

### Methodological Processes to estimate Short-term Credential of Value

This document details the methodology for counting certificates and certifications that are used for reporting beginning in 2024 (applies to 2023 data and forward). Certification rates are developed using the CPS but directly align with how degrees are evaluated under Lumina Foundation's revised goal. Certificate rates are developed through a multi-step process that estimates the national share of certificates, determines state and national shares of certificates, then calculates a corresponding "certificate of value" rate.

A certificate or certification is considered a credential of value if individuals who hold it earn at least **15% more than the national median annual earnings of a high school graduate**.

This earnings threshold is used consistently across states and credential types to ensure comparability with degree-based measures of value and to reflect labor market outcomes.

The process and details of the modified process to estimate short-term credentials of value are outlined in four phases.

#### **Phase 1. Determine the National Share of Certificates of Value**

1. Acquire data from the 2022 National Training, Education and Workforce Survey (NTEWS) Pilot Study.
2. Identify adults (25 to 64) respondents who were in the Labor Force in NTEWS
3. Identify the portion of the labor force with only a postsecondary vocational certificate.
4. Of that population with a certificate (step 3), refine to those with some college but no degree, GED or High School diploma (but with a certificate from vocational, trade, or business school/community or technical college/another college or university).
5. Count the number of adults from Step 4 with postsecondary certificates whose earnings are 15% higher than the high school median wage (from the American Community Survey for 2021 as 2021 matches the year of the NTEWS question on earnings.)
6. To arrive at a *National Share of Certificates of Value*, divide the count from step 5 by the count derived in step 2.



Notes. The *National Share of Certificates of Value* is a rate that will stay the same until a newer data source becomes available.

## Phase 2. Determine the National and State Counts of Certificates of Value

1. Compute the *National Count of Certificates of Value* by multiplying the *National Share of Certificates of Value* (obtained from NTEWS in Phase 1) with the labor force from the ACS (3-year pool). This national count will change depending on the size of Labor Force for each year.
2. Acquire three years of IPEDS data from the Completions Survey (to get certificates awarded) and Institutional Characteristics Survey (for institution location/state).
3. Merge the two files together, then sum certificate completion data for the nation and each state.
4. Calculate each state's share of the national count of IPEDS certificates by dividing state count (step 3) by national count (step 3); the total will equal 1.
5. Get a *State Count of Certificates of Value* by multiplying the state's share (step 4) by the *National Count of Certificates of Value* from step 1.



Step 3:



Step 4:



Step 5:

Notes. This phase is conducted annually. Pooling is done in the following manner – The 2019-2021 pool is used to get 2021 Labor Force using the ACS. The 2020-2022 pool is used to get 2022 Labor Force, etc.

### Phase 3. Determine the National and State Certificate of Value Rate

1. Create a file that includes each *State's Count of Certificates of Value* and the state's labor force size from the American Community Survey (ACS).
2. Determine each *State's Certificate of Value Rate* by dividing a *State's Count of Certificates of Value* by the state's labor force size (from ACS).
3. Calculate the *National Certificate of Value Rate* by dividing the *National Count of Certificates of Value* (Phase 2) by the total size of the labor force (from ACS).



Notes. This phase will be conducted annually.

#### Phase 4. Determining the Certifications of Value Rate

1. Acquire and pool together 3 years of ASEC/CPS data.
2. Identify respondents with at least a high school diploma or GED but no degree, ages 25-64 with a certification and in the labor force (CPS).
3. Compare earnings to a 15 percent premium of the high school median wage (from the American Community Survey).
4. Get weighted count using weights in CPS (MARSUPWT) of those with earnings greater than or equal to 15 percent of high school median. Divide by 3.
5. Determine the *National* and each *State's Certification of Value Rate* by dividing state certification counts by the labor force (from ACS).



Steps 1-3.



Notes. This analysis will be conducted annually.

**STEP-by-STEP Calculations**

Phase	Data Set	Certificates of Value	Variable in data set	Clarifying notes
<b>Phase 1: Determine the National Share of Certificates of Value</b>	NTEWS 2022 Pilot	Step 1. Get the data from NTEWS 2022 pilot	N/A	URL: <a href="https://nces.nsf.gov/surveys/national-training-education-workforce/2022#tabs-2">https://nces.nsf.gov/surveys/national-training-education-workforce/2022#tabs-2</a>  The estimates included in the NTEWS Pilot are not official statistics and should not be used to make official statements or inferences about characteristics of the population or economy.
	NTEWS 2022 Pilot	[LABOR FORCE] Step 2. Refine the population to only include ADULTS in the Labor Force (working, seeking to work, military)  They answered "yes" to question 1 or 2 on NTEWS  [Adults] They are aged 25 to 64 as determined by using question 78	Compute age as BIRYR – 2022  Use LFSTAT = 1 or 2 to determine labor force status.  Use EDLEVL=2,3,4,5 to keep only respondents with at least a high school diploma/GED but without an associate’s degree (i.e. some college, no degree and vocational certificate). This variable corresponds to Q27.	

		They answered 2, 3, 4, or 5 on Question 27	Compute the number in this group using the weight WTSURVY	
	NTEWS 2022 Pilot	<p>Step 3. Identify those with a postsecondary vocational certificate only.</p> <p>Those who checked box 4, 5 for question 27.</p> <p>Remove respondents with certification or license question 47</p>	<p>EDLEVL = 4,5</p> <p>Use CLIC = "Y" to exclude licenses</p>	Excluding respondents with a certification ends the need to apply a deduplication factor that was done in previous iterations.
	NTEWS 2022 Pilot	<p>Step 4. Refine to those with some college but no degree GED or High School diploma (but with a certificate from vocational, trade, or business school/community or technical college/another college or university). (responded 4 or 5 in question 27 as well as 2 or 3 in question 27 and vocational/trade/business school or community/technical college in question 34)</p>	<p>See above. Refers to using only EDLEVL = 4,5</p> <p>Include also EDLEVL = 2,3 and VOCISS = 2,3,4</p> <p>VOCISS = 2,3,4 corresponds to Q34 (where the certificate was obtained – high school is excluded)</p>	

	NTEWS 2022 Pilot	Step 5. Count number of adults in the Labor Force with a postsecondary vocational certificate only whose earnings are 15% higher than the High School Median wage (from ACS, see note).	N/A	<p>To establish continuity across degree and short-term credential estimates, The High School Median Wage value will come from the degree CoV analysis of ACS degree data. That data will be available after the release of the PUMS data, typically in mid-October.</p> <p>For this analytical step, only a wage benchmark is needed for the 2021 year.</p> <p>Determined using American Community Survey, three-year average PUMS data for degrees.</p>
	NTEWS 2022 Pilot	Step 6. Determine the <i>National Share of Certificates of Value</i> by dividing the count from Step 5 by the count from Step 2.	N/A	The denominator – Labor Force with high school diploma, GED and some college – was determined using NTEWS

				The <i>National Share of Certificates of Value</i> equals 9.3% (rounded to one decimal place).
<b>Phase 2: Determine the National and State Counts of Certificates of Value</b>	American Community Survey	Step 1. Determine the <i>National Count of Certificates of Value</i> by multiplying the <i>National Share of Certificates of Value</i> (Phase 1, step 6) by the Labor Force (from ACS)		Labor Force data from ACS
	IPEDS	Step 2. Get three years of IPEDS completion data e.g. 2021-2023.	N/A	From the <a href="#">IPEDS data center</a> retrieve the completion file that ends with “_A” files, i.e. Awards/degrees conferred by program (6-digit CIP code), award level: <from date> to <to date> Get the directory information data (begins with “HD”). This is needed to get the state FIPS code.
	IPEDS	Step 3. Merge the completion data to the IPEDS directory data by UNITID. Then, sum completion data for	From the completion data: UNITID, CIPCODE = 99 (total) AWLEVEL = 1,2,20,21 CTOTALT (number of certificates)	AWLEVEL codes are: 1 = 'Award of less than 1 academic year'

		certificates to the state level (using STABBR). Calculate the share of certificates for each state. The sum of the shares should be equal to one.	From the HD data: UNITID, STABBR, FIPS, SECTOR > 0, PSET4FLG = 1,3	2 = 'Award of at least 1 but less than 2 academic years' 20 = 'Certificates of less than 12 weeks' 21 = 'Certificates of at least 12 weeks but less than 1 year' <i>Note: Prior to 2022, codes 20 and 21 were combined into code value 1.</i>  SECTOR = 0 is "administrative unit" PSET4FLG = 1,3 (only Title IV institutions)  Use FIPS or STABBR to only keep DC and 50 states
	N/A	Step 4. Calculate the share of certificates for each state. The sum of the shares should be equal to one.	N/A	
	N/A	Step 5. Determine each <i>State's Count of Certificates of Value</i> by multiplying the state's	N/A	Calculate each state's stock of good certificates by multiplying the share from Step 2 with the

		share (Step 4) by the <i>National Count of Certificates of Value</i> (step 1).		national count of good certificates (Phase 1, Step 6).
<b>Phase 3: Calculate the National and State Credential of Value Rate</b>	ACS (from Lumina)	Step 1. Create a file that includes each <i>State's Count of Certificates of Value</i> (Phase 2, Step 5) and the state's Labor Force from the American Community Survey (ACS). Create a year variable based on the last year of the 3-year pool to use to merge to the CPS labor force population.	N/A	The Labor Force population is determined using American Community Survey, three-year average PUMS data for degrees.
	ACS (from Lumina)	Step 2. Determine each <i>State's Certificate of Value Rate</i> by dividing a <i>State's Count of Certificates of Value</i> by the state's Labor Force (from ACS).	N/A	
	ACS (from Lumina)	Step 3. Calculate the <i>National Certificates of Value Rate</i> by dividing the <i>National Count of Certificates of Value</i> (Phase 2) with the total size of the Labor Force (from ACS).	N/A	

Certifications of Value				
<p><b>Phase 4. Determining National and State Certification of Value Rates</b></p>	<p>CPS ASEC</p>	<p>Step 1. Pool three years of CPS ASEC, for example 2021-2023</p>	<p>N/A</p>	<p><a href="https://www.census.gov/programs-surveys/cps/data/datasets.html">https://www.census.gov/programs-surveys/cps/data/datasets.html</a></p> <p>Pooling is done in the following manner – the 2021-2023 pool is matched to the 2023 benchmark provided by Lumina. The 2022-2024 pool is matched to the 2024 benchmark, etc.</p>

	CPS ASEC	Step 2. Identify respondents with at least a high school diploma but no degree, ages 25-64 with a certification and in the labor force. Create a year variable based on the last year of the 3-year pool to use to merge to the CPS Labor Force population.	<p>A_HGA = 39,40 (educational attainment)  PEMLR = 1,2,3,4 (labor force)  P_STAT = 2 (Armed Forces)  A_AGE &gt;= 25 and A_AGE &lt;= 64  MARSUPWT (weight)  GESTFIPS (state)  PECERT1 = 1 else 0 (certification)</p>	<p>Respondents in the Armed Forces are considered to be “Not in universe” (NIU) for labor force questions in the CPS.</p> <p>If earnings are missing, set to 0 (WSAL_VAL = 0 if WSAL_VAL = .)</p>
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	CPS ASEC and ACS	Step 3. Get median high school earnings benchmark each year determined using ACS. Compare earnings to a 15 percent premium of the high school median.	N/A	<p>Data available from Phase 1, Step 1.</p> <p>To establish continuity across degree and short-term credential estimates, this value will come from the degree CoV analysis of ACS degree data. That data will be available after the release of the PUMS data, typically in mid-October.</p> <p>Determined using American Community Survey, three-year average PUMS data for degrees.</p> <p>A benchmark threshold for each year is applied, then identify individuals at or above the threshold for the relevant year, then calculate counts and percents across the three-year sample.</p>
		Step 4. Get weighted count of those with earnings	N/A	N/A

		greater than 15 percent of high school median. Divide by 3.		
		Step 5. Compute the <i>National and State Certification of Value Rates</i> .	N/A	