



# **The Early Impact of Postsecondary Career and Technical Education: Do Workers Earn More in Occupations Related to Their College Major?**

## **Appendices A and B**

### **A CAPSEE Working Paper**

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## Appendix A

**Table A.1: Crosswalk Between Major Field of Study and 2002 Standard Occupation Codes (SOC)**

Major Field of Study & Occupation Categories	Standard Occupation Classification (SOC) 2002 Census Codes
Business and communications	0010 Chief executives
	0020 General and operations managers
	0040 Advertising and promotions managers
	0050 Marketing and sales managers
	0060 Public relations managers
	0100 Administrative services managers
	0120 Financial managers
	0130 Human resources managers
	0140 Industrial production managers
	0150 Purchasing managers
	0160 Transportation, storage and distribution managers
	0220 Construction managers
	0310 Food service managers
	0330 Gaming managers
	0340 Lodging managers
	0410 Property, real estate, and community association managers
	0520 Wholesale and retail buyers, except farm products
	0530 Purchasing agents, except wholesale, retail and farm products
	0540 Claims adjusters, appraisers, examiners and investigators
	0620 Human resources, training and labor relations specialists
	0700 Logisticians
	0710 Managements analysts
	0730 Other business operations specialists
	0800 Accountants and auditors
	0810 Appraisers and assessors of real estate
	0820 Budget analysts
	0830 Credit analysts
	0840 Financial analysts
	0850 Personal financial advisors
	0860 Insurance underwriters
	0900 Financial examiners
	0910 Loan counselors and officers

0930 Tax examiners, collectors, and revenue agents  
0940 Tax preparers  
0950 Financial specialists, all other  
2800 Announcers  
2810 News analysts, reporters and correspondents  
2820 Public relations specialists

Health science

0350 Medical and health services managers  
3000 Chiropractors  
3010 Dentists  
3030 Dietitians and nutritionists  
3040 Optometrists  
3050 Pharmacists  
3060 Physicians and surgeons  
3110 Physician assistants  
3120 Podiatrists  
3130 Registered Nurses  
3140 Audiologists  
3150 Occupational therapists  
3160 Physical therapists  
3200 Radiation therapists  
3210 Recreational therapists  
3220 Respiratory therapists  
3230 Speech-Language pathologists  
3240 Therapists, all other  
3250 Veterinarians  
3260 Health diagnosing and treating practitioners, all other  
3300 Clinical laboratory technologists and technicians  
3310 Dental hygienists  
3320 Diagnostic related technologists and technicians  
3400 Emergency medical technicians and paramedics  
3410 Health diagnosing and treating practitioner support technicians  
3500 Licensed practical and licensed vocational nurses  
3510 Medical records and health information technicians  
3520 Opticians, dispensing  
3530 Miscellaneous health technologists and technicians  
3540 Other healthcare practitioners and technical occupations  
3600 Nursing, psychiatric, and home health aides  
3610 Occupational therapist assistants and aides  
3620 Physical therapist assistants and aides  
3630 Massage therapists

	3640	Dental assistants
	3650	Medical assistants and other healthcare support occupations
STEM	0110	Computer and information systems managers
	0300	Engineering managers
	0360	Natural sciences managers
	0600	Cost estimators
	1000	Computer scientists and systems analysts
	1010	Computer programmers
	1020	Computer software engineers
	1040	Computer support specialists
	1060	Database administrators
	1100	Network and computer systems administrators
	1110	Network systems and data communications analysts
	1200	Actuaries
	1210	Mathematicians
	1220	Operations research analysts
	1230	Statisticians
	1240	Miscellaneous mathematical science occupations
	1310	Surveyors, cartographers, and photogrammetrists
	1320	Aerospace engineers
	1330	Agricultural engineers
	1340	Biomedical engineers
	1350	Chemical engineers
	1360	Civil engineers
	1400	Computer hardware engineers
	1410	Electrical and electronics engineers
	1420	Environmental engineers
	1430	Industrial engineers, including health and safety
	1440	Marine engineers and naval architects
	1450	Materials engineers
	1460	Mechanical engineers
	1500	Mining and geological engineers, including mining safety engineers
	1510	Nuclear engineers
	1520	Petroleum engineers
	1530	Engineers, all other
	1540	Drafters
	1550	Engineering technicians, except drafters
	1560	Surveying and mapping technicians
	1600	Agricultural and food scientists
	1610	Biological scientists

	1640	Conservation scientists and foresters
	1650	Medical scientists
	1700	Astronomers and physicists
	1710	Atmospheric and space scientists
	1720	Chemists and materials scientists
	1740	Environmental scientists and geoscientists
	1760	Physical scientists, all other
	1900	Agricultural and food science technicians
	1910	Biological technicians
	1920	Chemical technicians
	1930	Geological and petroleum technicians
	1940	Nuclear technicians
	1960	Other life, physical, and social science technicians
Education	0230	Education administrators
	2200	Postsecondary teachers
	2300	Preschool and kindergarten teachers
	2310	Elementary and middle school teachers
	2320	Secondary school teachers
	2330	Special education teachers
	2340	Other teachers and instructors
	2540	Teacher assistants
	2550	Other education, training, and library workers
Other professional and managerial occupations	0030	Legislators
	0200	Farm, ranch, and other agricultural managers
	0320	Funeral directors
	0400	Postmasters and mail superintendents
	0420	Social and community service managers
	0430	Managers, all other
	0500	Agents and business managers of artists, performers, and athletes
	0510	Purchasing agents and buyers, farm products
	0560	Compliance officers, except agriculture, construction, health and safety, and transportation
	0720	Meeting and convention planners
	1300	Architects, except naval
	1800	Economists
	1810	Market and survey researchers
	1820	Psychologists
	1830	Sociologists
	1840	Urban and regional planners
	1860	Miscellaneous social scientists and related workers

2000 Counselors  
2010 Social workers  
2020 Miscellaneous community and social service specialists  
2040 Clergy  
2050 Directors, religious activities and education  
2060 Religious workers, all other  
2100 Lawyers  
2110 Judges, magistrates, and other judicial workers  
2140 Paralegals and legal assistants  
2150 Miscellaneous legal support workers  
2400 Archivists, curators, and museum technicians  
2430 Librarians  
2440 Library Technicians  
2600 Artists and related workers  
2630 Designers  
2700 Actors  
2710 Producers and directors  
2720 Athletes, coaches, umpires, and related workers  
2740 Dancers and choreographers  
2750 Musicians, singers, and related workers  
2760 Entertainers and performers, sports and related workers, all other  
2830 Editors  
2840 Technical writers  
2850 Writers and authors  
2860 Miscellaneous media and communication workers  
2900 Broadcast and sound engineering technicians and radio operators  
2910 Photographers  
2920 Television, video, and motion picture camera operators and editors  
2960 Media and communication equipment workers, all other  
3700 First-line supervisors/managers of correctional officers  
3710 First-line supervisors/managers of police and detectives  
3720 First-line supervisors/managers of fire fighting and prevention workers  
3730 Supervisors, protective service workers, all other  
3740 Fire fighters  
3750 Fire inspectors  
3800 Bailiffs, correctional officers, and jailers  
3820 Detectives and criminal investigators

	3830	Fish and game wardens
	3840	Parking enforcement workers
	3850	Police and sheriff's patrol officers
	3860	Transit and railroad police
	3900	Animal control workers
	3910	Private detectives and investigators
	3920	Security guards and gaming surveillance officers
	3940	Crossing guards
	3950	Lifeguards and other protective service workers
Administrative, clerical, and sales occupations	4700	First-line supervisors/managers of retail sales workers
	4710	First-line supervisors/managers of non-retail sales workers
	4720	Cashiers
	4740	Counter and rental clerks
	4750	Parts salespersons
	4760	Retail salespersons
	4800	Advertising sales agents
	4810	Insurance sales agents
	4820	Securities, commodities, and financial services sales agents
	4830	Travel agents
	4840	Sales representatives, services, all other
	4850	Sales representatives, wholesale and manufacturing
	4900	Models, demonstrators, and product promoters
	4920	Real estate brokers and sales agents
	4930	Sales engineers
	4940	Telemarketers
	4950	Door-to-door sales workers, news and street vendors, and related workers
	4960	Sales and related workers, all other
	5000	First-line supervisors/managers of office and administrative support workers
	5010	Switchboard operators, including answering service
	5020	Telephone operators
	5030	Communications equipment operators, all other
	5100	Bill and account collectors
	5110	Billing and posting clerks and machine operators
	5120	Bookkeeping, accounting, and auditing clerks
	5130	Gaming cage workers
	5140	Payroll and timekeeping clerks
	5150	Procurement clerks
	5160	Tellers



5200 Brokerage clerks  
5210 Correspondence clerks  
5220 Court, municipal, and license clerks  
5230 Credit authorizers, checkers, and clerks  
5240 Customer service representatives  
5250 Eligibility interviewers, government programs  
5260 File clerks  
5300 Hotel, motel, and resort desk clerks  
5310 Interviewers, except eligibility and loan  
5320 Library assistants, clerical  
5330 Loan interviewers and clerks  
5340 New accounts clerks  
5350 Order clerks  
5360 Human resources assistants, except payroll and  
timekeeping  
5400 Receptionists and information clerks  
5410 Reservation and transportation ticket agents and travel  
clerks  
5420 Information and record clerks, all other  
5500 Cargo and freight agents  
5510 Couriers and messengers  
5520 Dispatchers  
5530 Meter readers, utilities  
5540 Postal service clerks  
5550 Postal service mail carriers  
5560 Postal service mail sorters, processors, and processing  
machine operators  
5600 Production, planning, and expediting clerks  
5610 Shipping, receiving, and traffic clerks  
5620 Stock clerks and order fillers  
5630 Weighers, measurers, checkers, and samplers,  
recordkeeping  
5700 Secretaries and administrative assistants  
5800 Computer operators  
5810 Data entry keyers  
5820 Word processors and typists  
5830 Desktop publishers  
5840 Insurance claims and policy processing clerks  
5850 Mail clerks and mail machine operators, except postal  
service  
5860 Office clerks, general  
5900 Office machine operators, except computer  
5910 Proofreaders and copy markers

	5920	Statistical assistants
	5930	Office and administrative support workers, all other
Non-professional and low-skill occupations	0210	Farmers and ranchers
	4000	Chefs and head cooks
	4010	First-line supervisors/managers of food preparation and serving workers
	4020	Cooks
	4030	Food preparation workers
	4040	Bartenders
	4050	Combined food preparation and serving workers, including fast food
	4060	Counter attendants, cafeteria, food concession, and coffee shop
	4110	Waiters and waitresses
	4120	Food Servers, nonrestaurant
	4130	Dining room and cafeteria attendants and bartender helpers
	4140	Dishwashers
	4150	Hosts and hostesses, restaurant, lounge, and coffee shop
	4160	Food preparation and serving related workers, all other
	4200	First-line supervisors/managers of housekeeping and janitorial workers
	4210	First-line supervisors/managers of landscaping, lawn service, and groundskeeping workers
	4220	Janitors and building cleaners
	4230	Maids and housekeeping cleaners
	4240	Pest control workers
	4250	Grounds maintenance workers
	4300	First-line supervisors/managers of gaming workers
	4320	First-line supervisors/managers of personal service workers
	4340	Animal trainers
	4350	Nonfarm animal caretakers
	4400	Gaming services workers
	4410	Motion picture projectionists
	4420	Ushers, lobby attendants, and ticket takers
	4430	Miscellaneous entertainment attendants and related workers
	4460	Funeral service workers
	4500	Barbers
	4510	Hairdressers, hairstylists, and cosmetologists

4520 Miscellaneous personal appearance workers  
4530 Baggage porters, bellhops, and concierges  
4540 Tour and travel guides  
4550 Transportation attendants  
4600 Child care workers  
4610 Personal and home care aides  
4620 Recreation and fitness workers  
4640 Residential advisors  
4650 Personal care and service workers, all other  
6000 First-line supervisors/managers of farming, fishing,  
and forestry workers  
6010 Agricultural inspectors  
6020 Animal breeders  
6040 Graders and sorters, agricultural products  
6050 Miscellaneous agricultural workers  
6100 Fishers and related fishing workers  
6110 Hunters and trappers  
6120 Forest and conservation workers  
6130 Logging workers  
6200 First-line supervisors/managers of construction trades  
and extraction workers  
6210 Boilermakers  
6220 Brickmasons, blockmasons, and stonemasons  
6230 Carpenters  
6240 Carpet, floor, and tile installers and finishers  
6250 Cement masons, concrete finishers, and terrazzo  
workers  
6260 Construction laborers  
6300 Paving, surfacing, and tamping equipment operators  
6310 Pile-driver operators  
6320 Operating engineers and other construction equipment  
operators  
6330 Drywall installers, ceiling tile installers, and tapers  
6350 Electricians  
6360 Glaziers  
6400 Insulation workers  
6420 Painters, construction and maintenance  
6430 Paperhangers  
6440 Pipelayers, plumbers, pipefitters, and steamfitters  
6460 Plasterers and stucco masons  
6500 Reinforcing iron and rebar workers  
6510 Roofers  
6520 Sheet metal workers

6530 Structural iron and steel workers  
6600 Helpers, construction trades  
6660 Construction and building inspectors  
6700 Elevator installers and repairers  
6710 Fence erectors  
6720 Hazardous materials removal workers  
6730 Highway maintenance workers  
6740 Rail-track laying and maintenance equipment operators  
6750 Septic tank servicers and sewer pipe cleaners  
6760 Miscellaneous construction and related workers  
6800 Derrick, rotary drill, and service unit operators, oil, gas, and mining  
6820 Earth drillers, except oil and gas  
6830 Explosives workers, ordnance handling experts, and blasters  
6840 Mining machine operators  
6910 Roof bolters, mining  
6920 Roustabouts, oil and gas  
6930 Helpers—extraction workers  
6940 Other extraction workers  
7000 First-line supervisors/managers of mechanics, installers, and repairers  
7010 Computer, automated teller, and office machine repairers  
7020 Radio and telecommunications equipment installers and repairers  
7030 Avionics technicians  
7040 Electric motor, power tool, and related repairers  
7050 Electrical and electronics installers and repairers, transportation equipment  
7100 Electrical and electronics repairers, industrial and utility  
7110 Electronic equipment installers and repairers, motor vehicles  
7120 Electronic home entertainment equipment installers and repairers  
7130 Security and fire alarm systems installers  
7140 Aircraft mechanics and service technicians  
7150 Automotive body and related repairers  
7160 Automotive glass installers and repairers  
7200 Automotive service technicians and mechanics  
7210 Bus and truck mechanics and diesel engine specialists

7220 Heavy vehicle and mobile equipment service technicians and mechanics

7240 Small engine mechanics

7260 Miscellaneous vehicle and mobile equipment mechanics, installers, and repairers

7300 Control and valve installers and repairers

7310 Heating, air conditioning, and refrigeration mechanics and installers

7320 Home appliance repairers

7330 Industrial and refractory machinery mechanics

7340 Maintenance and repair workers, general

7350 Maintenance workers, machinery

7360 Millwrights

7410 Electrical power-line installers and repairers

7420 Telecommunications line installers and repairers

7430 Precision instrument and equipment repairers

7510 Coin, vending, and amusement machine servicers and repairers

7520 Commercial divers

7540 Locksmiths and safe repairers

7550 Manufactured building and mobile home installers

7560 Riggers

7600 Signal and track switch repairers

7610 Helpers—installation, maintenance, and repair workers

7620 Other installation, maintenance, and repair workers

7700 First-line supervisors/managers of production and operating workers

7710 Aircraft structure, surfaces, rigging, and systems assemblers

7720 Electrical, electronics, and electromechanical assemblers

7730 Engine and other machine assemblers

7740 Structural metal fabricators and fitters

7750 Miscellaneous assemblers and fabricators

7800 Bakers

7810 Butchers and other meat, poultry, and fish processing workers

7830 Food and tobacco roasting, baking, and drying machine operators and tenders

7840 Food batchmakers

7850 Food cooking machine operators and tenders

7900 Computer control programmers and operators

- 7920 Extruding and drawing machine setters, operators, and tenders, metal and plastic
- 7930 Forging machine setters, operators, and tenders, metal and plastic
- 7940 Rolling machine setters, operators, and tenders, metal and plastic
- 7950 Cutting, punching, and press machine setters, operators, and tenders, metal and plastic
- 7960 Drilling and boring machine tool setters, operators, and tenders, metal and plastic
- 8000 Grinding, lapping, polishing, and buffing machine tool setters, operators, and tenders, metal and plastic
- 8010 Lathe and turning machine tool setters, operators, and tenders, metal and plastic
- 8020 Milling and planing machine setters, operators, and tenders, metal and plastic
- 8030 Machinists
- 8040 Metal furnace and kiln operators and tenders
- 8060 Model makers and patternmakers, metal and plastic
- 8100 Molders and molding machine setters, operators, and tenders, metal and plastic
- 8120 Multiple machine tool setters, operators, and tenders, metal and plastic
- 8130 Tool and die makers
- 8140 Welding, soldering, and brazing workers
- 8150 Heat treating equipment setters, operators, and tenders, metal and plastic
- 8160 Lay-out workers, metal and plastic
- 8200 Plating and coating machine setters, operators, and tenders, metal and plastic
- 8210 Tool grinders, filers, and sharpeners
- 8220 Metal workers and plastic workers, all other
- 8230 Bookbinders and bindery workers
- 8240 Job printers
- 8250 Prepress technicians and workers
- 8260 Printing machine operators
- 8300 Laundry and dry-cleaning workers
- 8310 Pressers, textile, garment, and related materials
- 8320 Sewing machine operators
- 8330 Shoe and leather workers and repairers
- 8340 Shoe machine operators and tenders
- 8350 Tailors, dressmakers, and sewers

- 8360 Textile bleaching and dyeing machine operators and tenders
- 8400 Textile cutting machine setters, operators, and tenders
- 8410 Textile knitting and weaving machine setters, operators, and tenders
- 8420 Textile winding, twisting, and drawing out machine setters, operators, and tenders
- 8430 Extruding and forming machine setters, operators, and tenders, synthetic and glass fibers
- 8440 Fabric and apparel patternmakers
- 8450 Upholsterers
- 8460 Textile, apparel, and furnishings workers, all other
- 8500 Cabinetmakers and bench carpenters
- 8510 Furniture finishers
- 8520 Model makers and patternmakers, wood
- 8530 Sawing machine setters, operators, and tenders, wood
- 8540 Woodworking machine setters, operators, and tenders, except sawing
- 8550 Woodworkers, all other
- 8600 Power plant operators, distributors, and dispatchers
- 8610 Stationary engineers and boiler operators
- 8620 Water and liquid waste treatment plant and system operators
- 8630 Miscellaneous plant and system operators
- 8640 Chemical processing machine setters, operators, and tenders
- 8650 Crushing, grinding, polishing, mixing, and blending workers
- 8710 Cutting workers
- 8720 Extruding, forming, pressing, and compacting machine setters, operators, and tenders
- 8730 Furnace, kiln, oven, drier, and kettle operators and tenders
- 8740 Inspectors, testers, sorters, samplers, and weighers
- 8750 Jewelers and precious stone and metal workers
- 8760 Medical, dental, and ophthalmic laboratory technicians
- 8800 Packaging and filling machine operators and tenders
- 8810 Painting workers
- 8830 Photographic process workers and processing machine operators
- 8840 Semiconductor processors
- 8850 Cementing and gluing machine operators and tenders

8860 Cleaning, washing, and metal pickling equipment operators and tenders

8900 Cooling and freezing equipment operators and tenders

8910 Etchers and engravers

8920 Molders, shapers, and casters, except metal and plastic

8930 Paper goods machine setters, operators, and tenders

8940 Tire builders

8950 Helpers—production workers

8960 Production workers, all other

9000 Supervisors, transportation and material moving workers

9030 Aircraft pilots and flight engineers

9040 Air traffic controllers and airfield operations specialists

9110 Ambulance drivers and attendants, except emergency medical technicians

9120 Bus drivers

9130 Driver/sales workers and truck drivers

9140 Taxi drivers and chauffeurs

9150 Motor vehicle operators, all other

9200 Locomotive engineers and operators

9230 Railroad brake, signal, and switch operators

9240 Railroad conductors and yardmasters

9260 Subway, streetcar, and other rail transportation workers

9300 Sailors and marine oilers

9310 Ship and boat captains and operators

9330 Ship engineers

9340 Bridge and lock tenders

9350 Parking lot attendants

9360 Service station attendants

9410 Transportation inspectors

9420 Other transportation workers

9500 Conveyor operators and tenders

9510 Crane and tower operators

9520 Dredge, excavating, and loading machine operators

9560 Hoist and winch operators

9600 Industrial truck and tractor operators

9610 Cleaners of vehicles and equipment

9620 Laborers and freight, stock, and material movers, hand

9630 Machine feeders and offbearers

9640 Packers and packagers, hand

9650 Pumping station operators



- 9720 Refuse and recyclable material collectors
  - 9730 Shuttle car operators
  - 9740 Tank car, truck, and ship loaders
  - 9750 Material moving workers, all other
  - 9800 Military officer special and tactical operations  
leaders/managers
  - 9810 First-line enlisted military supervisors/managers
  - 9820 Military enlisted tactical operations and air/weapons  
specialists and crew members
  - 9830 Military, rank not specified
  - 9920 Unemployed, with no work experience in the last 5  
years or earlier or never worked
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## Appendix B

**Table B.1: Frequencies in Major, Occupation, and Major–Occupation Interaction Categories by Level of Highest Educational Credential**

Major Field of Study & Occupation Category	Major	Occupation	Major– Occupation Interaction
<i>Bachelor's degree</i>			
Business and communications	284	218	114
Health science	43	51	25
STEM	120	110	63
Education	72	138	50
Social science	148		
Humanities and other academic majors	74		
Other major and no major reported	116		
Other professional and managerial occupations		175	
Administrative, clerical and sales occupations		272	
Non-professional and low-skill occupations		147	
No occupation reported		5	
More than one occupation		236	
<i>Associate degree</i>			
Business and communications	40	23	6
Health science	52	45	40
STEM	52	23	13
Academic majors, including social science and humanities	29		
Other major including education and no major reported	69		
Other professional and managerial occupations		40	
Administrative, clerical and sales occupations		79	
Non-professional and low-skill occupations		78	
No occupation reported		4	
More than one occupation		48	
<i>Some college, no degree</i>			
Business and communications	170	88	27

Health science	95	72	28
STEM	128	26	9
Education	55	23	5
Social science	109		
Humanities and other academic majors	39		
Other major	127		
No major reported	90		
Other professional and managerial occupations		98	
Administrative, clerical and sales occupations		333	
Non-professional and low-skill occupations		357	
No occupation reported		14	
More than one occupation		185	

*Note.* Data are from the NLSY97 1997–2011 and are unweighted. The sample is restricted to those with earnings in 2008, 2009, or 2010. Respondents are coded as having a particular occupation if they reported this occupation in their main job in 2008, 2009, or 2010. Therefore, neither the occupation nor the interaction indicators are mutually exclusive, although the major indicators are mutually exclusive.