Higher Education Quality Council of Ontario

An agency of the Government of Ontario

Exploring the Canadian Graduate and Professional Student Survey (CGPSS): Results from 2007 and 2010 for Ontario Universities

Huizi Zhao, Higher Education Quality Council of Ontario

Published by

The Higher Education Quality Council of Ontario

1, Yonge Street, Suite 2402
Toronto, ON Canada, M5E 1E5

Phone: (416) 212-3893
Fax: (416) 212-3899
Web: www.heqco.ca
E-mail: info@heqco.ca

Cite this publication in the following format:

Zhao, H. (2012). *Exploring the Canadian Graduate and Professional Student Survey (CGPSS): Results from 2007 and 2010 for Ontario Universities*. Toronto: Higher Education Quality Council of Ontario.

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Dedication

Our thanks to Marty England of Western University, a colleague and friend who was integral to the development and launch of the CGPSS in Canada, and to the initiation of this Ontario research project. He passed away unexpectedly in the spring of 2011.

Acknowledgements

The assistance of many people was invaluable to the production of this report. The author's thanks go to those at the Council of Ontario Universities, members of the Council on University Planning and Analysis (CUPA) survey committee, and colleagues at the Higher Education Quality Council of Ontario (HEQCO) who reviewed the report and provided feedback and suggestions.

The author particularly wishes to extend her thanks to Sylvia Lin from the Council of Ontario Universities for coordinating the data gathering and transfer. Special thanks to Luc Simon from Université Laval and Marie-Eve Meunier from the University of Ottawa for serving as the data analysis advisor committee members of this project and providing helpful comments regarding the data and analysis. The author also wishes to acknowledge the professional management of the project on the part of Richard Wiggers of HEQCO for making the project happen and moving it forward. The report has significantly benefited from comments received on earlier drafts from Fred Hall, Richard Wiggers, Luc Simon, Marie-Eve Meunier, Joan Norris, and various university representatives.

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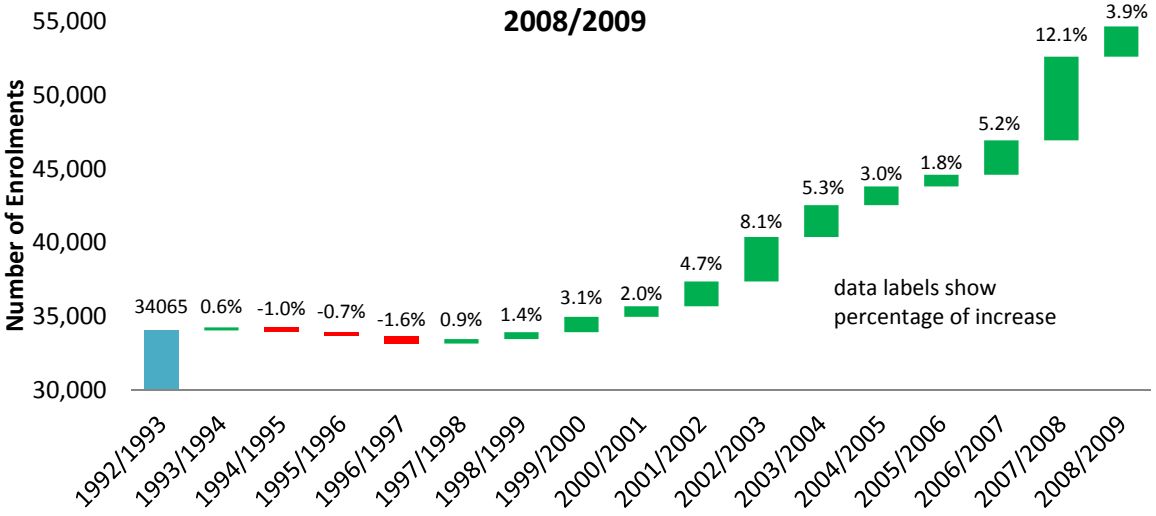
Section 1: Introduction

The Higher Education Quality Council of Ontario (HEQCO) is conducting research on a variety of topics related to graduate student enrolments and labour market outcomes. To some extent, graduate student satisfaction and related issues can be examined through the use of the Canadian Graduate and Professional Student Survey (CGPSS), which was administered across Canada in 2007 and 2010, and is scheduled to be administered again in 2013. This examination of past data will allow us to explore the usefulness of the CGPSS data for institutions and to determine what factors – both individual and program-related – influence graduate student satisfaction.

In Ontario, recent growth in graduate student enrolment has largely been a response by the government, universities, and students to the perceived needs and demands of the knowledge economy. While greater numbers of students have been pursuing degrees above the Bachelor's level, the federal government's *Innovation Strategy* (2002) and the provincial government's *Reaching Higher* plan (2005) sought to increase the number of graduate student spaces in Ontario universities even further. Universities have also expressed a desire to increase their graduate student enrolments – reinforced with the release of a paper by the Council of Ontario Universities (COU) to that effect in February 2012 (COU, 2012) – and all Ontario universities have expanded their graduate program offerings over the past ten years, some quite substantially (Arnold, Maldonado, & Wiggers, forthcoming; Wiggers, Lennon, & Frank, 2011).

After a period of declining enrolments in the early 1990s, graduate enrolments in Ontario universities have increased 56% in the decade from 1999/2000 to 2008/2009 (Figure 1). While some fields of study have experienced even greater growth than others (e.g., health), all disciplines have increased their graduate student enrolment numbers.

Figure 1. Graduate student enrolments in Ontario, 1992/1993-2008/2009



Source: Statistics Canada. *Table 477-0013 - University enrolments, by registration status, program level, Classification of Instructional Programs, Primary Grouping (CIP_PG) and sex, annual (number),* CANSIM (database).

As enrolments have grown, there has been some concern about how enrolment expansion might affect the quality of graduate level degrees. Since 2006/2007, Ontario universities have collaborated with the Ontario

government to incorporate the periodic administration of student surveys as quality indicators as part of the Multi-Year Accountability Agreements (MYAAs).[1] Most recently, the Don Drummond report (Drummond, 2012) also recommended using student satisfaction as a quality indicator to enhance performance measures in the MYAAs.

The CGPSS offers data that can be instrumental in analyzing students' experiences and level of satisfaction with their graduate education, allowing for an indication of the quality of Ontario's graduate programs. The survey questionnaire was initially developed by the Massachusetts Institute of Technology (MIT) and Duke University, and is based on three pre-existing surveys from Rutgers, the Higher Education Data Sharing (HEDS) Consortium, and the Consortium on Financing Higher Education (COFHE) (Chang, 2011).

Spearheaded by Marty England, former Senior Policy Advisor to the President at Western University, the CGPSS was first piloted by several universities in 2005 and was originally designed to gain insight into the experience of students at various universities across Canada. The following benefits were anticipated with administration of the survey:

- Better understanding of graduate level education processes;
- Allowing comparative analyses;
- Providing provincial and/or national portraits of the state of graduate level education, along with more detailed insights into policy issues such as graduate funding, impediments to completion, institutional infrastructure, and other areas for improvement; and
- Promoting relevant changes and appropriate adaptations with the goal of maintaining a competitive edge internationally with respect to our graduate level institutions (Spence, 2009).

In addition, access to the CGPSS data allows for analyses beyond the descriptive level that permit an examination of which program- and student-related factors may influence graduate students' level of satisfaction and provide insight into potential variations by field of study, degree type, and institution.

Based on the success of the pilot, CGPSS was administered in 27 Canadian universities (15 Ontario universities) in 2007 and 37 (17 Ontario universities) in 2010. Six overall satisfaction and general assessment questions from the CGPSS have been included as part of the MYAA framework.

The data used for this report is CGPSS student level data collected by Ontario institutions in 2007 and 2010. The survey is a national, cross-sectional study of all graduate students in all years of study, with the exception of students in the MBA program.

This analysis of CGPSS data is relevant to HEQCO's mandate of assessing the quality of Ontario's postsecondary system by providing an indication of the experiences of current graduate students, with the measurement of student satisfaction treated as a proxy for some measures of quality. This project also touches on issues of accessibility, particularly with respect to the effects of funding and debt on the experiences of graduate students. In addition to addressing HEQCO's mandate, this analysis of the 2007 and 2010 data also provides institutions with suggestions to improve the experiences of their graduate students and insight into what elements of graduate programs may be altered to provide students with a more

[1] Ontario universities agreed to administer and report on the National Survey of Student Engagement (NSSE) and CGPSS, while Ontario colleges were required to use the Ontario College Student Engagement Survey (OCSES). Recently, the KPI+ (Key Performance Indicators) pilot was introduced as a replacement to the OCSES to measure student engagement in Ontario Colleges.

satisfying experience. For that reason, we worked with COU – and in particular their CUPA survey committee – to secure the collaboration of all Ontario universities who had administered the CGPSS in 2007 and 2010.

After all participating Ontario universities permitted the COU to pool their CGPSS data from the 2007 and 2010 cycles, COU provided the pooled database (both student and institution de-identified) to HEQCO. The analysis plan focused on three main research questions:

1. What factors (student characteristics, program-related factors, etc.) influence graduate students' general/overall satisfaction level with their universities, programs of study, academic experiences, and faculty supervisors?
2. What factors influence graduate students' perception on quality of teaching and learning as measured by the following four benchmarks in CGPSS?
    - Quality of Teaching (QT)
    - Opportunities to Present and Publish (OPP)
    - Research Training and Career Orientation (RT)
    - Supportive Dissertation Advisor (SDA)
3. How did graduate students' satisfaction level at Ontario universities change between 2007 and 2010?

In response to this analysis plan, the remainder of this report is organized as follows:

- Section 2 summarizes findings on student satisfaction in the literature.
- Section 3 describes the Ontario CGPSS data and discusses the feasibility of using the latter as an assessment tool.
- Section 4 presents results and is further divided into five subsections based on the variables:
    - 4.1 describes the CGPSS data for 2007 and 2010 in terms of survey respondents' demographic and program characteristics;
    - 4.2 examines graduate students' general assessment of their experience;
    - 4.3 presents student's general satisfaction towards their universities, programs, and dissertation advisors; and
    - 4.4 examines the four benchmarks described earlier.
- Section 5 examines how graduate students' satisfaction levels changed between 2007 and 2010.
- Section 6 provides some concluding remarks.

Section 2: Literature Review

A review of the North American literature on graduate student satisfaction reveals that previous research on predictors is relatively scarce and often out-dated (e.g., Gregg, 1972; Girves & Wemmerus, 1988). Studies that do examine this issue are primarily conducted with data from the United States (e.g., Lovitts, 2008; Zhao, Golde, & McCormick, 2007). Many of these studies also tend to focus on graduate student retention or degree progress and supervisor-student interactions, leaving the issue of graduate student satisfaction largely ignored. Previous HEQCO research has been conducted with the CGPSS data from one institution, Western University, providing a solid foundation upon which to build this project (Spence, 2009).

Drawing on these studies, some key issues relating to graduate students' professional development, academic experience, and level of satisfaction have been brought to light. Across all studies reviewed, the advisor-student relationship was found to be a highly significant aspect of graduate students' experiences, particularly for those pursuing a doctoral degree. The role of the advisor has been determined to be the "single most important micro-environmental factor" in student's transition to conducting independent research (Lovitts, 2008:316). Previous research conducted with the CGPSS also indicates that the quality of an advisor's performance is significantly related to graduate students' satisfaction with their universities and programs (Spence, 2009). Spence found that advisors who provide constructive feedback, act as a student's advocate when necessary, and facilitate a student's professional development are considered to be advisors of high quality, performing their role well. In general, it has been found that a high level of faculty-student interaction and collegiality within departments positively influence graduate students' experiences (Gregg, 1972; Girves and Wemmerus, 1988).

While advisor and faculty characteristics are important predictors of graduate student satisfaction, field of study has also been found by some to be an important determinant. In an examination of the quality of advisor-student relationships among doctoral students, Zhao, Golde, and McCormick (2007) found that students in the social sciences and biological sciences report being less satisfied with the quality of advising they have received than their peers in humanities programs. In Ontario universities, meanwhile, students in the biological sciences were found to be more likely than arts students to report that they would recommend their university to someone considering the same program (Spence, 2009). Zhao, Golde, and McCormick (2007) suggest that systematic differences in how departments and disciplines operate are likely to influence student satisfaction. These differences could provide valuable insight into variations in graduate satisfaction based on structural differences present between fields of study.

Other factors such as financial support, levels of student debt, and departmental atmosphere (e.g., student-faculty interaction, social activities) have also been investigated in the literature examining graduate students' experiences. While financial support has been identified as a significant factor in facilitating degree progress for doctoral students (Girves & Wemmerus, 1988), the amount of individual student debt accumulated and the level of departmental funding have not been found to significantly influence many measures of graduate student satisfaction among those who responded to the CGPSS (Spence, 2009). However, Spence (2009) finds that departmental funding to attend national or regional scholarly meetings or conferences positively influences how students rated the overall quality of the graduate experience at their university.

Spence's (2009) research analyzed the utility of CGPSS data at one institution (the University of Western Ontario). He found that the CGPSS provides data that are useful for understanding processes related to graduate student education, and noted that the use of the larger CGPSS data sets (i.e., provincial or national) would allow for a more robust analysis and would "offset many of the limitations encountered" with the analysis of the graduate population at only one institution (2009:8).
In addition to Spence's (2009) analysis of CGPSS data, HEQCO has also undertaken analyses of similar satisfaction survey data. An examination of the National Survey of Student Engagement (NSSE) was recently

conducted by Chris Conway and Sara Montgomery from Queen's University, and HEQCO senior research analyst Huizi Zhao. The research indicates that institutional size has some influence on student engagement at the undergraduate level with respect to the "supportive campus environment," "student faculty interaction," and "active and collaborative learning" measurements; however, it does not have a significant effect on the "enriching educational experiences" and "level of academic challenge" engagement measures. Considering that the graduate student population is distinct from the undergraduate population in many ways, it is unknown what effects institutional size may have on graduate students' level of satisfaction, if any. Thus, this was considered to be a fruitful aspect to explore in this analysis of the CGPSS data.

Given these findings, it is obvious that several factors are influential in determining the level of graduate students' satisfaction, though many aspects of graduate students' experiences, such as guidance with research training and career paths, have yet to be studied. Thus, an examination of the factors discussed above, in addition to other factors (e.g., professional development activities) has been undertaken here to obtain a more complete picture of the graduate student experience and a better understanding of the factors that may influence their levels of satisfaction. It is these additional levels of analysis that we are undertaking in this report.

Section 3: Data and Methodology

3.1 The CGPSS Data

This research utilizes the 2007 and 2010 CGPSS data from 15 Ontario universities in 2007 and 17 in 2010 (refer to Appendix A for a list of participating Ontario universities). The CGPSS data provide various measurements for graduate student satisfaction as well as information on coursework, research activities, faculty-student interaction, funding, and university services. [2]

The final data HEQCO received from COU are de-identified individual survey records. Institutional identifiers were removed by COU and replaced with a university size variable indicating whether the institution at which each student is enrolled is considered "small," "low-medium," and "high-medium" or "large" according to an agreed upon definition by the CUPA survey committee.[3]

In addition to the information collected in the survey, the data also included additional fields that were created by linking the survey records to student administrative records in their own universities. Those additional fields provided accurate demographic information (e.g., gender, immigrant status) as well as student's current status in their graduate study (e.g., year of study, full-time/part-time status, program CIP code).

There are some limitations with the use of CGPSS data. First, although there are two available data sets (2007 and 2010), the data is not collected as a longitudinal survey. In this respect, we cannot analyze whether individuals' satisfaction changes over time; however, we can conduct cross-sectional analyses with each data set and compare the two results. These two waves/cycles of the survey can provide some insight into whether the factors influencing graduate student satisfaction have changed between a group of students who were largely unaffected by the expansion of graduate programs (2007 CGPSS) and those who were likely largely affected by this growth (2010 CGPSS).

Second, there was a change in the survey instrument between 2007 and 2010. In 2007, one version of the survey was administered to all graduate students. However, in 2010 the CGPSS was administered as two versions. The "Regular" version was identical to the 2007 survey instrument and was given to Master's Research and Doctoral students. The "Professional" version excluded a number of research-focused questions and included several new questions related to professional skills development, and was sent to Master's students enrolled in professional programs (as defined by their own institution). This limited our abilities to compare results from 2007 to 2010 for Master's students.

Third, the CGPSS does not provide any insight into graduate students' labour market outcomes, which is often of interest when examining this population. However, we can obtain some information regarding aspects of career training from some of the CGPSS questions.

[2] The data used for this study was collected and consolidated by COU from each participating Ontario university through the CUPA survey committee. The committee was updated regularly along the way and contributed through feedback and comments for this project.
[3] The university size variable was coded according to 2009-2010 fall-term graduate headcounts. The cut-off numbers are: 0-999 for "small," 1,000-2,999 for "low medium," 3,000-4,999 for "high medium," and more than 5,000 for "large."

3.2 Methodology

As indicated above, the independent variables of interest include student characteristics (e.g., sex, age, full-time/part-time), program characteristics (e.g., degree type, field of study), financial factors (e.g., debt, funding), and university size.

The primary dependent variables involve the following three sets of measures, which are also explained in greater detail below:

1) General Assessment

Overall, how would you rate the quality of:

- Your academic experience at this university?
- Your student life experience at this university?
- Your graduate/professional program at this university?
- Your overall experience at this university?

2) General Satisfaction

- If you were to start your graduate/professional career again, would you select the same university?
- If you were to start your graduate/professional career again, would you select the same field of study?
- Would you recommend this university to someone considering your program?
- Would you recommend this university to someone in another field?
- If you were to start your graduate career again, would you select the same faculty supervisor?

3) Four Benchmarks

- Quality of Teaching (QT)
- Opportunities to Present and Publish (OPP)
- Research Training and Career Orientation (RT)
- Supportive Dissertation Advisor (SDA)

The four benchmarks were developed by a group of researchers from Université Laval, McGill University, and the University of Ottawa for the G13 Data Exchange (Mercier, Meunier, Jacques, Simon, & DiGenova, 2010). The researchers focused on survey sections 3-7, which are more closely related to the quality of learning. They used component factor analysis and four benchmarks were created based on 29 items.4 Please refer to Appendix B for a list of the four benchmarks and their component items.

Throughout this report, results are provided for three types of graduate students determined by their program type (i.e., doctoral program, research master's program and professional master's program). In 2007, Master's students were categorized into two groups (Master's with thesis, and Master's without thesis) by whether the programs "included a Thesis, Dissertation, or Research Paper." In 2010, Master's students were

[4] The reliability and validity of the four benchmarks were tested by the researchers using three tests: Bartlett test, Measure of Sample Adequacy (MSA), and partial correlation.

grouped into Master's Research and Master's Professional according to the two versions of the CGPSS survey (Regular and Professional) distributed by the participating universities.[5]

Due to the survey instrument change for Master's students between 2007 and 2010, the comparison between the two years was conducted for all respondents and for the sample of doctoral students only. Of particular interest with doctoral students is their research and teaching preparation, as well as whether they obtain guidance and advice about careers both within and outside of academia.

All summary tables have been tested for statistical significance, using Chi-square for distributions, and Analysis of Variance (ANOVA) for mean score differences. Only statistically significant differences are noted in the text.

Logistic regression models were used to examine dependent variables with binary values. For example, logistic regression model was used to predict the probability that a student chose "Definitely" or "Probably" for selecting the same university (0=No, 1=Yes). Odds ratios were used to present the relative likelihood of a specific student subgroup choosing the same university compared to the reference group indicated in the tables. If the odds ratio is bigger than 1, the specific student subgroup is more likely to choose "Definitely" or "Probably"; If the odds ratio is smaller than 1, the specific student subgroup is less likely to do so. OLS regression models were employed to examine linear dependent variables (mean scores of the four benchmarks).

[5] Pease note that the "Master's Research" group in 2010 includes all graduate students who responded to the "Regular" version of the survey, regardless of whether their program included a Thesis or not. This grouping method was approved by the CUPA survey committee members.

Section 4: Results

Please note that although all the graphs and results are presented for both 2007 and 2010 in the section that follows, the results for the two years are not directly comparable due to both the sample change and the survey instrument change. The 2010 sample in the analysis that follows also includes two additional Ontario universities. Please see Section 5 for a comparative analysis between the two years.

4.1 Respondent Profile

(For sample distribution by degree type, please refer to Tables 2.1 & 2.2.)

The CGPSS was administered from January to April of the survey year. Students who were registered in both the fall term of the year prior to the survey year and/or the winter term of the survey year were invited by email to participate in the CGPSS. Therefore, the 2007 survey sample was drawn from students enrolled in the 2006/2007 academic year and the 2010 survey sample corresponded to graduate students enrolled in the 2009/2010 academic year.

In 2007, the initial sample size (before data cleaning) was 16,695, which translates to a 35% response rate for all Ontario graduate students enrolled in 2006/2007. The initial sample for 2010 of 17,199 respondents also corresponds to a response rate of approximately 35% of all enrolled Ontario graduate students in 2009/2010. Table 1 presents a comparison between the overall Ontario graduate student population (as calculated by Statistics Canada's Postsecondary Student Information System (PSIS) data) and CGPSS respondents, as well as the response rates by students' characteristics in 2007 and 2010. In both years, the response rates (after removing non-valid responses) are slightly over 30%.[6] The response rate varies among student sub-groups, and the patterns are consistent in both years. Females, full-time students, doctoral students, and students enrolled in "Physical and Life Sciences and Technologies," "Agriculture, Natural Resources and Conservation," and "Health, Parks, Recreation and Fitness" disciplines[7] were more likely to respond to the CGPSS survey in both years. However, regardless of the variations among graduate student sub-groups, the response rate generally ranged between 20%-40%.

As shown in Table 1, the survey participants are reasonably representative of the population of Ontario graduate students in 2007 and 2010 in terms of gender, age, immigrant status, degree type, registration status, and disciplinary area. There is very little change between 2007 and 2010 in both the overall graduate student population in Ontario and in the distribution of CGPSS respondents.

[6] Please note that CGPSS data presented in Table 1 are the final sample used for this specific research, after excluding some invalid records. As a result of the exclusion, the response rates presented in this table are slightly lower than the real response rates of the CGPSS survey.

[7] The discipline categories listed in Table 1 are grouped differently from the grouping used in the rest of this report. CIP classifications are what Statistics Canada used to group disciplines in the PSIS data, so this grouping is used in Table 1 for comparison between the CGPSS respondents and Ontario graduate population.

Table 1. Comparison of CGPSS participants and graduate student population, Ontario universities, 2007 and 2010

	2007					2010				
Characteristic	Survey Participants		Graduate Student Population		Response Rate	Survey Participants		Graduate Student Population		Response Rate
	No.	Col %	No.	Col %		No.	Col %	No.	Col %	
Total	15,508	100.0%	47,214	100.0%	32.8%	17,668	100.0%	56,334	100.0%	31.4%
Gender										
Male	6,858	44.2%	22,977	48.7%	29.8%	7,590	43.0%	26,700	47.4%	28.4%
Female	8,597	55.4%	24,237	51.3%	35.5%	10,078	57.0%	29,634	52.6%	34.0%
Immigrantion status										
Domestic	13,000	83.8%	40,698	86.2%	31.9%	15,261	86.4%	48,942	86.9%	31.2%
International	2,299	14.8%	6,510	13.8%	35.3%	2,407	13.6%	7,410	13.2%	32.5%
Registration status										
Part-Time	2,201	14.2%	10,410	22.0%	21.1%	2,531	14.3%	10,914	19.4%	23.2%
Full-Time	13,303	85.8%	36,804	78.0%	36.1%	15,137	85.7%	45,426	80.6%	33.3%
Degree Type										
Master's	9,459	61.0%	32,001	67.8%	29.6%	11,443	64.8%	38,337	68.1%	29.8%
Doctoral	6,049	39.0%	15,213	32.2%	39.8%	6,225	35.2%	17,997	31.9%	34.6%
CIP Classifications										
Education	1,106	7.1%	3,933	8.3%	28.1%	1,300	7.4%	4,515	8.0%	28.8%
Visual and Performing Arts, and Communications Technologies	449	2.9%	966	2.0%	46.5%	337	1.9%	1,218	2.2%	27.7%
Humanities	1,435	9.3%	4,551	9.6%	31.5%	1,384	7.8%	4,671	8.3%	29.6%
Social and Behavioural Sciences and Law	2,344	15.1%	7,140	15.1%	32.8%	3,172	18.0%	9,183	16.3%	34.5%
Business, Management and Public Administration	2,033	13.1%	7,689	16.3%	26.4%	2,243	12.7%	10,104	17.9%	22.2%
Physical and Life Sciences and Technologies	2,442	15.7%	6,438	13.6%	37.9%	2,526	14.3%	6,945	12.3%	36.4%
Mathematics, Computer and Information Sciences	1,059	6.8%	3,039	6.4%	34.8%	1,138	6.4%	3,558	6.3%	32.0%
Architecture, Engineering, and Related Technologies	2,271	14.6%	7,011	14.8%	32.4%	2,792	15.8%	7,656	13.6%	36.5%
Agriculture, Natural Resources and Conservation	393	2.5%	1,137	2.4%	34.6%	543	3.1%	1,413	2.5%	38.4%
Health, Parks, Recreation and Fitness	1,913	12.3%	4,833	10.2%	39.6%	2,143	12.1%	6,603	11.7%	32.5%
Personal, Protective and Transportation Services	0	0.0%	321	0.7%	0.0%	12	0.1%	51	0.1%	23.5%
Other	53	0.3%	153	0.3%	34.6%	78	0.4%	426	0.8%	18.3%

Data sources: PSIS data, Statistics Canada custom tables, 2006/07 and 2009/10; CGPSS data, Ontario universities, 2007 and 2010.

The respondent profiles for 2007 and 2010 are very similar (Figures 2 through 9, Tables 2.1 and 2.2), and the difference in the gender distributions of the two years is only 1% (Figure 2). Figure 3 shows the age group distribution for the two years. Graduate students aged 25 years or younger increased from 30% in 2007 to 35% in 2010. This signals that the Ontario graduate student population is becoming younger. There is no change or very little change in distributions in terms of language selected by students for the survey (Figure 4), immigrant status (Figure 5), and registration status (Figure 6). Among survey respondents, less than 4% chose French as the language of choice for the survey, about 15% were international students, and 14% were enrolled part-time.

Figure 2. Distribution of survey participants by gender, CGPSS 2007 & 2010, Ontario universities

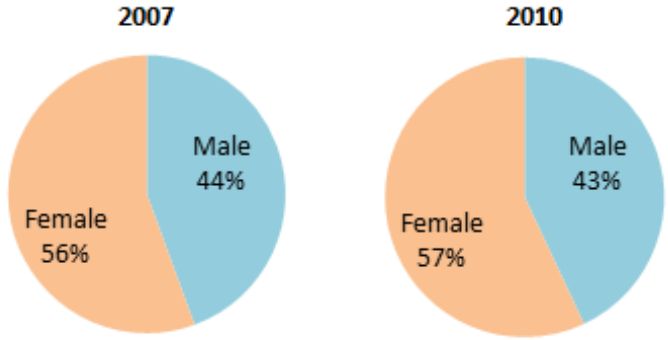


Figure 3. Distribution of survey participants by age group, CGPSS 2007 & 2010, Ontario universities

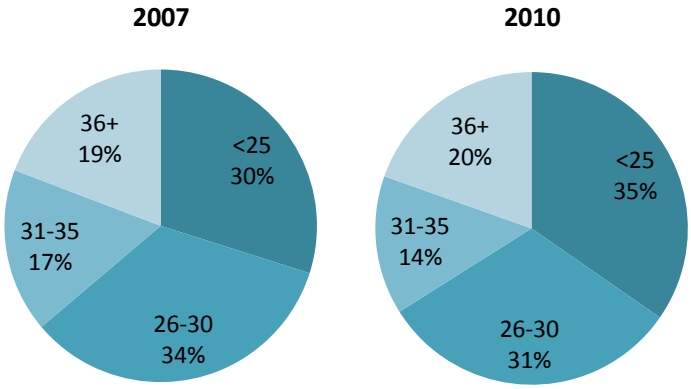


Figure 4. Distribution of survey participants by language selected by student for survey, CGPSS 2007 & 2010, Ontario universities

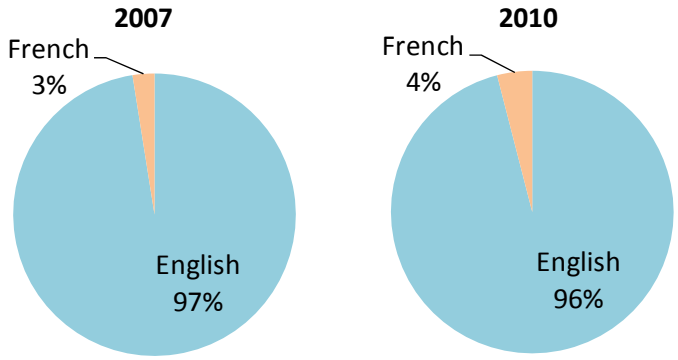


Figure 5. Distribution of survey participants by immigrant status, CGPSS 2007 & 2010, Ontario universities

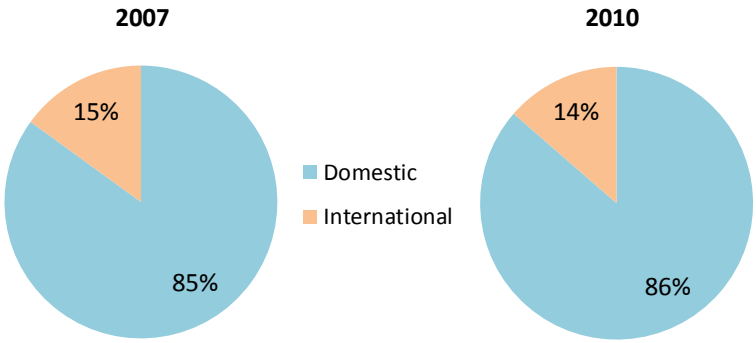
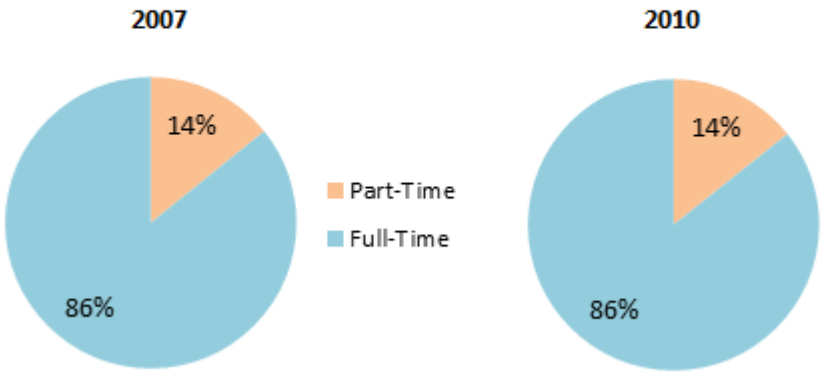


Figure 6. Distribution of survey participants by registration status, CGPSS 2007 & 2010, Ontario universities



Due to the grouping differences in degree type, respondent distribution by degree type between the two years is not comparable. Therefore, the pie charts for 2007 and 2010 in Figure 7 should be examined separately. In 2007, 39% of survey respondents were Doctoral students, 43% respondents were enrolled in Master's programs with thesis, and 18% respondents were enrolled in Master's programs without thesis. In 2010, 35% of respondents were Doctoral students, 43% respondents were in Master's Research program (as defined by their own institutions regardless of whether their programs included a thesis or not), and the remaining 22% were enrolled in Master's Professional programs.

Figure 7. Distribution of survey participants by degree type, CGPSS 2007 & 2010, Ontario universities

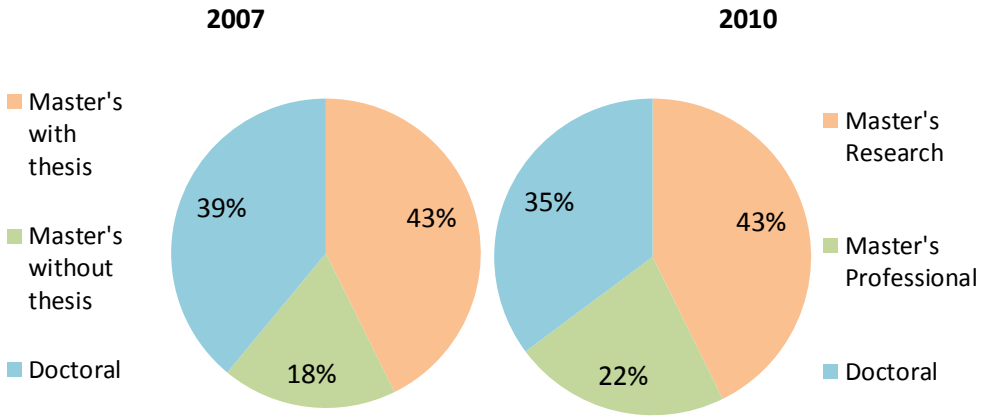


Figure 8 shows the distribution of survey respondents by university size. The distribution differences between the two years in this case are likely due to the inclusion of the two additional universities' data in 2010.

Figure 8. Distribution of survey participants by university size, CGPSS 2007 & 2010, Ontario universities

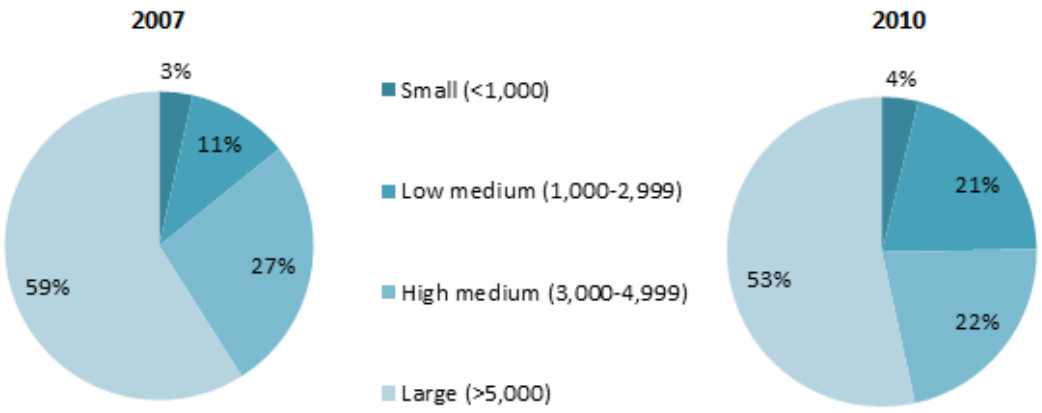
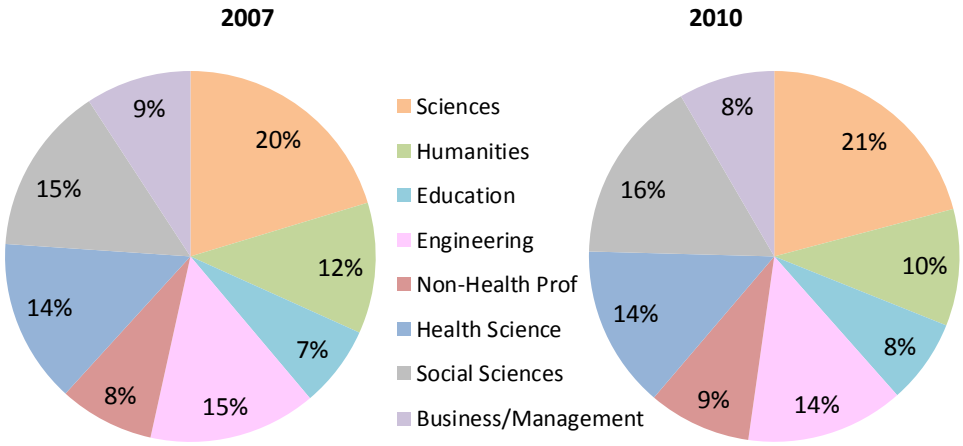


Figure 9 shows the distribution of disciplines for the two years. The discipline categories were created by utilizing the same grouping of CIP codes as used previously by the G13 data exchange.[8] Again, the distribution is very similar between 2007 and 2010. Please refer to Table 2.1 and Table 2.2 in the Appendix for a complete list of sample distribution by degree type and student characteristics.

Figure 9. Distribution of survey participants by discipline, CGPSS 2007 & 2010, Ontario universities



[8] The CIP grouping was kindly provided by Luc Simon from Université Laval, who also served as one of the data analysis advisor committee members for this project.

4.2 General Assessment

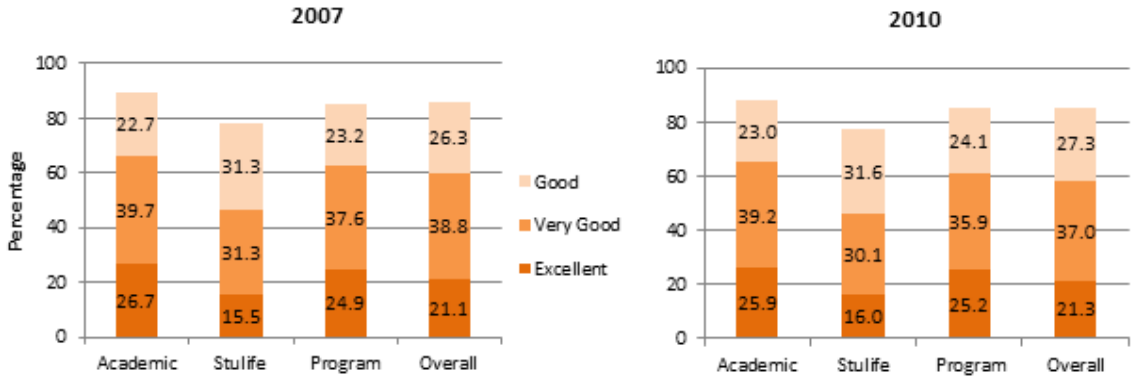
(For summary statistics please refer to Tables 3.1 & 3.2 and Figures 10-23; for regression results please refer to Tables 6.1 & 6.2.)

Section 11 of the CGPSS asks graduate students to rate the overall quality of their experience for four aspects of their graduate school experience: academic experience (Academic), student life experience (Stulife), graduate/professional program (Program), and overall experience (Overall).

In general, graduate students in both years rated their satisfaction very positively. As shown in Figure 10, in 2007 86.2% of students rated their overall graduate/professional program as “Excellent,” “Very Good,” or “Good.” In 2010, this number was 85.6%. Students showed the highest levels of satisfaction with their academic experience in both years (89.1% in 2007 and 88.1% in 2010). The majority of students were also satisfied with their graduate/professional program (85.6% in 2007 and 85.1% in 2010). However, students were less satisfied with their student life, with 78.1% of students considering their student life to be “Excellent”, “Very Good” or “Good” in 2007, and 77.7% in 2010. Figure 10 also shows the mean scores for each of the four aspects of general assessment for 2007 and 2010. Though not directly comparable, the results for 2007 and 2010 are very similar.

Figure 10. General assessment, CGPSS 2007 & 2010, Ontario universities

percentage answered "Excellent," "Very Good," or "Good"



Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent

Please refer to Tables 3.1 and 3.2 for the mean scores and standard deviation for each of the four general assessment measures by student, program, and university characteristics. Figures 11 through 23 present a number of selected results from Tables 3.1 and 3.2 showing the mean scores by student subgroups. The mean scores were tested with ANOVA for statistical significance, and the results were included within the tables. Logistic regression models were used to predict the probability that a student employed the rating "Excellent," "Very Good" or "Good" for each of the quality measures by degree type. The independent variables in the regression models include student characteristics (sex, age, language, housing, marital status, number of children, citizenship status, visible minority groups, Aboriginal status, full-time/part-time status), program characteristics (degree type, field of study, year of study), financial factors (debt level, financial support received), and university size. The results of these regression models are presented in Tables 6.1 and 6.2.

Gender

Figure 11. General assessment by gender, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent

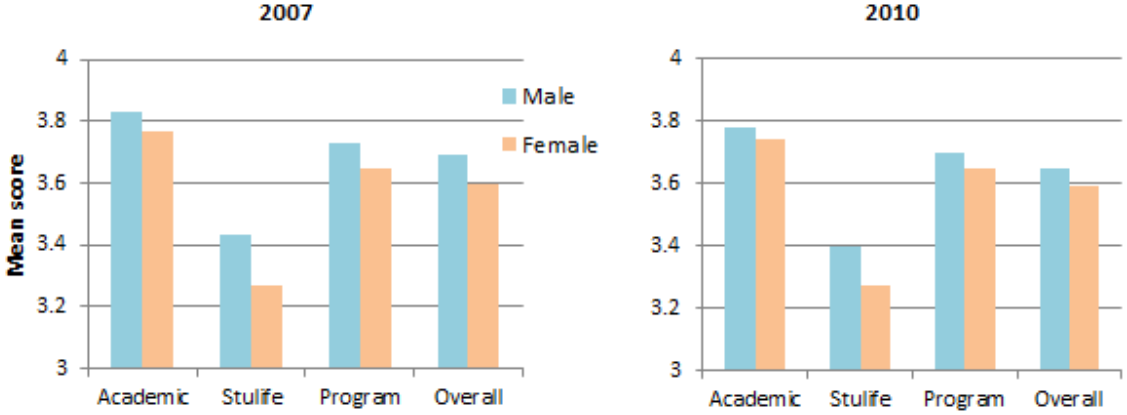
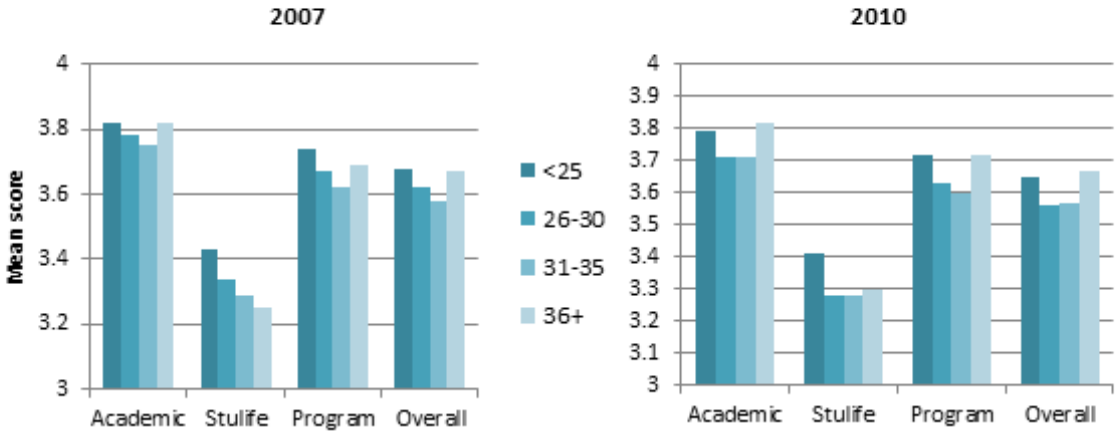


Figure 11 shows that male students were more satisfied than female students regarding their academic experience, student life, program and overall experience at the university. However, after controlling for all the other characteristics in the regression model, gender effect only remained significant for "Student life."

Age group

Figure 12. General assessment by age group, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent



Age has an effect on general assessment measures. Figure 12 and Table 2 show that the oldest age group, "36 and older," had the highest satisfaction level for three of the four general assessment measures, except "student life experience," and in that measure it was students from the youngest age group "less than 25" that were most satisfied. Interestingly, the effect of being "36 and older" was reversed in the regression model. Table 6.2 shows that the oldest age group (36 and older) had negative and statistically significant effects on ratings of overall experience in 2010. This is most likely due to the high correlation between age group and marital status, and between age group and number of children. The positive effect of age – as seen in the descriptive analysis – was mainly due to the fact that older students are more likely to be married and/or with children. After controlling for marital status, number of children and all the other characteristics, age alone had a negative effect on students' general assessment of their overall experience.

English/French

Students who answered the survey in French were more satisfied than students who answered the survey in English. This effect was statistically significant for all four general assessment measures and consistent in both 2007 and 2010.

On/Off-campus

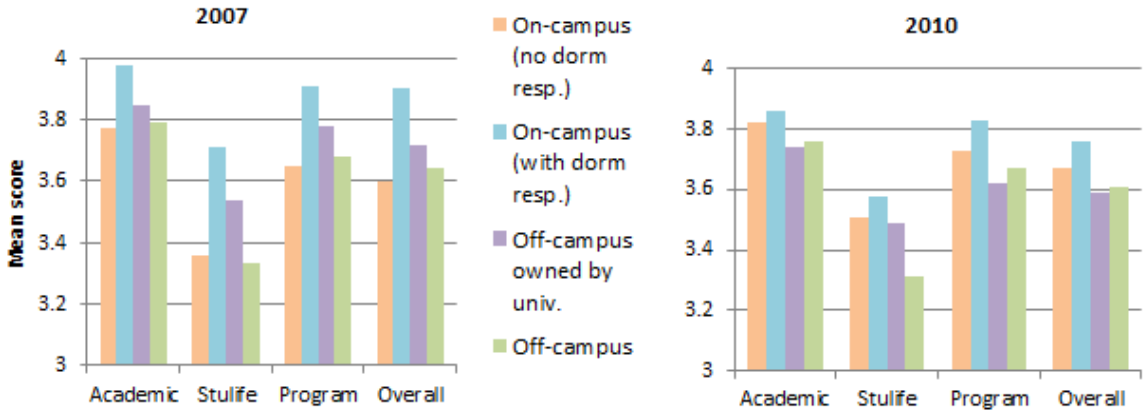
The 2010 results show that students living on-campus were in general more satisfied regarding their academic experience, student life, program and overall experience at the university, especially those with resident assistant/dorm responsibilities (Figure 13). In the regression models, after controlling for all the other characteristics, the positive effect of "living on-campus with dorm responsibilities" remained positive for all four general assessment measures in 2007, but showed no effect in 2010. This result is consistent with NSSE results that students living on-campus are more engaged and satisfied than students living off-campus (Conway, Zhao, & Montgomery, 2011).

The results for students living in "off-campus housing owned by this university" is inconsistent between 2007 and 2010. In 2007, those students have higher general assessment levels when compared to "on-campus students without dorm responsibilities." In 2010, those students have lower general assessment scores than

both groups of on-campus students. The inconsistency between the two years is most likely due to the small sample sizes (please refer to Tables 2.1 & 2.2 for sample size in each of the groups).

Figure 13. General assessment by housing arrangement, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent



Marital status

Tables 3.1 and 3.2 show that married students were generally more satisfied than single students regarding their academic experience, program, and overall experience. However, as one would expect, single students enjoyed student life more than married students. After controlling for all the other characteristics, the effect of marital status did not appear to be a significant factor in the regression models (Tables 6.1 and 6.2).

Number of children

Figure 14. General assessment by number of children, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent

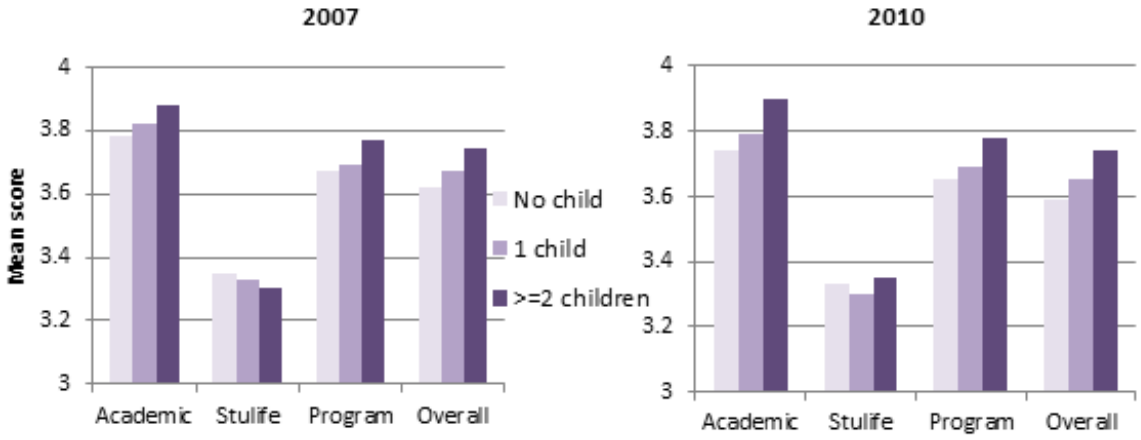


Figure 14 shows students with children were in general more satisfied than students without children regarding their academic experience, program, and overall experience at the university. Students with more than two children were more satisfied on three of the four general assessment measures than students with one child. This positive effect of numbers of children is statistically significant in the regression models after controlling for all other characteristics.

International students

Contrary to the general perception, international students were in general more satisfied than domestic students with their student life (Tables 3.1 and 3.2). However, this effect was not significant in the regression results (Tables 6.1 and 6.2).

Visible minority group

Graduate students who self-identified as Black or Latin American were more satisfied than non-visible minority groups and other visible minority groups. West Asian and Mixed origin students were the least satisfied among all students (Tables 3.1 and 3.2).

Aboriginal

Aboriginal status had no effect on the four general assessment measures (Tables 6.1 and 6.2).

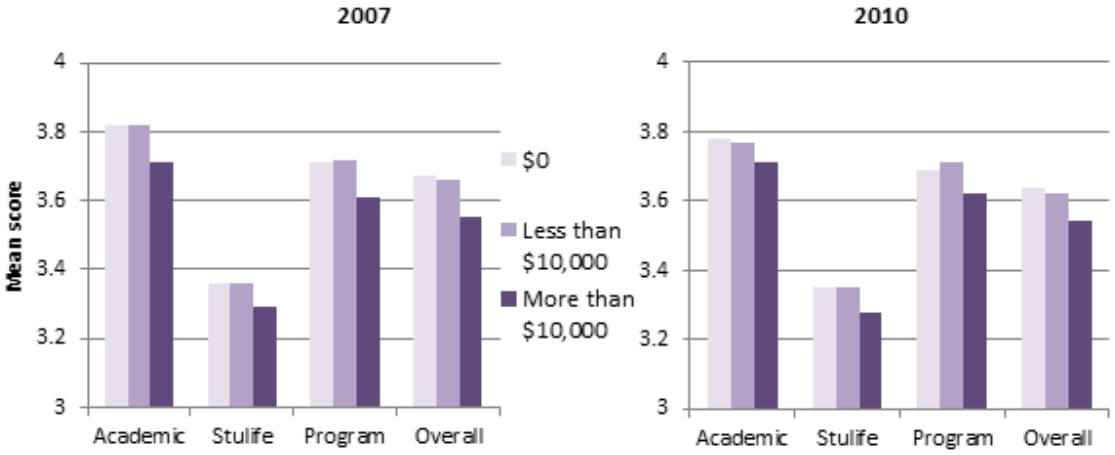
Full-time/part-time

Full-time students were in general more satisfied than part-time students regarding student life, but full-time/part-time status had no effect on the other three general assessment measures (Tables 3.1, 3.2, 6.1, & 6.2).

Educational debt level

Figure 15. General assessment by level of graduate educational debt, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent



Not surprisingly, graduate educational debts (Figure 15) affect graduate students' experiences. Interestingly, educational debt "less than $10,000" did not affect students' general assessments at all, but "more than $10,000" debt reduced the scores significantly.

Financial support

Section 8 of the CGPSS survey asks graduate students to identify the forms of financial support they received while they were enrolled in their program. Forms of financial support were categorized into 16 groups in 2007 and 17 groups in 2010 in the survey questionnaire. Figure 16 shows the percentage of students receiving each form of financial support. The top 3 forms of financial support graduate students received were "Graduate teaching assistantship" (TA), "Loans, savings, or family assistance," and "Graduate research assistant" (RA).

Nearly half of all graduate students received teaching assistantship (49.8% in 2007 and 47.9% in 2010). There is very little change in the percentages of students who received financial support between the two survey cycles, although the proportion who reported receiving "University funded fellowships" dropped from 35.7% in 2007 to 27.8% in 2010. This decline is most likely due to the addition of one more related category, "University funded bursary," in the 2010 survey.

Figure 17 shows that most graduate students received more than one form of financial support. While 17% of students received only one source of financial support, over 50% of graduate students were recipients of more than three different forms of financial support for both 2007 and 2010. Only 7% of graduate students did not receive any form of financial support.

For the purpose of analysis for this project, the 16 (2007) or 17 (2010) forms of financial support listed in the survey instrument were further broken down into four categories. (Please refer to Tables 2.1 & 2.2 for sample distributions among the four financial support categories.) Overall, the majority of Ontario graduate students received some kind of "Scholarship/Fellowship/Bursary" (63.3% in 2007, 67.3% in 2010) and "RA/TA/Residence Donship" (63.3% in 2007, 60.6% in 2010).The percentage of students who received "Scholarship/Fellowship/Bursary" support also varied significantly by degree type. For example, in 2010 more than 86% of doctoral students received this type of financial support compared to only 44% of Master's Professional students. Master's Professional students were also much less likely to hold an "RA/TA/Residence Donship" compared to Doctoral students (16% compared to 85% in 2010). Meanwhile, students enrolled in Master's Professional programs were more likely to have "Employment income/funding" and more likely to rely upon "Loans, savings, or family assistance" to finance their graduate studies compared to Master's Research and Doctoral students.

Figure 16. Forms of financial support received, from Section 8 of the CGPSS, 2007 & 2010, Ontario universities

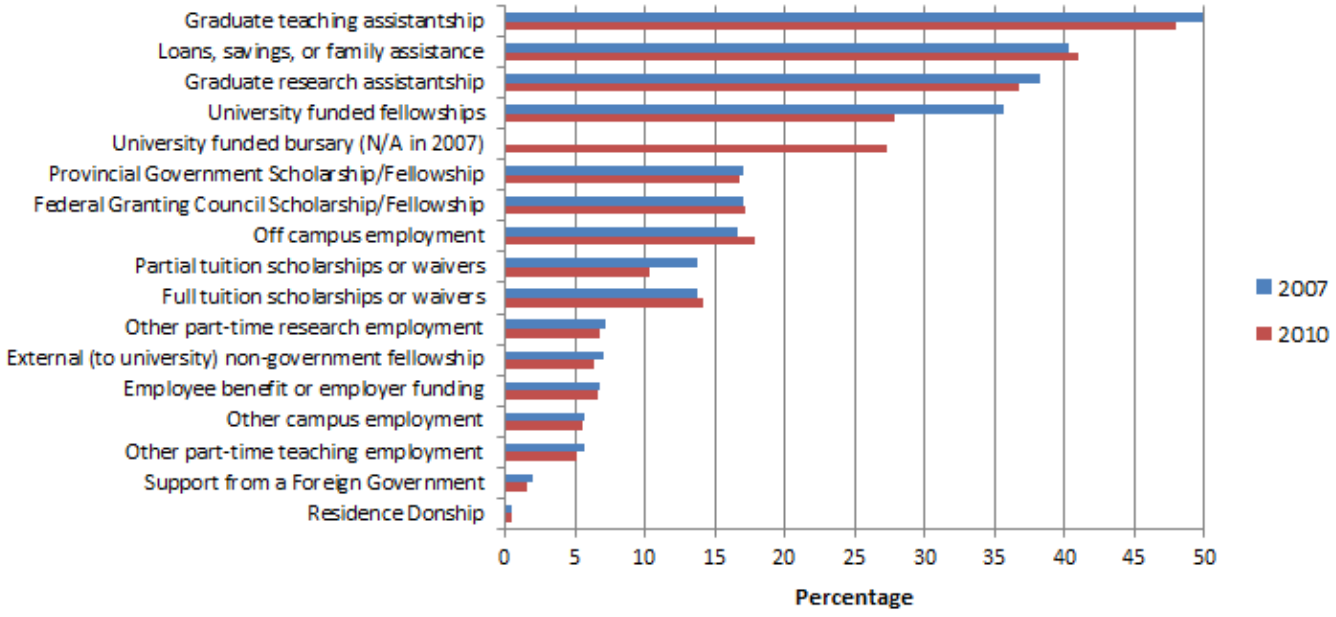


Figure 17. Distribution of survey participants by number of finainical support sources, CGPSS 2007 & 2010, Ontario universities

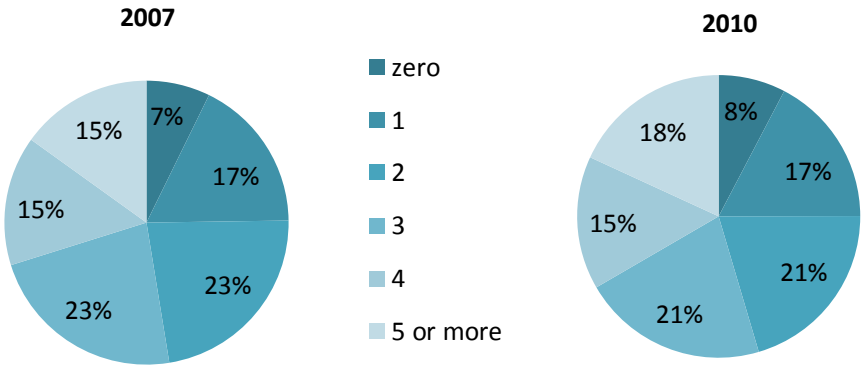
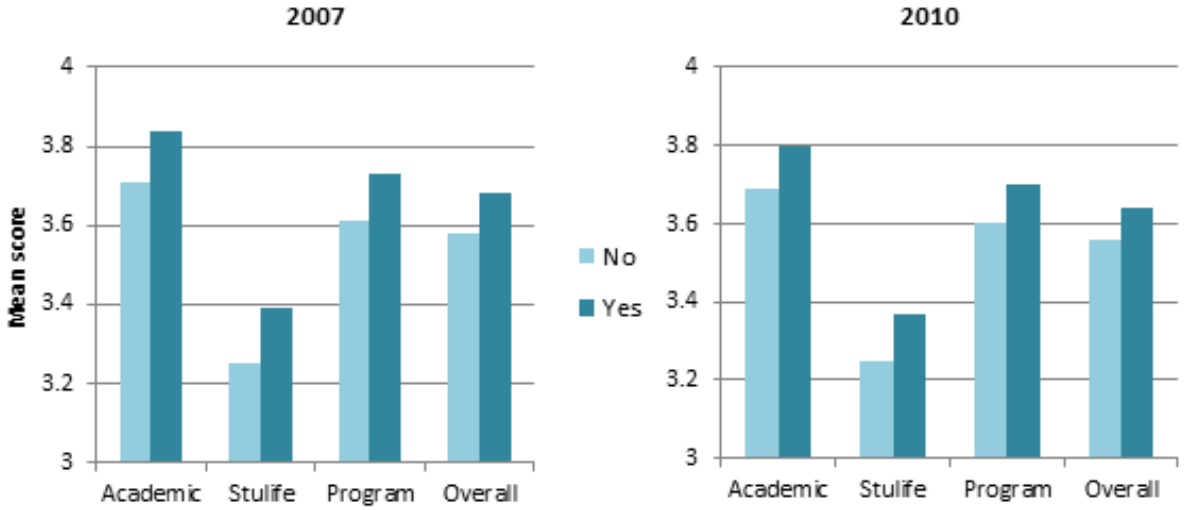
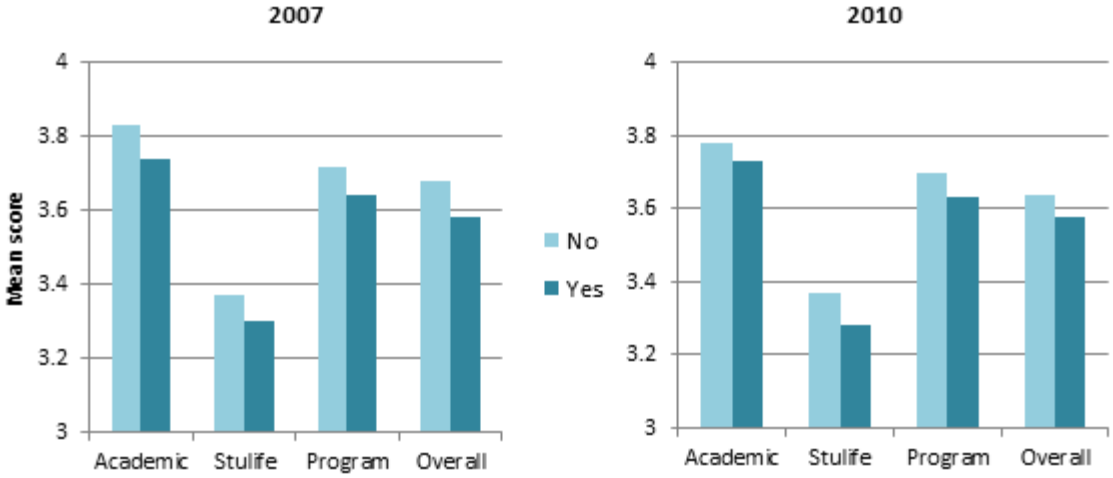


Figure 18. General assessment by whether received financial support in the form of scholarship/fellowship/bursary, CGPSS 2007 & 2010, Ontario universities



Receiving financial support in the form of a Scholarship/Fellowship/Bursary also appeared to impact student satisfaction levels (Figure 18). Graduate students who received this kind of financial support were more satisfied with their experiences than those who did not. Meanwhile, having an employment income and/or receiving financial support in the form of loans/savings/family assistance had a negative effect on graduate students' self-reported experiences, especially for the student life measure (Figure 19).

Figure 19. General assessment by whether received financial support in the form of loans/saving/family assistance, CGPSS 2007 & 2010, Ontario universities

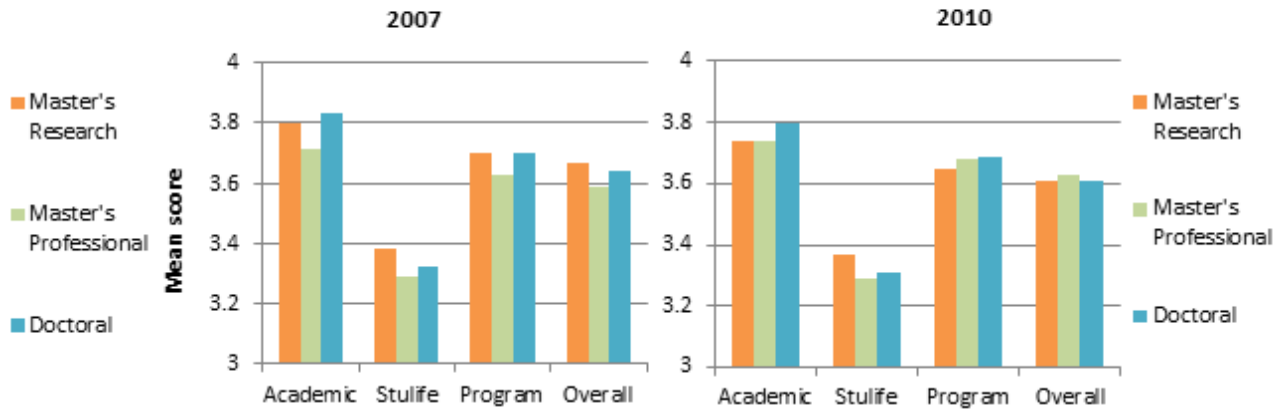


Degree type

Figure 20 shows Doctoral students were more satisfied with their overall academic experience than both groups of Master's students. Master's Research students enjoyed student life experience the most among all three degree types.

Figure 20. General assessment by degree type, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent



Year of study

Figure 21. General assessment by year of study, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent

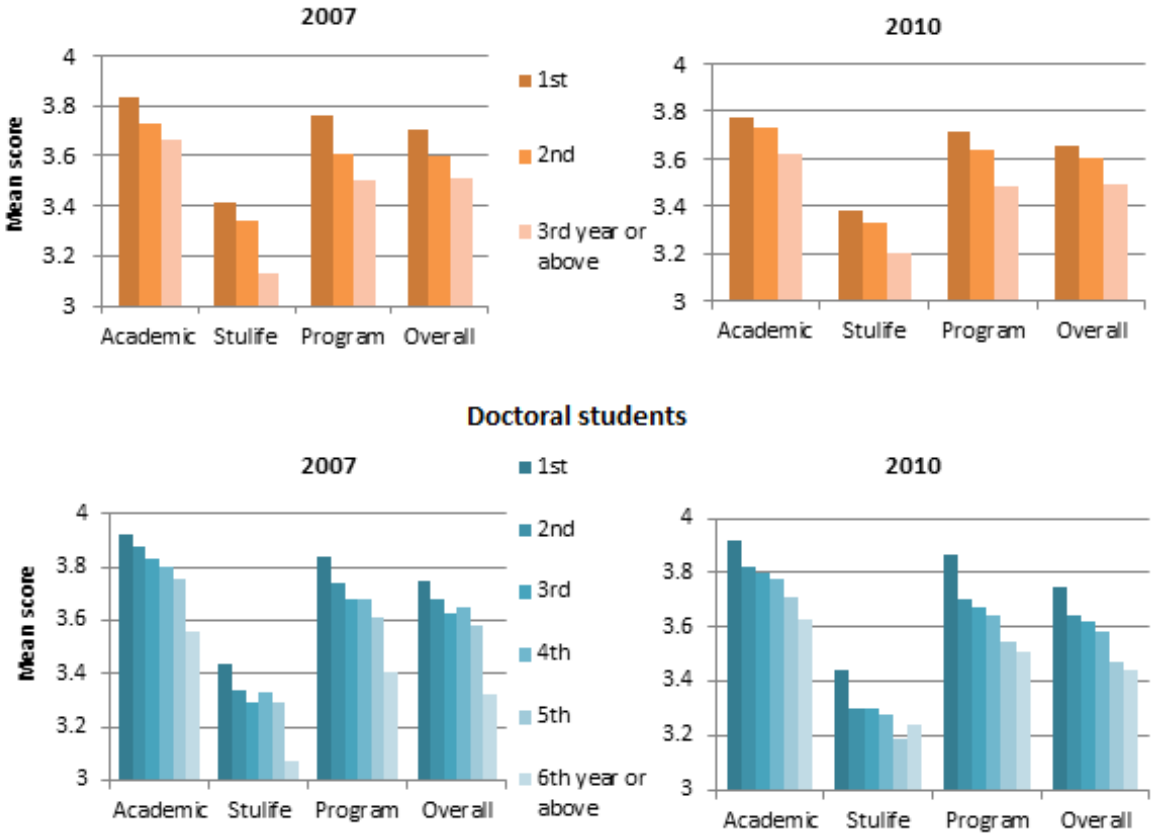


Figure 21 shows graduate students' general assessment level by year of study and is presented separately for Master's students and Doctoral students. As seen in Figure 21, it appears that the longer the graduate students remain in their program of study, the less satisfied they become. Staying in their programs longer than the expected completion date (three years or above for Master's students; six years or above for Doctoral students) significantly reduced graduate students' satisfaction levels regarding their academic experience, student life, programs, and overall graduate school experience.

University size

Figure 22. General assessment by university size, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent

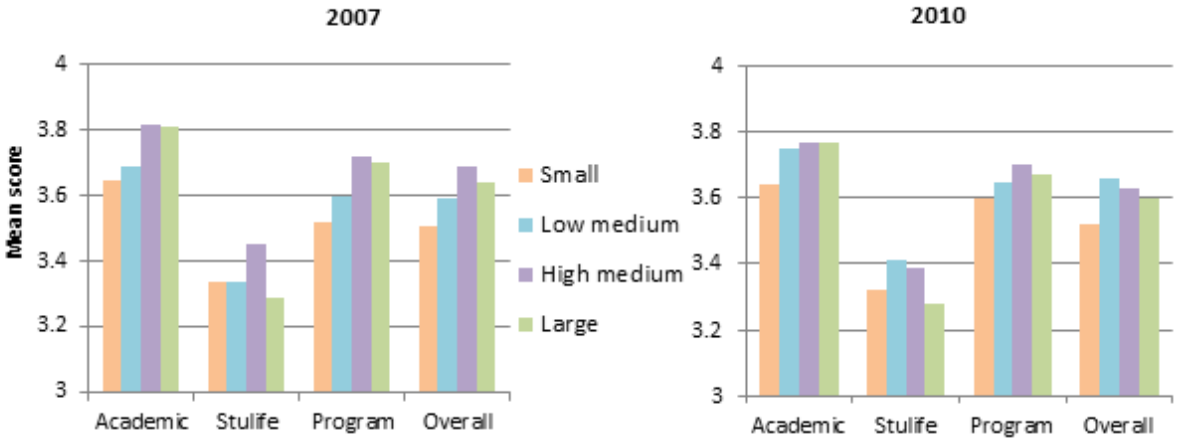


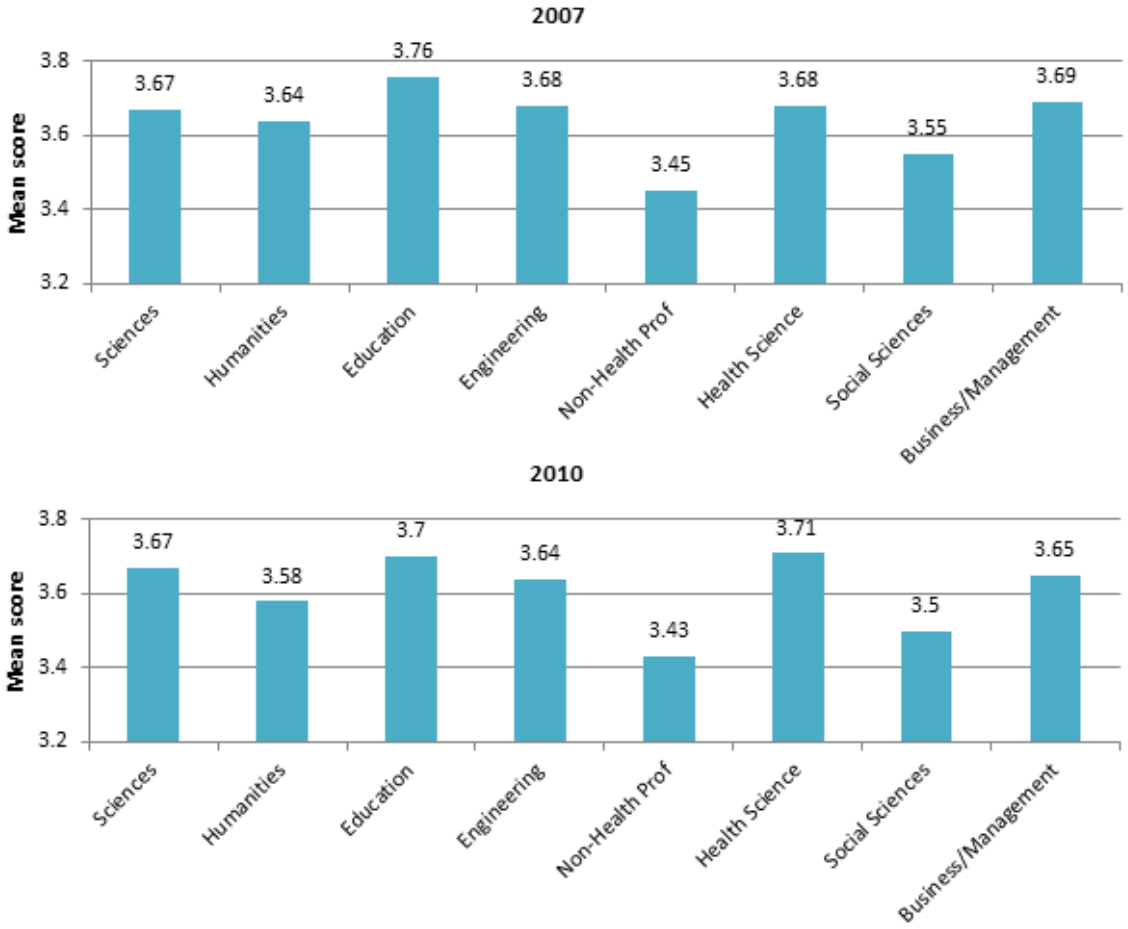
Figure 22 shows that Ontario graduate students enrolled in small universities (below 1000 graduate students) reported that they were less satisfied than their peers in institutions with larger graduate student populations regarding their academic experience, programs, and overall experience. Graduate students in large universities, meanwhile, were also somewhat less satisfied than their peers in medium-sized universities, particularly regarding their student life experiences. However, the regression results presented in Table 8 reveal that university size was not a statistically significant factor for any of the four general assessment measures in 2007. In 2010, regression results show that graduate students from small universities and large universities were less satisfied than students from medium-sized universities.

Disciplinary area

Disciplinary area was a significant factor for all four general assessment measures (Figure 23). The higher performing programs in terms of general assessment in both 2007 and 2010 were Education, Health Science, Business/Management, and Engineering. This pattern is consistent across most measures. Students in Non-Health Professional programs rated the program quality relatively lower than their peers in both survey cycles.

Figure 23. Overall experience by discipline, CGPSS 2007 & 2010, Ontario universities

Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent



4.3 General Satisfaction

(For summary statistics please refer to Tables 4.1 & 4.2 and Figures 24-37; for regression results please refer to Tables 7.1 & 7.2.)

In Section 2 of the CGPSS survey, students were asked to rate the general satisfaction levels of their graduate school experience by answering five overall questions:

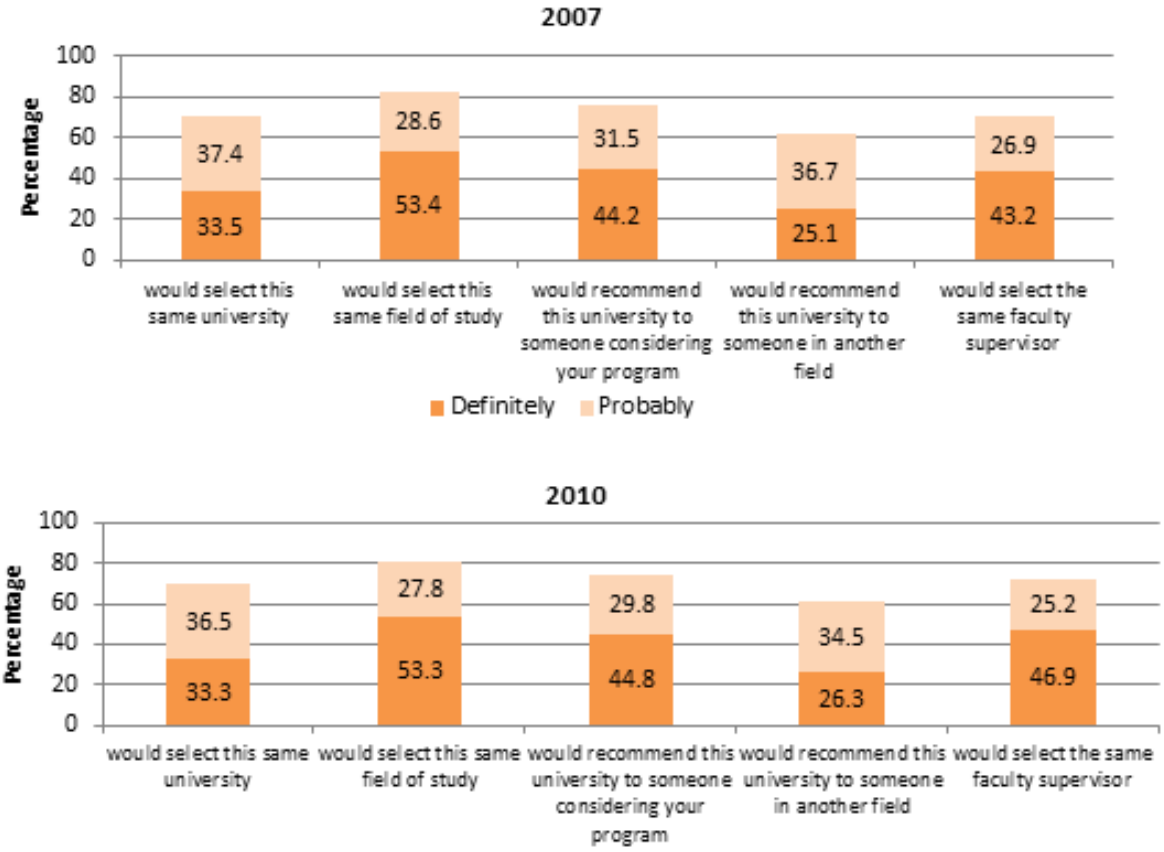
1. If you were to start your graduate/professional career again, would you select the same university?
2. If you were to start your graduate/professional career again, would you select the same field of study?
3. Would you recommend this university to someone considering your program?
4. Would you recommend this university to someone in another field?
5. If you were to start your graduate career again, would you select the same faculty supervisor?

The last question regarding faculty supervisors was not applicable to Master's Professional students in 2010 or to students enrolled in a Master's program without thesis in 2007.

In 2007, 70.8% of students responded "Definitely" or "Probably" to the question "If you were to start your graduate/professional career again, would you choose the same university?" and, in 2010, 69.7% of the survey respondents responded positively to the same question (Figure 24). In both years, students were more satisfied about their program choices than their institution choices. In 2007, 82.7% of students said they would choose the same field of study if they were to start graduate school again, while in 2010, 81.2% of respondents said so. When Master's Research students and Doctoral students were asked if they would select the same faculty supervisor, 70.2% of students responded "Definitely or "Probably" in 2007 and 72.1% of students responded so in 2010.

Figure 24. General satisfaction, CGPSS 2007 & 2010, Ontario universities

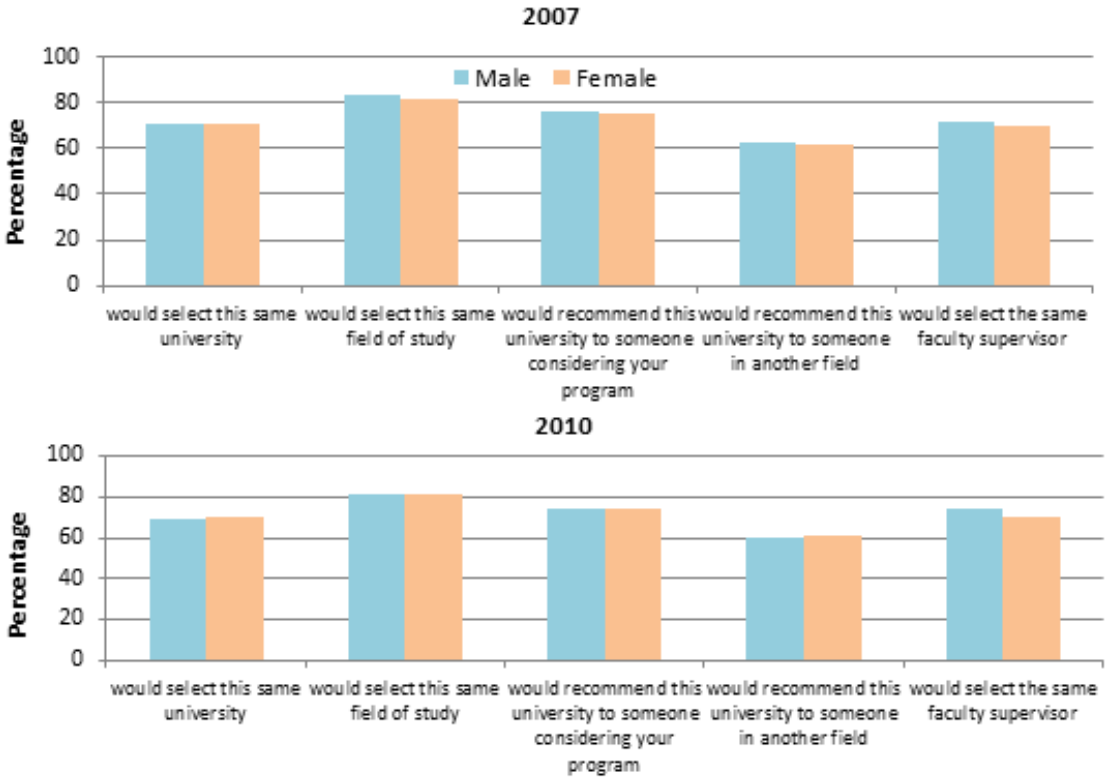
Percentage responded "Definitely" or "Probably"



Gender

Figure 25. General satisfaction by gender, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"

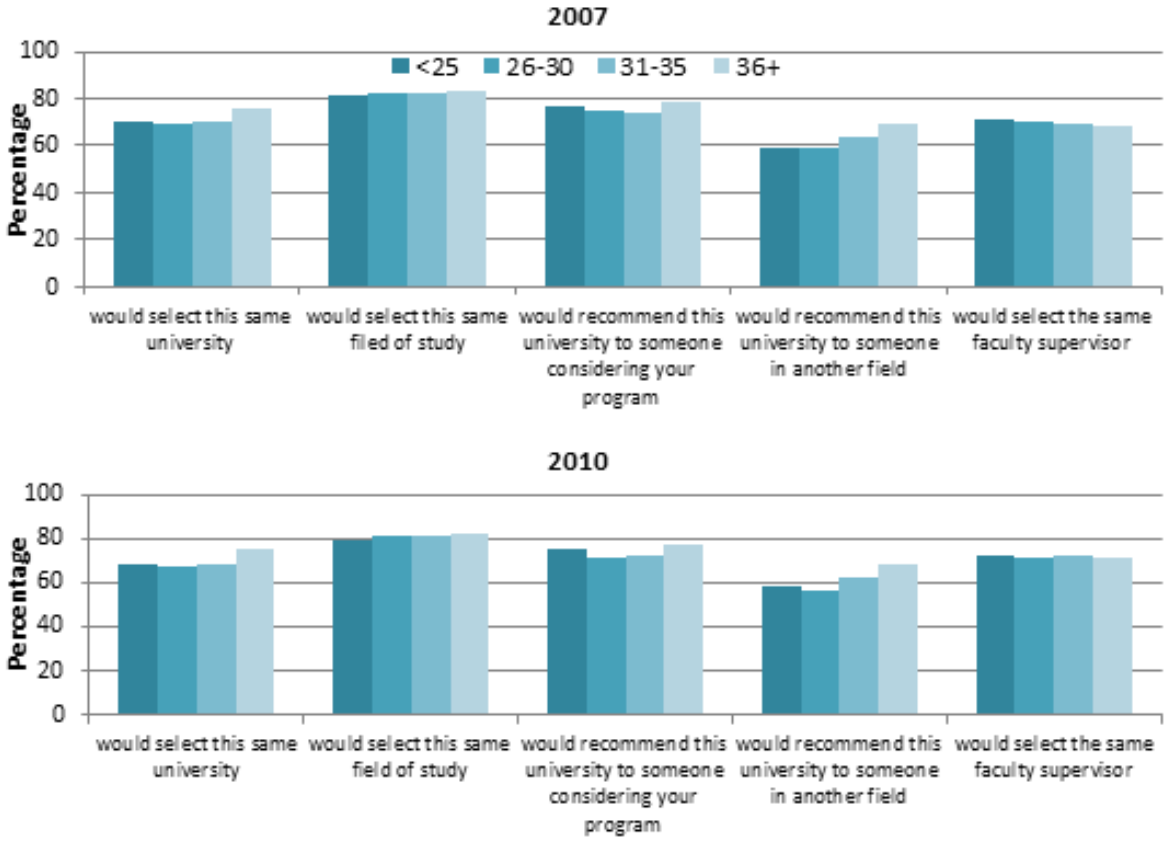


Age group

As seen in Figure 26, the oldest age group “36 and older” was the most satisfied group and was most likely to respond positively to the question regarding whether they would select the same university if they were to start graduate school again. The effect of “36 and older” on choosing the same university stayed positive and statistically significant in the regression model in 2010 after controlling for all other characteristics (Table 7.2).

Figure 26. General satisfaction by age group, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"

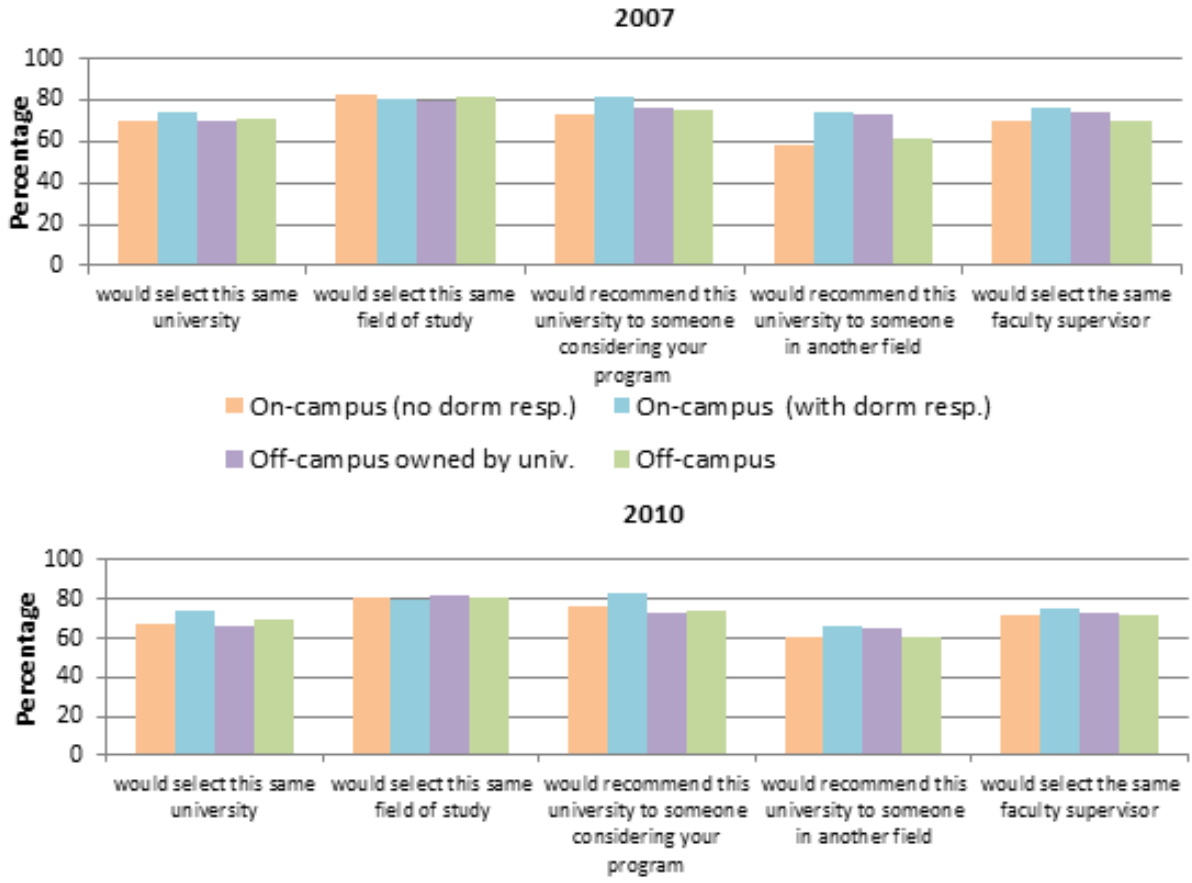


On/Off-campus

Figure 27 shows students “living on-campus with dorm responsibilities” were more likely to select the same university and to recommend their universities to their peers. This result is consistent for both years and statistically significant in the regression results. Figure 27 also shows graduate students “living on-campus with dorm responsibilities” and students “living in off-campus housing owned by this university” were more likely to recommend their universities to someone in another field and were more likely to select the same faculty supervisors. However, these effects were not significant in the regression results.

Figure 27. General assessment by housing arrangement, CGPSS 2007 & 2010, Ontario universities

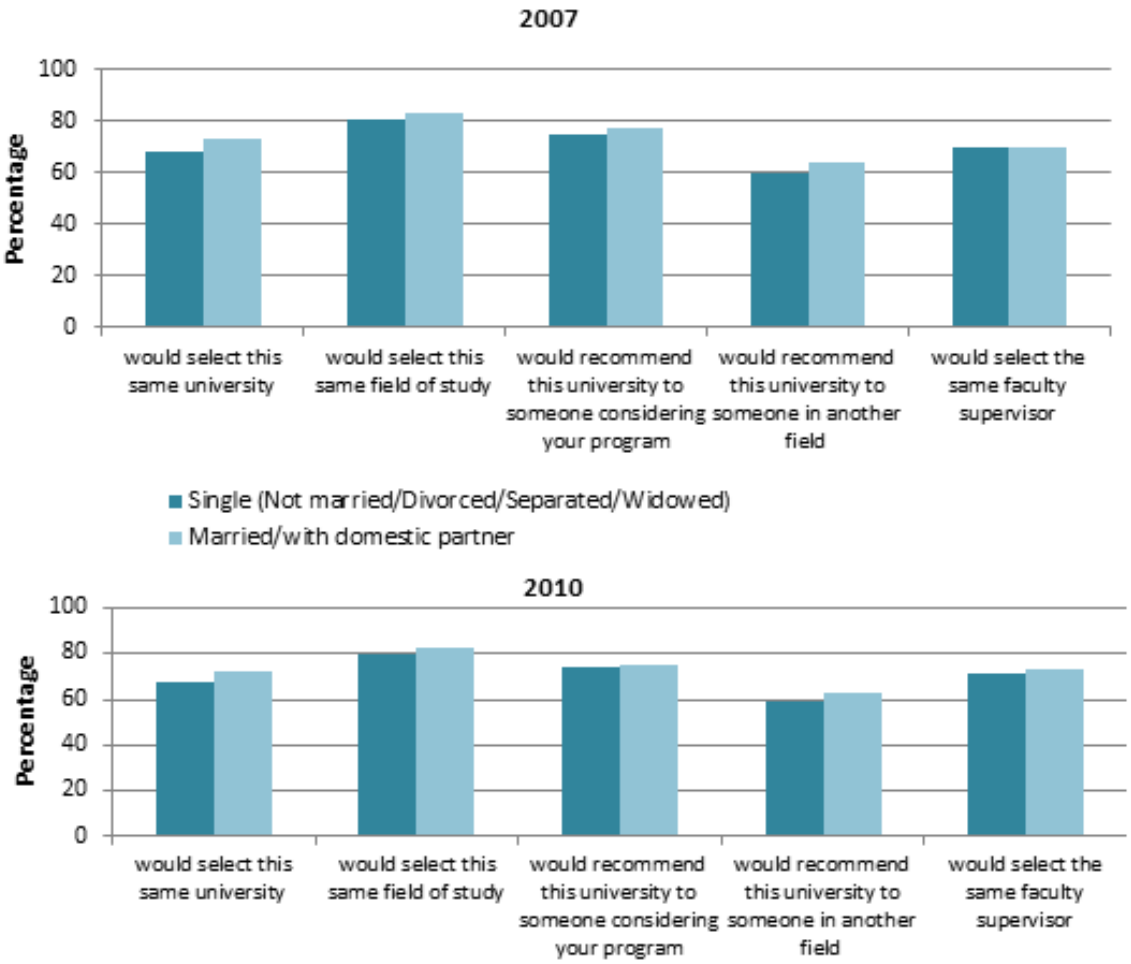
Percentage responded "Definitely" or "Probably"



Marital status and number of children

Figure 28. General satisfaction by marital status, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"



Married students (Figure 28) and students with children (Tables 4.1 & 4.2) were more likely to select the same university and to recommend their universities to their peers. This result was consistent for both years and was statistically significant in the regression models.

International student

Figure 29. General satisfaction by immigrant status, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"

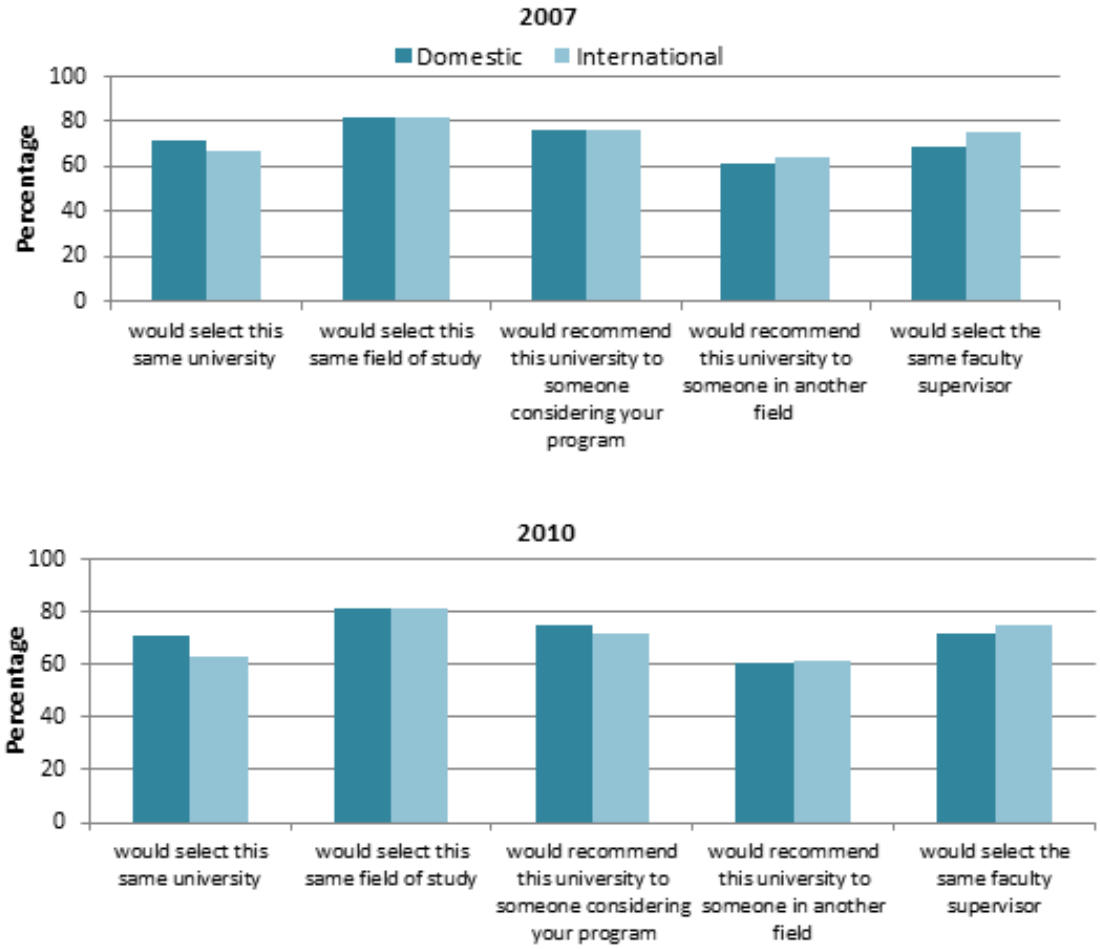


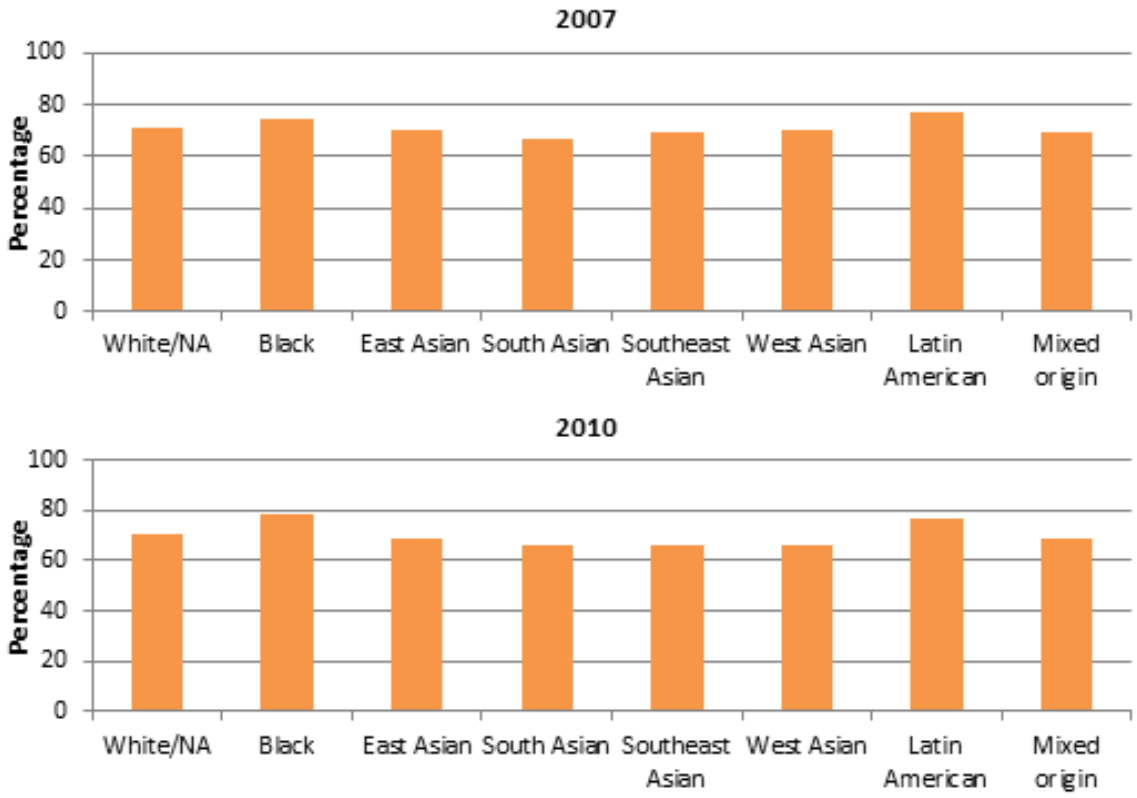
Figure 29 shows that international students were less likely to choose the same university if they were to start their graduate/professional career again. However, international students were more satisfied with their faculty supervisors when compared to domestic students. These results were consistent for both years and were statistically significant in the regression models.

Visible minority group

Students who self-identified as “Black” or “Latin American” were more likely to select the same university and to recommend their universities to their peers (Figure 30). Asian and mixed origin students were the least satisfied among all visible minority groups.

Figure 30. "Would you select this same university?" by visible minority group, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"



Aboriginal

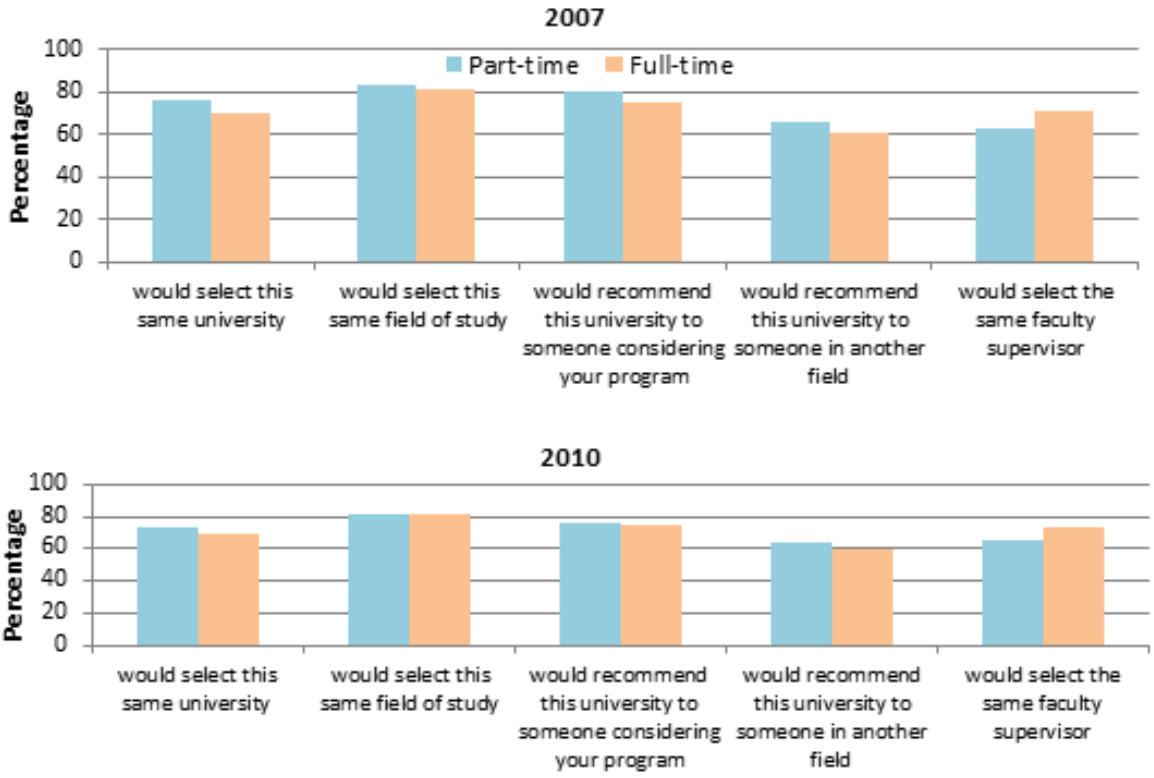
Aboriginal status had no effect on seven of the eight general assessment and satisfaction indicators, except that in 2010 non-Aboriginal students were more likely to select the same university if they were to start their professional career again.

Full-time/part-time

Figure 31 shows full-time students were less likely to select the same university and the same program (significant in the 2007 regression results only). Full-time students were more likely to select the same faculty supervisors (not significant in the regression models).

Figure 31. General satisfaction by registration status, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"



Educational debt level

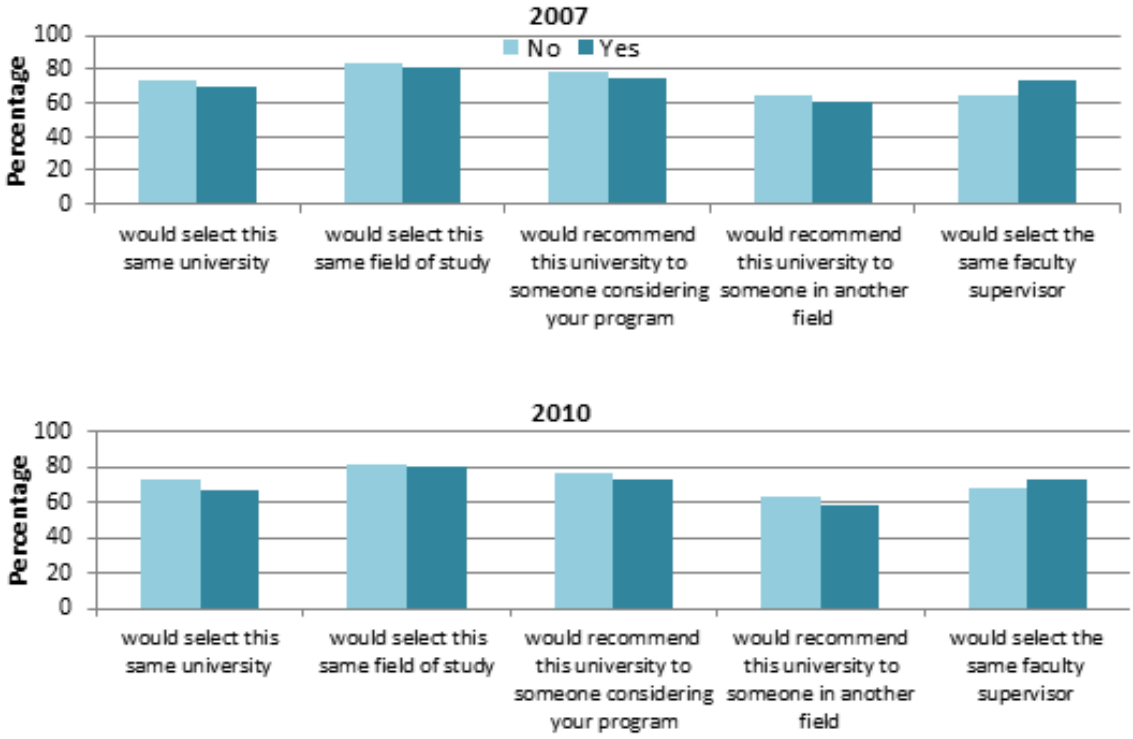
The levels of both graduate and undergraduate debt held by graduate students had a negative effect on all of the general satisfaction measures. However, undergraduate educational debt level lost its significance in the regression models while graduate educational debt stayed significant. This is possibly due to the correlation between undergraduate and graduate debt levels.

Financial support

Figure 32 presents the five general satisfaction measures by whether students received financial support in the form of RA/TA/Residence Donship. Surprisingly, students who received this form of financial support were less likely to select the same university or the same program in both 2007 and 2010, though the negative effect was not statistically significant. Students receiving RA/TA/Residence Donship were more likely to choose the same faculty supervisor, and this positive effect was statistically significant in the regression models. The regression results also show that students who received financial support in the form of a Scholarship/Fellowship/Bursary were more likely to choose the same university, same program, and same faculty supervisor in both 2007 and 2010.

Figure 32. General satisfaction by whether received financial support in the form of RA/TA/Residence Donship, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"



Year of study

The year of study had a significant effect on all of the four general satisfaction measures. Students who had stayed in their programs longer were much less satisfied than their peers. This result was consistent in both 2007 and 2010 and across all three degree types.

Degree type

Figure 33. General satisfaction by degree type, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"

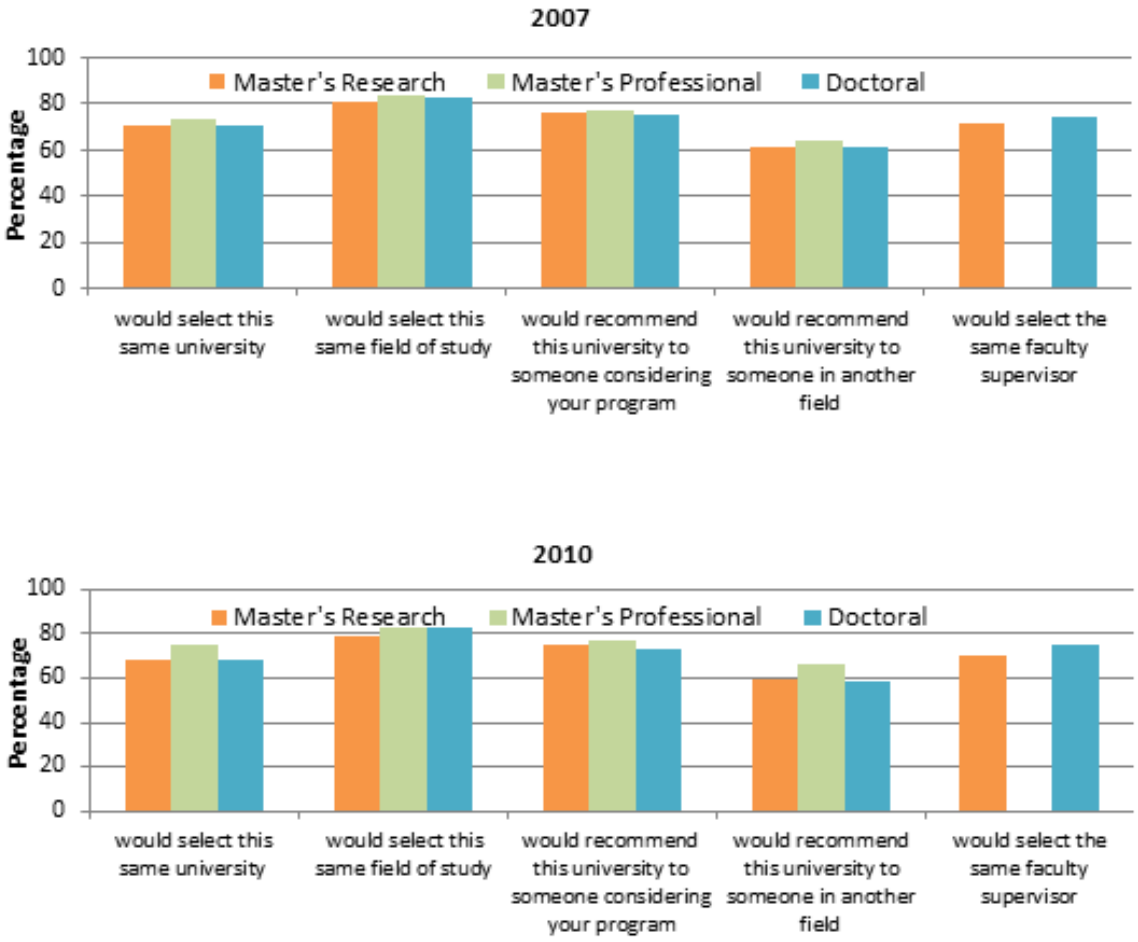


Figure 33 shows that students enrolled in Master's programs without a thesis in 2007 and Professional Master's students in 2010 were more likely to choose the same universities and the same programs than research stream Master's students. Doctoral students were most satisfied regarding their faculty supervisors.

University size

Figure 34. "Would you select this same university?" by university size, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"

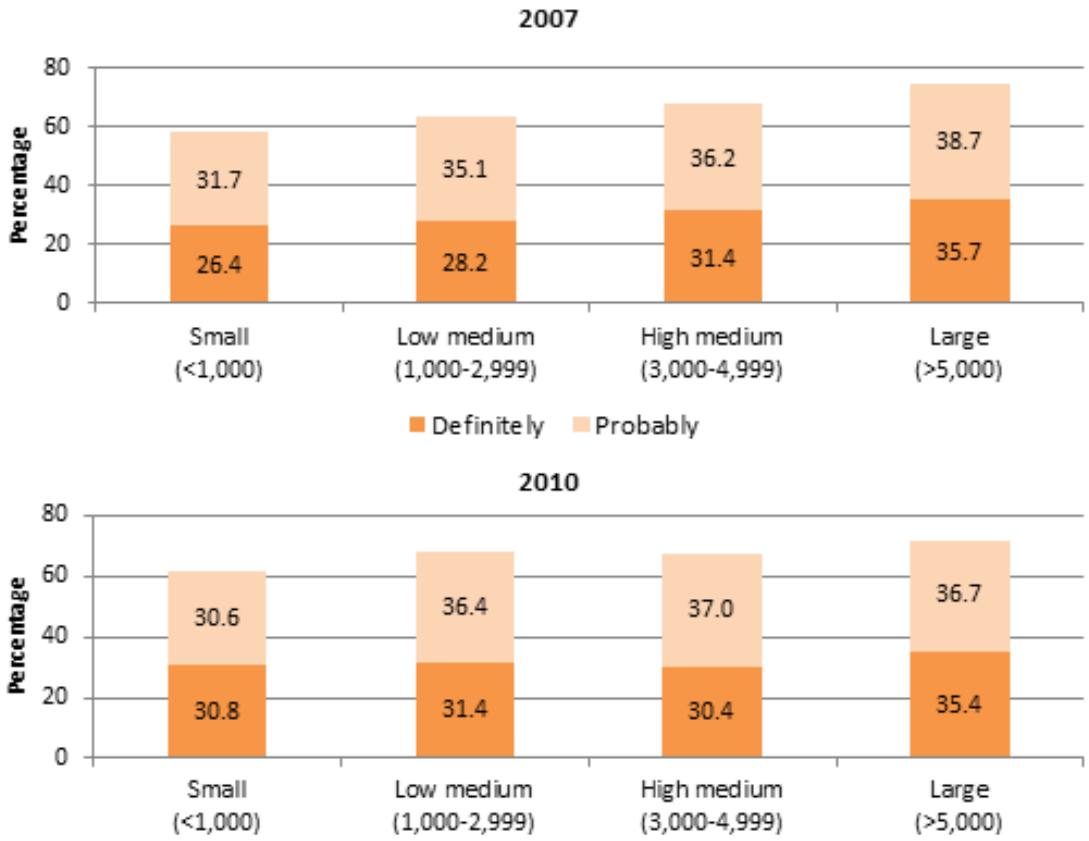


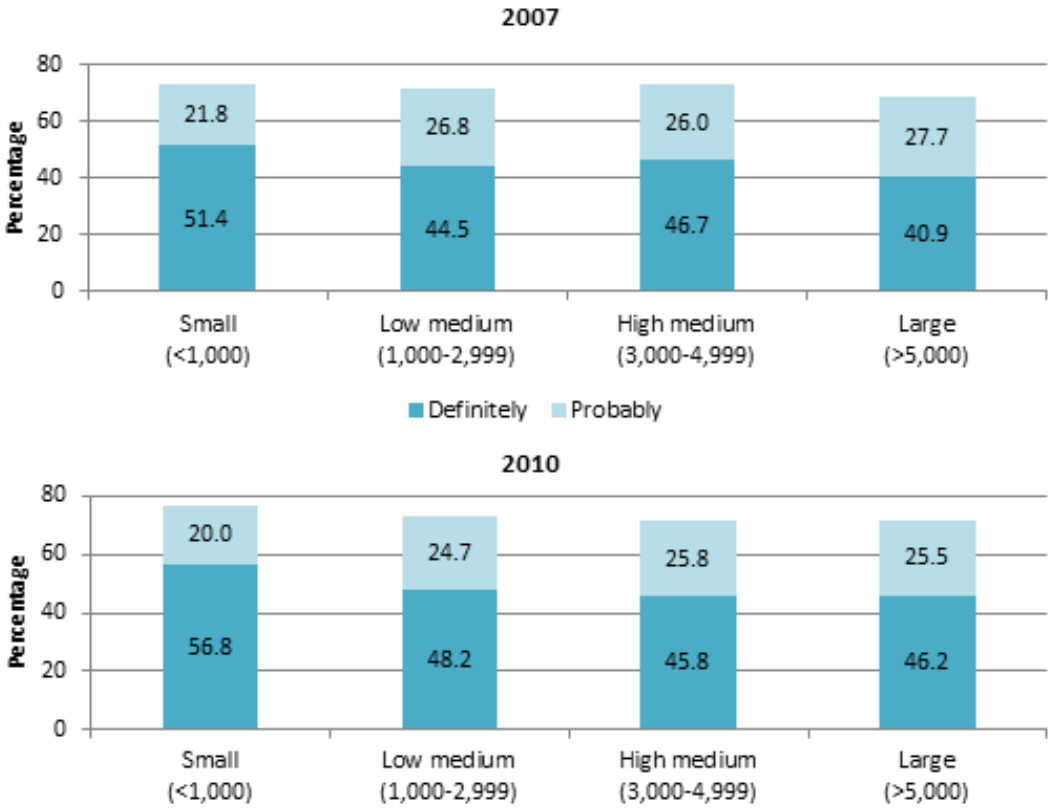
Figure 34 presents the result for the survey question “would you select this same university?” by university size. University size in general had a positive effect on students’ satisfaction levels, i.e., the larger the university size, the more satisfied the graduate students were with their universities. In 2007, 35.7% of graduate students from large universities indicated they would “definitely” choose the same universities, while only 26.4% of students from small universities responded so. This result is consistent for both 2007 and 2010. Small universities showed a negative effect in the 2010 regression model when compared to low medium-sized universities (the reference group). Large universities showed a positive effect in regression models for both years when compared to the reference group.

However, students from smaller universities were more satisfied with their faculty supervisors than students from larger universities. As shown in Figure 35, 51.4% of students from small universities responded they would “definitely” select the same faculty supervisors while 40.9% of students from large universities responded so in 2007. The same trend is seen in 2010, where again the smaller the university size, the more satisfied the graduate students were with their faculty supervisors. In the regression models as well in both

2007 and 2010, being enrolled at a large university is a negative factor for whether graduate students would select the same faculty supervisor.

Figure 35. "Would you select the same faculty supervisor?" by university size, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"



Disciplinary Area

Figure 36 shows graduate students' responses to "would you select this same field of study?" Different results occurred when different groups of response sets were examined. For example, when "definitely" was considered as the only positive response, graduate students enrolled in the Business/Management discipline in 2007 were considered to be the least satisfied, with the lowest percentage responding "definitely" to the question "would you select this same field of study?" However, when both "definitely" and "probably" were grouped together as positive responses, Business/Management students ranked as the most satisfied regarding their field of study among all disciplines. Regression results combining both "definitely" and "probably" as positive responses indicate that Health Science and Business/Management students were more likely to choose the same field of study if they were to start their graduate career again when compared to the reference discipline (Social Sciences).

Students from Health Science and Business/Management were less satisfied, however, regarding their faculty supervisors when both "definitely" and "probably" were combined as positive answers (Figure 37). Both

summary statistics and regression results show that Humanities students were most likely to select the same faculty supervisor if they were given the option to start their graduate school again.

Figure 36. "Would you select this same field of study?" by discipline, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"

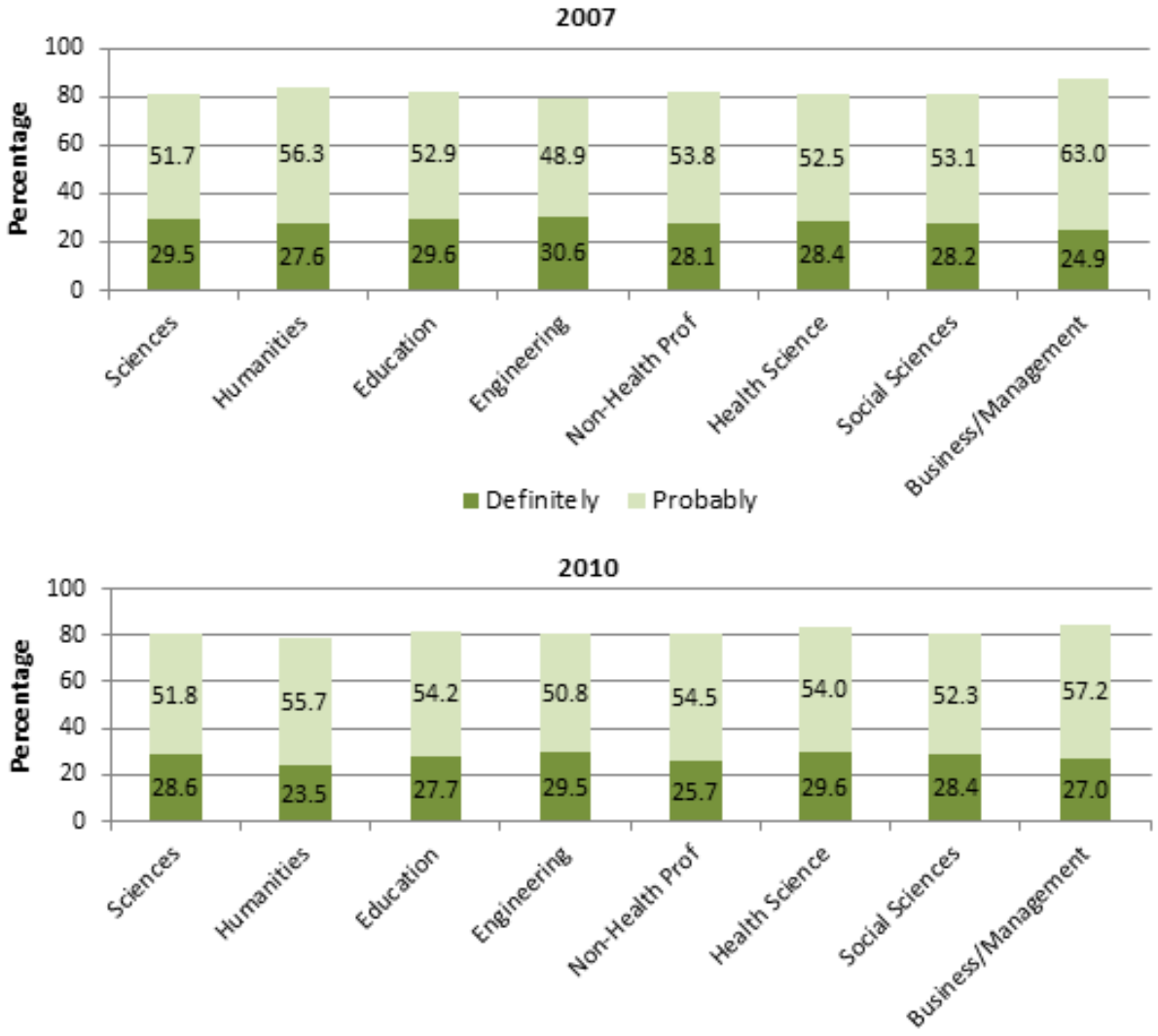
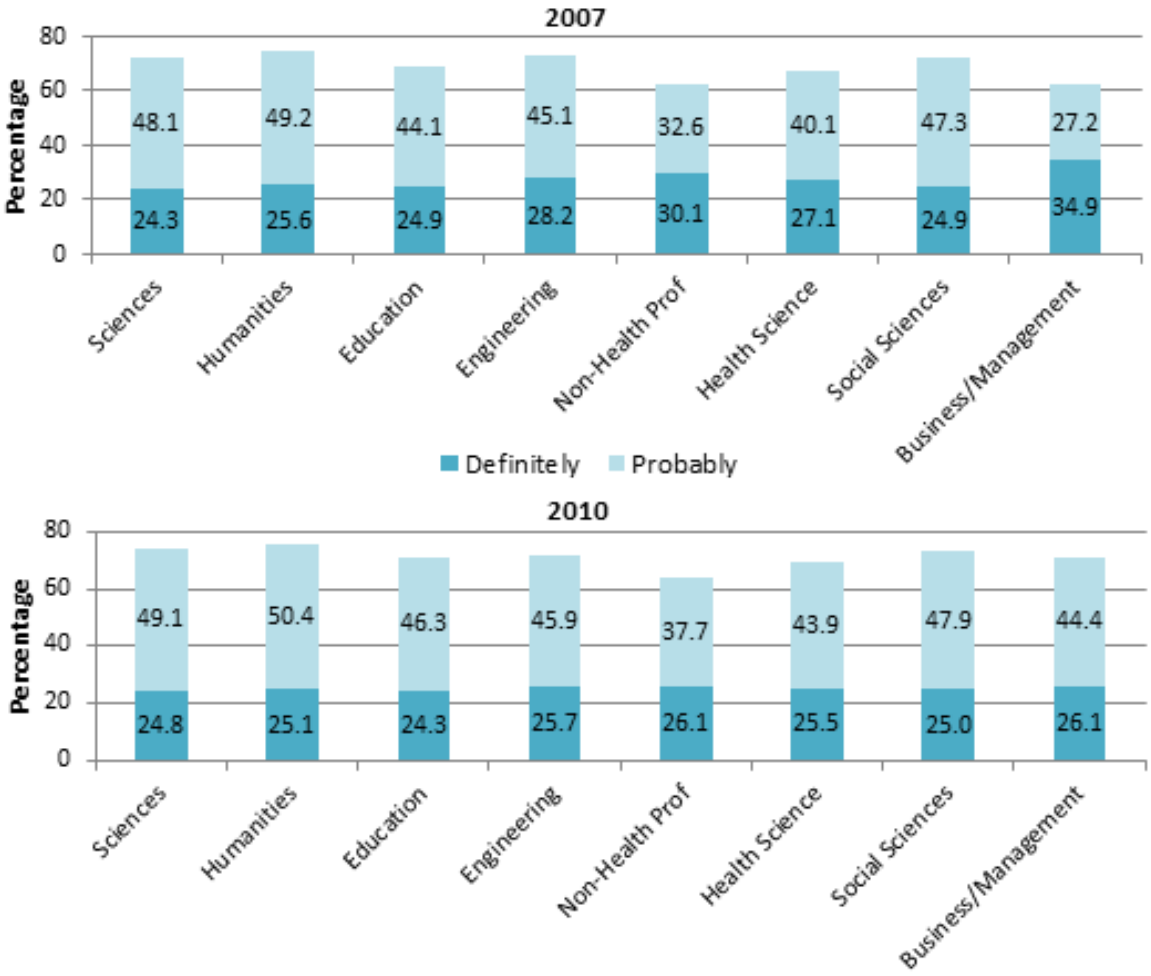


Figure 37. "Would you select the same faculty supervisor?" by discipline, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"



4.4 The Four Benchmarks

(For summary statistics please refer to Tables 5.1 & 5.2 and Figures 38-44; for regression results please refer to Tables 8.1 & 8.2.)

The four benchmarks developed for analysis of the CGPSS results are "Quality of Teaching" (QT), "Opportunity to Present and Publish" (OPP), "Research Training and Career Orientation" (RT), and "Supportive Dissertation Advisor" (SDA).[9] The current paper only focuses on the analysis of the benchmarks,

[9] Please note that of the four benchmarks, only the "Quality of Teaching" benchmark is applicable for Master's without thesis/Master's Professional students. Therefore, all figures and analysis in this section – including the mean scores

and not the individual items included in the benchmarks. Further research could be undertaken in the future focusing on analysis of the individual items. (Please refer to Appendix B for a list of CGPSS benchmarks and items.) Highlighted observations from the benchmark analysis are:

- Doctoral students had higher mean scores for "Opportunities to Present and Publish" and "Supportive Dissertation Advisor" compared to Master's Research students (Figure 38);
- Master's Research students were more satisfied than Master's Professional students regarding the benchmark "Quality of Teaching" (Figure 38);
- Students who stayed longer in their program of study had more "Opportunities to Present and Publish," but were less satisfied about the other three benchmarks, "Quality of Teaching," "Research Training and Career Orientation," and "Supportive Dissertation Advisor" (Figure 39);
- Research Master's and Doctoral students in larger universities had more "Opportunities to Present and Publish" but were less satisfied regarding their dissertation advisors (Figure 40);
- Education, Humanities, and Health Sciences students rated the "Quality of Teaching" higher than students from other disciplines, while Engineering students reported the lowest rating for "Quality of Teaching" (Figure 41);
- Non-Health Professions students had the lowest or the second lowest benchmarks among all disciplines (Figures 41-44);
- Research Master's and Doctoral students enrolled in Health Science, Sciences, and Engineering had the most "Opportunities to Present and Publish," while research stream graduate students enrolled in Non-Health Professional programs reported having the least opportunities (Figure 42);
- Research Master's and Doctoral students enrolled in Business/Management, Health Science, and Engineering were the most satisfied about the "Research Training and Career Orientation" they received during their graduate school years, while students in Social Sciences, Humanities, and Non-Health Professionals were the least satisfied (Figure 43); and,
- Research Master's and Doctoral students enrolled in Education, Sciences, Humanities, and Social Sciences were more satisfied about their dissertation advisors, while Non-Health Professionals and Engineering students were less satisfied (Figure 44).

presented in Figures 38-44 for the other three benchmarks – are calculated based on results for Master's with thesis/Master's Research and Doctoral students only.

Figure 38. Benchmarks by degree type, CGPSS 2007 & 2010, Ontario universities

Mean scores

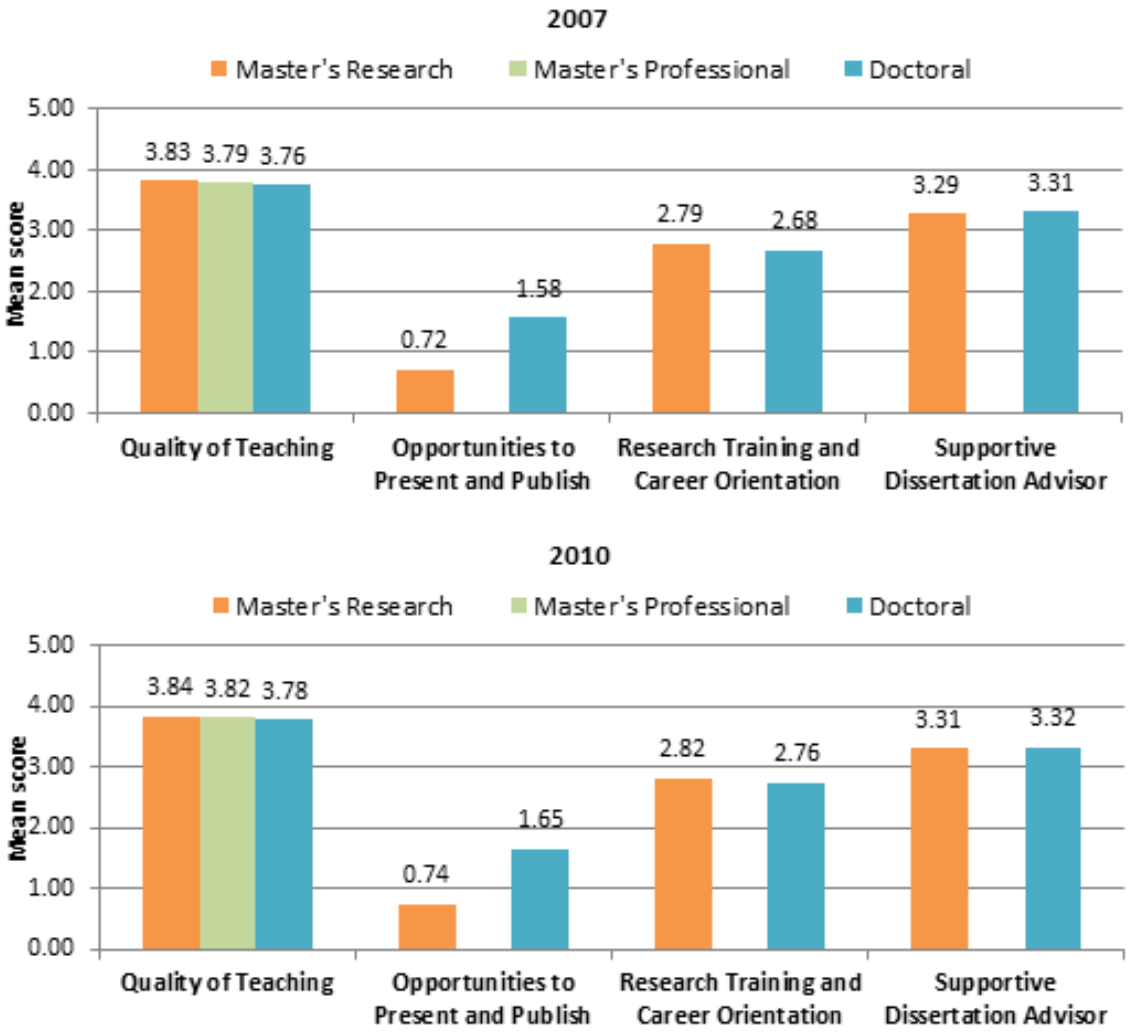


Figure 39. Benchmarks by year of study, CGPSS 2007 & 2010, Ontario universities

Mean scores

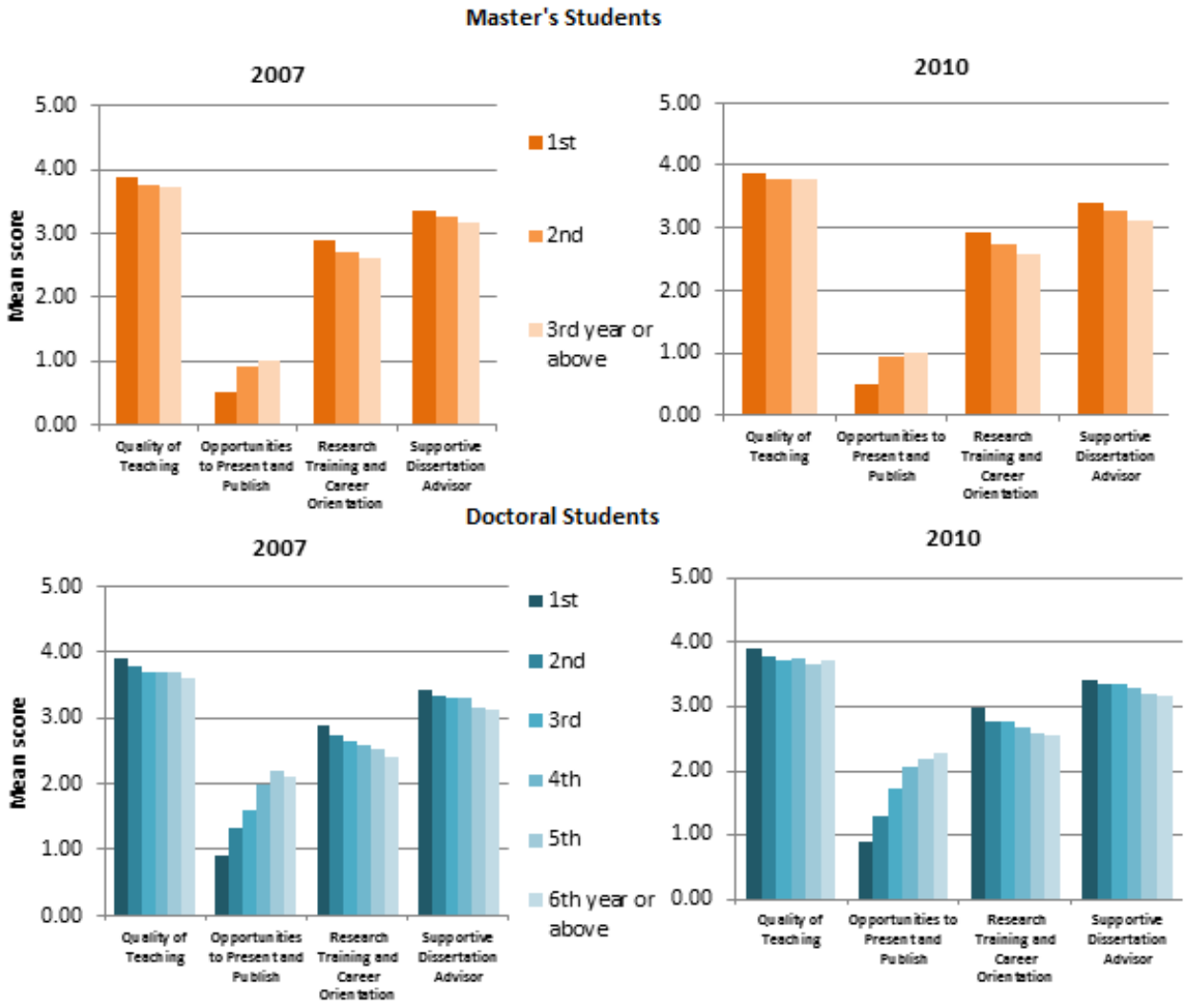


Figure 40. Benchmarks by university size, CGPSS 2007 & 2010, Ontario universities

Mean scores

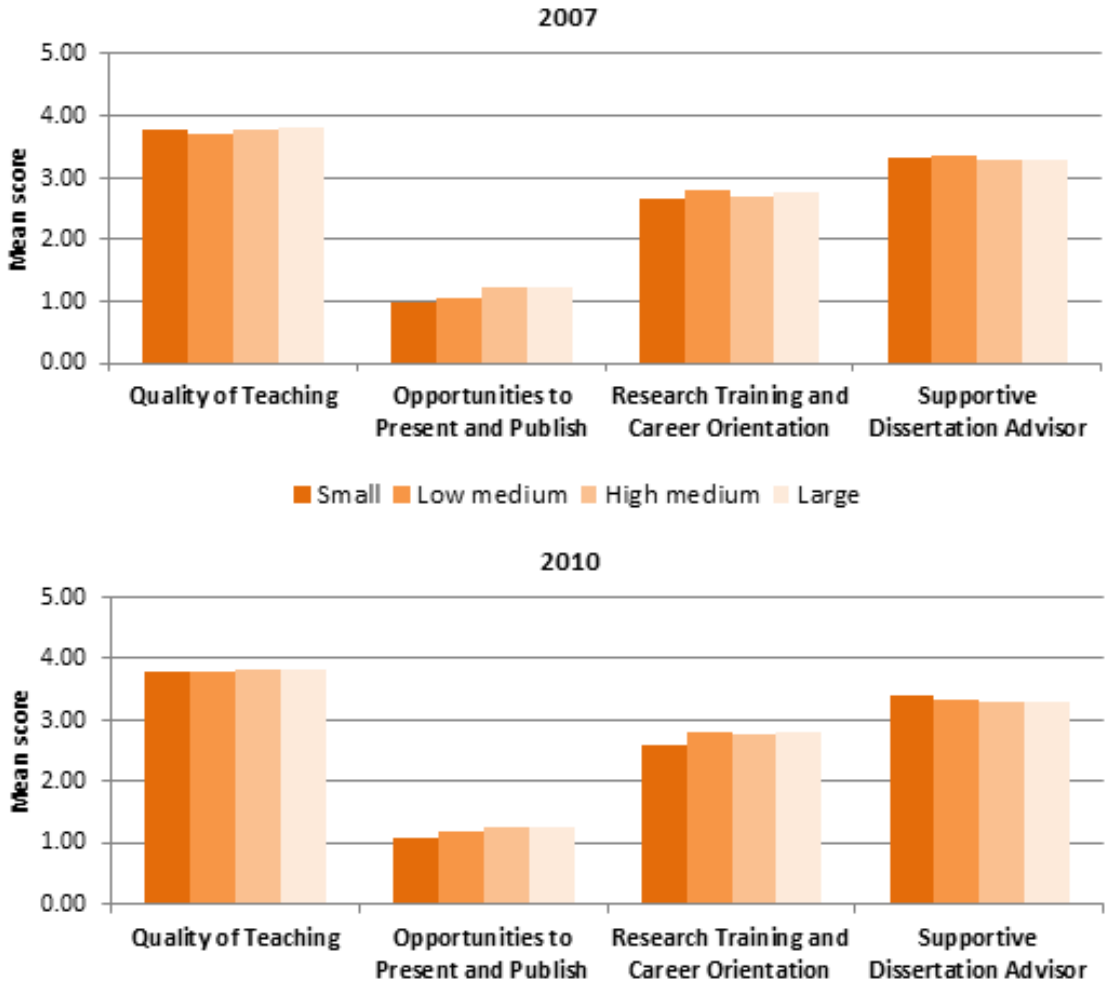


Figure 41. Quality of Teaching by discipline, CGPSS 2007 & 2010, Ontario universities

Mean scores

Figure 42. Opportunities to Present and Publish by discipline, CGPSS 2007 & 2010, Ontario universities

Mean scores

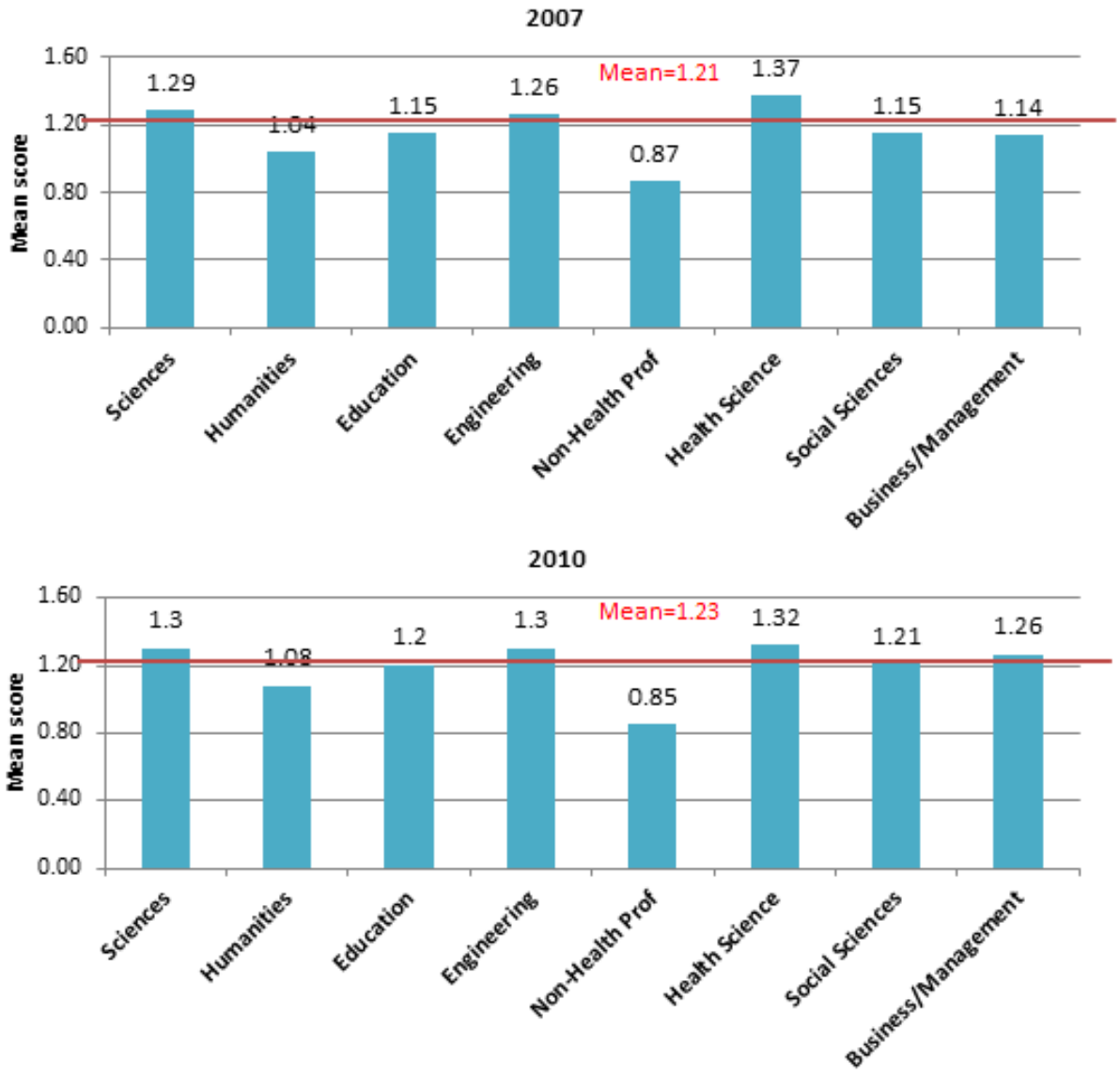


Figure 43. Research Training and Career Orientation by discipline, CGPSS 2007 & 2010, Ontario universities

Mean scores

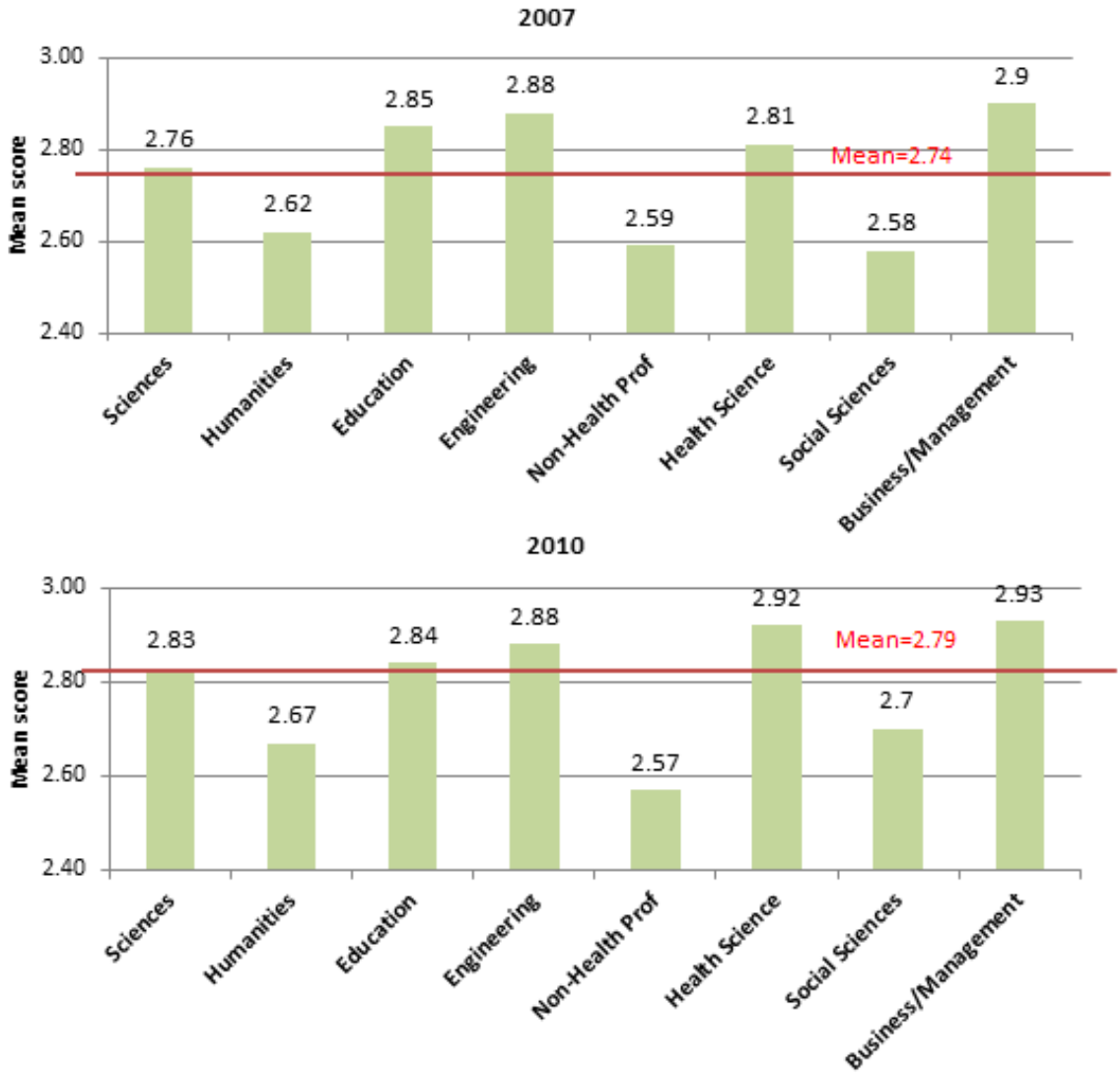
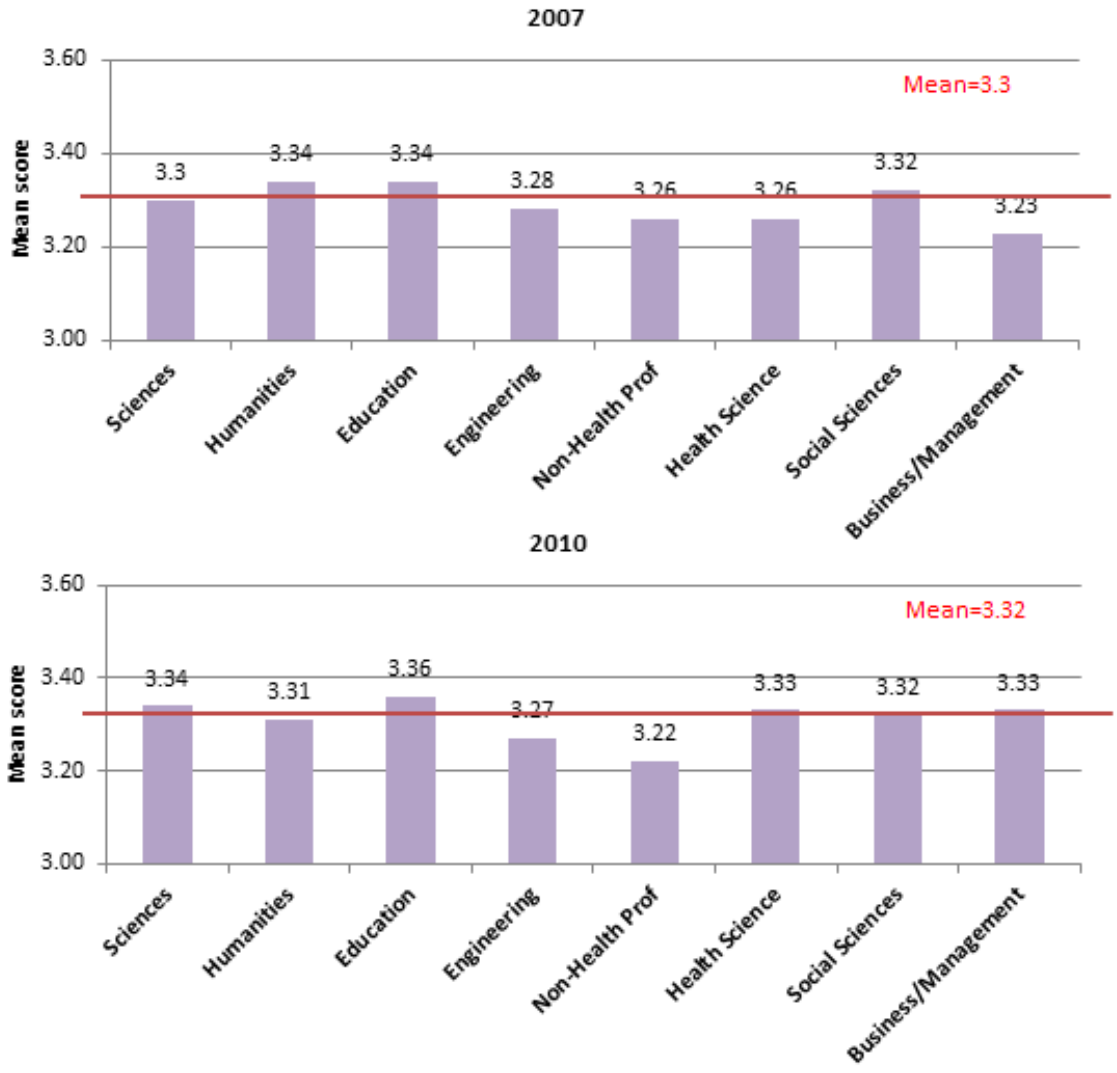


Figure 44. Supportive Dissertation Advisor by discipline, CGPSS 2007 & 2010, Ontario universities

Mean scores



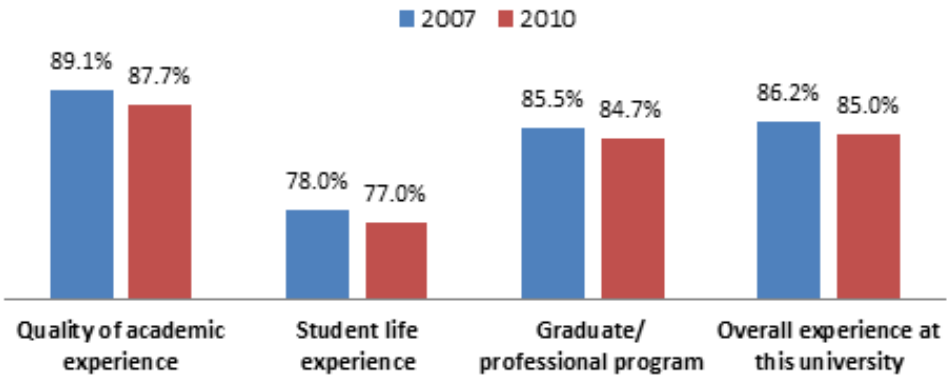
Section 5: Comparisons between 2007 and 2010

The survey sample in the previous sections of this report contains CGPSS respondents from 15 Ontario universities in 2007 and 17 Ontario universities in 2010 (Appendix A). Of the 17 participating universities in 2010, UOIT did not participate in the 2007 CGPSS survey, while a number of questions from University of Guelph were not directly comparable. Therefore, these two universities were excluded from the 2010 sample for this section where 2007 and 2010 CGPSS results are directly compared.

Figure 45 shows the results for the general assessment measures for 2007 and 2010. General assessment ratings were slightly lower in 2010 than 2007 with respect to satisfaction with the academic experience, graduate program, and overall experience. Figure 45 presents both the percentage of students who responded “Excellent,” “Very Good,” and “Good” and the mean scores of the four general assessment measures. Levels of satisfaction decreased from 2007 to 2010 for all five general assessment questions. Two-sample t tests were performed to test if the differences between the mean scores of 2007 and 2010 are statistically significant, and the results show that the decrease in satisfaction levels for all four measures were significant at the 95% level (Table 9).

Figure 45. General assessment by year, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Excellent," "Very Good," or "Good"



Mean scores: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent

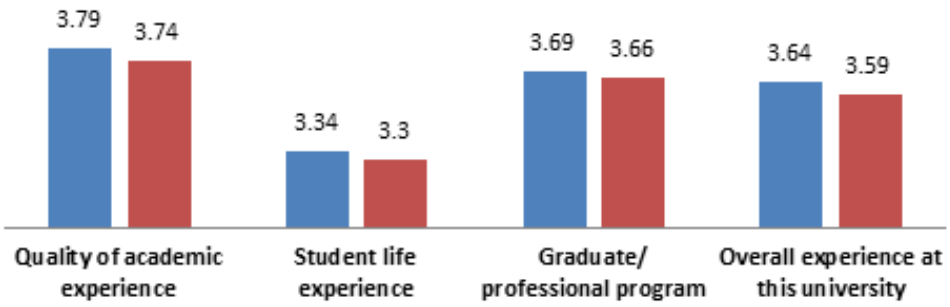


Figure 46 shows a comparison between 2007 and 2010 for the general satisfaction measures. Responses from 2010 were slightly lower, with the exception of results for the question "if you were to start your graduate career again, would you select the same faculty supervisor?" Two-sample t tests results show that the differences between 2007 and 2010 for all five general satisfaction measures are statistically significant at the 95% level (Table 9).

Figure 46. General satisfaction by year, CGPSS 2007 & 2010, Ontario universities

Percentage responded "Definitely" or "Probably"

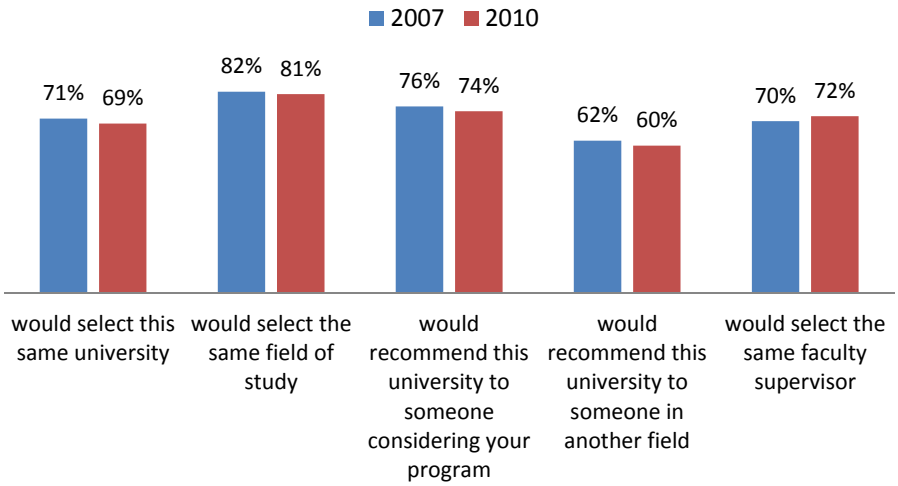
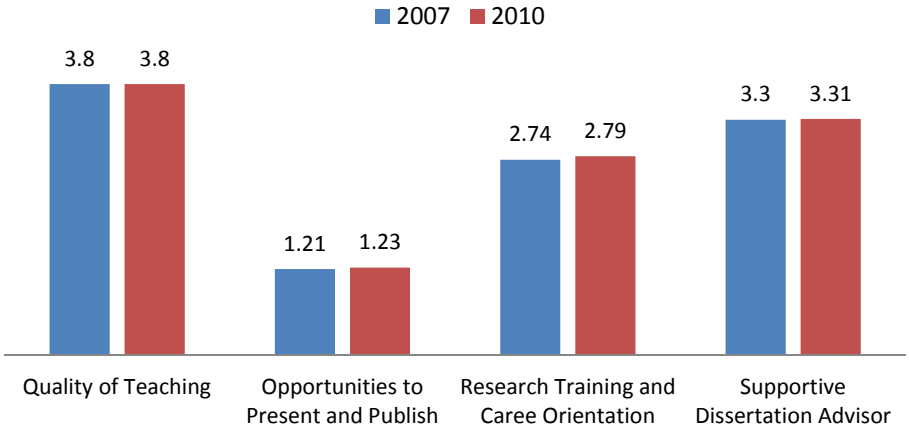


Figure 47 tells the opposite story. While general satisfaction and assessment levels decreased slightly between 2007 and 2010, scores on the four CGPSS benchmarks increased slightly between the two years. Students in 2007 and 2010 share the same mean score for Quality of Teaching. However, the mean scores for all the other three benchmarks were slightly higher (and statistically significant) in 2010 than 2007.

Figure 47. Benchmarks by year, CGPSS 2007 & 2010, Ontario universities

Mean scores



One might argue that the slight decrease in satisfaction levels reported by graduate students is due to differences in the student and program representation in the 2007 and 2010 respondent population. A number of regression models were conducted to check the validity of this argument. A set of thirteen regression models were conducted on the combined sample from 2007 and 2010 for four general assessment measures, five general satisfaction measures, and four benchmarks. Dependent variables were the same set of variables as listed in the previous sections including student characteristics, educational debt level, financial aid received, university size, and programs enrolled. The regression results show that there is some truth to this argument. Adding "year" as one of the independent variables in the model captures the factors/events in 2007 and 2010 that are not being controlled in the model (such as the sharp increase in number of graduate enrolments).

After controlling for all other characteristics, the year effect of 2010 (comparing to year 2007) is a negative factor for the following four measures:

- Quality of academic experience,
- Would recommend this university to someone in another field,
- Would select the same faculty supervisor, and
- Research Training and Career orientation.

It is positive for the following two measures:

- Would select this same university, and
- Opportunities to Present and Publish.

Some of these regression results are contradictory to the results portrayed in the summary statistics. For example, the mean score for "would select this same university" was slightly lower in 2010 than it was in 2007, but the year effect of 2010 was positive for this measure in the regression result. However, the analysis provided some evidence that the satisfaction level of Ontario graduate students has decreased slightly between 2007 and 2010, at least for some measures.
Another set of comparison analyses was done for doctoral students only, since the survey instrument change that occurred in 2010 did not affect doctoral students. The results showed different patterns but still suggests that the satisfaction levels of doctoral students have generally decreased slightly between 2007 and 2010 (Table 10). The year effect of 2010 was negative and significant for four of the 13 satisfaction measures but positive and significant for the "Research Training and Career Orientation" benchmark.

Section 6: Conclusions and Policy Recommendations

By using 2007 and 2010 CGPSS data collected by Ontario universities, this study provides some insights into Ontario graduate students' experiences, especially during a period of significant enrolment growth. This research focuses on three main research questions:

1. What factors (student characteristics, program-related factors) influence graduate students' general/overall satisfaction level with their universities, programs of study, academic experiences, and faculty supervisors?
2. What factors influence graduate students' satisfaction level as measured by the four benchmarks in CGPSS?
3. How did graduate students' satisfaction level change between 2007 and 2010?

Overall, graduate students in Ontario rated their satisfaction positively in both 2007 and 2010. In 2007, 86.2% of students rated their overall graduate/professional program as "Excellent," "Very Good," or "Good." In 2010, this percentage was 85.6%. In 2007, 70.8% of students responded "Definitely" or "Probably" to the question "If you were to start your graduate/professional career again, would you choose the same university?" and 69.7% of survey respondents responded positively to the same question in 2010. As well, 82.7% of students said they would choose the same field of study in 2007 and 81.2% responded so in 2010.

The findings suggest that both students' characteristics and program-related factors have impacts on students' satisfaction levels or at least on their perceptions regarding the graduate school experiences. The positive and negative factors that influence graduate students' satisfaction levels are listed below:

Positive factors

- Male;
- Living on-campus, especially those with resident assistant/dorm responsibilities;
- With children;
- Married;
- Chose French as the language for survey;
- Black or Latin American visible minority students;
- Received financial support in the form of scholarship/fellowship/bursary;
- Doctoral students (positive factor for general assessment, faculty supervisor, Opportunities to Present and Publish, Supportive Dissertation Advisor);
- Master's without thesis students in 2007 and Professional Master's students in 2010 (positive factor for general satisfaction and Quality of Teaching);
- Enrolled in Health Science, Business/Management (positive factor for general satisfaction, field of study, Research Training and Career Orientation); and,
- Enrolled in Humanities (positive factor for faculty supervisor).

Negative factors

- More than $10,000 educational debt;
- Had an employment income;

- Received financial support in the form of loans/savings/family assistance; and,
- Stayed in the program longer.

No effect

- Aboriginal status

Mixed effect

- Older;
- University size;
  - Students from bigger universities were more satisfied regarding their institutions and overall experience,
  - Students from smaller universities were more satisfied regarding their faculty supervisors/dissertation advisors and student life,
- International students;
- Registration status; and,
- Received financial support in the form of RA/TA/Residence Donship.

The survey instrument change introduced for the 2010 administration of the CGPSS limited some comparisons between 2007 and 2010 data. However, our findings suggest that the overall student satisfaction levels decreased slightly from 2007 to 2010. Students were less satisfied regarding the quality of their academic experience and student life. On the positive side, doctoral students expressed greater satisfaction with the quality of professional skills development they received (RT benchmark) in 2010. This may suggest the success of some Ontario institutions' initiatives – such as the Graduate Professional Skills (GPS) program launched by University of Toronto in 2009 and various MITACS initiatives being introduced in various universities – during the four year period encompassing the administration of the 2007 and 2010 surveys. This is a particular positive finding in light of the recent graduate enrolment expansion.

Based on findings presented in this paper, our policy recommendations are as follows:

1. Both the provincial government and Ontario universities should continue to promote the administration of and student responses to the CGPSS, especially with the next cycle scheduled for the winter of 2013.

2. The pooled data set developed by COU for this report, linking student administrative data with survey results from the 2007 and 2010 cycles, should be preserved in some fashion and supplemented with the 2013 data when it is made available to allow another future round of analysis.

3. Variations in student satisfaction levels and quality of learning (as measured by the four benchmarks) are associated with many factors, including but not limited to a student's socioeconomic characteristics, registration status, educational debt levels, financial support received, degree type, year of study, institution size, and program. Any simple ranking or direct comparison of satisfaction results among institutions, years, or disciplines should be interpreted with caution. Each institution or department has a different student body; therefore, data derived from the CGPSS or other survey instruments should focus on institution/department strengths and weaknesses.

4. The graduate educational debt held by graduate students is a significant negative factor affecting their satisfaction levels and experiences, while financial support in the form of a Scholarship/Fellowship/Bursary significantly improved graduate students' satisfaction levels and graduate school experiences. The government and universities should provide more financial support and implement policies aimed at cutting the educational debt levels of graduate students to improve their experiences.

5. Universities should develop and evaluate initiatives targeted at their graduate student populations based on the relevant provincial and institutional results. We encourage more institutional initiatives to improve graduate students' experiences, especially in response to the current environment of continued graduate enrolment expansion.

6. Ontario universities have shown some success in implementing targeted programs to improve doctoral students' professional skills development. The government should continue to work with universities and their graduate deans to promote and support initiatives and best practices that improve graduate student preparation for the labour market.

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Appendix

Appendix A. CGPSS participation, 2007 and 2010, Ontario Universities

	2007	2010
Brock	√	√
Carleton	√	√
Guelph	N/A	√
Lakehead	√	√
Laurentian	√	√
McMaster	√	√
Nipissing	X	X
OCAD	X	X
Ottawa	√	√
Queen's	√	√
Ryerson	√	√
Toronto	√	√
Trent	√	√
UOIT	X	√
Waterloo	√	√
Western	√	√
Wilfrid Laurier	√	√
Windsor	√	√
York	√	√

Appendix B. CGPSS benchmarks and items

Variable name	Benchmark/Survey item
QT	**Quality of Teaching** (from 1 = *Poor* to 5 =*Excellent*) Students were asked to rate the following dimensions of their program: 3.1 The intellectual quality of the faculty 3.4 Overall quality of graduate level teaching by faculty 3.9 Quality of instruction in my courses
OPP	**Opportunities to Present and Publish** Students were asked to report on the number of times they were involved in the following: (None, Once, Twice, Three times, Four or more times) 6.2b Obtained departmental funding in order to attend national or regional meetings. 6.3b Attended national scholarly meetings. 6.4b Delivered a paper or presented a poster at national scholarly meetings. 6.5b Co-authored in refereed journals with their program faculty. 6.6b Published as sole or first author in a refereed journal.
RT	**Research Training and Career Orientation** Students were asked to rate the quality of the support and training received in the following: 4.4 Advice/workshops on the standards for academic writing in your field 4.5 Advice/workshops on writing grant proposals 4.6 Advice/workshops on publishing your work 4.7 Advice/workshops on career options within academia 4.8 Advice/workshops on career options outside academia 4.9 Advice/workshops about research positions 4.10 Advice/workshops about research ethics in human subject research 4.11 Advice/workshops about research ethics in the use of animals 4.12 Advice on intellectual property issues
SDA	**Supportive Dissertation Advisor** For each of the following statements, students were asked to indicate the extent to which it described the behaviour of their dissertation advisor or chair. (from 1 = Strongly Disagree to 4 = Strongly Agree) 7.2.2 served as my advocate when necessary 7.2.3 gave me constructive feedback on my work 7.2.4 returned my work promptly 7.2.5 promoted my professional development 7.2.6 overall, performed the role well 7.2.7 was available for regular meetings 7.2.8 was very helpful to me in preparing for written qualifying exams 7.2.9 was very helpful to me in preparing for the oral qualifying exam 7.2.10 was very helpful to me in selecting a dissertation topic 7.2.11 was very helpful to me in writing a dissertation prospectus or proposal 7.2.12 was very helpful to me in writing the dissertation 7.2.13 was very helpful to me in selecting the dissertation committee

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