

Exploring Census Data Webinar Series: Education Statistics

May 27, 2020

Coordinator: Welcome, and thank you for standing by. At this time, all participants will be in a listen only mode until the question and answer portion. If, at that time, you would like to ask a question, press star 1.

Today's conference is also being recorded. If you have any objections, please disconnect at this time. And now I'll turn the call over to your host, to Lynda Lee. Ma'am, you may begin.

Lynda Lee: Good afternoon, everyone. My name is Lynda Lee, and I'd like to welcome everyone to the Exploring Census Data Webinar Series. For anyone who may not be familiar with our format, the Exploration Census Data Webinar Series is a set of webinars presented on a monthly basis based on popular topics.

The webinars are presented by our subject matter experts with the opportunity for Q&A at the end of each session. All webinars and Q&A sessions are recorded and will be accessible from the Census Academy webinar tab once the recording and transcript are available. Today's webinar on Education Statistics is the third in our series for this year.

This is our third installment of the series. We have all of the webinars from our previous series archived on [census.gov](https://www.census.gov) or you can also access them by using the link provided on this slide. In light of the recent transition to 100% telework, we are utilizing technology off site to continue operations.

We aim to minimize interruptions as much as possible and we appreciate your patience if we experience any technical delays. Please utilize the chat feature to notify us of issues should any arise, and we will do our best to address and

mitigate them.

Also, please note, today we will be focusing on data you can obtain from the Census Bureau related to education. We want you to be aware of all Census products and programs on this topic. The webinar will not focus on additional topics such as hiring for the 2020 Census or our partnership programs.

If you need additional information on any topic pertaining to the 2020 Census, please visit the 2020 Resource site on [census.gov](https://www.census.gov). Today's webinar will be presented by Ms. Earlene Dowell and Ms. Amanda Klimek.

Ms. Dowell is a program analyst with our outreach program specializing in the Longitudinal Employer Household Dynamics Program. Ms. Klimek is a statistician with our demographic program, American Community Survey. So our first objective for today is to provide you with information on the type of data you can obtain related to educational services sector.

Also known as NAICS 61 in the North American Industry Classification System. And in a moment, we will provide a brief overview of the system for anyone who may not be familiar with how we classify. And knowing about the availability is powerful. Accessing the data itself can sometimes be a challenge. So our second objective is to show you how to get the data and we've included a section toward the end to help you find what you need.

In today's webinar, we will go over a high level of review about the Census Bureau and the structure of our programs. Then we will dive into data from our programs with education statistics so you can see the type of data that you can obtain.

So from our program, we will be covering the Post-secondary Employment Outcome, the Job-to-Job Flows, Longitudinal Employer Dynamics, and American Community Survey. After showing you the data, we will go into how to access our data, and then close out with a Q&A section.

Lynda Lee:

So let's go into about the Census Bureau. The Census Bureau is the federal government's largest statistical agency. We conduct over 130 surveys each year with our well-known survey listed here. Collecting data on the nation's people is a Decennial Census which takes place every ten years.

As you know, the 2020 Census is going on right now. Please remember to respond because your response is critically important. At the end of the webinar, we've included contact information in case you may have questions on the 2020 Decennial.

Next the American Community Survey is a program that collects demographic data annually. In a moment, Amanda will dive into more details about this program. For business statistics, the Economic Census is our most comprehensive program. Taking place every five years in the years ending in two and seven.

We also have the Census of Governments which is the public counterpart of the Economic Census. A pyramid is a good illustration of the relationship between the time and details from our business or economic programs. We primarily conduct Monthly, Quarterly and Annual Surveys. Now in looking at this pyramid, it's important to know that the more current data, the less amount of details, with more details available from programs categorized in the middle and bottom of the pyramid.

With that be said, the Economic Census is a periodic survey that takes place every five years. It is illustrated at the bottom of the pyramid because it is the most comprehensive program when you're looking for business data.

And as you move up the pyramid to our annual programs, you will find that you can use these statistics for analyzing trends. And finally, at the very top of the pyramid from Monthly and Quarterly programs is where you can obtain timely data. And before I turn the presentation over to our presenters, here are some key terms and items that are helpful to know when you use our data. First is the North American Industry Classification System. Also commonly referred to as the NAICS.

The NAICS is a system that we use to classify every business in the United States and is the primary dimension of business employment data that you'll see today. Each physical business location is assigned its own 6-digit NAICS code based on the primary business activities at that location.

Each individual business data are then turned into the summary statistics that we publish by industry and geography. In the reference section we've included slides that illustrate the system, and if you'd like more information beyond the reference materials, please visit our site, [census.gov](https://www.census.gov), where you will be able to access additional material.

Next is the term Establishment as opposed to Company or Firm. Most of our employment data is collected and published on an establishment level. Collecting the data this way allows us to provide the most accurate picture in terms of business activity.

For instance, if a company has both a manufacturing and retail locations in many states, separate data is captured for each location and not the company

as a whole. If we didn't collect the data this way, we would lose the accuracy and geographic and industry detail. Third, we collect data from both employer and nonemployer establishments.

Some programs only cover employer business, while others cover both. Employers are businesses that have at least one paid employee, while nonemployer businesses have no paid employee. Depending on the industry you're looking at, the nonemployer statistics could represent a big portion of the sector. So it's good to be aware of this distinction.

And finally, we are bound by Titles 13 and 26 to uphold and protect privacy. As a result, we are able to provide high quality data because respondents are more likely to provide information knowing that their privacy will be protected.

And now, it's time for me to turn over the webinar to our presenter, Ms. Earlene Dowell.

Earlene Dowell: Thank you, Lynda. As Lynda mentioned, my name is Earlene Dowell, and I'm a program analyst for the U.S. Census Bureau specializing in the Longitudinal Employer Household Dynamics Program. I'm excited to be spending the afternoon with you and sharing information about the Census Bureau and education.

When I hear the word education, I automatically think of teachers and students. In Census data, we can look at teachers in the education workforce or student enrollment. Census has data on educational attainment, educational enrollment, public school system and finances, teaching about statistics in schools, and the educational service NAICS code 61.

Educational attainment covers the highest level of education that an individual has completed. Sources for that data come from the American Community Survey and the decennial. Educational enrollment covers enrollment in elementary, high school, colleges, or professional schools. Public school system and finances includes revenue, expenditures, and debt of elementary and secondary schools. Information on this topic comes from the Annual Survey of School System Finances which is our survey spotlight for this webinar.

Teaching about statistics, using Statistics in Schools, supports the efforts that every child is counted in the 2020 Census and how the count impacts federal funding. My colleague, Adam Grundy, recently wrote an article in the America Counts on Class Activities from the Census Bureau's Statistics in Schools on Pinterest.

I've included the link to the America Counts page for you to check out this article. Finally, Census covers Educational Services which falls under NAICS code 61, included in the 2017 Economic Census. Educational services cover more than elementary and secondary schools. It covers colleges, business schools, computer training, and flight schools, to name a few.

For this webinar, we will highlight educational attainment, educational enrollment, public school systems and finances, and touch a little on NAICS 61 Educational Services. First, I will be covering education and the Longitudinal Employer Household Dynamics, or LEHD program. The LEHD program has many areas that highlight educational attainment in all of their data sets, which we will go over. But there is one data set that strictly covers post-secondary employment outcome.

I'll be going over all of those areas in my presentation. Unlike the American

Community Survey and the Economic Census, the Longitudinal Employer Household Dynamics Program is not dependent on survey responders. LEHD is a unique link between employer and employee data for the U.S. Of course, you cannot talk about LEHD without talking about the local employment dynamics, or LED, which is a voluntary federal state partnership developed in 1990.

Under the partnership, the states send their employment insurance, or UI wage records, and their Quarterly Census of Employment Wage Data, or QCEW, to us, which then is combined with censuses and surveys to create new dynamic information on workers to produce public use data products as well as approximate microdata for research. The UI records gives us jobs data, the QCEW gives us firm data, and our person data comes from censuses and surveys.

Currently, LEHD has five different data sets with seven applications for easy access to these data sets. Each data set along with each data tool is unique in its own way. If you're curious about employment, hires, separation, turn overs, and earnings, you would look at the Quarterly Workforce Indicators, or QWI, utilizing the QWI Explorer, or the LED Extraction Tool.

If you want to look at statistics on job mobility across state boundaries or industries, or earning changes due to job changes, you would use our Job-to-Job, or J2J Flows Data, using the J2J Explorer. If you want to look at employment for details and customized geographic, you would look at the LEHD Original Destination Employee Statistics or LODES data, using the OnTheMap or OnTheMap for Emergency Management data tools.

One of our newer data sets is the Post-Secondary Employment Outcomes, or PSEO. This experimental data set reports earnings by institution, degree field,

degree level, and graduation cohort for one, five, and ten years after graduation, and is accessible through PSEO Explorer.

The current release includes the University the Texas system, public institutions in Colorado, University of Michigan, and University of Wisconsin Madison. Future releases as early as the end summer will include more post-secondary institutions from the states of Ohio and New York CUNY and SUNY.

We are currently in the discussion with states, Counsel for Higher Education for Virginia, Texas Higher Education Coordinating Board, Arizona Board of Regents, Indiana Board of Higher Education, and Utah System of Higher Education. Finally, we just released a new data set, Veteran Employment Outcomes, or VEO.

This new experimental data set reports earnings and employment outcomes for U.S. Army Veterans one, five, and ten years after discharge by military occupation, rank, demographic, industry, and geography of employment. This is also accessible through our VEO Explorer.

Last year, the University of Michigan published an article that highlighted professional services and health care as their leading industries of graduates ten years after receiving a bachelor's degree. The article looked at alumni employment and geographical statistics using the PSEO data from 2001 to 2015. The top industries of their graduates who received bachelor's degrees across all fields for employment after ten years were professional, scientific, and technical services, health care and social assistance, educational services, finance and insurance, and manufacturing.

PSEO is an experimental tabulation that highlights earnings outcomes for

college and University graduates. By matching University transcript data with national database of jobs, PSEO provides earnings of the graduates in the 25th, 50th, and 75th percentile and traces graduate movement from post-secondary institution degree level and degree major to employment by industry and geographic labor markets.

Transcript data is provided to the Census Bureau by higher education systems and individual colleges and Universities through data hiring agreements with the Census Bureau. In the article, an example about English majors from the University of Michigan top industries are educational, professional, scientific, and technical services, information, and health care and social assistance. This example mirrors the article.

The article also mentioned how many graduates stayed in Michigan, and how many others left and where they went. This bipartite chart from the PSEO explorer gives you a data visualization of the article. So let's go live. And I'll show you how easy this is. So if I just go to lehd.ces.census.gov it'll take us to the LEHD home page.

And then I can just click on PSEO Explorer on the left-hand side, and it automatically takes me to the PSEO Explorer. So here, what I need to do is go ahead and change the Data Type to Flow. I'm going to change the State to Michigan. We're going to keep it at Baccalaureate, and All Cohorts, and then I'm going to change the Destination Flows and hit this earth or globe, and then change it to ten years.

So then I will scroll down to the bottom and continue by putting in percentage, and then I will clear the selection. And click on English Language and Literature. So here, you can see that under the program, we selected English Language and Literature.

We can see under the Industry that Educational Services is 26%, and Professional Scientific and Technical Services is 25%, and Health Care and Social Assistance and Information are both 10%. And then, you can see also, Geography that 29% of those have a bachelor's degree after ten years, stayed in Michigan, about 29%, and then 19% went to the East North Central Region.

17% went to the mid-Atlantic. And then about 13% went to the Pacific region. So one more thing that I want to show you, if I go ahead and click on the bar chart in the left hand corner, now we can see what the outcome, the earnings outcomes are, and you can see under the English Language and Literature that after ten years, their earnings are \$64,969.

And then it also gave us Rhetoric and Composition Writing Studies where after ten years, the earnings were \$65,238. And so that's for a Bachelor's degree. But if we want to go and look at a Doctoral degree, and I also click Professional Practice, you can see that it actually changes the program because most likely, this is the program that they are offering at the University of Michigan.

And so it changed it to Law and Medicine. So now we can see those with the Doctorate degree in Law earns about \$155,929 after ten years. While in medicine, it's about \$250,302. As for the rest of the data sets, educational attainment can be crossed with race, earnings, age, industry, geography, and sex, to name a few. Educational attainment can be broken down into five groups. We have no high school diploma or GED, high school diploma with no college, some college or two year degree, bachelor's degree or advanced, and other.

Which includes workers 24 or younger who are still going through college, or

those who have put college on hold, or those who are undecided. Here is an example of our Job-to-Job Flows piggybacking on the University of Michigan article. That is a chart of those who left Michigan and what states they went to and what industries they went into. So here, we can see that 24.5% went into Florida. 28.4% went into Illinois. 19.8% went to Indiana, and 27.5% went to Ohio.

The industries they went into were information, finance and insurance, professional, scientific, and technical services, educational services and health care and social assistance. Still looking at hires from Michigan, here's an example of Educational Attainment and top Industry.

You can see those with bachelor's degree are predominantly in professional, scientific, and technical services, health care and educational services. Finally, for J2J, we can see job flow from Michigan to the top four states and their educational level.

We can see that majority of those who left Michigan had some college or a bachelor's degree or higher. Another one of our data tools is the OnTheMap. Here is a snapshot of where people with bachelor's degrees or advanced OnTheMap actually where they work. So here's a snapshot of where people with bachelor's degree and above work in DC.

When I click on the blue underlying text, a bachelor's degree or advanced, the map updates to only those workers that work in DC with a bachelor's degree and above. The total workers equals 139,448. This final LEHD example using the QWI Explorer and one that I can relate to, since that's my home state, the in the state of Hawaii. Accommodation and food services is the highest industry in Hawaii.

Those with some college or associate's degree make only \$153 less a month than someone with bachelor's degree or advanced. Those with some college or associate's degrees earning \$3,395 a month while those with bachelor's degree and above earn \$3,548 a month.

So that was a quick over view of the LEHD data tools highlighting educational attainment. Please visit the LEHD home page at lehd.ces.census.gov to check out some of these data tools. Okay. So changing gears.

As Lynda mentioned earlier, the Economic Census is conducted every five years on every employer businesses in the U.S. There are about eight million employer businesses and data first started to be released back in September of 2019.

The Economic Census is the most details and comprehensive economic program. It covers almost every two to six-digit NAICS code covered by the Census Bureau. A link of a full list of exclusions is provided. One exclusion is that we do not publish data for agriculture which is published by the department of agriculture since 1997.

The Economic Census also provides detailed geographic information at the national, state, metropolitan area, and even county levels. We are publishing place levels for some sectors but there have been some adjustments to publishing place level for manufacturing.

The Economic Census also publishes other dimensions of data broken out by business size. There are four different dimensions that are available. Employment size, revenue size, total a number of establishments, and by company size. We also publish data by franchise or non-franchise

owners.

What makes the Economic Census so detailed is that it includes over 200 data variables such as a number of establishments, employment total, or payroll. Also, one unique aspect of data published by the Economic Censuses is revenue broken down below the National level. Here's a sample of the 2017 economic geography released for educational services NAICS 61 at six-digit code of all establishments for the state of Colorado. We can see number of firms in establishments, sales in revenues, and number of employees for both the professional and marketing training and fine arts school sectors.

Just a reminder, these are only two of many educational services covered. Census developed this great infographic as a resource that shows you the states that have been released. Each state is represented by a hexagon and when that data is released, the inside of the hexagon is shaded peach.

Go to the link below to check out this graphic. Census has many new things going on for the 2017 Economic Census, starting with the geographic areas. Every other Tuesday, Census conducts a GAS released webinar on geographical area statistics.

Be sure to tune in on June 9th at 2PM Eastern Standard Time when we present geographical area releases for Iowa, Nebraska, and South Dakota. In those webinars, we also go over some of the NAICS changes, which include mining, manufacturing, retail trade, information, real estate, and rental and leasing, and professional, scientific, and technical services.

As part of 2017 Economic Census, the new North American Product Classification System, or NAPS, will take the place of the product line. Under this new classic system, products are now going to be published consistently

across their different sector.

This will allow user to easily combine product data across industries. Other changes include new disclosure rules, and of course the new data.census.gov dissemination platform. With the 2010 Economic Census, we are also releasing some fun facts on social media and other platforms. Each state is represented by the state's quarter and gives information about a sector for that state, like the example we have here for Virginia. Reported revenue of 2.4 billion for educational establishments.

Data first started to be released back in September of 2019 with the first look estimates that provided National level estimates at the two through six-digit NAICS code. And we will release the last data project as you can see on the screen around September 2021. Now I'd like to take this time to highlight one of our many economic surveys.

The Annual Survey of School System Finances. This annually survey of elementary and secondary public-school systems finances begins six months after the fiscal year begins and continues for the next nine months. Data include revenue, expenditures, debt, assets, and characteristics. Statistics from FY 2017 revealed the amount spent per pupil in all 50 states and DC increased by 3.7% to \$12,201 per pupil during the 2017 fiscal year compared to \$11,763 per pupil in 2016. Go to the link listed here for more information.

Just a little more background on the Annual Survey of School System Finances. Before 1977, expenditure data for school systems were included in the Annual Government Finance Survey. And though is it released every year, it is still included in the Annual Government Finance Survey every year ending with two or seven. Unlike other data, this data is public and not subject to confidentiality.

Some major uses include allocation of federal funds, legislation of research, wage and salary negotiation, and comparative studies of schools' finances across the country. With that, I'll hand it over to my colleague, Amanda Klimek.

Amanda Klimek: Thank you, Earlene and good afternoon. My name is Amanda Klimek and I work with the American Community Survey Office's Outreach and Education Branch. And I'm here to talk about how we can use the American Community Survey, or ACS, to view education data.

The American Community Survey, or ACS, is the nation's most current, reliable, and accessible data source for local statistics on critical planning topics such as age, children, veterans, commuting, education, income, and employment.

The survey samples approximately three and half million addresses every year. And these data are collected continuously throughout the year to produce annual, social, economic, housing, and demographic estimates. The ACS is also used to distribute more than \$675 billion dollars of federal government spending each year.

These estimates cover more than 40 topics and support more than 300 known federal uses and countless nonfederal uses. Businesses and communities use these estimates to make vital decisions including where to locate hospitals and schools, what transportation exists, and what goods and services businesses should provide to the customers.

We released three different sets of estimates each year which are listed on this slide. We have the 1-year estimate, which are collected over one calendar

year. And include geography with populations above 65,000. We have the 1-year supplemental estimates, which are supplemental estimates to the one year based on the most popular tables. And these are included for geographies with populations above 20,000.

And then there's the 5-year estimates, which are collected over a period of 60 months or five years, and include more granular levels of geography such as census tract and block groups. The ACS is such a great resource for education since we provide so many topics at so many geographic levels including counties and school districts.

If you look at the blue bar on the right, I've included some real estimates from our 2014 to 2018 5-year data. And this is just a sample of is some of the popular estimates that you can get from a selection of the education topics on the ACS.

The content collected by the ACS can be grouped into these four main types of characteristics that you see on the screen. Social, economic, housing, and demographic. And you can see some of the social characteristics listed on the left including popular topics such as accessibility and educational attainment.

And the ACS also collects basic demographic characteristics such as age, Hispanic origin, race, relationship, and sex. And you might recognize that this is the same information collected on the Decennial Census that happens every ten years.

And if you go right under that, you will go to economic characteristics which shows income, employment stats, and some of the others you see here. And housing characteristics listed on the right includes both the physical and financial characteristics of housing such as the year built and home

value. Each question on the ACS is required for federal and state government programs.

We provide a resource on the ACS website called the “Why we ask page” which gives the public information on the required use cases for these questions as well as how they appear on the questionnaire. And sometimes, this information is useful in determining the type of data that you can find. And we'll actually explore this page briefly when we go over a demonstration of how to find this data.

So out of all these topics, I've highlighted just a few that would be relevant for education right off the bat such as educational attainment, school enrollment, and industry and occupation. But this is by no means an exhaustive list of the types of data that you can get that's relevant to education.

And also, the data can be much more useful when you mix these topics with other topics in the ACS such as educational attainment, and age, or industry and occupation, and race. And I'll show you some of the various ways we have of creating all different layers of data. Here you can see the different levels of geography that we offer.

The ACS provides data from more geographies on an annual basis than any other household survey. And the great thing about this slide is that we can see how the different levels of geography is interact with one another. This is helpful if you'd like to combine these geographies to approximate some sort of area in your community that you're interested in such as a neighborhood or some sort of other meaningful district or region. Lower geographic areas fit neatly within the larger areas connected with lines.

For example, congressional districts, school districts, and places which you

will know as cities, towns, and other municipalities, sit neatly within the states and don't cross state boundaries. But these may cross boundaries of other counties or metropolitan areas since they're not directly connected to counties.

And I'll give you a quick little primer on as he knows track and blocker. So some of you may be familiar with some of these, some of you may be new to the concept. So census track are small statistical subdivisions within a county with populations of 1,200 to 8,000 people.

Think small towns, rural areas, and neighborhoods. And block groups are groups of blocks within a census track around 600 to 3,000 people as you see, we're not in the right corner of the screen. And we really like to encourage people to use these types of charts as being blocks for any customizing people might need.

So here we have an example of one of our data profiles which gives us a demographic break down of the population within Ann Arbor public schools in keeping with the Michigan theme today. This table is one of our published products and can be found on data.census.gov.

And I will give an example of how to find this in just a moment. We cater to a variety of data users with unique needs. So we have a right here of data access tools. This is a list of just a few these tools. And a couple of these such as OnTheMap, Earlene mentioned earlier. These can all be found by navigating to census.gov and then going to Explore Data, and then Data Tools and Apps. The Census Bureau's primary dissemination platform is data.census.gov.

So we're going to briefly go through a demo of this platform right now. To find some of the data that I've mentioned to you today. So here we see the front page of data.census.gov. And this is where we can start to explore our data. So we're going to start with the Advanced Search. This is one of my preferred ways of looking at data.

So we're going to start here because you can search the different topics, geographies, years, surveys, and if you're familiar with different types of codes, such as industry codes, you can search by that. But right now, we're going to focus on topics. Assuming, we're going into this tool with fresh eyes.

And we just want to see what they have on education. So if we go into education, we can see various educational related topics. We can see educational attainment, we can click on school enrollment, you'll see a couple things related to that. But if I just click on the broad category of education, it will bring up all these options.

And so, I will go ahead and click on education and see what that brings up. And this brings up a couple of interesting tables right off of the bat here. So we have a couple of subject tables here.

Which are tables that provide counts and percentages for estimates for some of the most popular topics and provide a cross section, a cross tabulation of several really useful topics. So let's start with this educational attainment table. And this is where I actually got the educational attainment estimate that I listed on the (unintelligible) customize table on different geographies. I'll show you how to do that here in a moment (unintelligible) data profiles.

(Unintelligible) show you how to find the data profile that I showed in (unintelligible) socio-economic breakdown of geography and (unintelligible) school district. So (unintelligible) and we're going to (unintelligible) one-year estimate data profile. And actually we're going to find the data profiles here. And we can add in a geography (unintelligible) before we go to the customize table filter. It's really asking whether you want to do it now or once you get to the table.

And you go in and we're going to go into unified school district. We're going to stick with Michigan. That's been working for us so far. And just select (unintelligible) And here we have some really neat data profiles for (unintelligible) This is how you can get some interesting demographic of economic (unintelligible) district. (Unintelligible) our first table here.

And this is just basically - yes, the basic graph breaks down age, race, citizen voting age. We have a table here (unintelligible) which will give you that educational attainment, relationship marital status (unintelligible) And we have housing characteristics which I mentioned earlier describes both the physical condition of the housing stock, the number of units in the structure, the year the structure was built.

And there's also some financial characteristics of the housing stock, the number of units in structure, the year the structure was built, and there's also some financial logistics of the housing in the area such as the home values and gross rent and information like that. And there is just one more area I want to show you.

And this is where I got that quick little estimate of preschool and kindergarten teachers. And I got that here. I just - we have so many occupation tables. You

can go into the advanced search and, you know, do topics in industry and occupation like I did earlier. But you can also just search on the front page.

I'm going to type in – I like this detailed occupation table A24114 and this is a nation-level table, but it gives you such a great breakdown of all of these different occupations. And this is where I can find the breakdown of different education.

Here, see I got this preschool and kindergarten teachers here, post-secondary teachers, elementary and middle school teachers and again you can get occupation information below the nation level. This particular table is at the nation level but if you go into that industry and occupation filter that will give you tables that you can find at other levels of geography that I mentioned.

And I want to go quickly to the Why we Ask page. So, as I said earlier this page mentions – gives information on, you know, what statutory or otherwise uses these topics have for the questions that we ask on the ACS and the data that's presented using these topics. And I want to go back down to the – let's see – industry occupation class of worker. Something that makes us different from the household survey is different from the economic survey.

Kind of like Earlene mentioned earlier, she was showing a graphic on where people with bachelor's degrees work in D.C. These household surveys such as the ACS are based on where people live. So, you're going to get this information, like, occupation and, you know, educational attainment everything based upon where people live.

And something interesting that happens in the education field is the way this question is asked on the ACS is if this person had more than one job describe the one at which the most hours were worked. So, we will only show, you

know, the primary jobs that one had which is based on the number of hours. So that is also an interesting consideration when you consider, you know, the education factor.

We're going to go back to our PowerPoint here and I showed you some of the, you know, some of the really useful pre-tabulated data that we have. And we have quite a lot. And we have, you know, quite a few different variations of how the data's presented. You know, we have cross-tabulations of income and race and educational attainment. A lot of these categories are already, you know, pre-tabulated for you in various combinations.

But it's possible that there's something that you're looking for that you can't find in our pre-tabulated data. And we also produce a product called the "Public Use Microdata Sample" or PUMS which is a powerful microdata set that allows you to create your own custom tabulations in case you can't find what you need in those pre-published tables that I presented a moment ago. And this is a brief example of what makes it different from the summary data that you might see in data.census.gov or other sources.

In the summary tables such as this one (unintelligible) .gov individual records are arranged and weighted the larger population. For this (unintelligible) has taken individuals living in Michigan who indicated that they were a male between the ages of 25 to 34 who had graduated high school or beyond and they grouped them together and weighted them to create an estimate of all the males in Michigan who fit this education attainment category. And the statisticians has also calculated and provided the margin of error for this estimate which you can see on the right.

By contrast Microdata, shown below, provides a sample of those records that the statisticians used. And here you can see that one person who responded to

the ACS in Michigan is a 34-year old male who is a high school graduate. In order to create and estimate the data user must take this raw data and follow the same steps that the statisticians did in the example above.

However, we have some tools that do make it quite a bit easier than, you know, being a – trying to create, you know, a professional table. We have some tools that will create this table for you.

If you're interested in an example of how PUMS can be used in action you can visit an interactive data visualization that we released last year on young adults in higher education. And I'm going to actually navigate over to this right now.

So, we used the PUMS rather than our internal microdata to showcase this sophistication of what can be done using the PUMS. And we created a really interesting story on what degrees young adults are getting and what those degrees are doing for them in terms of occupations and earnings.

And this is not an analysis that could've been conducted using only are existing tables. And so, you know, we have, you know, "How many young adults have a bachelor's degree?" "What are the most common degrees for men and women?"

And hover over it, "Learn a little more" and "What occupations do young adults with their degrees" – just to remind you again this is based on where people live. And "Do young adults get what they paid for?" So, it's a, you know, it's a breakdown of median earnings and, you know, bachelor's versus high school and graduate versus bachelor's degree.

And so, I just really wanted to emphasize this is publicly available data that we use. This is not our, you know, internal microdata that we used ourselves. So, this is something, you know, a data user as external as the Census Bureau could produce. So that's what we really wanted to emphasize what's available and not necessarily what a, you know, Census Bureau with high-level access to our internal data can do on their own.

If you're interested in this microdata and would like to learn more, we just had an informative webinar on PUMS data a couple months ago on March 11th. And this also included a demonstration of the new microdata access tool I was referring to that allows you to create these custom tables.

So, you can find the recorded webinar and the associated transcript on Census Academy's recorded webinar's page which is linked on this slide. And it was pretty recent so you can go to Census Academy and just look at the recent recorded webinars and it should be on there, pretty recently.

So, then a couple considerations on working with ACS data as opposed to economic data used throughout the rest of this webinar. And the first which I've emphasized a couple times which is that this is a household survey based on demographics and not one provided by businesses.

So, as far as employment records go this allow this allows us to capture all types of workers included under employer business including, you know, self-employed, government, employer businesses. You know, it's different than payroll records and government records in that it's all-encompassing and, you know, it allows people to identify themselves, not businesses to identify their employees.

So, you know, the data sources can be used, you know, in conjunction with one another to get really a complete picture. Most tables are based on where someone lives, not necessarily where they work or go to school. And you have the choice between 1 or 5-year estimates can yield different types of estimates depending on your data needs.⁶

Finally, we use occupation codes specific to the Census Bureau and not NAICS codes. So, if you want to look more into these codes that we use you can take a look at our website census.gov/acs for more information.

And finally, you can sign up for and manage alerts on ACS news and events such as conferences and webinars by a GovDelivery, visit our website or connect on social media using the #ACS data. For support you can reach out to us at acso.users.support@census.gov.

And if you end up using ACS data for any cool education uses or otherwise, please make sure to source us. It helps people figure out where they can get the detailed information that we're giving you today. You can also go on our website census.gov/acs and you can, you know, if you do end up doing something cool with our data you can share your story with us and we can help share your story with others and, you know, share how you used our data.

With that in mind, I am going to give the presentation back to Earlene. I'm sorry, back to Lynda.

(Lynda): Thank you, Earlene and Amanda, for presenting our audience with information on education statistics available from the Census Bureau and how to access the data. Thank you everyone for your interest in our data and for attending today's webinar.

Before we begin our Q&A if you have questions regarding the 2020 Decennial Census please use the contact information provided here. We also listed information on our data dissemination specialist. This is for any who may be interested in a hands-on, in-person training. We have specialists assigned by geography that will be able to provide you with this service.

And as a reminder we're focusing our Q&A on today's topic and we will be accepting questions regarding education data. If you have questions on other topics please feel free to send an email to us at census.askdata@census.gov. And now we'd like to open the lines up for the Q&A portions of this session. Operator, at this time do we have questions in the queue?

(Amanda): Not at this time.

Coordinator: As a reminder to ask a question, please press *1 and record your name.

(Lynda): And while we're waiting for questions to come in, Amanda, I wanted to let you know thank you for including the PUMS in your presentation. We did receive a question regarding how to access raw data so that was very helpful. We did have another question regarding that, and it was related. It says, "Does the API support a variety of programming languages for accessing the data?" Would you be able to assist with that?

(Amanda): Sure. So, I'm still sharing my screen so I can go ahead and if you go to census.gov/acs and you go to data and go to PUMS data we have several ways of disseminating PUMS data. We have the raw records that I showed you in the presentation which are going to be on the left available on the FCC site.

And this is where you select your year and then you select your data set and then you will download that kind of raw data file. It will be either in – you can

choose to download it as a CSV or a Unix file which you can load into it (unintelligible), you know, or something like that. And that will be the raw data file.

If you would prefer to, you know, try your hand at our microdata access tools on data.census.gov, you can click here or you can, you know, go to data.census.gov and scroll down to microdata and that will take you to where you need to go. And again, we did a demo on this tool in the PUMS webinar which was a couple months ago on March 11th. And that is posted on Census Academy if you would like to see that demo.

(Lynda): Thanks, Amanda. Let's check in with our operator. Operator, do we have questions at this time?

Coordinator: Yes, we do. The first question comes from Ben. Your line is open.

(Ben): Hi, thank you for that presentation. I was wondering if there was any overlap or how the data that centers on educational attainment NAICS overlap with data from the National Center for Educational Statistics. And another question was -- this will be in the longitudinal study -- if there's any data that maybe tracks how people that attain associate's degrees whether they NAICS go on to, like, bachelor's degree or other higher education -- if there's any data that would point to that. Thank you.

Earlene Dowell: This is Earlene. That's a great question regarding the tracking of associate's degrees and going on to a bachelor's degree. All of our data usually comes from employment data. So, I'm not sure about that but if you send me an email, I can ask around the researchers to see if they know where that comes from.

(Ben): Okay great.

(Amanda): I'm sorry, this is Amanda. On the household side we do have subject matter experts. We have an entire branch for it's called Education and Social (Unintelligible) branch.

So, you can feel free to reach out to us. This has my email rather than our support email on it but if you want to reach out to our support email it's also – for ACS, American (Unintelligible) – so [acso.users -with an S at the end - .support@census.gov](mailto:acso.users-support@census.gov). And we can put you in touch with subject matter experts because it's possible somebody did, like, a report on that or something.

(Ben): Okay great. Thank you, guys, so much. And I guess if you have any idea on the general question that I asked about the National Center for Education's statistics and if there's, like, if they use you guys as an input (unintelligible) viewer or whether that's just separate data that maybe has some overlap in terms of what it shows.

(Amanda): That would be a question we could put you in touch with the subject matter experts on as well.

(Ben): Great.

(Amanda): I know that our subject matter experts work with other agencies either for, you know, we do reimbursable survey work for them or, you know, we work with them to get our coding lists. But we can look into that for you.

(Ben): Awesome. Thank you, guys, so much. Great presentation.

Coordinator: The next question we have is from (Todd). Your line is open.

Todd? Okay we'll go to the next question. The next question comes from Tom. Your line is open.

(Tom): I think that must've been me. My question is to what extent the particular employment data overlaps or compliments the Labor Department statistics that they compile? Is that something you work with in (unintelligible) or something you do independently just out of curiosity? Thank you.

(Amanda): So, Tom, we do work with the labor market statistics, but I feel that they get the majority of their data from us instead because we partner with them. So, the data comes from the states and then we create this data product and then we share it with other areas.

(Tom): Okay excellent. Thank you.

So Tom, this is Andy Hait. On the (comment on) the Census Bureau just to add one small thing to what Earlene just said.

One major difference between the business employment that we have at the Census Bureau and the business employment data that the Bureau of Labor Statistics produces is that we have a special program that (Lynda) mentioned earlier at the beginning of the webinar called "Non-Employer Statistics" that covers self-employed people. And the Bureau of Labor Statistics with very few exceptions does not cover self-employed people.

There are over 24 million non-employer businesses in the United States as opposed to about 8 million employer business. BLS covers the 8 million or so employer businesses. Census covers both. So, that's one difference that I

usually refer people to when they're trying to understand you know, which data set should they use.

If they want to make sure they're counting folks who are in their communities that are self-employed truck drivers or a wide variety of other professions including folks, by the way, the work in the educational services sector they should use the non-employer data. So that's just one addition I would make.

(Tom): Well thank you. That's a great clarification having been self-employed myself for a couple of decades now. It's interesting to know. I've always wondered if the labor statistics included me or people like me and that helps. Thank you.

Andy Hait: You're welcome.

Coordinator: Okay the next question comes from Roy. Your line is open.

(Roy): Thank you. Quite a good webinar. I had quick question. In the demographic like was mentioned the difference they're going to count where you live. Now, what is the timeframe where you live or where you lived or what does it look like and the cutoff date or something? They're going to create the data on that. Right? So, (mentioned) on that one line (unintelligible) it depends where you lived. Could you elaborate on that?

(Amanda): Right. Yes, so on the – this is (Amanda) with ACS – so on the ACS specifically which is what I presented on it's a household survey. So, like, the educational attainment and occupation data I presented is based on where you live.

Now there are some commuting information in the ACS where, you know, we do ask, you know, how far do you live, like, we ask where, you know, you

work so we can calculate commuting data. But again, the ACS data is based on where people live whereas some of the data that Earlene was presenting earlier, like, program -- the PSEO data and stuff like that -- that's based on where people works. So, it really just, you know, depends on what you're looking for. Does that answer your question?

(Roy): Yes, it was partly but my question is that you said that the difference in where you live. As of what? As of a particular date or particular month or particular (several) date? Like, what would depend. That's my question. What would depend...

(Amanda): Well, I guess, the data represents people where they live, you know, so I showed you the data for Ann Arbor Public School District. The data that I showed you -- the demographic data -- will represent people that live in the Ann Arbor Public School District, not necessarily people who work in the Ann Arbor Public School District but, you know, live in another school district. So, basically that's just saying the data represents people who live in that geographic area, not necessarily people who work there but live elsewhere.

(Roy): Oh okay. Okay now I got it. Thank you very much. I appreciate your help, Amanda.

Coordinator: Thank you. The next question is from Rosie. Your line is open.

(Rosie): Hi, thank you again for the presentation. I have two questions. One may have already been sort of answered. But I was wondering if there was any connection to the post-secondary -- to the PSEO study -- and the College Score Card data that's published by the Department of Education?

Earlene Dowell: So, yes there is. That's all wrapped up into the PSEO. There is a webinar that we gave on March 18th and let me give you the title of that. It's called "Using National Jobs Data to Measure Graduate Impact." It's on our Census Academy website and it's under webinars. So, our researcher, Andrew Foote, gave a very explicit or a very detailed webinar regarding the PSEO and he does talk about the scorecard.

(Rosie): Okay thank you so much. And then just one other question about the PSEO specifically. What years is the data pulled from? Is it, like, one specific year? Is it an accumulation of 10 – 15 years? I've used the visual (unintelligible) but haven't really been able to figure that out.

Earlene Dowell: So, the data comes from 2001 to 2015.

(Rosie): Okay.

Earlene Dowell: So, if you want to send me an email of all your questions feel free to send me, you know, your questions. But it's from 2001 to 2015.

(Rosie): Okay thank you very much.

Earlene Dowell: Sure.

Coordinator: And again, if you would like to ask a question please press *1.

Earlene Dowell: So, there was a few questions that came in on the chat regarding PSEO and also private sectors. So, I wanted to just let people know that currently we do not have any private institutions in the data mostly because we are trying to get more – or trying to expand by working with other states with higher education authorities. So, that generally has – they don't usually have private

data so it's costly for us to negotiate with private sectors because of the MOUs or, you know, the Memorandums of Understanding. So, that's the reason we don't have private institutions.

And then there was also a question regarding citations. We have certificates and it just depends on what the universities send to us whether they have citations or not. So, to just answer that question that came in on the chat.

Coordinator: Thank you. The next question comes from Ted. Your line is open.

(Ted): I wonder if this is me. Maybe not.

Coordinator: It is, sir. Go ahead.

(Ted): Okay, I was confused a tad but okay so a couple three things. On Roy's let me help you guys out or help him out. I was part of the Census Bureau survey and they ask you – one of the first questions are, "Do you still live at the house" and they give you the house number. That's how they figure out your date of residence. So, if you live at the house you can continue in the survey. If you don't, if you've moved, if you no longer live in the house that the selected then you are done with participation in that survey. So, that's how that works.

So, two questions. I was actually looking for this article. It was my question on the citation. You keep talking about the University of Michigan study or article or something. What I was trying to get is there a link to that thing or if you could provide information on their study that you guys keep quoting?

Earlene Dowell: Sure.

(Ted): The other thing is I work for a higher education department – a state higher education department – so I'd be interested in finding out how we can be involved in the Post-secondary Employment Outcomes project. Who do I talk to?

Earlene Dowell: Absolutely. Okay so, Ted, send me an email and then I will refer you to Andrew Foote. He's the lead researcher for the PSEO but the other question, the article is on our LEHD (quan) page under LED in Action." And so, Amanda, do you want to pass me the ball?

(Amanda): Yes sure. Let me – or Lisa...

(Ted): And who was that just speaking so I can send the email to the right person?

Earlene Dowell: It's Earlene. So, my email is earlene.kp.dowell@census.gov.

(Ted): Okay.

Earlene Dowell: All right. And so, here is the home page. So, it's lehd.ces.census.gov and, Ted, can you see my screen?

(Ted): Yes.

Earlene Dowell: Okay. Then the last tab where it says, "LED in Action" if you click on that and then there's PSEO and then there's articles about PSEO and then the one about Michigan is at the top. So, Professional Services Health Care to Top Industries.

(Ted): Okay.

Earlene Dowell: Also, if you're on the PSEO if you send any questions to the feedback where it says, "Email us" about wanting to be a part of or, you know, one of our partners, you can just click on that and send an email and it goes straight to them.

(Ted): Okay. Okay.

Earlene Dowell: Okay?

(Ted): Great. I'll send you and email...

Earlene Dowell: Thanks for your question.

(Ted): ...and if you can find me some information that'd be great. I'll talk to the powers that be and see if we can get involved with this.

Earlene Dowell: Yes, sir. That sounds great.

(Ted): Thanks

Coordinator: Thank you. The next question is from Jerri. Your line is open.

(Jerri): Hello. I was just wondering the power point that you guys have been showing the presentation, can we have that sent to us or how can we access that because it has so many links and everything in it that I think would be helpful, you know, when I'm trying to explore all this?

(Earlene): Yes, that's going to be available on our Census Academy website.

(Jerri): And is that the www.census.gov/acs?

(Earlene): Wait no.

Lisa Glover-West: No, it's www.census.gov/data/academy...

(Jerri): Okay.

Lisa Glover-West: .../webinars.

(Jerri): Okay.

Lisa Glover-West: It's actually in the chat box.

(Jerri): Is it? Okay. All right. And one question. I am from a private college in Indiana and you were saying generally speaking the data that you have is state or public school, is that correct?

(Earlene): Yes, ma'am.

(Jerri): Okay but it is still very informational. Thank you.

(Earlene): That's great and Indiana is coming out. We are making some arrangements with them, so parts of Indiana are coming out.

(Jerri): Good. Good.

Coordinator: Thank you. The next question is from either Lynn or Len. Your line is open, sir.

(Len): Thank you. My question has to do with the QCEWBOS data and how it correlates with the census data. So, in the QCEW particular on the county level data but also national and state, they have the super sectors. And the super sector combines education and healthcare. It also has ownership breakdown but it also has the NAICS categories 61, etc.

So, when I'm looking at super sector data on QCEW do I need to include the ownership characteristics in order to map that into the census data, if that's a clear question. It's a little bit obscure but...

(Earlene): Andy, can you answer that question?

Andy Hait: Sure. So, this is Andy Hait. As you mentioned the Bureau of Economic Analysis publishes data through the (Unintelligible) Centers of Employment and Wages publishes data by industry and by ownership characteristics. So, whether that business is a corporation, a partnership, a proprietorship, etc.

Census similarly does publish data by industry and by what we call Legal Form of Organization (LFO) so there is a mapping between those two. Most of the time when I talk to users about the comparisons between the BLS data and the Census Bureau's Business Employment data and for that matter our other data -- number of establishments, payrolls, etc. -- the other data that are similar to what is published by BLS -- the two points of comparison that I typically bring up are number one, the comparison that I already mentioned earlier which is that BLS does not count non-employers, self-employed people, where we do. Non-employers are not counted in the economic census. The economic census is an employer business program. But we do have data on them too.

The second difference in the differentiation between BLSQCW and census has to do with how the NAICS code is assigned at BLS versus how it's assigned at Census Bureau. Because we collect data not only on number of employees and payroll but also on revenue and expenditures and inventories and assets and a variety of other statistics we are able to classify a business into a NAICS code based upon what they report to us rather than having the business choose their own NAICS code for themselves.

And in some sectors of the US economy that difference between self-classification and the Census Bureau doing the classification, in some sectors that difference is insignificant. It almost makes no difference. If you are a grocery store you pretty much know what you are. Businesses don't think that all of a sudden, I'm a gas station when they really are a grocery store.

But in other very diversified industries and diversified businesses where at a single physical location a business could be doing multiple things, how that business has been classified then sometimes does vary. So, for example, if you're looking at data for restaurants and data for bars in the BLS data versus the Census Bureau's data you will often find differences between our restaurant and bar data and their restaurant and bar data because often you have restaurants that have a bar in the restaurant.

And if the restaurant normally does the majority of the sale that business gets classified as a restaurant. But if that restaurant happens to have a really good bar year and their food sales are lower than their bar sales, we would actually reclassify that business as a bar where BLS and the business itself probably would still consider themselves a restaurant because they think of themselves as a restaurant. Yes, they had a great bar year, but they still are a restaurant.

((Crosstalk))

(Len): That helps.

((Crosstalk))

Andy Hait: ...the (grill) part. So...

(Len): So, with regard to education then if I want to look at education employment through BLS' view if I look at public education those numbers come under – is education listed separately under government education as far as local and state education? And the numbers we saw today would that have included both private as well as public education employment numbers?

Andy Hait: Right. So, the differentiation between public education employment, teachers that work for county school systems, those workers and the workers that work for private colleges and universities, that differentiation of the first type of employees actually collected as a government – they are a government employee. They are published in NAICS 92 – whereas data for teachers of Syracuse University or any other private university those are counted as NAICS 61. That differentiation is the same between BLS and census.

(Len): Oh okay.

Andy Hait: Bureau does not count those teachers any differently than we do. What they would though count as Earlene mentioned in the economic census, we exclude colleges and universities from the economic census data because the National Center for Education Statistics has data. They do their own survey on college and universities.

BLS does actually include everything. So, when you look at the NAICS 61 data for BLS and you compare that to the NAICS 61 data from the economic census you will notice a pretty substantial difference. And the majority of that difference is because we don't count private colleges and university employees the way that they do because they are one of those industries that are excluded from the economic census.

(Len): Very good. So the data we saw in Michigan today and Ann Arbor that presumably was all the public – that was not private education numbers? Very good. That's very helpful. Thank you.

Andy Hait: You're welcome.

(Lynda): This is Lynda. At this time, we are reaching our allotted time and with respect for your time we are going to accept one more question.

Coordinator: Okay. The next question is from Michael. The line is open.

(Michael): Hi, good afternoon everybody, and thank you. It was a webinar. I just have really one question and that is the veteran employment. I mentioned about it being a new site on your website. I wonder what data it is providing as far as employment for veterans.

Earlene Dowell: This is Earlene. So, the veterans employment outcome gives us data for enlisted Army – military – and it gives us 1 year, 5 years and 10 years after they are discharged and what jobs they have and what earnings they have.

(Michael): And is this for enlisted military, right?

Earlene Dowell: Yes, sir.

(Michael): Okay. Okay. That's all I need. Thank you.

Earlene Dowell: Thank you.

(Lynda): At this moment I'd like to express our thanks to everyone again for attending today's webinar. Please be sure to check out our webinar next month on economic geography. And this concludes today's presentation. Have a great day.

Coordinator: Thank you and this does conclude today's conference call. All parties may disconnect.

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