

## Economic Insights

# Which Master's Degree Programs Were Associated with the Highest Pay Prior to the COVID-19 Pandemic? A Focus on Very Detailed Fields of Study

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# Which Master's Degree Programs Were Associated with the Highest Pay Prior to the COVID-19 Pandemic? A Focus on Very Detailed Fields of Study

Marc Frenette and Tomasz Handler

Estimating earnings by very detailed fields of study can be useful for students since they must make very specific program choices when applying for postsecondary admission. This study reports on the median earnings of master's degree graduates five years after graduation (prior to the COVID-19 pandemic), after adjusting for age, institution, and year of graduation. It covers 77 fields for men and 95 fields for women. The results, which are based on postsecondary administrative and taxation data, indicate that the highest earners are generally business graduates from various specialties, as well as several types of health graduates. Notably, engineering graduates experienced varying degrees of success in the labour market, depending on their specialty. While graduates from several broad field of study groupings also experience mixed success (again, depending on specialty), arts and humanities graduates generally earned far less than most other graduates. These results highlight the importance of reporting earnings by very detailed fields of study when possible.

## Introduction

Most studies that examine earnings by field of study report results for only a small number of broad academic programs, often due to data limitations (Frank and Walters 2012; Ostrovsky and Frenette 2014; Frank, Frenette, and Morissette 2015; Zhao et al. 2017; Frenette 2019) or perhaps due to ease of presentation (Galarneau et al. 2017; Finnie et al. 2019).<sup>1</sup> Providing more detailed evidence is important since the expected earnings associated with a field of study is an important factor in the decision-making process of students (Gunderson and Krashinsky, 2009). The purpose of this study is to provide earnings estimates of graduates of specific disciplines for a very wide range of master's degree graduates.<sup>2</sup>

The approach is the same as in Frenette and Handler (2020a), and is described in more detail in that study. Briefly, this study reports on the median paid earnings (expressed in 2017 constant dollars from Table 18-10-005-01) from the T1 Family File (T1FF) five years after graduation from a master's degree program obtained between the years 2010 and 2012 (identified from the Postsecondary Student Information System, or PSIS). Earnings are adjusted for age, institution, and graduation year. Individuals

1. Frenette and Frank (2016) reported results by detailed fields of study, but had to include all graduates between the ages of 25 and 54, regardless of when they completed their program.
2. This is one of three articles examining the earnings of graduates by detailed fields of study. The other articles look at bachelor's graduates (Frenette and Handler 2020a) and doctoral graduates (Frenette and Handler 2020b). Future work may look at college certificate and diploma graduates, as more data become available. Note that the data used in these studies were collected and the first drafts written prior to the COVID-19 pandemic. How individuals who graduate from specific programs during or after the pandemic will fare in the labour market may not be known for quite some time.

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who returned to postsecondary studies following graduation, who reported self-employment income five years after graduation (prior to the COVID-19 pandemic), or who graduated from a discipline with fewer than 50 observations in the final sample are excluded.<sup>3</sup> Importantly, individuals with zero earnings are included, which means that the results will reflect in part differences in employment between graduates. In total, results are available for 77 (95) fields for men (women), which are identified through the four-digit 2011 Classification of Instructional Program (CIP).<sup>4, 5</sup>

### Business graduates are highest earners among master's degree holders

Five years after graduation, individuals with various business specialties out-earned all other master's degree graduates, after accounting for differences in age, institution, and graduation year. For men, the three top disciplines registering the highest median earnings included Finance and financial management services (\$110,518), Business administration, management and operations (\$108,382), and Accounting and related services (\$102,718)—see Chart 1. Management sciences and quantitative methods graduates also landed in the top 10, with median earnings of \$91,161 (9<sup>th</sup> place).

Women who obtained a master's degree in a business-related discipline also outperformed their counterparts from other disciplines in the labour market (Chart 2). Specifically, among female graduates, those with Taxation degrees out-earned all others with \$96,416 in median earnings, followed closely by Finance and financial management services graduates with \$92,956. Women who specialized in Accounting and related services (\$89,605) or Business administration, management and operations (\$89,202) also found themselves in the top 5 (4<sup>th</sup> and 5<sup>th</sup> place, respectively).

Several other male and female business-related graduates registered median earnings that were well above the average among all master's degree graduates.

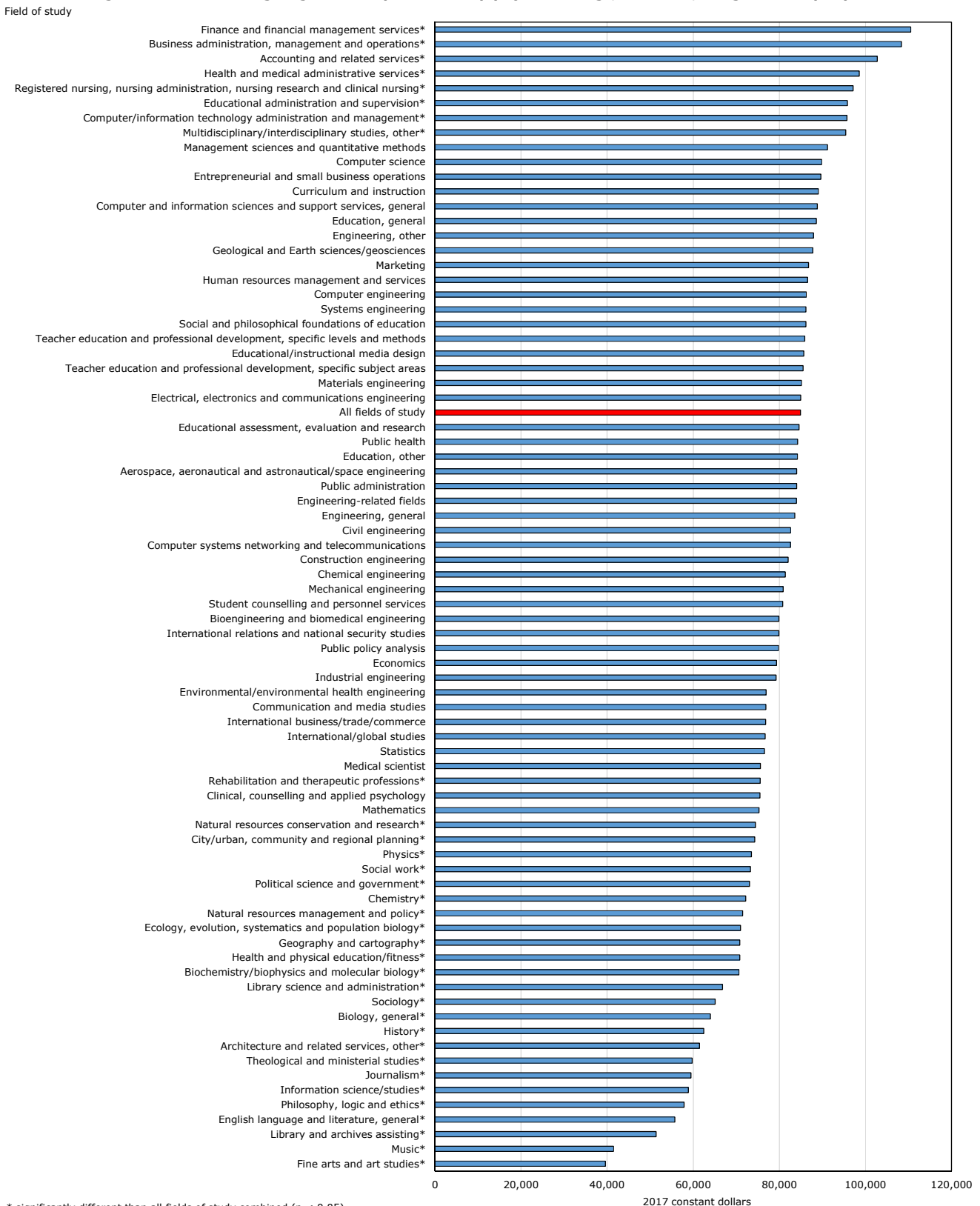
Certain health graduates also performed well in the labour market. For men, Health and medical administrative services and Registered nursing, nursing administration, nursing research and clinical nursing graduates came in 4<sup>th</sup> and 5<sup>th</sup> place, respectively. For women, those who studied Pharmacy, pharmaceutical sciences and administration (3<sup>rd</sup>), Registered nursing, nursing administration, nursing research and clinical nursing (6<sup>th</sup>), or Health and medical administrative services (9<sup>th</sup>) also registered relatively high median earnings.

Male Computer science and Computer/information technology administration and management graduates were in 7<sup>th</sup> and 10<sup>th</sup> place, respectively. There were not enough women in these fields to include in the study.

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3. Note that disciplines with fewer than 50 observations are included when reporting results for all master's degree graduates.
  4. Although the statistical significance of the results is reported in this study, it is important to note that there is no intentional sampling in the data used in deriving the results. In other words, results are based on complete, well-defined populations (e.g. all female graduates of a certain discipline who appeared in the tax data). Statistical significance can be used by readers to make inferences to “super-populations” (e.g. all female graduates of a certain discipline, whether they appeared in tax data or not). However, in doing so, it is important to note that the “sampling” process (appearing in the tax data) was not necessarily random, and no weights have been created to obtain estimates for the larger population.
  5. Note that the following professional programs were excluded from the analysis since they are typically not offered as a second degree after high school that is focused on graduate level research (like most master's degree programs): Law (LLB, JD, BCL), Legal research and advanced professional studies (post-LLB/JD), Chiropractic (DC), Dentistry (DDS, DMD), Advanced/graduate dentistry and oral sciences (Cert., MS, MSc, PhD), Medicine (MD), Optometry (OD), Osteopathic medicine/osteopathy (DO), Podiatric medicine/podiatry (DPM), Veterinary medicine (DVM), Dental residency programs, Veterinary residency programs, Medical residency programs—general certificates, Medical residency programs—subspecialty certificates, Podiatric medicine residency programs, and Dental, medical and veterinary residency programs (other).

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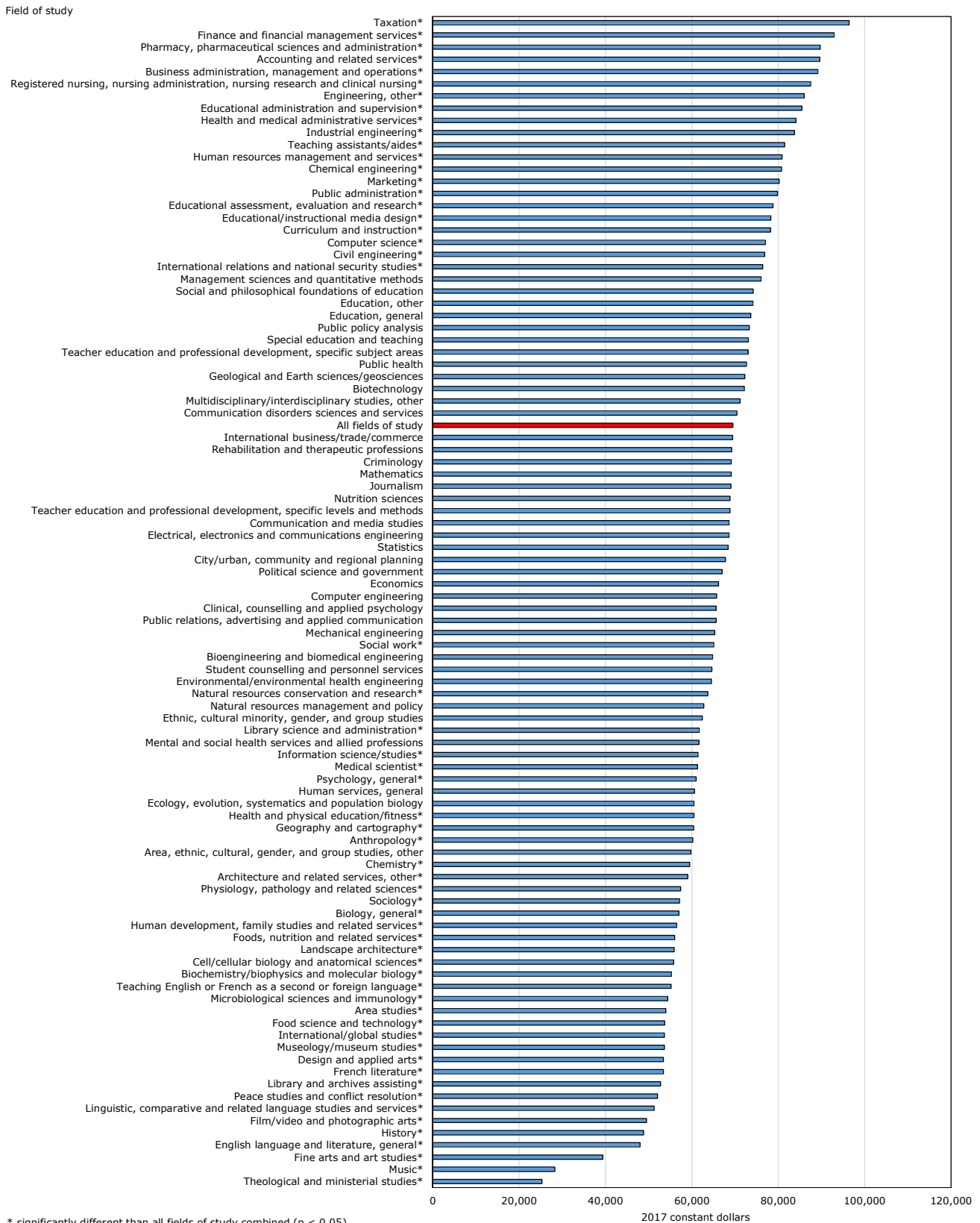
**Chart 1**  
**Median earnings of male master's degree graduates by field of study (adjusted for age, institution, and graduation year)**



\* significantly different than all fields of study combined (p < 0.05)  
 Sources: Statistics Canada, Postsecondary Student Information System (PSIS) and T1 Family File (T1FF).

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**Chart 2**  
**Median earnings of female master's degree graduates by field of study (adjusted for age, institution, and graduation year)**



\* significantly different than all fields of study combined (p < 0.05)  
**Sources:** Statistics Canada, Postsecondary Student Information System (PSIS) and T1 Family File (T1FF).

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Educational administration and supervision graduates were also ranked in the top ten for men (6<sup>th</sup>) and women (8<sup>th</sup>). This field is distinct from teacher training, and focuses on training students to administer schools or other educational organizations. It may include, for example, individuals interested in becoming a school principal. Several other male and female education-related graduates registered median earnings above the average among all master's degree graduates.

Finally, male graduates of Multidisciplinary/interdisciplinary studies (other) landed in 8<sup>th</sup> place among all master's degree graduates with respect to median earnings. These programs combine two or more disciplines that are not specified.

### Engineering graduates from many specialties registered below average earnings

It has been well documented that engineering graduates generally outperform most other graduates in the labour market. However, this is generally not the case among graduates of master's degree programs in engineering.

Indeed, there were no engineering graduates in the top 10 for men, and only two types of engineering graduates in the top 10 for women [Engineering (other) in 7<sup>th</sup> place and Industrial engineering in 10<sup>th</sup> place]. This is in contrast to bachelor's degree graduates, where 6 of the top 10 spots were occupied by engineering graduates for men, and 7 of the top ten for women (Frenette and Handler 2020a).

Moreover, male graduates from 9 of the 14 engineering disciplines registered median earnings below the median among all master's degree graduates. For women, 5 of the 9 engineering disciplines landed below the median among all master's degree graduates.

These results are in line with Wall et al. (2018), who estimated no statistically significant premium associated with a master's degree in engineering compared to a bachelor's degree in engineering. However, these results mask the important differences highlighted in Chart 1 and Chart 2, which suggest that engineering graduates at the master's degree level experienced varying degrees of success in the labour market, depending on their specialty.

### Art and humanities graduates generally earned less than most other graduates

The high degree of variable results within the broad field of engineering also applies to many other disciplines, including sciences, mathematics and computer science, health, and social sciences. However, graduates of arts and humanities programs generally earn far less than most other graduates.

Specifically, 7 of the bottom 10 fields among male master's degree graduates are associated with arts or humanities [Fine arts and art studies, Music, English language and literature (general), Philosophy, logic, and ethics, Journalism, Theological and ministerial studies, and History]. Their median earnings five years after graduation ranged from about \$40,000 to about \$62,000.

For women, 8 of the bottom 10 fields included program associated with the arts or humanities (Theological and ministerial studies, Music, Fine arts and art studies, English language and literature (general), History, Film/video and photographic arts, Linguistic, comparative and related language studies and services, and French literature). Median earnings ranged from about \$25,000 to about \$53,000 for these graduates, five years after graduation.

One notable exception is graduates of Communication and media studies. The median earnings of men who studied in this discipline was \$76,842, only about \$8,000 below the median for all male master's degree graduates. Their female counterparts registered \$68,664 in median earnings—less than \$1,000 below the median for all female master's degree graduates. Female Journalism graduates also came in just below the median for all graduates, at \$69,069.

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### Conclusion

This study reports on the median earnings of master's degree graduates five years after graduation (prior to the COVID-19 pandemic), after adjusting for age, institution, and year of graduation. Results are shown for 77 fields for men and for 95 fields for women. Students may benefit from this information since they must apply to specific programs, as opposed to broader categories that are more often reported in studies.

The results, which are based on postsecondary administrative and taxation data, indicate that the highest earners are generally business graduates from various specialties, as well as several types of health graduates. Notably, engineering graduates experienced varying degrees of success in the labour market, depending on their specialty. While graduates from several broad field of study groupings also experience mixed success (again, depending on specialty), arts and humanities graduates generally earned far less than most other graduates.

This article highlights the importance of presenting results at detailed levels whenever possible. At the same time, the results reflect economic conditions that graduates faced during the 2010s. Many sectors naturally go through peaks and troughs, and this may affect the demand for graduates from different academic programs. Moreover, the COVID-19 pandemic may lead to longer-term shifts in demand due to possible re-organization of work (e.g. teleworking or automation) or changes in demand in sectors like health care or clean energy.

### References

Finnie, R., M. Miyairi, M. Dubois, T. Bonen, and B. Amery. 2019. How Much Do They Make? New Evidence on the Early Career Earnings of Canadian Post-secondary Education Graduates by Credential and Field of Study. Ottawa, ON: Education Policy Research Initiative and Labour Market Information Council.

Frank, K., and D. Walters. 2012. "Exploring the Alignment between Post-secondary Education Programs and Earnings: An Examination of 2005 Ontario Graduates." *Canadian Journal of Higher Education* 42 (3): 93–115.

Frank, K., M. Frenette, and R. Morissette. 2015. Labour Market Outcomes of Young Postsecondary Graduates, 2005 to 2012. *Economic Insights*, no. 50. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.

Frenette, M. 2019. Are the Career Prospects of Postsecondary Graduates Improving? *Analytical Studies Branch Research Paper Series*, no. 415. Statistics Canada Catalogue no. 11F0019M. Ottawa: Statistics Canada.

Frenette, M. and K. Frank. 2016. Earnings of Postsecondary Graduates by Detailed Fields of Study. *Economic Insights*, no. 56. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.

Frenette, M. and T. Handler. 2020a. Which Bachelor's Degree Programs Were Associated with the Highest Pay Prior to the COVID-19 Pandemic? A Focus on Very Detailed Fields of Study. *Economic Insights*, no. 120. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.

Frenette, M. and T. Handler. 2020b. Which Doctoral Degree Programs Were Associated with the Highest Pay Prior to the COVID-19 Pandemic? A Focus on Very Detailed Fields of Study. *Economic Insights*, no. 122. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.



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**Which Master's Degree Programs Were Associated with the Highest Pay Prior to the COVID-19 Pandemic? A Focus on Very Detailed Fields of Study**

Galarneau, D., C. Hinchley, and A. Ntwari. 2017. Labour Market Outcomes of Graduates from Universities in the Maritime Provinces. Statistics Canada Catalogue no. 75-006-X. Ottawa, ON: Statistics Canada.

Gunderson, M., and H. Krashinsky. 2009. Do Education Decisions Respond to Returns by Field of Study? Canadian Labour Market and Skills Researcher Network. Working Paper no. 47.

Ostrovsky, Y., and M. Frenette. 2014. The Cumulative Earnings of Postsecondary Graduates Over 20 Years: Results by Major Field of Study. Economic Insights, no. 40. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.

Wall, K., J. Zhao, S. J. Ferguson, and C. Rodriguez, C. 2018. Is Field of Study a Factor in the Payoff of a Graduate Degree? Statistics Canada Catalogue no. 75-006-X. Insights on Canadian Society. Ottawa, ON: Statistics Canada.

Zhao, J., S. J. Ferguson, H. Dryburgh, C. Rodriguez, and R. Subedi. 2017. Is Field of Study a Factor in the Earnings of Young Bachelor's Degree Holders? Statistics Canada Catalogue no. 98-200-X2016023. Ottawa, ON: Statistics Canada.