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# The Socioeconomic Benefits Generated by 24 Colleges of Applied Arts and Technology in Ontario

## Detailed Report



# **The Socioeconomic Benefits Generated by 24 Colleges of Applied Arts and Technology in Ontario**

*Province of Ontario*

## **Volume 2: Detailed Results**

*by*

*Entry Level of Education*

*And Gender*

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## INTRODUCTION

The purpose of this volume is to present the results of the economic impact analysis in detail by gender and entry level of education. It is kept as a separate volume intended for limited distribution only, however, because this effort is not about gender differences *per se*. The study is about the overall economic impacts generated by colleges of applied arts and technology. As such, the Main Report and the short Executive Summary both present the results without reference to gender differences.

We feel, nevertheless, that it is important to present *all* of the results for the sake of completeness, not just the consolidated ones, so long as the users of the detailed information remain prudent in its use and distribution. The results should not be used, for example, to further political agendas. Other studies about gender differences address such questions better and in greater detail. Our intent is simply to provide college presidents with pertinent information should specific questions arise.

On the input side, gender is an important variable that helps characterize the student body profile. We collect the profile data and link it to national statistical databases which are already broken out by gender differences. The student body profile, to a large extent, drives the magnitudes of the results which are presented in detail in this volume and in a consolidated fashion in the Main Report and the Executive Summary.

**Tables 19** and **20** in this report are particularly important. They provide the data needed for computing the investment analysis results in **Tables 3.7** and **3.8** in the **Main Report** – the broad and narrow taxpayer perspectives. In **Table 19**, every other column (the higher taxes and the avoided cost columns) provides the data needed for the narrow taxpayer perspective. The remaining columns provide the data needed for the broad taxpayer perspective. **Table 20** provides the detailed calculations on student earnings that feed into the first column of **Table 19**.

## DETAILED RESULTS

Table 1. Higher Annual Earnings Based on Achievements During Analysis Year, Aggregate

	Male	Female	Total
< HS	\$14,032,693	\$14,243,321	\$28,276,015
HS equivalent	\$15,412,826	\$15,966,325	\$31,379,151
One year post HS or less	\$121,259,230	\$89,556,323	\$210,815,552
Two years post HS or less	\$181,340,664	\$139,093,447	\$320,434,112
> Two years post HS	\$116,172,288	\$99,835,622	\$216,007,910
<b>Total</b>	<b>\$448,217,701</b>	<b>\$358,695,039</b>	<b>\$806,912,739</b>

Table 2. Number of Days Reduced Absenteeism per Year

	Male	Female	Reduce Absent.
< HS	6,918	8,125	15,043
HS equivalent	2,884	3,387	6,271
One year post HS or less	45,868	59,543	105,411
Two years post HS or less	35,736	48,243	83,979
> Two years post HS	19,931	30,181	50,112
<b>Total</b>	<b>111,337</b>	<b>149,479</b>	<b>260,816</b>

Table 3. Employer Savings from Reduced Absenteeism, \$ per Year

	Male	Female	Total
< HS	\$1,039,048	\$807,587	\$1,846,635
HS equivalent	\$495,956	\$414,885	\$910,841
One year post HS or less	\$8,343,280	\$7,704,079	\$16,047,359
Two years post HS or less	\$6,914,131	\$6,630,004	\$13,544,134
> Two years post HS	\$4,067,030	\$4,369,438	\$8,436,468
<b>Total</b>	<b>\$20,859,444</b>	<b>\$19,925,993</b>	<b>\$40,785,437</b>

Table 4. Fewer Smokers

	Male	Female	Total
< HS	323	259	582
HS equivalent	135	108	243
One year post HS or less	2,143	1,895	4,039
Two years post HS or less	1,670	1,536	3,206
> Two years post HS	931	961	1,892
<b>Total</b>	<b>5,203</b>	<b>4,758</b>	<b>9,961</b>

Table 5. Medical Savings from Reduced Smoking, \$ per Year

	Annual Costs		
	Male	Female	Total
< HS	\$831,975	\$665,592	\$1,497,567
HS equivalent	\$346,857	\$277,491	\$624,348
One year post HS or less	\$5,516,454	\$4,877,767	\$10,394,220
Two years post HS or less	\$4,297,889	\$3,952,075	\$8,249,965
> Two years post HS	\$2,397,053	\$2,472,447	\$4,869,500
<b>Total</b>	<b>\$13,390,228</b>	<b>\$12,245,372</b>	<b>\$25,635,600</b>

Table 6. Fewer Alcohol Abusers

	Male	Female	Total
< HS	44	14	57
HS equivalent	30	10	40
One year post HS or less	645	228	873
Two years post HS or less	715	263	979
> Two years post HS	454	188	642
<b>Total</b>	<b>1,888</b>	<b>703</b>	<b>2,591</b>

Table 7. Medical Savings from Reduced Alcohol Abuse, \$ per Year

	Annual Costs		
	Male	Female	Total
< HS	\$567,319	\$181,701	\$749,020
HS equivalent	\$391,782	\$125,480	\$517,262
One year post HS or less	\$8,407,039	\$2,977,994	\$11,385,033
Two years post HS or less	\$9,325,771	\$3,433,286	\$12,759,057
> Two years post HS	\$5,922,887	\$2,445,762	\$8,368,650
<b>Total</b>	<b>\$24,614,799</b>	<b>\$9,164,223</b>	<b>\$33,779,021</b>

Table 8. Fewer Incarcerated, Aggregate for Student Body

	Male	Female	Total
< HS	3.3	0.2	3.4
HS equivalent	1.4	0.1	1.4
One year post HS or less	21.7	1.2	22.9
Two years post HS or less	16.9	1.0	17.9
> Two years post HS	9.4	0.6	10.0
<b>Total</b>	<b>53</b>	<b>3</b>	<b>56</b>

Table 9. Savings from Reduced Incarceration, \$ per Year

	Annual Costs		
	Male	Female	Total
< HS	\$33,277	\$1,654	\$34,932
HS equivalent	\$13,874	\$690	\$14,563
One year post HS or less	\$220,647	\$12,124	\$232,771
Two years post HS or less	\$171,907	\$9,823	\$181,730
> Two years post HS	\$95,877	\$6,145	\$102,023
<b>Total</b>	<b>\$535,582</b>	<b>\$30,437</b>	<b>\$566,019</b>

Table 10. Crime Victim Savings, Aggregate for Student Body, \$ per Year

	Annual Costs		
	Male	Female	Total
< HS	\$39,839	\$1,981	\$41,820
HS equivalent	\$16,609	\$826	\$17,435
One year post HS or less	\$264,155	\$14,515	\$278,670
Two years post HS or less	\$205,804	\$11,760	\$217,564
> Two years post HS	\$114,783	\$7,357	\$122,140
<b>Total</b>	<b>\$641,190</b>	<b>\$36,439</b>	<b>\$677,628</b>

Table 11. Productivity Gained (Fewer Incarcerated), \$ per Year

	Annual Costs		
	Male	Female	Total
< HS	\$19,176	\$648	\$19,823
HS equivalent	\$8,737	\$309	\$9,046
One year post HS or less	\$143,929	\$5,628	\$149,558
Two years post HS or less	\$118,781	\$4,824	\$123,605
> Two years post HS	\$69,787	\$3,175	\$72,963
<b>Total</b>	<b>\$360,411</b>	<b>\$14,585</b>	<b>\$374,995</b>

Table 12. Fewer People on Welfare

	Male	Female	Total
< HS	128.7	150.7	279.4
HS equivalent	53.7	62.8	116.5
One year post HS or less	853.3	1104.5	1957.8
Two years post HS or less	664.8	894.9	1559.7
> Two years post HS	370.8	559.8	930.6
<b>Total</b>	<b>2,071</b>	<b>2,773</b>	<b>4,844</b>

Table 13. Community Welfare Savings, \$ per Year

	Annual Costs		
	Male	Female	Total
< HS	\$503,107	\$589,210	\$1,092,317
HS equivalent	\$209,750	\$245,647	\$455,396
One year post HS or less	\$3,335,880	\$4,318,004	\$7,653,884
Two years post HS or less	\$2,598,996	\$3,498,543	\$6,097,539
> Two years post HS	\$1,449,533	\$2,188,714	\$3,638,246
<b>Total</b>	<b>\$8,097,266</b>	<b>\$10,840,117</b>	<b>\$18,937,383</b>

Table 14. Fewer People on Unemployment

	Male	Female	Total
< HS	162	156	318
HS equivalent	68	65	133
One year post HS or less	1,076	1,142	2,218
Two years post HS or less	838	925	1,764
> Two years post HS	468	579	1,046
<b>Total</b>	<b>2,612</b>	<b>2,867</b>	<b>5,479</b>

Table 15. Unemployment Savings, \$ per Year

	Annual Costs		
	Male	Female	Total
< HS	\$1,150,798	\$1,104,786	\$2,255,584
HS equivalent	\$479,777	\$460,595	\$940,372
One year post HS or less	\$7,630,425	\$8,096,383	\$15,726,808
Two years post HS or less	\$5,944,892	\$6,559,870	\$12,504,762
> Two years post HS	\$3,315,632	\$4,103,902	\$7,419,534
<b>Total</b>	<b>\$18,521,525</b>	<b>\$20,325,535</b>	<b>\$38,847,060</b>

Table 16. Summary of Annual Impacts, \$ per Year

	Male	Female	Total
Higher earnings	\$448,217,701	\$358,695,039	\$806,912,739
Absenteeism Savings	\$20,859,444	\$19,925,993	\$40,785,437
Medical Cost Savings	\$38,005,026	\$21,409,595	\$59,414,621
Incarceration Savings	\$535,582	\$30,437	\$566,019
Crime Victim Savings	\$641,190	\$36,439	\$677,628
Added Productivity	\$360,411	\$14,585	\$374,995
Welfare Savings	\$8,097,266	\$10,840,117	\$18,937,383
Unemployment Savings	\$18,521,525	\$20,325,535	\$38,847,060
<b>Total</b>	<b>\$535,238,144</b>	<b>\$431,277,738</b>	<b>\$966,515,882</b>

Table 17. Annual Impacts per Credit Hour Equivalent, \$ per Year

	Male	Female	Weighted Average
Higher earnings	\$ 83	\$ 59	\$ 70
Absenteeism Savings	\$ 4	\$ 3	\$ 4
Medical Cost Savings	\$ 7	\$ 4	\$ 5
Incarceration Savings	\$ 0	\$ 0	\$ 0
Crime Victim Savings	\$ 0	\$ 0	\$ 0
Added Productivity	\$ 0	\$ 0	\$ 0
Welfare Savings	\$ 1	\$ 2	\$ 2
Unemployment Savings	\$ 3	\$ 3	\$ 3
<b>Total</b>	<b>\$ 99</b>	<b>\$ 71</b>	<b>\$ 84</b>

Table 18. Annual Impacts per Student, \$ per Year

	Male	Female	Weighted Average
Higher earnings	\$ 1,630	\$ 1,151	\$ 1,432
Absenteeism Savings	\$ 76	\$ 64	\$ 70
Medical Cost Savings	\$ 138	\$ 69	\$ 115
Incarceration Savings	\$ 2	\$ 0	\$ 2
Crime Victim Savings	\$ 2	\$ 0	\$ 2
Added Productivity	\$ 1	\$ 0	\$ 1
Welfare Savings	\$ 29	\$ 35	\$ 32
Unemployment Savings	\$ 67	\$ 65	\$ 66
<b>Total</b>	<b>\$ 1,946</b>	<b>\$ 1,384</b>	<b>\$ 1,721</b>

Detailed Results

Table 19. Cumulative Impact Over Time (\$ Thousands), Details for Both Taxpayer Perspectives

Year	Earnings Net	Added Taxes	Health					Crime				Welfare / Unemployment				
			Reduced Absent.	Avoided Cost	Medical Saving	Avoided Cost	Incarceration	Avoided Cost	Victims	Avoided Cost	Product. Gained	Avoided Cost	Reduced Welfare	Avoided Cost	Reduced Unempl.	Avoided Cost
1	\$1,699,152	\$293,072	\$38,747	\$1,084	\$56,445	\$22,578	\$538	\$430	\$644	\$0	\$356	\$61	\$17,991	\$4,678	\$36,906	\$0
2	\$195,957	\$33,799	\$38,645	\$1,081	\$56,128	\$22,451	\$535	\$428	\$640	\$0	\$354	\$61	\$17,890	\$4,651	\$36,625	\$0
3	\$217,343	\$37,488	\$38,543	\$1,078	\$55,813	\$22,325	\$532	\$425	\$637	\$0	\$351	\$61	\$17,789	\$4,625	\$36,347	\$0
4	\$239,965	\$41,390	\$38,442	\$1,075	\$55,500	\$22,200	\$529	\$423	\$633	\$0	\$348	\$60	\$17,690	\$4,599	\$36,071	\$0
5	\$263,786	\$45,498	\$38,341	\$1,072	\$55,188	\$22,075	\$526	\$421	\$629	\$0	\$346	\$60	\$17,590	\$4,573	\$35,797	\$0
6	\$288,756	\$49,805	\$38,240	\$1,069	\$54,878	\$21,951	\$523	\$418	\$626	\$0	\$343	\$59	\$17,491	\$4,548	\$35,525	\$0
7	\$314,810	\$54,299	\$38,139	\$1,067	\$54,570	\$21,828	\$520	\$416	\$622	\$0	\$340	\$59	\$17,393	\$4,522	\$35,256	\$0
8	\$341,872	\$58,967	\$38,039	\$1,064	\$54,263	\$21,705	\$517	\$414	\$619	\$0	\$338	\$58	\$17,296	\$4,497	\$34,988	\$0
9	\$369,849	\$63,792	\$37,939	\$1,061	\$53,959	\$21,583	\$514	\$411	\$615	\$0	\$335	\$58	\$17,198	\$4,472	\$34,722	\$0
10	\$398,638	\$68,758	\$37,839	\$1,058	\$53,656	\$21,462	\$511	\$409	\$612	\$0	\$333	\$57	\$17,102	\$4,446	\$34,459	\$0
11	\$428,119	\$73,842	\$37,739	\$1,055	\$53,354	\$21,342	\$508	\$407	\$609	\$0	\$330	\$57	\$17,006	\$4,422	\$34,197	\$0
12	\$458,162	\$79,024	\$37,640	\$1,053	\$53,055	\$21,222	\$505	\$404	\$605	\$0	\$328	\$57	\$16,910	\$4,397	\$33,937	\$0
13	\$488,626	\$84,279	\$37,541	\$1,050	\$52,757	\$21,103	\$503	\$402	\$602	\$0	\$325	\$56	\$16,815	\$4,372	\$33,680	\$0
14	\$519,356	\$89,579	\$37,442	\$1,047	\$52,461	\$20,984	\$500	\$400	\$598	\$0	\$323	\$56	\$16,721	\$4,347	\$33,424	\$0
15	\$550,189	\$94,897	\$37,344	\$1,044	\$52,166	\$20,866	\$497	\$398	\$595	\$0	\$320	\$55	\$16,627	\$4,323	\$33,170	\$0
16	\$580,955	\$100,204	\$37,246	\$1,042	\$51,873	\$20,749	\$494	\$395	\$592	\$0	\$318	\$55	\$16,534	\$4,299	\$32,918	\$0
17	\$611,475	\$105,468	\$37,148	\$1,039	\$51,582	\$20,633	\$491	\$393	\$588	\$0	\$315	\$54	\$16,441	\$4,275	\$32,668	\$0
18	\$641,565	\$110,658	\$37,050	\$1,036	\$51,292	\$20,517	\$489	\$391	\$585	\$0	\$313	\$54	\$16,348	\$4,251	\$32,420	\$0
19	\$671,041	\$115,742	\$36,952	\$1,033	\$51,004	\$20,402	\$486	\$389	\$582	\$0	\$311	\$54	\$16,257	\$4,227	\$32,174	\$0
20	\$699,712	\$120,687	\$36,855	\$1,031	\$50,718	\$20,287	\$483	\$387	\$578	\$0	\$308	\$53	\$16,165	\$4,203	\$31,930	\$0
21	\$727,393	\$125,462	\$36,758	\$1,028	\$50,433	\$20,173	\$480	\$384	\$575	\$0	\$306	\$53	\$16,075	\$4,179	\$31,687	\$0
22	\$753,898	\$130,033	\$36,661	\$1,025	\$50,150	\$20,060	\$478	\$382	\$572	\$0	\$304	\$52	\$15,984	\$4,156	\$31,447	\$0
23	\$779,047	\$134,371	\$36,565	\$1,023	\$49,868	\$19,947	\$475	\$380	\$569	\$0	\$301	\$52	\$15,895	\$4,133	\$31,208	\$0
24	\$802,667	\$138,445	\$36,469	\$1,020	\$49,588	\$19,835	\$472	\$378	\$566	\$0	\$299	\$52	\$15,805	\$4,109	\$30,971	\$0
25	\$824,592	\$142,227	\$36,373	\$1,017	\$49,310	\$19,724	\$470	\$376	\$562	\$0	\$297	\$51	\$15,717	\$4,086	\$30,736	\$0
26	\$844,669	\$145,690	\$36,277	\$1,014	\$49,033	\$19,613	\$467	\$374	\$559	\$0	\$294	\$51	\$15,628	\$4,063	\$30,502	\$0
27	\$862,755	\$148,809	\$36,182	\$1,012	\$48,757	\$19,503	\$464	\$372	\$556	\$0	\$292	\$50	\$15,541	\$4,041	\$30,271	\$0
28	\$878,723	\$151,563	\$36,086	\$1,009	\$48,484	\$19,393	\$462	\$370	\$553	\$0	\$290	\$50	\$15,453	\$4,018	\$30,041	\$0
29	\$892,461	\$153,933	\$35,991	\$1,007	\$48,211	\$19,285	\$459	\$367	\$550	\$0	\$288	\$50	\$15,367	\$3,995	\$29,813	\$0
30	\$903,873	\$155,901	\$35,897	\$1,004	\$47,941	\$19,176	\$457	\$365	\$547	\$0	\$286	\$49	\$15,280	\$3,973	\$29,586	\$0
31	\$912,881	\$157,455	\$35,802	\$1,001	\$47,671	\$19,069	\$454	\$363	\$544	\$0	\$283	\$49	\$15,194	\$3,951	\$29,362	\$0
32	\$900,600	\$155,337	\$35,708	\$999	\$47,404	\$18,961	\$452	\$361	\$541	\$0	\$281	\$49	\$15,109	\$3,928	\$29,139	\$0
33	\$895,743	\$154,499	\$35,614	\$996	\$47,138	\$18,855	\$449	\$359	\$538	\$0	\$279	\$48	\$15,024	\$3,906	\$28,918	\$0
34	\$897,679	\$154,833	\$35,520	\$993	\$46,873	\$18,749	\$447	\$357	\$535	\$0	\$277	\$48	\$14,940	\$3,884	\$28,698	\$0
35	\$847,513	\$146,180	\$35,427	\$991	\$46,610	\$18,644	\$444	\$355	\$532	\$0	\$275	\$47	\$14,856	\$3,863	\$28,480	\$0
36	\$688,266	\$118,713	\$35,334	\$988	\$46,348	\$18,539	\$442	\$353	\$529	\$0	\$273	\$47	\$14,773	\$3,841	\$28,264	\$0
37	\$634,617	\$109,459	\$35,241	\$986	\$46,088	\$18,435	\$439	\$351	\$526	\$0	\$271	\$47	\$14,690	\$3,819	\$28,049	\$0
0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PV	\$11,296,536	\$1,948,441	\$715,718	\$20,015	\$1,002,021	\$400,808	\$9,546	\$7,637	\$11,428	\$0	\$6,163	\$1,063	\$319,377	\$83,038	\$638,401	\$0

Table 20. Earnings Calculations, Taxpayer Perspectives (\$ Thousands)

Year	Gross Student Earnings	Net of Attrition	Direct Earnings Net	Indirect Student Earnings	Net Total Student Earnings	Total College Earnings	Total Earnings Net
1	\$265,993	\$253,350	\$126,675	\$29,418	\$156,093	\$1,543,059	\$1,699,152
2	\$335,185	\$318,053	\$159,026	\$36,931	\$195,957	\$0	\$195,957
3	\$372,641	\$352,764	\$176,382	\$40,961	\$217,343	\$0	\$217,343
4	\$412,396	\$389,481	\$194,741	\$45,225	\$239,965	\$0	\$239,965
5	\$454,399	\$428,145	\$214,072	\$49,714	\$263,786	\$0	\$263,786
6	\$498,580	\$468,673	\$234,336	\$54,420	\$288,756	\$0	\$288,756
7	\$544,841	\$510,961	\$255,480	\$59,330	\$314,810	\$0	\$314,810
8	\$593,061	\$554,884	\$277,442	\$64,430	\$341,872	\$0	\$341,872
9	\$643,096	\$600,293	\$300,147	\$69,703	\$369,849	\$0	\$369,849
10	\$694,773	\$647,019	\$323,509	\$75,128	\$398,638	\$0	\$398,638
11	\$747,897	\$694,869	\$347,434	\$80,684	\$428,119	\$0	\$428,119
12	\$802,249	\$743,632	\$371,816	\$86,347	\$458,162	\$0	\$458,162
13	\$857,584	\$793,076	\$396,538	\$92,088	\$488,626	\$0	\$488,626
14	\$913,640	\$842,953	\$421,476	\$97,879	\$519,356	\$0	\$519,356
15	\$970,133	\$892,998	\$446,499	\$103,690	\$550,189	\$0	\$550,189
16	\$1,026,763	\$942,933	\$471,466	\$109,488	\$580,955	\$0	\$580,955
17	\$1,083,212	\$992,469	\$496,234	\$115,240	\$611,475	\$0	\$611,475
18	\$1,139,154	\$1,041,308	\$520,654	\$120,911	\$641,565	\$0	\$641,565
19	\$1,194,252	\$1,089,149	\$544,574	\$126,466	\$671,041	\$0	\$671,041
20	\$1,248,163	\$1,135,685	\$567,843	\$131,870	\$699,712	\$0	\$699,712
21	\$1,300,543	\$1,180,613	\$590,307	\$137,087	\$727,393	\$0	\$727,393
22	\$1,351,049	\$1,223,633	\$611,816	\$142,082	\$753,898	\$0	\$753,898
23	\$1,399,342	\$1,264,452	\$632,226	\$146,821	\$779,047	\$0	\$779,047
24	\$1,445,095	\$1,302,788	\$651,394	\$151,273	\$802,667	\$0	\$802,667
25	\$1,487,991	\$1,338,374	\$669,187	\$155,405	\$824,592	\$0	\$824,592
26	\$1,527,729	\$1,370,960	\$685,480	\$159,189	\$844,669	\$0	\$844,669
27	\$1,564,031	\$1,400,316	\$700,158	\$162,597	\$862,755	\$0	\$862,755
28	\$1,596,640	\$1,426,233	\$713,116	\$165,607	\$878,723	\$0	\$878,723
29	\$1,625,324	\$1,448,530	\$724,265	\$168,196	\$892,461	\$0	\$892,461
30	\$1,649,882	\$1,467,052	\$733,526	\$170,346	\$903,873	\$0	\$903,873
31	\$1,670,144	\$1,481,674	\$740,837	\$172,044	\$912,881	\$0	\$912,881
32	\$1,652,051	\$1,461,740	\$730,870	\$169,730	\$900,600	\$0	\$900,600
33	\$1,647,722	\$1,453,857	\$726,928	\$168,814	\$895,743	\$0	\$895,743
34	\$1,655,058	\$1,456,999	\$728,500	\$169,179	\$897,679	\$0	\$897,679
35	\$1,570,513	\$1,375,576	\$687,788	\$159,725	\$847,513	\$0	\$847,513
36	\$1,290,402	\$1,117,107	\$558,553	\$129,712	\$688,266	\$0	\$688,266
37	\$1,183,193	\$1,030,030	\$515,015	\$119,602	\$634,617	\$0	\$634,617
0	\$676,452	\$585,683	\$292,841	\$68,006	\$360,848	\$0	\$360,848
0	\$605,864	\$522,954	\$261,477	\$60,723	\$322,200	\$0	\$322,200