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Impact of an Individual's Institutional Field of Study on Inciting Income in the Labor Marketin Canada

Md. Razib Alam*
Mahmud Ullah**

Abstract

The purpose of this study is to examine the impact of an individual's institutionalfield of study on inciting her / his yearly earnings in the Canadian Labour market. By using the Microdata File (PUMF) of the 2006 Census of Population of Canada and adopting ordinary least squares (OLS) and quantile regressions (Q.R.), the paper shows how thefinancial returns vary across the income distribution based on the field of study. After controlling the level of degree awarded, gender, age, immigration status, knowledge of the official languages, and occupations, the research results show that the yearly earning of a person is influenced bythe choice of her / his institutional field of study. The results of quantile regression (Q.R.) models reveal that, in general, engineering & applied sciences, management & business, mathematics & computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. The QR models also show that the effects of the individual field vary across various quantiles. The study further shows that the impact of the field of study diminishes as one moves up the earning or income distribution; at the higher levels, occupations may become a more meaningful indicator of yearly earnings.

JEL Classification *I26·J21 · J24 · J62 · E24 · D31· C25*

Keywords *Education- Field of Study · Labour Market · Occupation · ncome · Yearly Earnings · Quantile Regression*

* Associate Professor, Department of Marketing, University of Dhaka, Dhaka – 1000, Bangladesh.
** Associate Professor, Department of Marketing, University of Dhaka, Dhaka – 1000, Bangladesh. (Corresponding Author.)

Introduction

People generally think that the income premium of a university degree is extensive and ever-growing. However, Coates & Morrison (2012 & 2013) challenged this popular thought. They argue that not all degrees are valued equally in the Canadian job market. Coates & Morrison (2012) mention that students who complete degrees in applied and specialised fields (e.g. accountants, I.T. specialists, economists, health care professionals, and MBAs) generally do well in the job market. However, students with non-specialised degrees (e.g. arts, humanities, and basic sciences) generally face prolonged underemployment and even unemployment, at least for quite a while at times. After completing their non-specialised university degrees, students usually enrol in a one-or two-year postgraduate certificate or diploma program in a college to get some employable skills (Miner, 2010). Canada has one of the world's highest rates of residents with post-secondary degrees and diplomas, second only to South Korea's (Coates & Morrison, 2012). However, not all fields of study offering post-secondary degrees provide the same return to the concerned degree holders.

By mentioning the 2006 Canadian Census data that the Statistics Canada Data Centre crunches at McMaster University, Coates & Morrison (2013) argue that the average income for university graduates aged 26 to 35 years old varies based on the field of study. However, they did not show any empirical evidence to prove their statement. Our paper conducts an empirical analysis to show the relationship between the field of study and yearly earnings by controlling the level of degree awarded, gender, age, knowledge of the official languages, immigration status, and occupations. To address the claim that income premium varies due to the field of study, this paper seeks to answer the question: does the field of study matter for income returns? This issue is examined using data from the 2006 Census of Population (Canada) Public Use Microdata File (PUMF). Specifically, by adopting OLS regression and quantile regressions (Q.R.), this paper examines the impact of the fields of study on yearly earnings and shows how the field of study based yearly financial returns vary across the income distribution pattern.

The choice of field of study influences the results of the study exhibit that yearly earning. After controlling the level of degree awarded, gender, age, immigration status, knowledge of the official languages, and occupations, the results show that compared to educational & recreational field, engineering & applied sciences, management & business, mathematics & computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. However, fine & applied arts, humanities & related fields, and agricultural, biological, & nutritional fields impact yearly earnings negatively. By and large, this result matches the observation of Coates & Morrison (2012 &

2013). The results of the quantile regression (Q.R.) models reveal that, in general, engineering & applied sciences, management & business, mathematics & computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. Again, returns are lower to fine & applied arts, humanities & related fields, and agricultural, biological & nutritional fields. One interesting finding from the Q.R. models is that the impact of the field of study increases across the different quantiles except for the technological & trade field; however, the rate of increment varies among the fields across the different quantiles. The QR models also show that the individual field effects vary across various quantiles. For example, in the case of engineering & applied sciences, the return is lowest in the 25th quantile and highest in the 95th quantile. It is also true for management & business administration, health professions, and mathematics & computer science fields. Moreover, the result from the Q.R. models exhibits among almost all the study areas that the field of study-specific returns amongthe fields decreases as one moves up the earnings distribution. Therefore, we conclude that the impact of the field of study diminishes as one moves up the earning distribution; because at the higher level, occupations may become a more meaningful indicator of yearly earnings.

Literature

Broadly, two streams of literature deal with the relationship between the fields of study and labour market earnings. The first stream of the literature shows the impact of potential earnings on fields of study selection when a student enrols in a college or university. Moreover, the second stream of literature focuses on the impact of the field of study on labour market earnings after graduation. Our work is related to the second one.

The first stream of literature focuses on the expected labour market earnings after completing a degree in college or university choices (Willis and Rosen, 1979; Berger, 1988; Beffy et al., 2012). Willis and Rosen (1979) show that the demand for higher education depends on anticipated post-education earnings. Berger (1998) shows that the expected flow of future earnings impacts the field of study selection. However, using a large sample of 26,359 individuals who completed their higher studies in French institutions in 1992, Beffy et al. (2012) shows that the impact of future earnings on post-secondary major choices is meagre but significant.

In general, college or university graduates earn more wages than those without a higher education degree (Autor2014; Brand and Xie 2010; Kim and Sakamoto, 2008; Oreopoulos and Petronijevic, 2013). However, not all degrees have similar economic returns. Graduates from various fields of study gain

different capabilities and skills during their studies (Van de Werfhorst and Kraaykamp 2001). Some fields of study may yield more job-related skills and prepare students for specific professions, whereas others mainly focus on general skills and lack a job-related specific alignment (Noelke et al., 2012). Some fields may provide students with more stirring and productive skills and knowledge than others (Klein, 2016). Using micro-census data of West Germany between 1980 and 2008, Klein (2016) investigated the impact of the field of study on labour market participation. Klein found that graduates from different fields of study may have different professional paths, and field-specific job-related routes grow differently over time. Several studies show that graduates from 'soft fields' (Biglan, 1973), for instance, social science and humanities, have lower labour market returns than that of the graduates from 'hard fields' (Reimer and Noelke, 2008) such as engineering or natural sciences (Arcidiacono, 2004; Marini and Fan, 1997).

In some cases, vocational degrees are more linked to higher earnings than university degrees. Using the 2004 and 2008 Survey of Income and Program Participation (SIPP) dataset, Kim and Tamborini (2019) find significant variation across degree types and fields of study. Several vocational degrees are associated with higher earnings than bachelor's degrees in social science, liberal arts, and education. Using the data of the 1983 Census of Population of Israel, Neuman and Ziderman (1991) show that students who completed vocational school and got jobs in their field of study earn more than their counterparts who went to general schools. Vocational degrees are not always linked to higher earnings. For instance, vocational training connected with general education usually leads to unemployment of the training receiver (Ahmed, Tutan; 2016).

Few studies attempt to investigate whether returns to fields of study vary across different countries (Kim and Kim, 2003; Machin and Puhani, 2003; Reimer and Noelke, 2008; Reimer and Steinmetz, 2007; van de Werfhorst, 2004). However, all these studies compare two or three countries except for Reimer and Noelke (2008). Using data from 22 countries from the European Labor Force Surveys of 2004 and 2005, Reimer and Noelke (2008) show how the field of study impacts unemployment and the professional status of university graduates. Reimer and Noelke (2008) find that although humanities graduates have a risk of unemployment, they earned relatively high occupational status; whereas, health and welfare-related degree-holders received the lowest average occupational status. Hence, it is evident that the relationship results between the fields of study and labour market earnings vary across countries. Each country is unique in many ways.

The fields of study may differ in the scope that ranges from general to occupational skills. Even job prospects of engineering graduates may vary from

country to country due to the presence of licensing systems related to the practising of different engineering professions (Rataj and Unt, 2012). Hence, it is warranted to study the relationship between the fields of study and labour market earnings from the perspective of each country. Therefore, this study investigates the impacts of the fields of study on labour market outcomes in the Canadian context.

Data

The data were pulled out from the Public Use Microdata File (PUMF) of the 2006 Census of Population (Canada). Coates & Morrison (2013) utilised this data source in their paper. The census data were collected through a paper questionnaire and online questionnaire in May 2006. The Census contains a record of 844,476 individuals, representing 2.7% of the Canadian population. As a result, the data set contains 14,390 valid observations. Since the Census is essentially a simple random sample, we do not apply sampling weight for the analyses. However, to estimate the impact of the field of study on earnings, we selected a sample of men and women aged 25 to 34 who studied in Canadian Universities, employed full year (48-52 weeks) on a full-time basis, and had positive labor market earnings in the income reference year of 2005.

To estimate the impact of the field of study on yearly earnings, the data set that we finally use controls several variables. These include information indicating the person's most advanced diploma or degree (e.g., bachelor, master), gender, age, immigration status, knowledge of the official language, and occupations.

We consider the historical classification of the major fields of study, which consists of 11 categories. Table1represents the field of study distribution of the

Table 1: Field of Study Distribution and Mean Yearly Earnings

Field of Study	Percent	Mean Yearly Earning ($)
Educational, recreational &counselling	15.89	44821.77
Fine and applied arts	1.94	36137.19
Humanities & related fields	10.01	44616.57
Social sciences and related fields	18.76	51441.46
Management & business administration	20.75	60626.03
Agricultural, biological & Nutritional	4.79	45115.9
Engineering & applied sciences	10.94	64632.06
Applied science technologies & trades	0.23	48909.09
Health professions & related technologies	7.76	55955.57
Mathematics, computer, & physical sciences	8.94	56249.56

sample and the average yearly earnings associated with each. Management & business emerges as the highest / largest (20.75%) followed by social sciences (18.76%), educational & recreational (15.89%), engineering & applied sciences (10.94%), humanities (10.01%), mathematics & computer (8.94%), health professions (7.76%), agricultural, biological, & nutritional (4.79%), fine arts (1.94%), and trades (0.23%).

The data set represents 53.41% female and 46.59% male respondents. The data set considers two age groups, 25 to 29 years representing 46.77% of the observation and 30 to 34 years representing 53.23% of the observation. To find the earning differences among the respondents, we use immigration status.

Non-immigrants are Canadian citizens by birth representing 85.09% of the observation, immigrants represent 14.64% of the observation, and non-permanent residents are persons from another country, representing only 0.27% of the data. We consider the knowledge of the official languages of the respondents. 58.85% of the respondents speak English, 5.90% speak French, 35.24% speak both languages, and .01% of the respondents have no knowledge ofeither of the languages. The summary statistics for control variables are incorporated in Table2 to Table 6.

Methodology

Ordinary least square (OLS) regression and quantile regressions (Q.R.) have been used in this study. OLS regression helps to identify a multivariate relationship between yearly earnings and the field of study. To determine the impact of the field of study on earnings distribution, the basic model to be estimated can be written as follows:$\ln w_i=\beta_1+\beta_2 F_i+\beta_3 X_i+\beta_4 Ci+\beta_5 O_i+\varepsilon_i$

Where, is the dependent variable which is the log of yearly earnings; represents the field of study dummy variables; represents a set of degree awarded level, gender; age controls represent set of immigration status and knowledge of official languages controls, and represents a set of occupation controls, and is the error term. Three OLS regression models have been adopted to test the impact of the field of study on yearly earnings by adding more control variables to each subsequent model.

In OLS model 1, we show the impact of the field of study on yearly earnings by controlling the level of degree awarded (e.g. bachelor, master, diploma, medicine, and doctorate), gender (male and. female), and age groups (25 to 29 and 30 to 34 years). When running the OLS regression 1, we use 'Educational & Recreational' as a reference group for the field of study, 'Bachelor' as a reference group for a degree awarded control, 'Male' as reference for gender control, and 'Age 25 to 29 years as a reference group for age control.

Table 2: Summary Statistics of Yearly Earning's ($) Distribution over Field of Study

Field of Study	Mean	SD	10%	25%	50%	75%	95%
Educational, recreational &counselling	44822	16972	24000	35000	45000	54000	70000
Fine and applied arts	36137	34314	13000	22000	32000	45000	74000
Humanities & related fields	44617	42059	18000	29000	40000	54000	80000
Social sciences and related fields	51441	46971	22000	33000	45000	61000	95000
Management & business administration	60626	55994	27000	38000	51000	70000	120000
Agricultural, biological & nutritional	45116	24338	14000	30000	44000	59000	84000
Engineering & applied sciences	64632	60350	29000	44000	58000	75000	110000
Applied science technologies & trades	48909	18981	26000	39000	48000	59000	84000
Health professions & related technologies	55956	38698	22000	40000	54000	66000	100000
Mathematics, computer, & physical sciences	56250	44827	24000	38000	52000	68000	100000

Table 3: Summary Statistics of Yearly Earning's ($) Distribution over Degree Awarded

Degree awarded	Mean	Standard deviation	10%	25%	50%	75%	95%
Bachelor	52654	47179	23000	35000	47000	62000	98000
Diploma	50952	29957	24000	36000	49000	62000	89000
Medicine	62839	76852	17000	33000	52000	64000	150000
Master	57422	41957	20000	38000	53000	70000	110000
Doctorate	51150	29556	4000	29000	53000	70000	96000

Table 4: Summary Statistics of Yearly Earning's ($) Distribution over Immigration Status

Immigration status	Mean	Standard deviation	10%	25%	50%	75%	95%
Non-permanent	33083	43882	8000	13000	25000	39000	57000
Canadian	53443	45749	23000	35000	48000	63000	100000
Immigrants	52363	45301	22000	34000	47000	63000	99000

In addition to OLS model 1, we incorporate immigration status and knowledge of the official languages in OLS model 2. We use 'Non-immigrants

Table 5: Summary Statistics of Yearly Earning's ($) Distribution over Knowledge of the Official Languages

Knowledge of official language	Mean	Standard deviation	10%	25%	50%	75%	95%
English	55166	51514	23000	35000	49000	65000	100000
French	41348	18393	21000	31000	41000	48000	70000
Both English & French	51988	37480	23000	35000	48000	62000	95000
Neither English & French	45000	18385	32000	32000	45000	58000	58000

Table 6: Summary Statistics of Yearly Earning's ($) Distribution over Occupation

Occupation	Mean	Standard deviation	10%	25%	50%	75%	95%
Managers	67076	65540	27000	40000	57000	80000	130000
Professionals	54886	44745	25000	39000	50000	64000	96000
Technicians	41837	19632	20000	29000	40000	53000	75000
Supervisors	45981	24489	20000	28500	43000	59000	98000
Administrative	45683	22370	25000	33000	42000	53000	83000
Skilled sales	65475	80984	22000	35000	59000	76000	110000
Trades	44389	26029	17500	28000	42000	57000	86000
Clerical	38279	18344	19000	29000	36000	46000	68000
Intermediate sales	41902	26503	14000	24000	37000	54000	87000
Manual	43805	23019	15000	30000	40000	52000	84000
Other sales	30642	21564	11000	18000	26000	40000	68000
Other manual works	35300	21689	16000	20000	31500	46000	91000

(Canadians by birth)' as a reference groupfor immigration status control and 'English' as a reference group for controlling official languages. In OLS model 3, we add 'Occupations' as a control variable, where we use 'Managers' as reference groups.

Weestimate the field of study and the other control variables' effects on yearly earnings at the 10th, 25th, 50th, 75th, and 95th percentile. We use quantile regression to analyse how the effects of the field of study and the degree awarded vary across the different points along with the yearly earnings distribution. Finally, weanalyse the data using STATA 16.0 version.

Results

The results from the OLS regression analyses are presented in Table 7. Overall, the impact of the field of study on yearly earnings is stable across the three OLS

regression models with different control variables, namely, level of degree awarded, gender, age, knowledge of the official languages, immigration status, and occupations. In OLS model 1, where we use level of degree awarded, gender, and age as control variables, suggests that relative to the base case (educational & recreational), the returns are higher to engineering & applied sciences (22.6%), management & business (19%), mathematics & computer (12.4%), health & related technologies (10.9%), and social sciences & related fields (2.1%). However, relative to the base case, returns are lower to fine & applied arts (-33.5%), humanities & related fields (-12.4%) and agricultural, biological & nutritional (-19%). Moreover, there is no significant impact of applied science technologies & trades on yearly earnings.

The returns on fields of study slightly fall almost in all the fields when we add immigration status and knowledge of the official languages as additional controls in OLS model 2. OLS model 2 suggests that relative to the base case (educational & recreational) the returns are higher to engineering & applied sciences (22%), management & business (18.2%), mathematics & computer (11.6%), health & related technologies (9.5%), and social sciences & related fields (0.6%). Again, compared to the base case, returns are lower to fine & applied arts (-34.7%), humanities & related fields (-13.9%) and agricultural, biological & nutritional (-20.2%). Moreover, again, there is no significant impact of applied science technologies & trades on yearly earnings.

The most striking thing is that when we add occupations as additional controls in OLS model 3, the returns based on the fields of study increase significantly in almost all fields. More specifically, OLS model 3 reveals that relative to the base case (educational& recreational), the returns are higher to engineering & applied sciences (22.7%), management & business (19.0%), which is the same as in model 1, mathematics & computer (13.5%), health & related technologies (10.1%), and social sciences & related fields (5%). Again, compared to the base case, returns are lower to fine & applied Arts (-26%), humanities & related fields (- 9%) and agricultural, biological & nutritional (-16%). Moreover, again, there is no significant impact of applied science technologies& trades on yearly earnings. The results of the Q.R. models, which identify how the returns on a field of study vary across the yearly earnings distribution, are presented in Table 8. The results of Q.R. models show that, in general, the same fields of the study identified in OLS models provide more yearly earnings than the reference fields. As in OLS models, relative to the base case (educational & recreational), the returns are higher to engineering & applied sciences, management & business, mathematics & computer, health & related technologies, and social sciences & related fields. Again, compared to the base case, returns are lower to fine & applied arts,

Table 7: OLS Regressions: Impact of Field of Study on Yearly Earnings

Variable	OLS 1 Degree Awarded and Sex	OLS 2 Immigration Status and Knowledge of Official Languages	OLS 3 Occupation
(Reference= Educational, recreational &counselling)			
Fine and applied arts	-0.335***	-0.347***	-0.260***
	(0.044)	(0.044)	(0.045)
Humanities & related fields	-0.124***	-0.139***	-0.090***
	(0.024)	(0.024)	(0.025)
Social sciences and related fields	0.021	0.006	0.050**
	(0.019)	(0.020)	(0.020)
Management & business administration	0.190***	0.182***	0.190***
	(0.018)	(0.018)	(0.019)
Agricultural, biological & Nutritional	-0.190***	-0.202***	-0.160**
	(0.054)	(0.055)	(0.057)
Engineering & applied sciences	0.226***	0.220***	0.227***
	(0.026)	(0.027)	(0.026)
Applied science technologies & trades	0.066	0.045	0.112
	(0.091)	(0.093)	(0.094)
Health professions & related technologies	0.109**	0.095**	0.101**
	(0.039)	(0.040)	(0.039)
Mathematics, computer, & physical sciences	0.124***	0.116***	0.135***
	(0.024)	(0.025)	(0.025)
(Reference= Bachelor)	0.031	0.023	0.014
Diploma	(0.017)	(0.017)	(0.017)
Medicine	-0.240	-0.234	-0.263**
	(0.144)	(0.144)	(0.144)
Master	-0.002	0.011	-0.023
	(0.023)	(0.023)	(0.023)
Doctorate	-0.557**	-0.546***	-0.573***
	(0.188)	(0.187)	(0.187)
(Reference=Male)	-0.094***	-0.084***	-0.077***
Female	(0.016)	(0.016)	(0.016)
(Reference=Age 25 to 29)	0.277***	0.278***	0.264***
Age 30 to 34	(0.014)	(0.014)	(0.014)
(Reference= Canadian)		-0.599***	-0.600***
Non-permanent		(0.129)	(0.130)
Immigrants		-0.071***	-0.062
(Reference=English)		(0.018)	(0.018)
French		-0.255	-0.266***
		(0.039)	(0.039)
Both English & French		-0.047**	-0.057***
		(0.015)	(0.015)

Continue

Variable	OLS 1 Degree Awarded and Sex	OLS 2 Immigration Status and Knowledge of Official Languages	OLS 3 Occupation
Neither English & French		0.094	-0.051
		(0.113)	(0.110)
(Reference=Managers)			
Professionals			-0.111***
			(0.019)
Technicians			-0.297***
			(0.027)
Supervisors			-0.266***
			(0.040)
Administrative			-0.202***
			(0.025)
Skilled sales			-0.059
			(0.051)
Trades			-0.523***
			(0.144)
Clerical			-0.350***
			(0.026)
Intermediate Sales			-0.377***
			(0.035)
Manual			-0.326***
			(0.058)
Other sales			-0.711***
			(0.085)
Other manual works			-0.526***
			(0.131)
Constant	10.522	10.568	10.711
	(0.018)	(0.019)	(0.026)
Observations	14,390	14,390	14,390
R-squared	0.059	0.065	0.084

Note: Standard errors in parentheses.
*** Significant at 1%
**Significant at 5%
*Significant at 10%

humanities & related fields, and agricultural, biological & nutritional fields.

The result shows no significant impact of applied science technologies & trades on yearly earnings except for the Q.R. .75 level. The critical pattern evident in the Q.R. models is that the impact of the field of study increases across the different quantiles except for the technological & trade field; however, the rate of

Table 8: Quantile Regressions: Impact of Field of Study on Yearly Earnings

Variable	QR .10	QR .25	QR .50	QR .75	QR .95
(Reference= Educational, recreational &counselling)					
Fine and applied arts	0.512***	-0.293***	-0.223***	-0.094***	0.049
	(0.086)	(0.047)	(0.030)	(0.025)	(0.058)
Humanities & related fields	-0.157**	-0.121***	-0.067***	-0.002	0.126***
	(0.046)	(0.025)	(0.016)	(0.013)	(0.032)
Social sciences and related fields	0.037	0.012	0.038**	0.116***	0.259***
	(0.039)	(0.021)	(0.014)	(0.011)	(0.028)
Management & business administration	0.199***	0.125***	0.141***	0.216***	0.384***
	(0.039)	(0.021)	(0.014)	(0.011)	(0.027)
Agricultural, biological & nutritional	-0.358***	-0.067**	0.024	0.096***	0.175***
	(0.059)	(0.032)	(0.020)	(0.017)	(0.040)
Engineering & applied sciences	0.262***	0.206***	0.223***	0.267***	0.331***
	(0.046)	(0.025)	(0.016)	(0.013)	(0.032)
Applied science technologies & trades	0.317	0.187	0.094	0.130*	0.073
	(0.226)	(0.125)	(0.080)	(0.067)	(0.129)
Health professions & related technologies	0.092*	0.170***	0.195***	0.235***	0.332***
	(0.050)	(0.028)	(0.018)	(0.015)	(0.035)
Mathematics, computer, & physical sciences	0.125**	0.108***	0.132***	0.201***	0.292***
	(0.048)	(0.026)	(0.017)	(0.014)	(0.034)
(Reference= Bachelor)					
Diploma	-0.010	0.020	0.019	0.014	-0.060**
	(0.040)	(0.022)	(0.014)	(0.012)	(0.027)
Medicine	-0.509***	-0.120**	-0.063*	-0.025	0.346***
	(0.105)	(0.057)	(0.037)	(0.031)	(0.072)
Master	-0.182***	0.004	0.048***	0.052***	0.027
	(0.034)	(0.018)	(0.012)	(0.010)	(0.024)

Continue

Variable	QR .10	QR .25	QR .50	QR .75	QR .95
	-1.877***	-0.360***	0.023	0.005	-0.153*
Doctorate	(0.116)	(0.064)	(0.041)	(0.034)	(0.080)
(Reference= Male)	-0.088***	-0.078***	-0.088***	-0.097***	-0.179***
Female	(0.025)	(0.013)	(0.008)	(0.007)	(0.016)
(Reference= Age 25 to 29)	0.311***	0.252***	0.220***	0.217***	0.259***
Age 30 to 34	(0.023)	(0.012)	(0.008)	(0.007)	(0.015)
(Reference= Canadian)	-1.000***	-1.053***	-0.628***	-0.411***	-0.122
Non-permanent	(0.191)	(0.112)	(0.073)	(0.060)	(0.110)
Immigrants	-0.108**	-0.085***	-0.062***	-0.043***	-0.071**
	(0.032)	(0.017)	(0.011)	(0.009)	(0.022)
(Reference= English)	-0.154**	-0.132***	-0.195***	-0.239***	-0.278***
French	(0.049)	(0.026)	(0.017)	(0.014)	(0.033)
Both English & French	-0.034	-0.032**	-0.050***	-0.051***	-0.036**
	(0.024)	(0.013)	(0.008)	(0.007)	(0.016)
Neither English & French	0.494**	-0.044	-0.222	-0.138	-0.463***
	(0.226)	(0.209)	(0.231)	(0.112)	(0.109)
(Reference= Managers)	0.014	-0.000	-0.064***	-0.124***	-0.183***
Professionals	(0.035)	(0.019)	(0.012)	(0.010)	(0.025)
Technicians	-0.243***	-0.265***	-0.263***	-0.301***	-0.365***
	(0.053)	(0.028)	(0.018)	(0.015)	(0.035)
Supervisors	-0.241**	-0.288***	-0.263***	-0.246***	-0.275***
	(0.087)	(0.047)	(0.030)	(0.025)	(0.058)
Administrative	-0.131	-0.122***	-0.222***	-0.269***	-0.336***
	(0.061)	(0.033)	(0.021)	(0.017)	(0.041)
Skilled sales	-0.108	-0.080**	0.040	-0.023	-0.094*
	(0.072)	(0.039)	(0.025)	(0.021)	(0.050)
Trades	-0.468**	-0.346***	-0.307***	-0.322***	-0.471***
	(0.145)	(0.077)	(0.050)	(0.042)	(0.083)

Continue

Variable	QR .10	QR .25	QR .50	QR .75	QR .95
Clerical	-0.236	-0.273***	-0.342***	-0.400***	-0.489***
	(0.054)	(0.030)	(0.019)	(0.016)	(0.037)
Intermediate Sales	-0.539***	-0.408***	-0.329***	-0.276***	-0.263***
	(0.062)	(0.033)	(0.021)	(0.018)	(0.042)
Manual	-0.408***	-0.279***	-0.327***	-0.308***	-0.307***
	(0.116)	(0.065)	(0.041)	(0.035)	(0.079)
Other sales	-0.770***	-0.687***	-0.615***	-0.560***	-0.611***
	(0.131)	(0.075)	(0.048)	(0.040)	(0.090)
Other manual works	-0.536**	-0.579***	-0.456***	-0.551***	-0.334*
	(0.246)	(0.129)	(0.084)	(0.069)	(0.142)*
Constant	10.072	10.472	10.791	11.006	11.354
	(0.049)	(0.027)	(0.017)	(0.014)	(0.034)
Observations	14390	14390	14390	14390	14390
Pseudo R-squared	0.066	0.082	0.108	0.135	0.151

Note: Standard errors in parentheses.
*** Significant at 1%
**Significant at 5%
*Significant at 10%

increment varies among the fields across the quantiles. For instance, agricultural, biological, and nutritional fields negatively impact earnings up to Q.R. .25 level; however, it becomes significantly positive at Q.R. .75 and Q.R. .95 levels. Q.R. models also provide individual field effects across various quantiles. Inthe case of engineering & applied sciences, the return is lowest in the 25th quantile and highest in the 95th quantile. It is also true for management & business administration, health professions, and mathematics & computer science fields.

The results from the Q.R. models also show that the differences in increment in the field of study-specific returns among the fields decrease as one moves up the earnings distribution. For instance, if we compare the increments between arts and engineering, we observe that at Q.R. .10, the gap is 77.4%, at Q.R. .25, the gap is 49.9%, at Q.R. .50 the gap is 44.6%, at QR.75 the gap is 36.1%, and at Q.R. .95 the gap is 28.2%. This pattern holds for other observations as well. If we compare the increments between arts and business, we see at Q.R. .10 the gap is 71%, at Q.R. .25 the gap is 41.8%, at Q.R. .50 the gap is 36.4%, at QR.75 the gap is 31%, and at Q.R. .95 the gap is 33.5%. Therefore, we conclude that the impact of the field of study diminishes as one moves up the earning distribution because the higher-level occupations become more critical than the fields of study.

Conclusion

This study examines the impact of the field of study on yearly earnings in Canada in 2005 by controlling the level of degree awarded, gender, age, immigration status, knowledge of the official languages, and occupations. The study results show that, compared to the educational & recreational field, engineering&applied sciences, management &business, mathematics &computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. However, fine & applied arts, humanities & related fields, and agricultural, biological, and nutritional fields impact yearly earnings negatively.

The results of Q.R. models exhibit that, generally, engineering & applied sciences, management &business, mathematics & computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. Again, returns are lower to Fine & Applied Arts, humanities & related fields, and agricultural, biological & nutritional fields. One interesting finding from the Q.R. models is that the impact of the field of study increases across the different quantiles except for the technological & trade field; however, the rate of increment varies among the fields across the different quantiles. Moreover, the results of the Q.R. models show that the field of study-specific returns decreases as one moves up the earnings distribution. Therefore, we conclude that the impact of the field of study diminishes as one moves up the earning distribution because

the higher-level occupations become more important factors than the other factors of specific fields of study.

Field of study matters for the income, or financial returns although the gap between fields narrows at a higher quantile of the income level. Coates & Morrison (2012 & 2013) argued that the field of study matters for future earnings. However, they did not show any empirical evidence to prove their statement. Our paper conducted an empirical analysis to show the relationship between the field of study and yearly earnings by controlling the level of degree awarded, gender, age, knowledge of the official languages, immigration status, and occupations. In general, the findings match with observations mentioned by Coates & Morrison (2012 & 2013). However, we need more control variables such as union membership, tenure, experience, contract type, technical skills, team skills, communications, academic results, and so on to prove the relationship.

Future researchers may focus on those issues. The policymakers, both government and universities, may think about this issue; because earning is the most critical factor for the quality of life. The university is a great source of learning skills required for desired jobs. Suppose some institutional fields of study fail to provide sufficient skills that are required by the job market. In that case, policymakers may take corrective actions for the betterment of the Canadian socio-economic conditions.

This research may also be helpful to the researchers and policymakers in the governments and educational institutions in different countries around the world. As an aspiring country with the ambitious goal of becoming a developed nation by 2041, Bangladesh may also benefit from this study done in the context of Canada, despite having contrasting data on many indicators of measuring socio-economic conditions of the two countries till now.Research projects may be undertaken involving the concerned stakeholders in Bangladesh to create coherent databases applying a concerted effort of all the parties together in a well-coordinated manner, to developholistic models to determine the interrelation and interdependence among education, employment, and earnings both in the short term, and long term till the country reaches the stage of a developed nation. These models may be equipped with the auto-update and adjustment mechanisms to help Bangladesh continue to remain so, i.e. a developed country to receive and maintain the status of a sustainably developed nation in the context of the existing global socio-economic conditions and as per the standard criteria set during any actual and reasonable period.

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