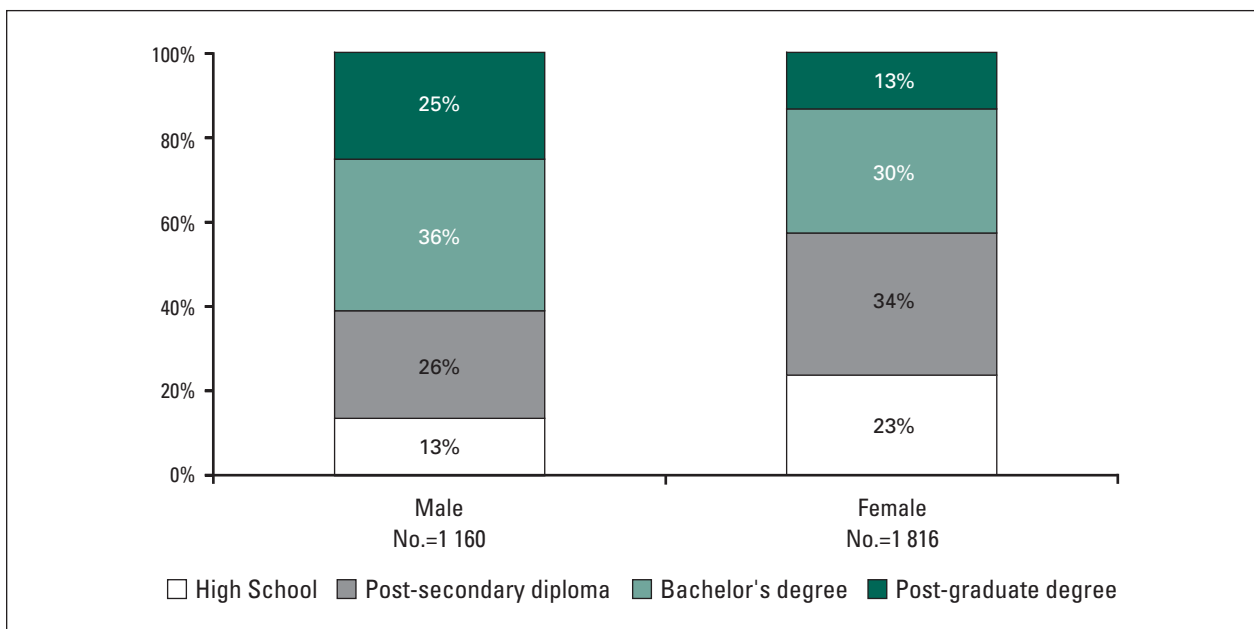
⁶ Percents shown in graphs may not add up to 100% due to rounding.

Figure 9: External appointments by level of education and gender



Source: PSC Survey of Appointments, July 2000 to March 2005

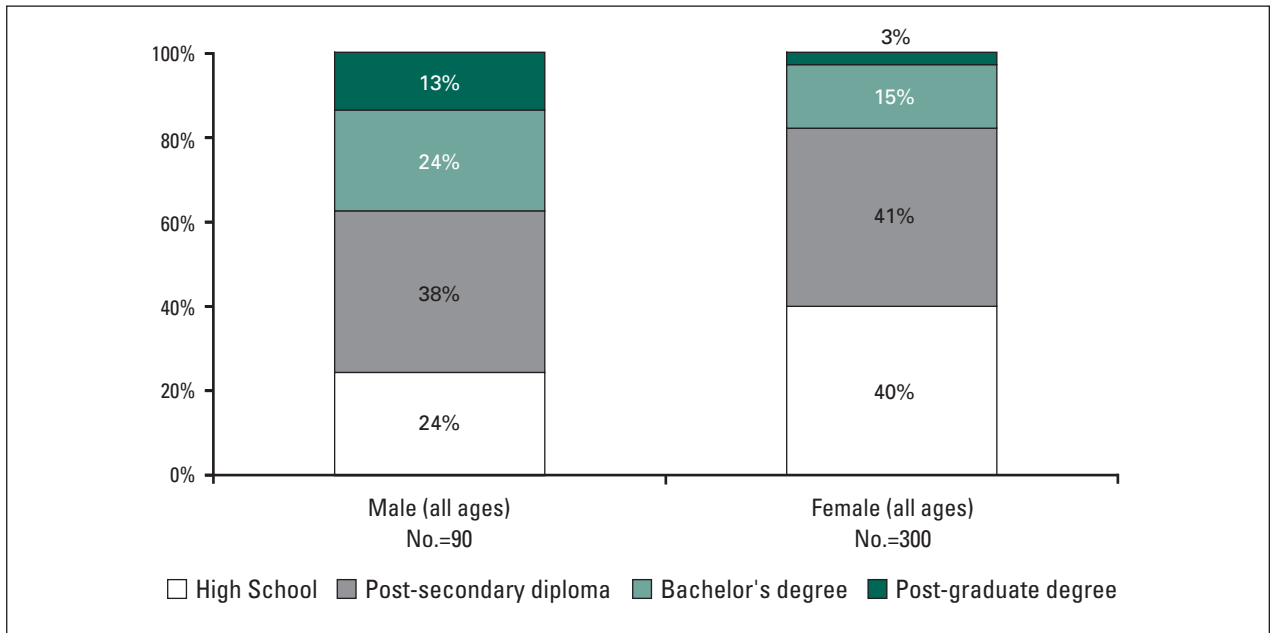
Figure 10: Internal appointments by level of education and gender



Source: PSC Survey of Appointments, July 2000 to March 2005

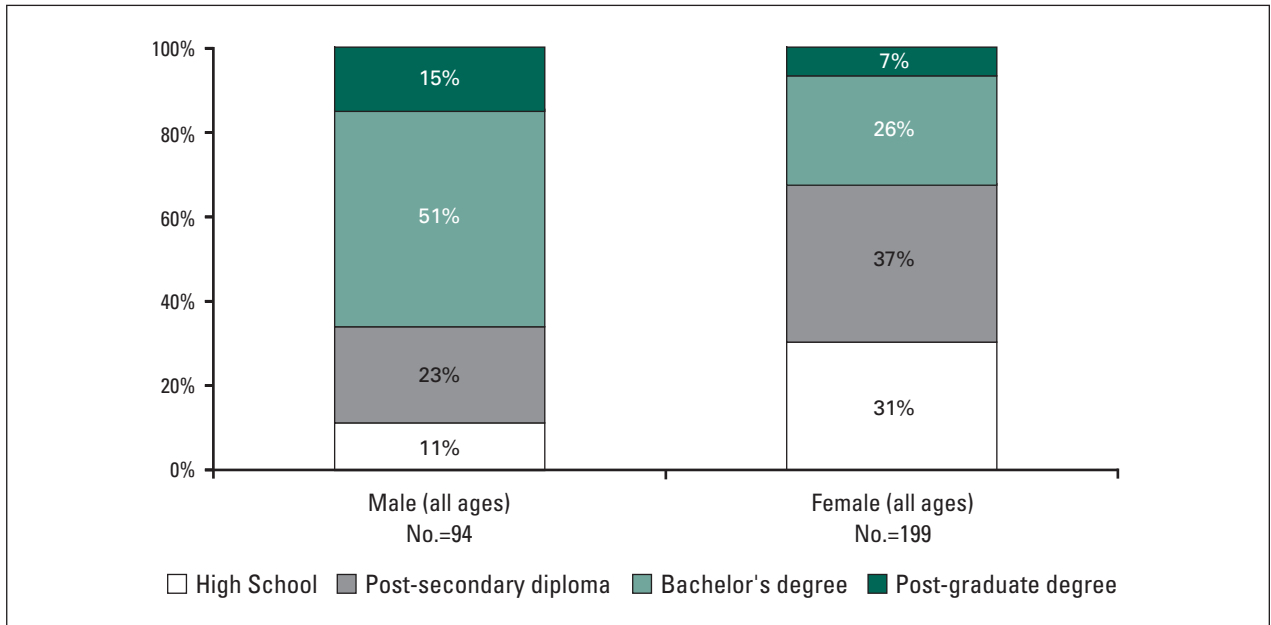
Among internal appointees, the educational gap between males and females is greatest within the Administrative and Foreign Service category and, especially, within the Administrative Services (AS) and Program Administration (PM) occupational groups, which dominate this category (see **Figures 11** and **12**). The share of male appointees with a university degree (38% for AS and 66% for PM) is more than double that of female appointees (19% for AS and 32% for PM).

Figure 11: Internal appointments in the Administrative Services (AS) group by gender and level of education



Source: PSC Survey of Appointments, July 2000 to March 2005

Figure 12: Internal appointments in the Program Administration (PM) group by gender and level of education

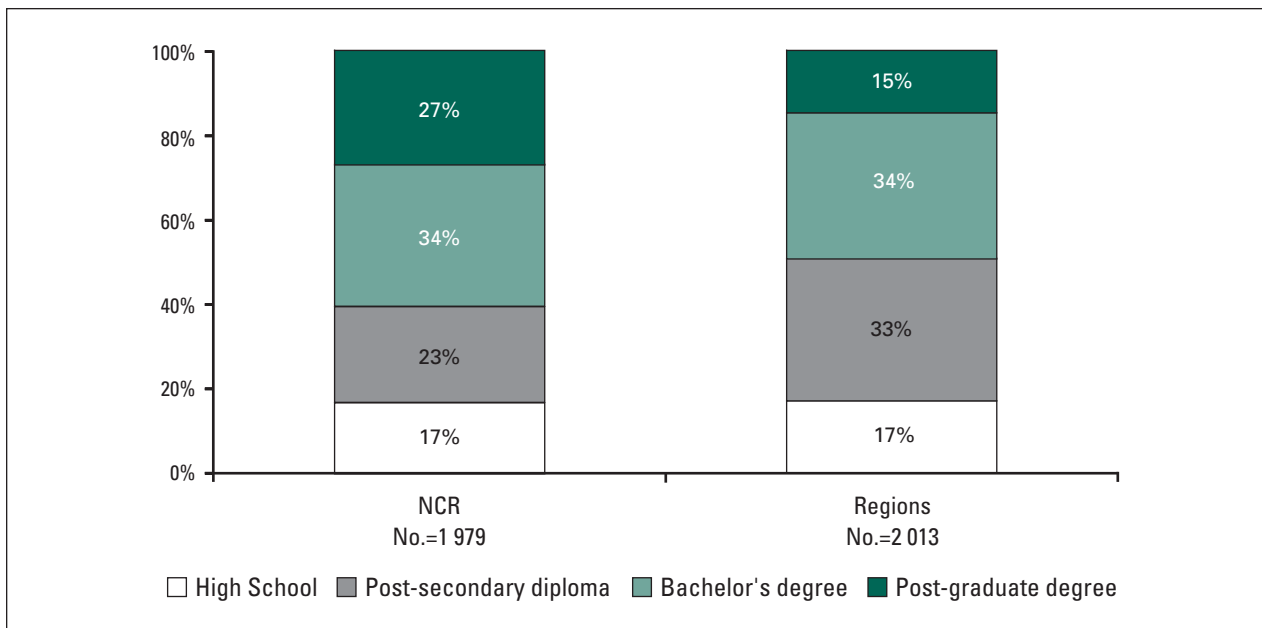


Source: PSC Survey of Appointments, July 2000 to March 2005

Appointees in the National Capital Region are more likely to have a post-graduate degree

Sixty-one percent of appointees in the National Capital Region (NCR) have a university degree, as compared with 49% in the regions (see **Figure 13**). Approximately one third of appointees in the NCR and in the regions have a bachelor's degree. However, 27% of NCR appointees have a post-graduate degree, compared with 15% of regional appointees. Non university post-secondary education appears to be more important in the regions than in the NCR — 33% of appointees in the regions have a post-secondary diploma, compared with 23% of appointees in the NCR.

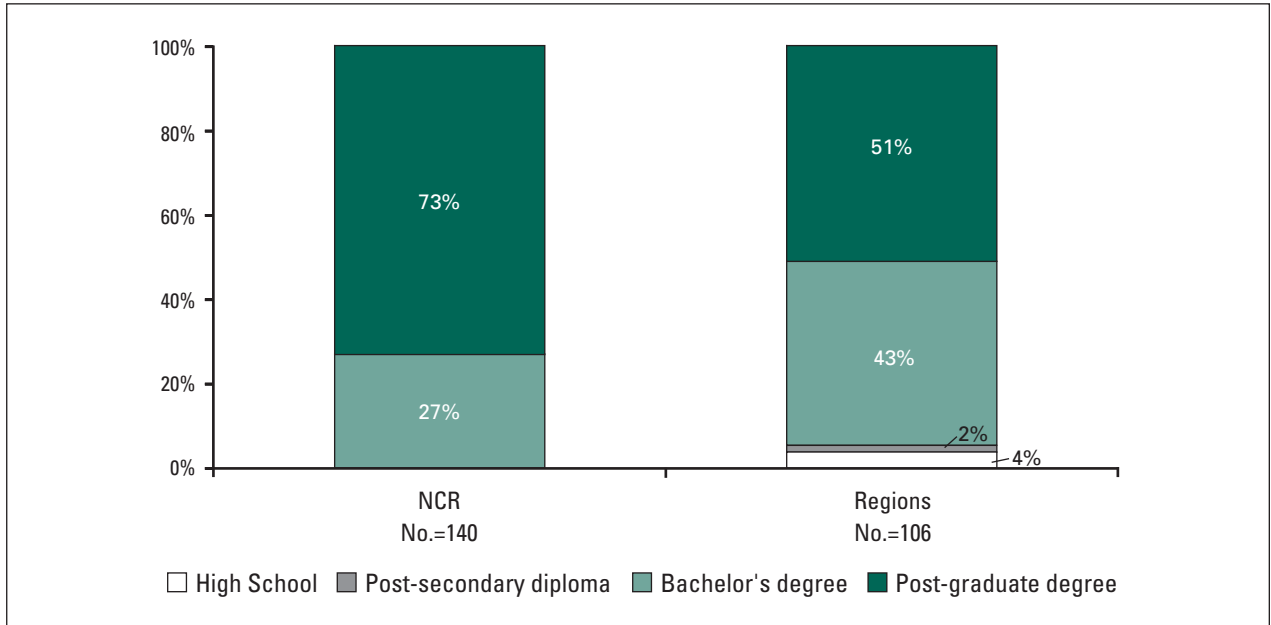
Figure 13: Total appointments by levels of education – NCR and regions



Source: PSC Survey of Appointments, July 2000 to March 2005

These higher levels of educational attainment in the NCR are most striking for external appointments in the Scientific and Professional category (see **Figure 14**). Within the Scientific and Professional category, 73% of external appointees in the NCR have a post-graduate degree, compared with only 51% of external appointees in the regions.

Figure 14: External appointments by level of education and region – Scientific and Professional category

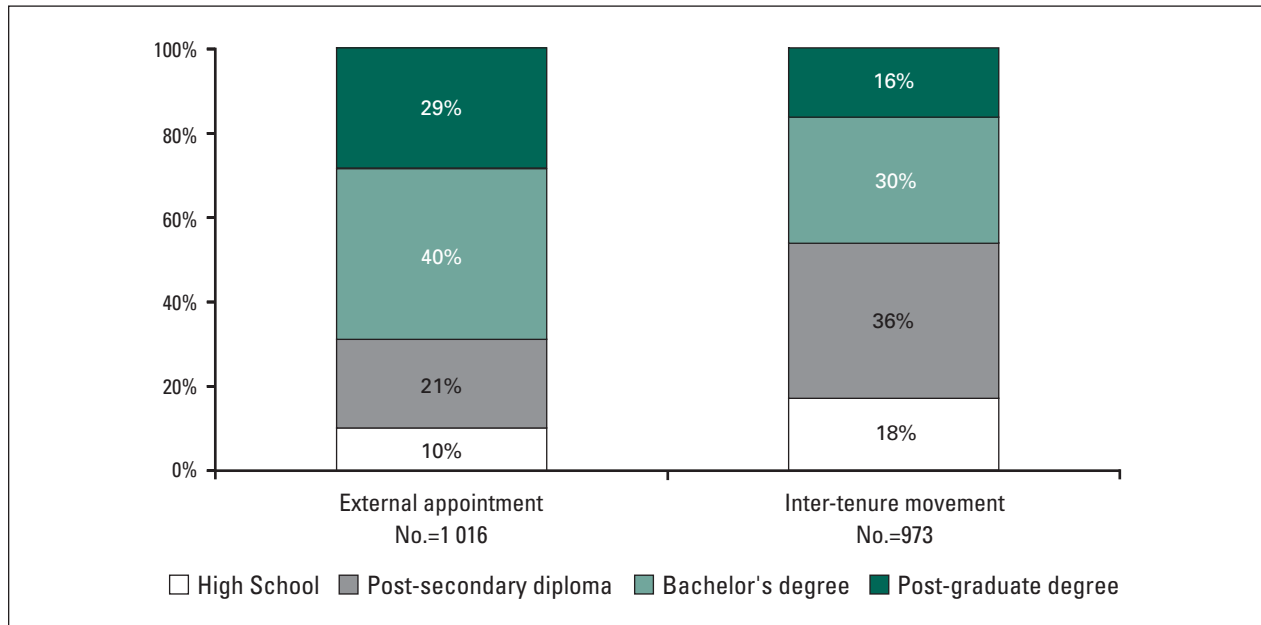


Source: PSC Survey of Appointments, July 2000 to March 2005

External appointees have higher levels of educational attainment than recruits from the temporary labour force

To this point in the study, analysis has focused on external appointments compared with internal appointments. This section focuses on external appointments compared with recruitment from the temporary labour force (term to indeterminate movement). Previously in this analysis, term to indeterminate movement was included in internal appointments.

Figure 15: External appointments and term to indeterminate movement by level of education



Source: PSC Survey of Appointments, July 2000 to March 2005

Sixty-nine percent of external appointees have a university degree compared with only 46% of those recruited from the temporary work force (term to indeterminate movement) [see **Figure 15**]. Similarly, 29% of external appointees have a post-graduate degree compared with 16% of those recruited from the temporary work force.

While these results hold true for all categories with the exception of the Technical category, it is the differences in the Administrative and Foreign Service category that drive the trend. Within this category, 78% of external appointees have a university degree, compared with 54% of those recruited from the temporary work force. While the numbers are considerably smaller, the trend is reversed for the Technical category, in which only 41% of external appointees have a university degree, compared with 59% of those recruited from the temporary work force.

Commerce, management or business administration are the favoured fields of study

Table 3 lists the major fields of study declared by survey respondents for the period from July 2002 through March 2005 (earlier periods could not be included due to changes in the survey questions). Similar distributions are provided for external appointees and internal appointees. The top-ranked fields of study were commerce, management or business administration (26%), social sciences (16%) and engineering and applied sciences (10%). The share of respondents declaring these major fields of study was the same for external appointees and internal appointees for the first two of these categories. However, engineering and applied sciences figured more prominently in external appointments than in internal appointments. Computer and information sciences ranked third for internal appointments.

Table 3: External and internal appointments by major field of study (university degree only)

All occupational categories	All appointment types (No.=1 468)	External appointments (No.=425)	Internal appointments (No.=1 043)
Field of study	(No.=1 468)	(No.=425)	(No.=1 043)
	%	%	%
Commerce, management or business administration	26	27	26
Social sciences	16	16	16
Engineering and applied sciences	10	16	8
Computer or information sciences	8	6	9
Humanities	7	7	8
Law	6	6	6
Biological or agricultural science	6	7	5
Public administration	4	3	5
Fine and applied arts	4	3	4
Health professions	4	3	4
Education	3	2	3
Mathematics and physical sciences	3	2	3
Interdisciplinary or no specialization	3	3	3
TOTAL	100	100	100

Source: PSC Survey of Appointments, July 2002 to March 2005

Concluding remarks

External appointees are better educated than their older internal counterparts. These differences persist across age cohorts. Male appointees in most occupational categories remain more highly educated than their female counterparts. However, these differences largely disappear when we look at younger external appointees. When staffing indeterminate positions, it is worth noting that the levels of educational attainment of those recruited from the temporary public service work force are, in general, lower than for those recruited from the general public.

This study provides a brief overview of the educational profile of appointees over a five year period. This overview provides useful information to managers and human resources planners as they look at their future staffing needs.

Study team

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Appendices

Appendix 1: Glossary

External appointment (Nomination externe):

The primary mechanism for replenishing the federal public service with members of the general public. This is primarily accomplished through open competitions.

Indeterminate (permanent) employment (Emploi pour une période indéterminée – emploi permanent):

Employment of no fixed duration, whether part-time, full-time or seasonal.

Level of educational attainment (Niveau de scolarité):

Academic, vocational or technical studies and training acknowledged through official documentation from, or accepted by, a recognized Canadian educational institution. Secondary high school includes a diploma or equivalent. Post-secondary education (diploma) includes:

- a registered apprenticeship, trade or vocational certificate or diploma;
- a certificate or diploma from a community college, CEGEP or technical institute; or
- a university diploma or certificate below the bachelor's level.

Examples of a professional degree include medicine, dentistry and veterinary medicine.

Major field of study (Domaine d'études principal):

The major field of post-secondary study at a recognized Canadian educational institution.

Occupational category (Catégorie professionnelle):

A broad series of job families characterized by the nature of the functions performed and the extent of academic preparation required. There are six occupational categories: Executive; Scientific and Professional; Technical; Administrative and Foreign Service; Administrative Support and Operational.

Occupational group (Groupe professionnel):

A grouping used for classification, comprised of similar kinds of work requiring similar skills.

Regions (Régions):

All areas of Canada other than the National Capital Region.

Specified term employment (Emploi pour une durée déterminée):

Part-time or full-time employment of a fixed duration.

Term to indeterminate movement

(Mouvement de personnes occupant un poste de durée déterminée à un poste pour une période indéterminée):

Appointments from specified period (term) positions to indeterminate (permanent) positions through promotion or lateral movement.

A complete list of the Glossary is available at
<http://www.psc-cfp.gc.ca/abt-aps/gls/index-eng.htm>.

Appendix 2: Standards for Selection and Assessment

The *Standards for Selection and Assessment* were applicable to most occupational groups. Over the study period, they were established by the Public Service Commission pursuant to section 12 of the *Public Service Employment Act*, R.S., 1985, c.P-33 (PSEA). These standards set out generic and group-specific qualifications that establish the minimum judged necessary to equip a person for a group of positions within an occupational group. Respecting these standards, and building on them based on the work to be performed in the actual position being staffed, allows managers to create a Statement of Qualifications, which provides the basis for selection based on merit.

For information on the *Standards for Selection and Assessment*, including standards for education by occupational category and group for the period covered in this study, please refer to the PSC Web site at <http://www.psc-cfp.gc.ca/plcy-pltq/staf-dot/selection/grp-eng.htm>. The responsibility for setting these standards passed to the Canada Public Service Agency (CPSA) with the coming into force of the current PSEA on December 31, 2005. The *Qualification Standards*, as they are now called, can be found on the CPSA Web site at <http://www.psagency-agencecfp.gc.ca/gui/squn-eng.asp>.

Appendix 3: Categories and professional groups

The following categories and groups are represented in the data.

Category	Group
Executive	<ul style="list-style-type: none"> ■ Executive (EX, GX)
Scientific and Professional	<ul style="list-style-type: none"> ■ Agriculture (AG) ■ Architecture and Town Planning (AR) ■ Auditing (AU) ■ Biological Sciences (BI) ■ Chemistry (CH) ■ Dentistry (DE) ■ Defence Scientific Service (DS) ■ Education (ED) ■ Engineering and Land Surveying (EN) ■ Economics, Sociology and Statistics (ES) ■ Forestry (FO) ■ Historical Research (HR) ■ Home Economics (HE) ■ Law (LA) ■ Library Science (LS) ■ Mathematics (MA) ■ Medicine (MD) ■ Meteorology (MT) ■ Nursing (NU) ■ Nutrition and Dietetics (ND) ■ Occupational and Physical Therapy (OP) ■ Pharmacy (PH) ■ Physical Sciences (PC) ■ Psychology (PS) ■ Scientific Regulation (SG) ■ Scientific Research (SE) ■ Social Work (SW) ■ University Teaching (UT) ■ Veterinary Medicine (VM)
Administrative and Foreign Service	<ul style="list-style-type: none"> ■ Administrative Services (AS) ■ Commerce (CO) ■ Computer Systems Administration (CS) ■ Financial Administration (FI) ■ Foreign Service (FS) ■ Information Services (IS) ■ Leadership Programs (PL) ■ Management Trainee Program (MM) ■ Organization and Methods (OM) ■ Personnel Administration (PE) ■ Purchasing and Supply (PG) ■ Program Administration (PM) ■ Translation (TR) ■ Welfare Programs (WP)

Category	Group
Technical	<ul style="list-style-type: none"> ■ Air Traffic Control (AI) ■ Aircraft Operations (AO) ■ Drafting and Illustration (DD) ■ Educational Support (EU) ■ Electronics (EL) ■ Engineering and Scientific Support (EG) ■ General Technical (GT) ■ Photography (PY) ■ Primary Products Inspection (PI) ■ Radio Operations (RO) ■ Ship's Officers (SO) ■ Social Science Support (SI) ■ Technical Inspection (TI)
Administrative Support	<ul style="list-style-type: none"> ■ Clerical and Regulatory (CR) ■ Communications (CM) ■ Data Processing (DA) ■ Office Equipment Operation (OE) ■ Secretarial, Stenographic, Typing (ST)
Operational	<ul style="list-style-type: none"> ■ Correction (CX) ■ Firefighters (FR) ■ General Labour and Trades (GL) ■ General Services (GS) ■ Heat, Power & Stationary Plant Ops. (HP) ■ Hospital Services (HS) ■ Lightkeepers (LI) ■ Printing Operations (PR) ■ Ship's Crews (SC) ■ Ship Repair (SR)

A complete list of occupational categories and groups is available at <http://www.psagency-agencefp.gc.ca/cla/def-eng.asp>.

Appendix 4: Data quality

The response rate introduces two potential sources of error. The first is error due to self-selection; the other is due to non-proportional sample distributions. The first source of error cannot be corrected, but non-proportional sample distributions can be corrected using appropriate weights. For this study, the potential for error in calculating population estimates using unweighted data was not considered large enough to cause material error, except perhaps in the relative weights of internal versus external competitive appointments, where insufficient information was available. Hence, unweighted estimates were reported, with results disaggregated by external and internal appointments.

While overall population estimates are considered accurate, some estimates of subgroups should be interpreted with caution as they are based on small samples. As a general guideline, we recommend that any findings based on samples smaller than 30 should be interpreted with caution.