

Connecting Occupational and Educational Pathways

ONCAT

17 April 2018



UNIVERSITY OF TORONTO
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Centre for the Study of
CIHE
Canadian & International Higher Education





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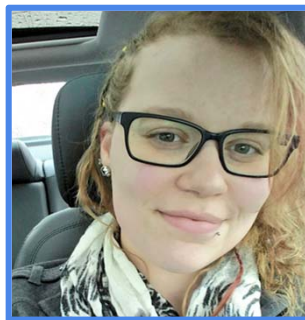
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Outline



1. Introduction



2. Background



3. Current Project



4. Data & Methods

5. Results



a. Nursing



b. Engineering



6. Implications



7. Next Steps

8. Q & A, Comments



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Introduction



Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

Canada



MINISTRY OF ADVANCED EDUCATION AND SKILLS DEVELOPMENT



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Introduction

Aims of this presentation

Give an
overview of our
larger project

Report progress
results for
nursing and
engineering
data

Show the 2-way
relationship b/w
education and
work



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Background

Education

Bachelor



Diploma



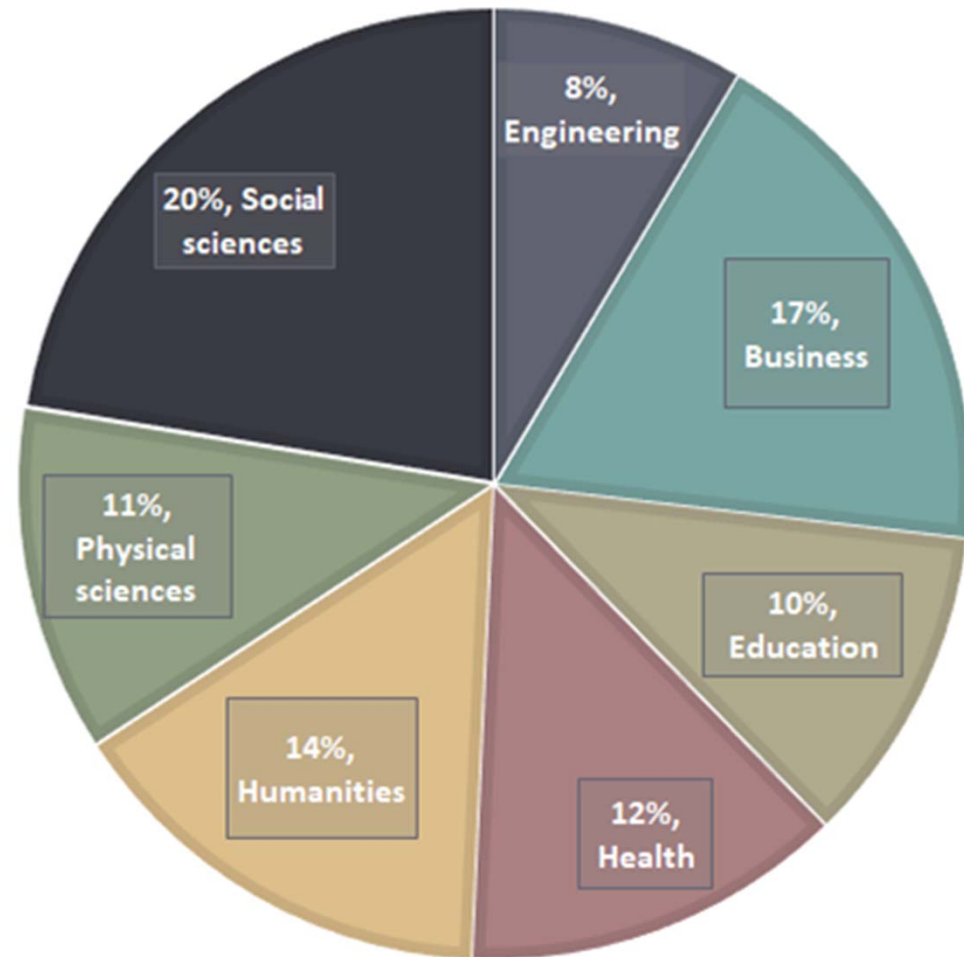
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Background

**University graduates
by field of study**
Sample: 98,200



Wheelahan et al (2015: 23) Table 8: 2009/2010 university graduates who had a prior Canadian college qualification, by field of education, Ontario.



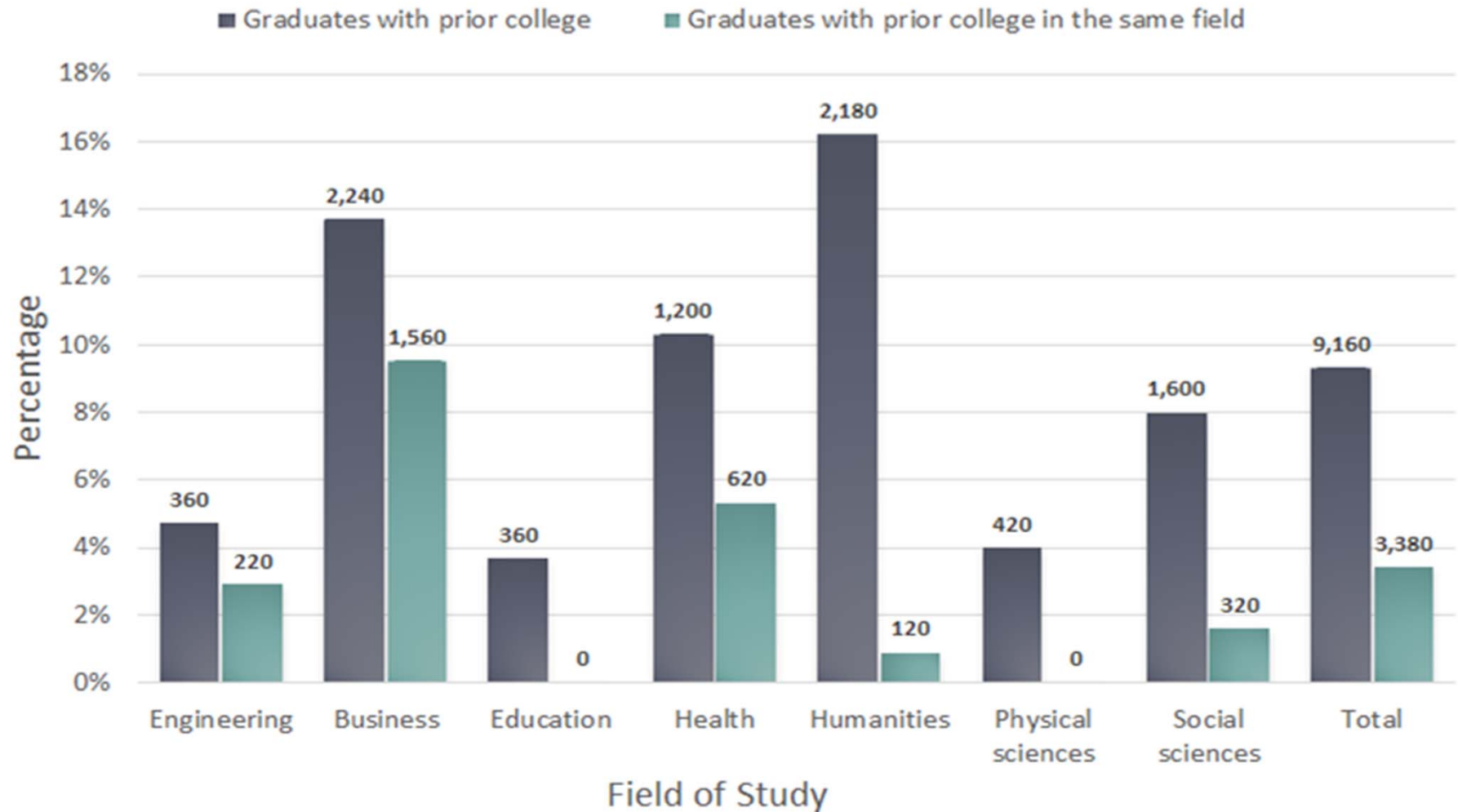
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Background

University graduates with prior college qualifications compared to all university graduates



Background

Education

Bachelor



Diploma



Work

Profession



Paraprofession



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Background

Education

Bachelor



Diploma



Certificate

High school



Work

Profession



Paraprofession



Skilled

Entry



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Current Project

Fields for analysis		
Regulated occupations	Applied qualifications	Liberal arts and sciences
Nursing and patient care	Business, financial services	Physical sciences and related technologies
Civil engineering	Computing and information technology	Life sciences and related technologies
Mechanical engineering		Social studies



Current Project

Education

Bachelor



Diploma



Certificate



Work

Profession



Paraprofession



Skilled



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Data & Methods



Statistics
Canada

Statistique
Canada

National Household Survey 2011

- ~30% of private dwellings
- ~68% response rate
- ~21% coverage



Data & Methods

Sample: Individuals aged 15-64 years who worked in 2010-11		
Variables	Description	Examples
NOC2011	Occupation	2131 Civil Engineers 3011 Nursing co-ordinators & supervisors
NOC11SKILL	Skill level	Skill level A “Managers” to Skill level D “On-the-job training”
HCDD	Highest qualification	“No certificate, diploma, or degree” to “Earned doctorate degree”
PSCDDSUM	Qualification combos	“Bachelor’s degree and trades and/or college qualifications”
CIP2011_PRIM	Major field of study	08 Architecture, engineering, and related 10 Health and related fields



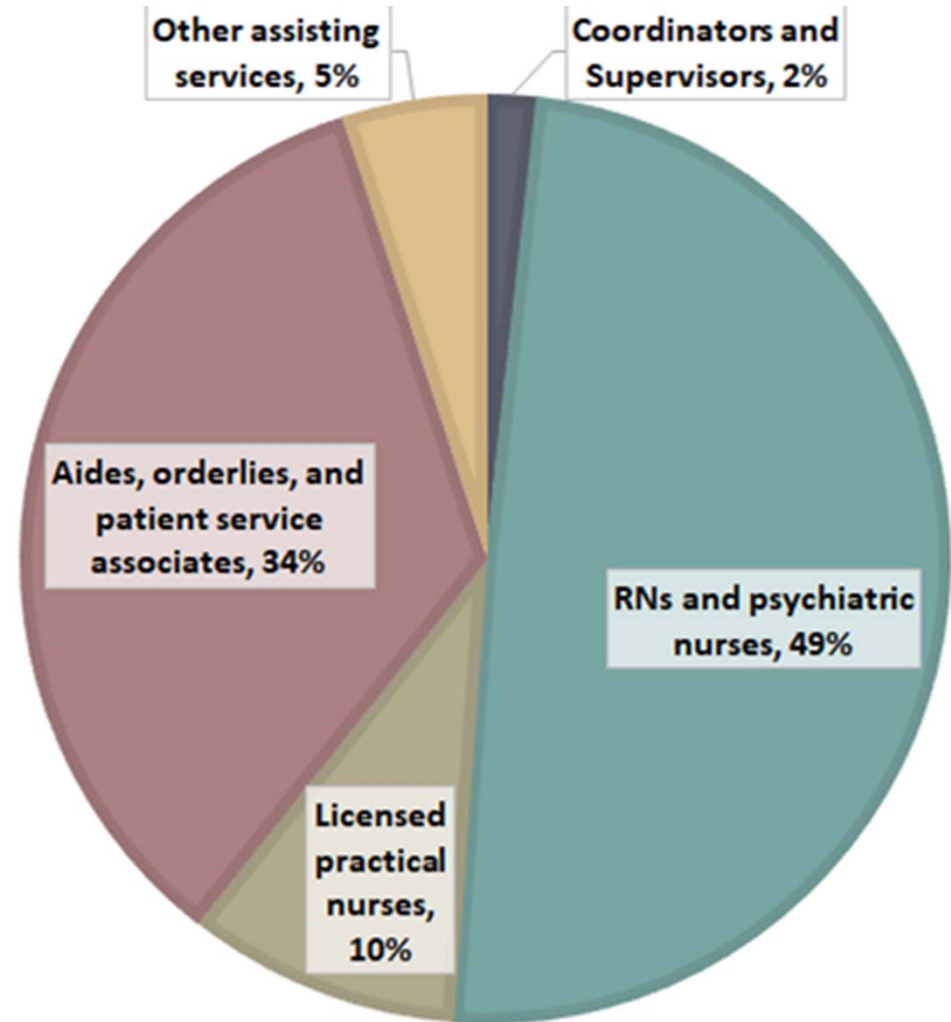
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Results: Nursing

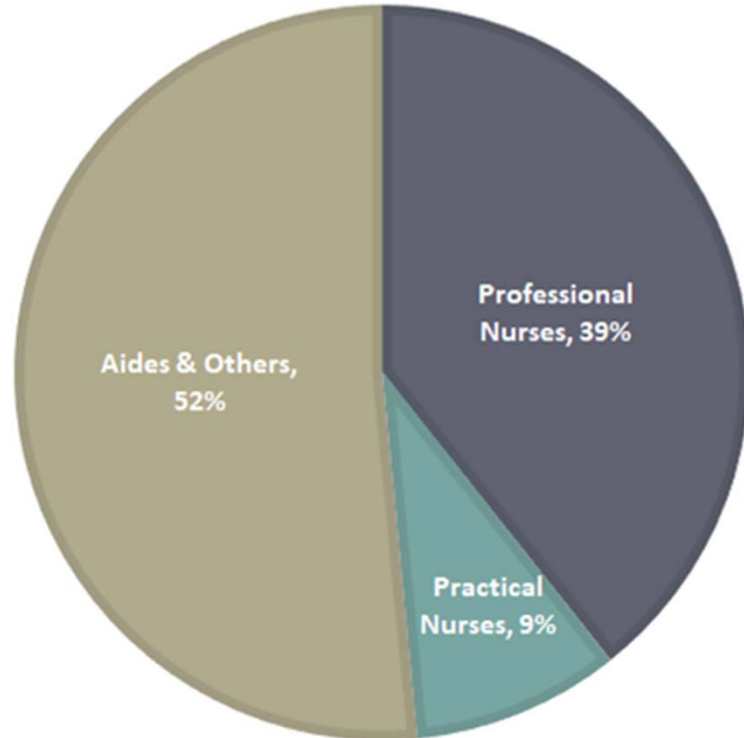
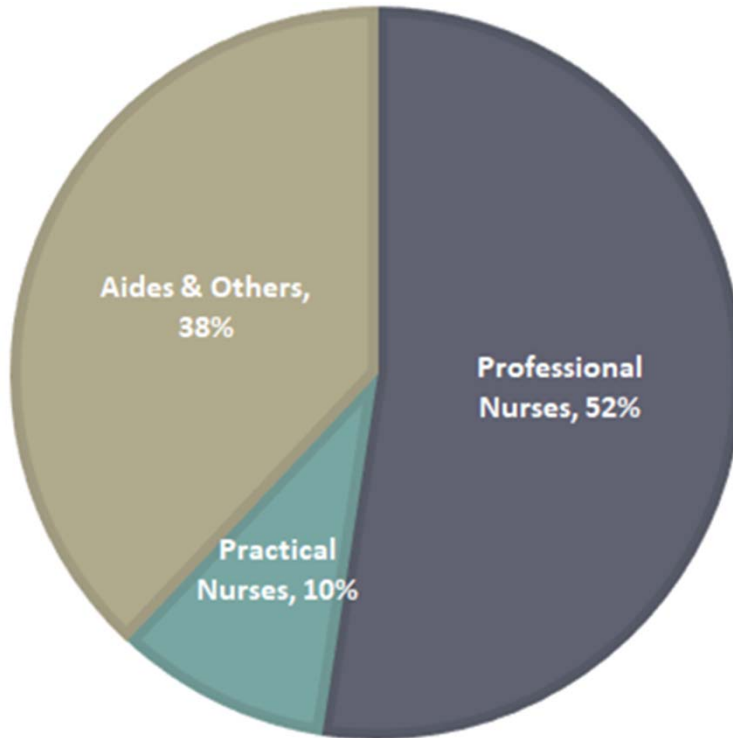
Nurses by subfield

Sample: 618,290



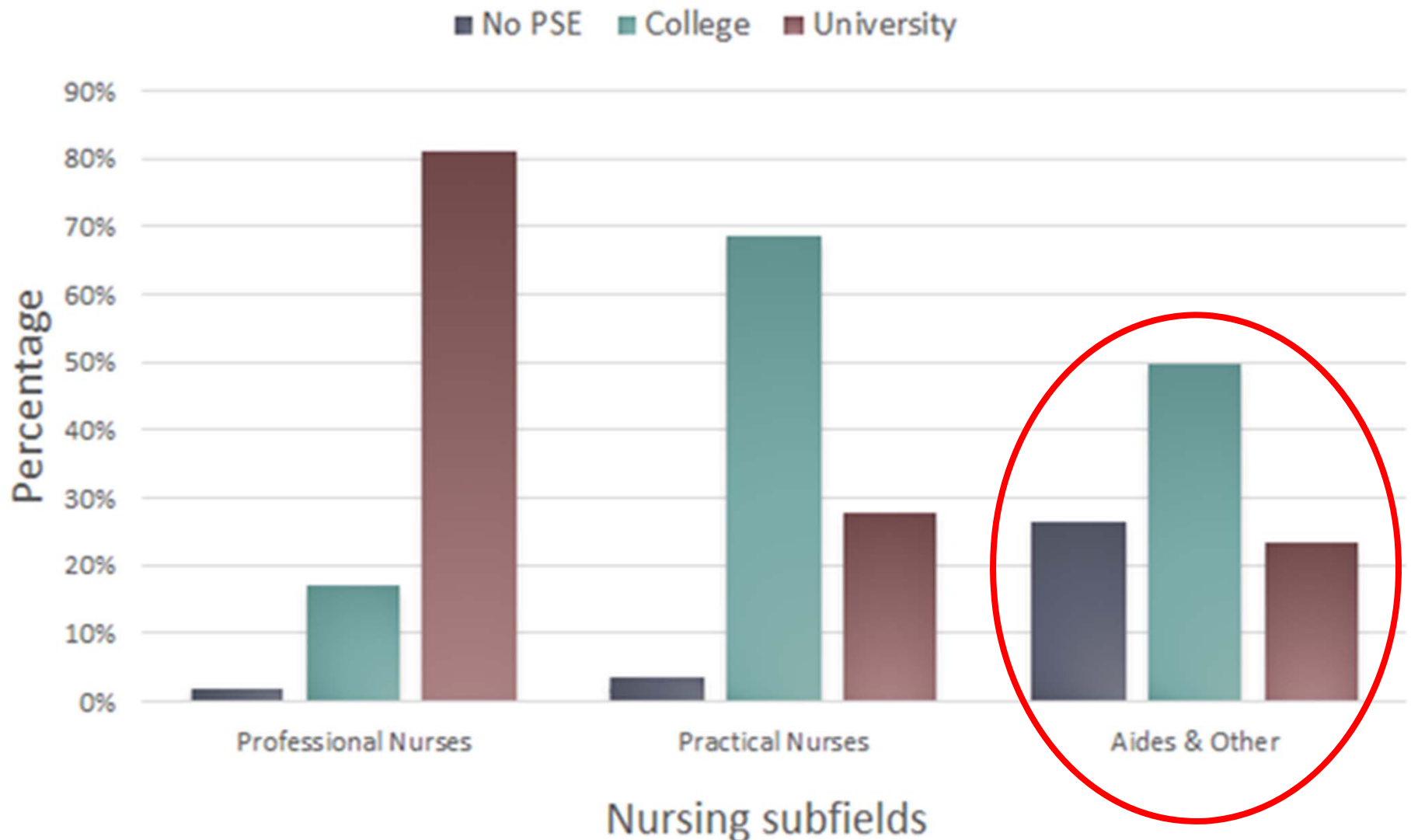
Results: Nursing

Nursing subfields by gender	
Female (90% of all nurses)	Male (10% of all nurses)



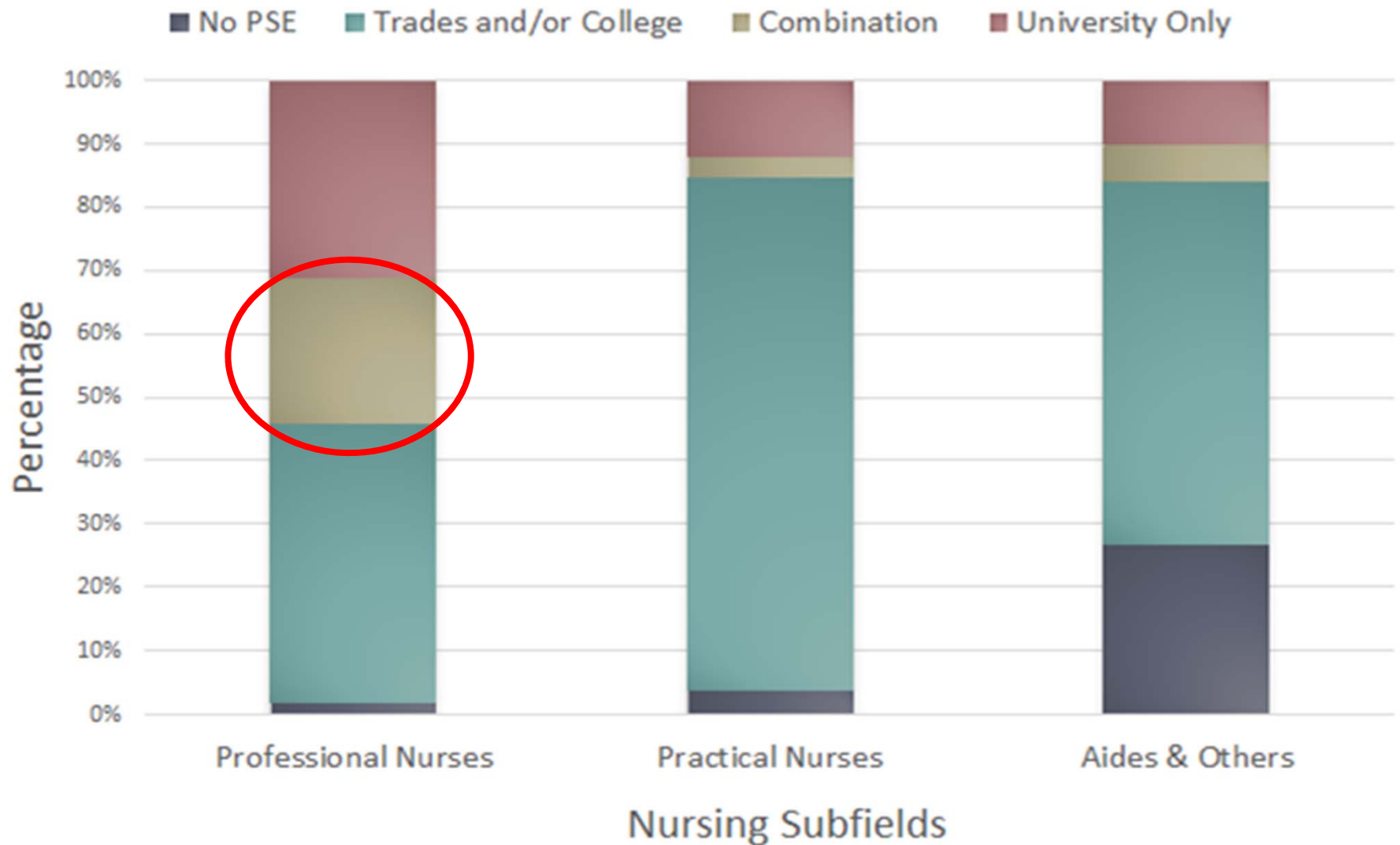
Results: Nursing

Highest qualification breakdown by nursing subfield



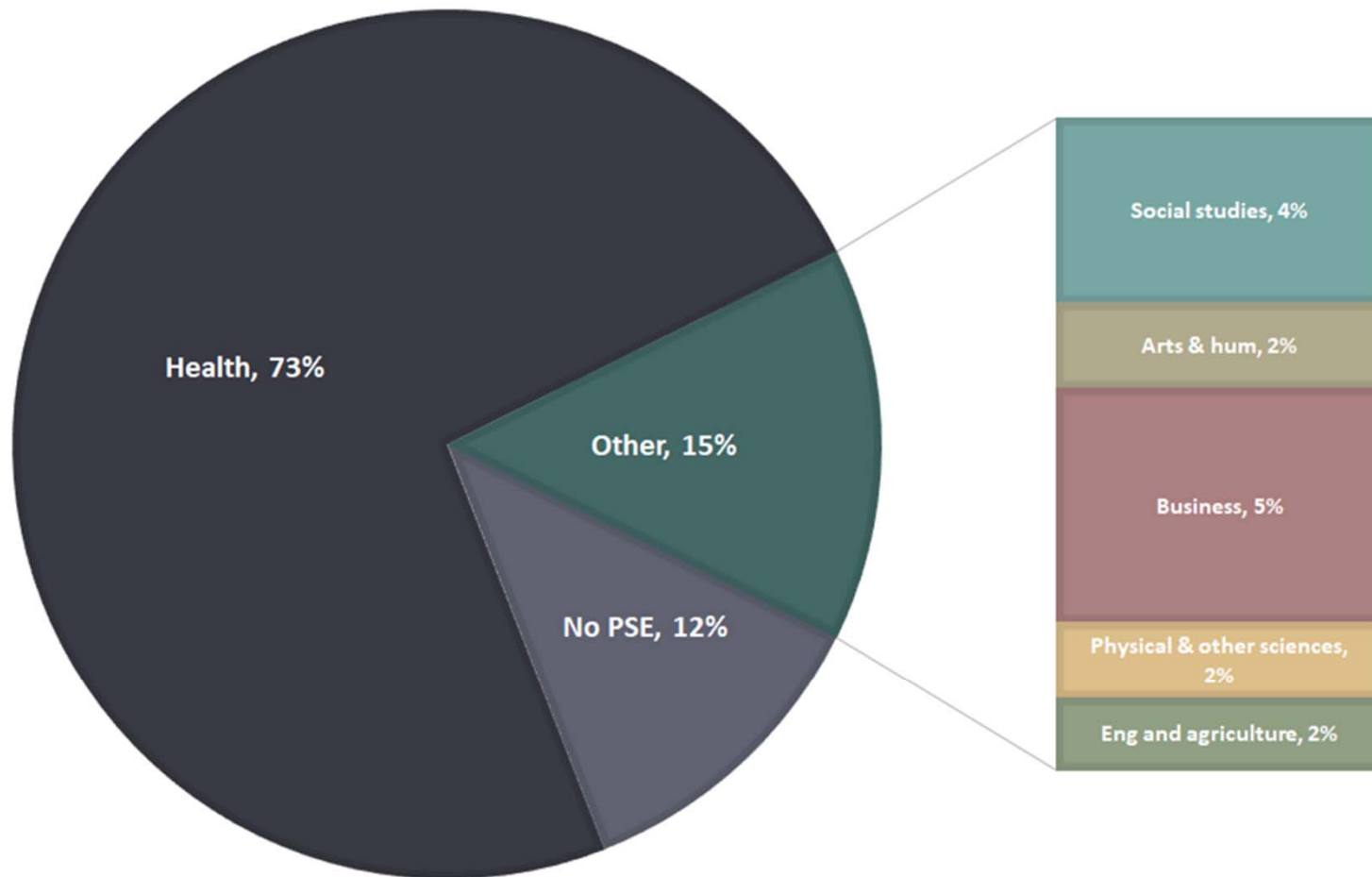
Results: Nursing

Qualification combinations by nursing subfield



Results: Nursing

Field of study for highest qualifications



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Results: Engineering

Engineering and nursing licensure

Qualification	Could get a licence (%)	
	Ontario	Canada
Registered nurse	83	85
Engineer	74	77
Technician	56	48

Wheelahan et al (2015: 31) Table 13: Links between subfields, occupational regulation, match between qualification & job requirements, & match between qualification & skills required for job



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Results: Engineering

Engineering and nursing licensure

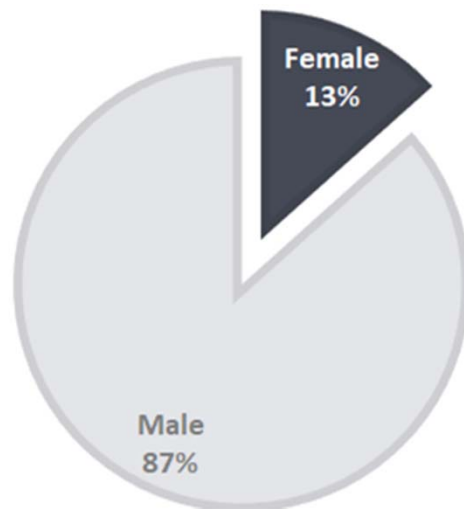
Qualification	Could get a licence (%)		Got licenced (%)	
	Ontario	Canada	Ontario	Canada
Registered nurse	83	85	99	98
Engineer	74	77	35	71
Technician	56	48	27	34

Wheelahan et al (2015: 31) Table 13: Links between subfields, occupational regulation, match between qualification & job requirements, & match between qualification & skills required for job

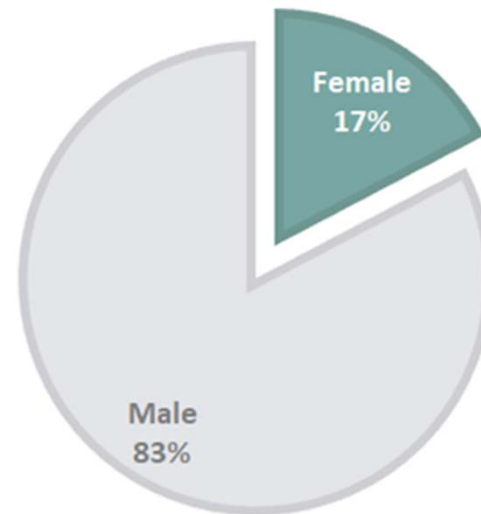


Results: Engineering

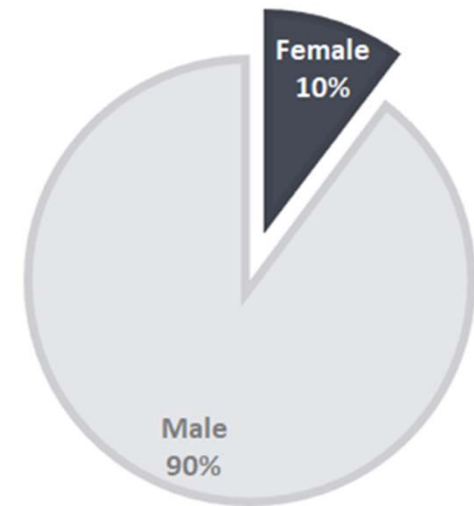
**All engineers
aged 15-64**



**Engineers aged
15 to 39 years**

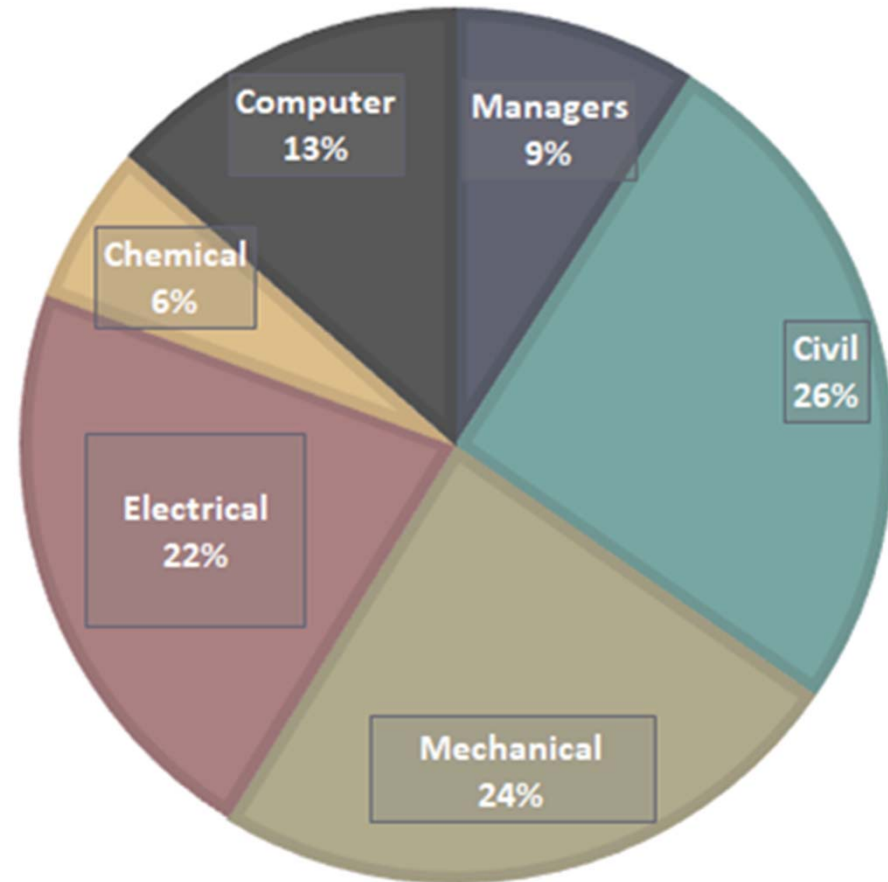


**Engineers aged
40 to 64 years**



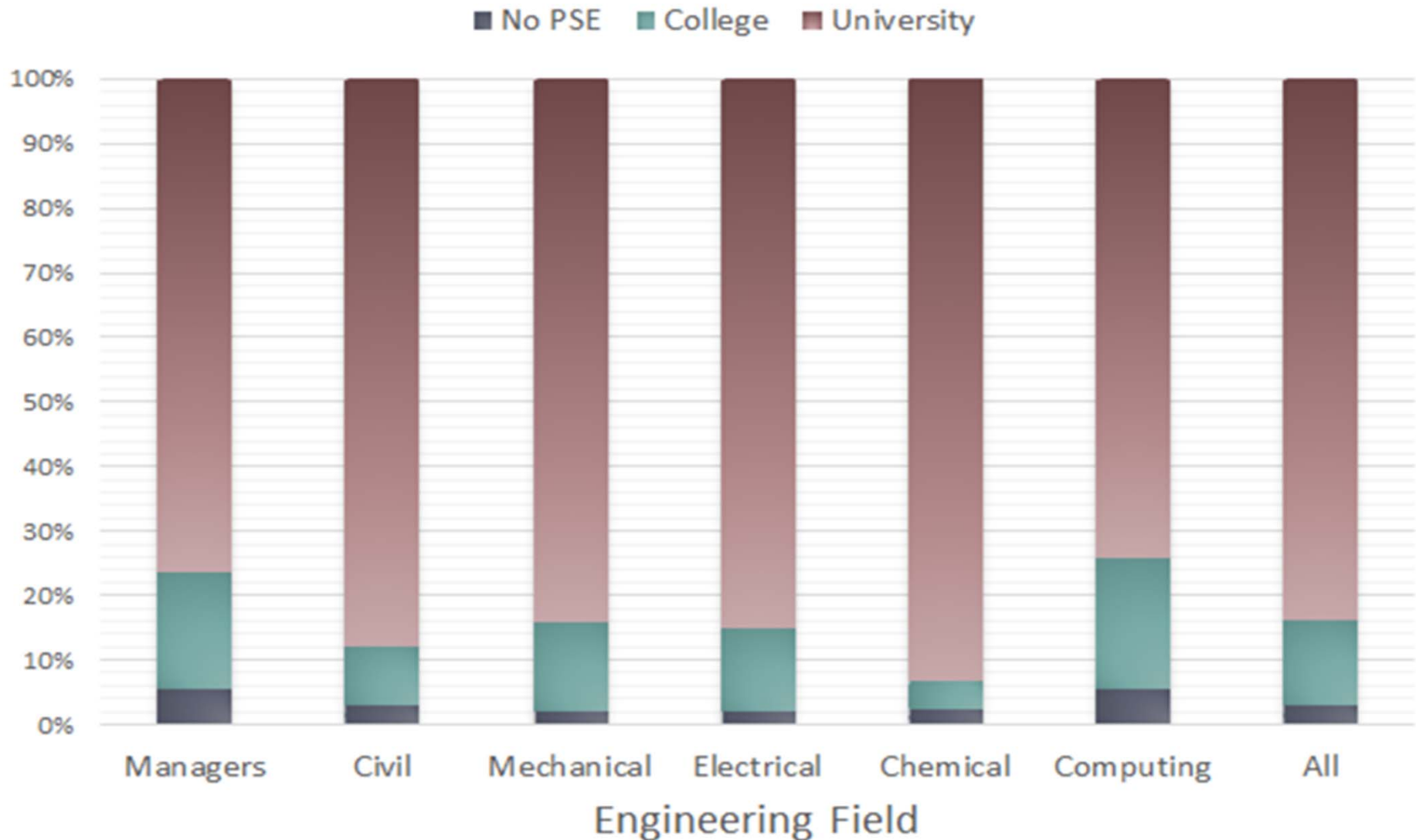
Results: Engineering

Engineers by subfield
Sample: 200,690



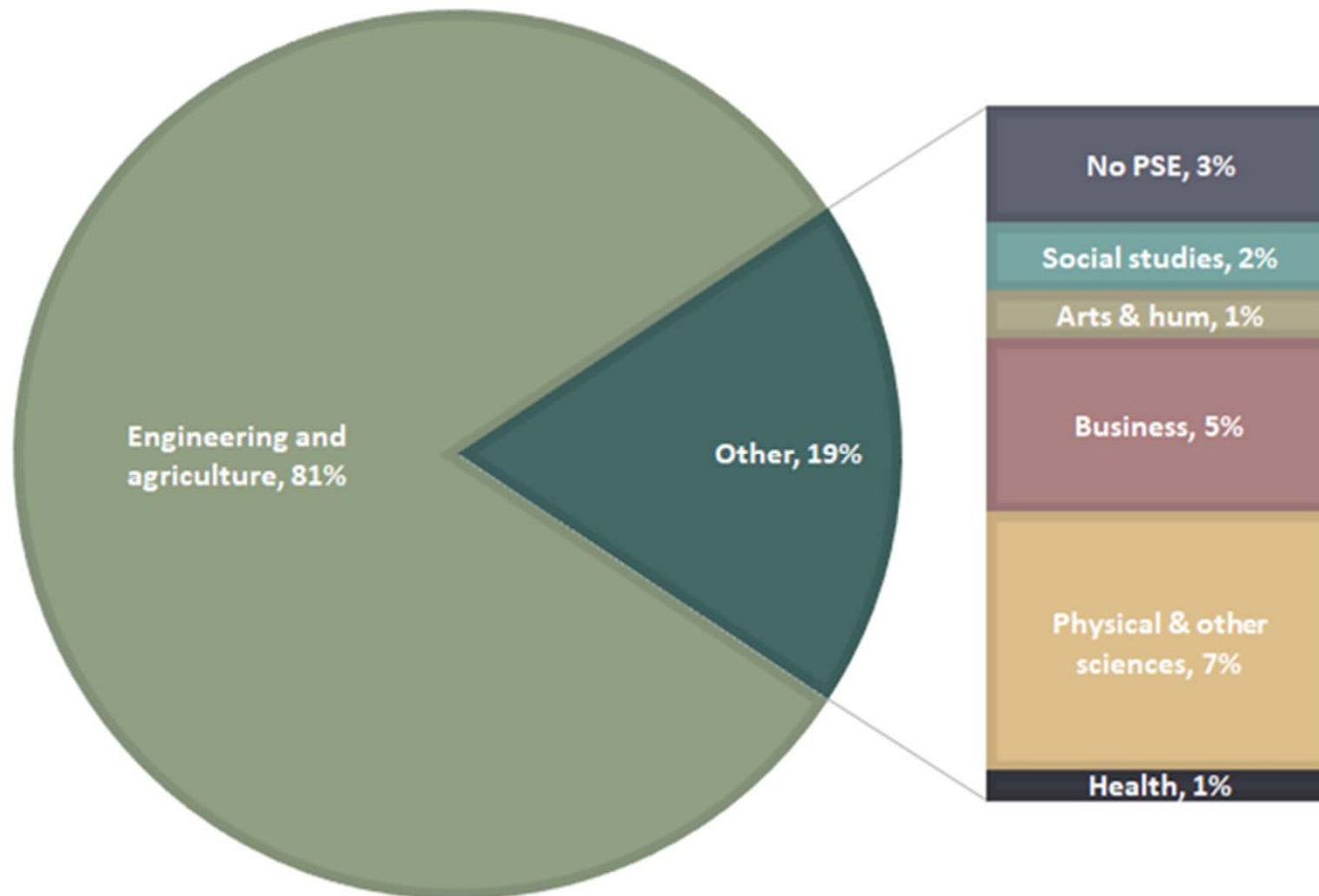
Results: Engineering

Highest qualification breakdown by engineering subfield



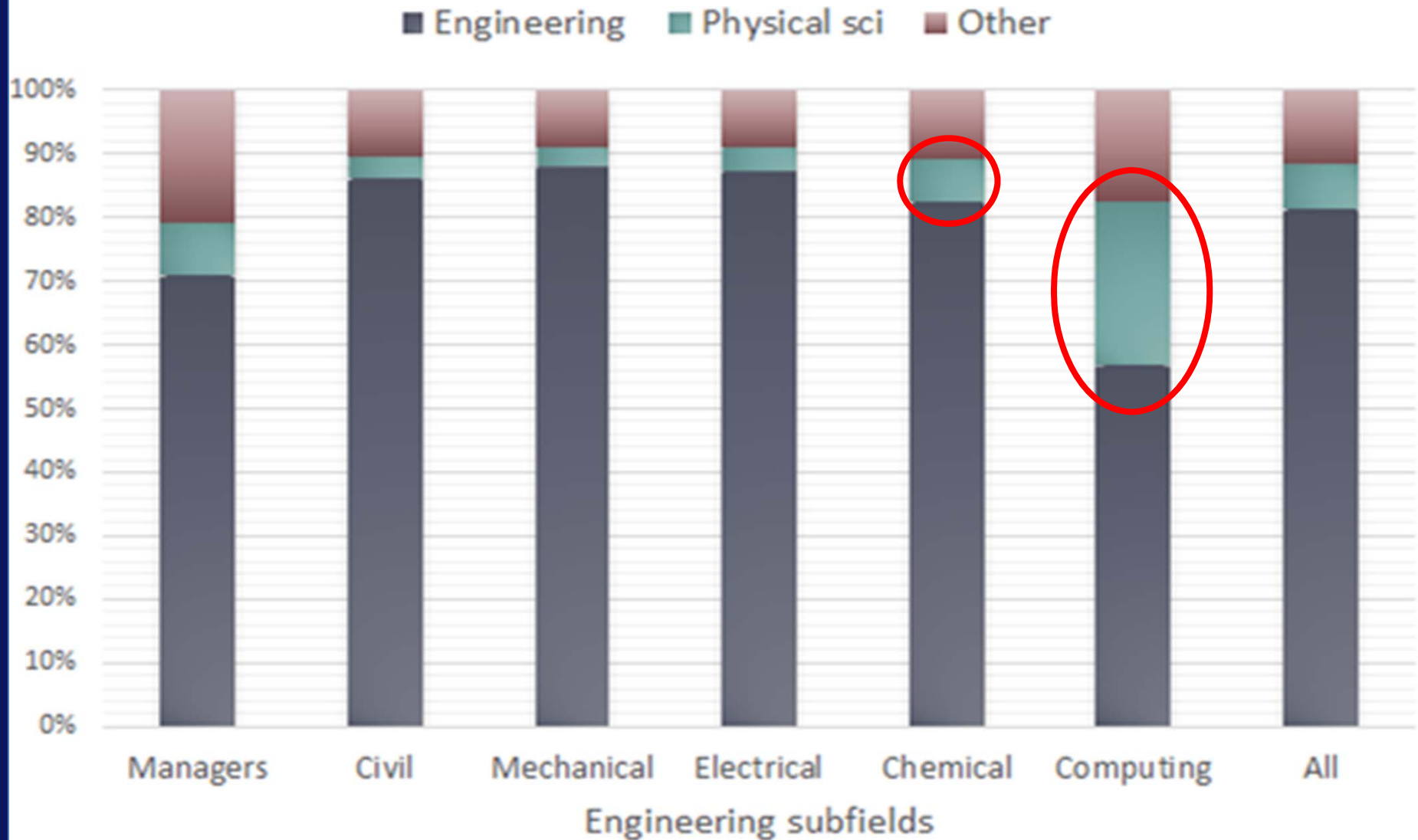
Results: Engineering

Field of study for highest qualifications



Results: Engineering

Field of study breakdown: Engineering and Physical & Other Sciences



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Implications

Education

Bachelor



Diploma



Certificate

High school



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Next Steps

Finding out “what”:

- Extract data for Engineering Skill levels B & C
- Corresponding analyses for 5 remaining fields

Finding out “why”:

- Interviews with employers, registering bodies, and graduates
- Analysis and formal report

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References

Frenette, Marc and Frank, Kristyn. (2017). “Do postsecondary graduates land high-skilled jobs?” Statistics Canada catalogue no. 11F0019M — No. 388
<http://www.statcan.gc.ca/pub/11f0019m/11f0019m2017388-eng.htm>

Statistics Canada (2016) 2011 National Household Survey: data tables, catalogue number: [99-012-X2011036](#)

Wheelahan, Leesa, Moodie, Gavin, Lavigne, Eric, Yang, Jinli, Brijmohan, Amanda and Childs, Ruth. (2015). “Pathways to education and work in Ontario and Canada.” Report for the Ontario Ministry for Training, Colleges and Universities’ Ontario Human Capital Research and Innovation Fund, University of Toronto’s Ontario Institute for Studies in Education, Toronto,
https://www.academia.edu/12813992/Pathways_to_education_and_work_in_Ontario_and_Canada



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