Expanded Measures of Education and their Labor Market Outcomes

INTRODUCTION

The well-established link between educational attainment and socioeconomic outcomes is based on social science research using federal data sources that effectively measure traditional educational credentials that result in a degree, including high school diplomas, 2- and 4- year degrees, and advanced degrees. However, with the expanding and changing landscape of the education system and labor market, alternative credentials to traditional degrees have emerged with labor market value that must be considered when examining social and economic outcomes and inequality therein. Policy makers and researchers have begun to recognize the labor market value of alternative credentials, including educational certificates and professional certifications and licenses, and President Obama has called for all adults to obtain at least one year of post-secondary education. However, there is a dearth of relevant data that comprehensively captures the prevalence of these alternative credentials.

This paper analyzes data from the Survey of Income and Program Participation (SIPP), which collects data on educational attainment and receipt of vocational certificates, to examine differences by sex, age, race and Hispanic origin in combinations of conventional educational attainment and vocational certificates, as well as how these different combinations of attainment affect labor market outcomes and inequality between demographic groups. This paper further utilizes recent data from the Re-Engineered SIPP field test (SIPP-EHC), which contains new measures of educational certificates and professional certifications and state and industry licenses, to examine the relationship between educational attainment, alternative credentials, and labor market outcomes. These analyses will demonstrate the value of expanded measures of attainment beyond conventional measures of education from most surveys.

BACKGROUND

There has been growth in sub-baccalaureate degrees at both the vocational certificate and associate's degree level. Only 1.8 percent of the adult population reported a vocational certificate as their highest level of educational attainment in 1984 compared to 10.9 percent in 2009 (Ewert 2012). Some research suggests that men and women have equal shares of educational certificates but that such alternative credentials are more prevalent among blacks and possibly Hispanics than among whites and Asians (Carnevale et al. 2012). Professional certifications and licenses are also relevant alternative credentials with labor market value that warrant attention.

Accurately measuring these alternative credentials matters for several reasons. Time spent on education and training develops general human capital, or skills and competencies, which can increase productivity and returns in the labor market. Furthermore, sub-baccalaureate education can develop vocational skills that provide access to higher paying occupations (Grubb 1993). Therefore, growth in the number of alternative credentials, including educational certificates and professional certifications and licenses warrants an examination of not only their prevalence in the adult population but also their relationship with labor market outcomes. To the extent that rates of receipt and returns to these credentials vary by subgroups, alternative credentials may contribute to socioeconomic inequality in the U.S.

Kerckhoff and Bell (1998) concluded there is a need for more systematic data collection on the topic. They argued that limited research on educational certificates stems partly from inadequate data. This paper uses data from the SIPP and SIPP-EHC to examine the complex relationship between conventional educational attainment, alternative credentials, field of study, demographic characteristics, and labor market outcomes.

DATA AND METHODS

I use data from the 2008 SIPP Panel and the 2012 SIPP-EHC Field Test. The 2008 SIPP Panel is a nationally representative longitudinal survey of the U.S. that began in 2008 with follow-up interviews every four months. The SIPP includes a measure of conventional educational attainment as well as separate items that capture information on the receipt of vocational certificates and field of degree, thereby enabling an examination of the combination of educational credentials.[1]

The SIPP-EHC is the product of the U.S. Census Bureau's current re-engineering of SIPP to reduce burden on respondents, reduce program costs, and improve accuracy and timeliness. It shifts from the current every-four-month data collection schedule of traditional SIPP to an annual data collection in the SIPP-EHC. The SIPP-EHC includes a measure of conventional educational attainment as well as two additional questions about alternative credentials. In these two questions, the SIPP-EHC collects information on receipt of educational certificates and professional certifications and licenses. An interagency working group tasked with improving federal data collection on alternative credentials developed these measures.

This paper will first present a typology of combinations of conventional educational attainment and alternative credentials and examine this distribution of educational credentials by sex, age, race and Hispanic origin using SIPP and SIPP-EHC data. Weighted crosstabulations will document who has various combinations of credentials. These descriptive analyses will also incorporate information on field of degree into the typology of educational credentials.

The paper will then concentrate on how these combinations of credentials pay off in the labor market and whether the pay off varies by demographic group. The outcome variables highlighted in this paper include current employment status, current earnings, employment in the past year, and receipt of unemployment. This examination of the payoff to combinations of

[1] See Appendix A for the exact questions and response categories.

educational credentials, by field of degree, will begin by exploring variation in the outcome variables by combinations of credentials for different subgroups. The paper will then use a modeling framework in order to isolate how combinations of credentials affect outcomes net of other relevant factors. These parametric models will provide the opportunity to examine interactions between age and other variables. Supplemental analyses that run models separately for different groups will further explore whether and how combinations of credentials operate differently for various subgroups of the U.S. population.

PRELIMINARY RESULTS AND EXPECTED FINDINGS

Table 1 displays the unweighted sample sizes for subgroups by sex, age, and typology of educational attainment. The table shows there is a reasonable sample with cell sizes large enough to examine important subgroups of the population. Table 2 shows the percentage of adults with a vocational certificate within sex, age, and educational attainment groups. People of all levels of conventional educational attainment earned vocational certificates. They were especially common among men and women whose highest levels of educational attainment were high school completion, some college but no degree, or an associate's degree. I calculated median earnings for those with and without vocational certificates and found interesting variation between education levels that I will explore further.

I expect the distribution of combinations of conventional educational attainment and vocational certificates will depend on race and Hispanic origin. I expect that current earnings, current employment status, and receipt of unemployment will vary across combinations of credentials and that the returns to combinations of credentials will differ for some demographic groups. I further anticipate these results will depend on the field of study.

REFERENCES

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Table 1. Unweighted Sample Size of Subgroups by Sex, Age, and Typology of Attainment for Adults 18 and Over: SIPP 2008

	Total N	Percent	Women						Men					
			Age						Age					
			18-24	25-34	35-44	45-54	55-64	65+	18-24	25-34	35-44	45-54	55-64	65+
Typology of attainment														
No vocational certificate														
Less than high school	10,078	13.7	761	689	688	759	712	1,572	954	725	733	763	600	1,122
High school	19,185	26.1	1,145	1,351	1,458	1,886	1,644	2,603	1,368	1,556	1,566	1,880	1,263	1,465
Some college but no degree	11,048	15.0	1,521	994	903	972	767	841	1,333	946	761	784	646	580
Associate's degree	3,972	5.4	209	431	489	572	398	283	135	305	340	334	271	205
Bachelor's degree	10,993	14.9	379	1,338	1,318	1,257	871	702	271	1,090	1,119	1,044	901	703
Advanced degree	6,268	8.5	33	579	697	722	640	466	24	373	624	692	774	644
Vocational certificate														
Less than high school	641	0.9	10	32	57	53	55	95	12	31	60	71	61	104
High school	4,798	6.5	179	338	456	512	470	481	173	352	439	560	402	436
Some college but no degree	2,970	4.0	99	245	355	403	297	229	69	177	269	361	263	203
Associate's degree	1,969	2.7	41	207	253	258	170	117	44	167	218	226	168	100
Bachelor's degree	1,259	1.7	12	97	134	196	120	58	12	108	126	158	136	102
Advanced degree	418	0.6	2	24	44	61	50	28	0	15	40	44	62	48
Total	73,599	100	4,391	6,325	6,852	7,651	6,194	7,475	4,395	5,845	6,295	6,917	5,547	5,712

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008.

Table 2. Percent of Sex, Age, and Educational Attainment Groups with a Vocational Certificate Among Adults 18 and Over: SIPP 2008
(weighted, numbers in thousands)

	Total number	Percent with voc	Women						Men					
			Age						Age					
			18-24	25-34	35-44	45-54	55-64	65+	18-24	25-34	35-44	45-54	55-64	65+
Total	226,249	15.9	6.7	14.4	18.5	19.2	18.6	13.6	6.3	13.8	18.0	20.2	19.3	17.4
Educational Attainment														
Less than high school	32,183	6.0	1.3	4.6	7.2	6.4	7.4	6.2	1.3	4.1	7.4	8.4	9.1	8.6
High school	71,644	19.2	10.3	18.9	23.8	21.0	22.3	15.5	8.8	16.7	21.5	22.9	23.7	22.7
Some college but no degree	44,362	20.3	5.9	19.4	27.8	29.2	27.5	21.6	5.1	15.0	25.7	30.3	28.4	26.0
Associate's degree	18,429	32.5	14.0	32.7	33.0	30.7	29.3	28.0	23.8	35.8	38.5	40.2	37.2	31.6
Bachelor's degree	38,782	10.2	3.3	6.8	8.6	13.7	11.9	7.4	4.2	9.0	10.5	13.2	13.0	13.3
Advanced degree	20,850	6.5	7.6	4.2	6.3	7.9	7.3	6.6	0.0	4.4	6.1	6.0	7.8	7.1

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008.

APPENDIX A

The SIPP measures conventional educational attainment and vocational certificates with the following questions:

What is the highest level of school completed or the highest degree received?

- Less than 1st grade
- 1st, 2nd, 3rd or 4th grade
- 5th or 6th grade
- 7th or 8th grade
- 9th grade
- 10th grade
- 11th grade
- 12th grade, no diploma
- High school graduate (diploma or GED equivalent)
- Some college credit, but less than 1 year
- 1 or more years of college, no degree (regular junior college/college/university)
- Associate (2-year) college degree (include academic/occupational degree)
- Bachelor's degree (for example: BA, AB, BS)
- Master's degree (for example: MA, MS, MENG, Med, MSW, MBA)
- Professional degree (for example: MD (doctor), DDS (dentist), JD (lawyer))
- Doctorate (for example: Ph.D.. Ed.D.)

Have [you] ever attended a vocational, technical, trade, or business school beyond high school?

- Yes
- No

Have [you] received a diploma or certificate from a vocational, technical, trade, or business school?

- Yes
- No

The SIPP-EHC measures conventional educational attainment and alternative credentials with the following questions:

What is the highest level of school completed or the highest degree received?

- Less than 1st grade
- 1st, 2nd, 3rd or 4th grade
- 5th or 6th grade
- 7th or 8th grade
- 9th grade
- 10th grade

11th grade
12th grade, no diploma
High school graduate (diploma or GED or equivalent)
Some college credit, but less than 1 year
1 or more years of college, no degree (regular junior college/college/university)
Associate's degree (2-year)
Bachelor's degree (for example: BA, AB, BS)
Master's degree (for example: MA, MS, MBA, MSW)
Professional degree (for example: MD (doctor), DDS (dentist), JD (lawyer))
Doctorate (for example: Ph.D.. Ed.D.)

Now I'd like to ask about professional certification and licensure. Do [you] have a professional certification or a state or industry license? Mark all that apply.

Yes, professional certification
Yes, license
Yes, unsure of type [do not read]
No professional certification or license

Some people decide to enroll at a college, university, community college, or trade school to earn a certificate rather than a degree. Have [you] ever earned this type of certificate?

Yes
No