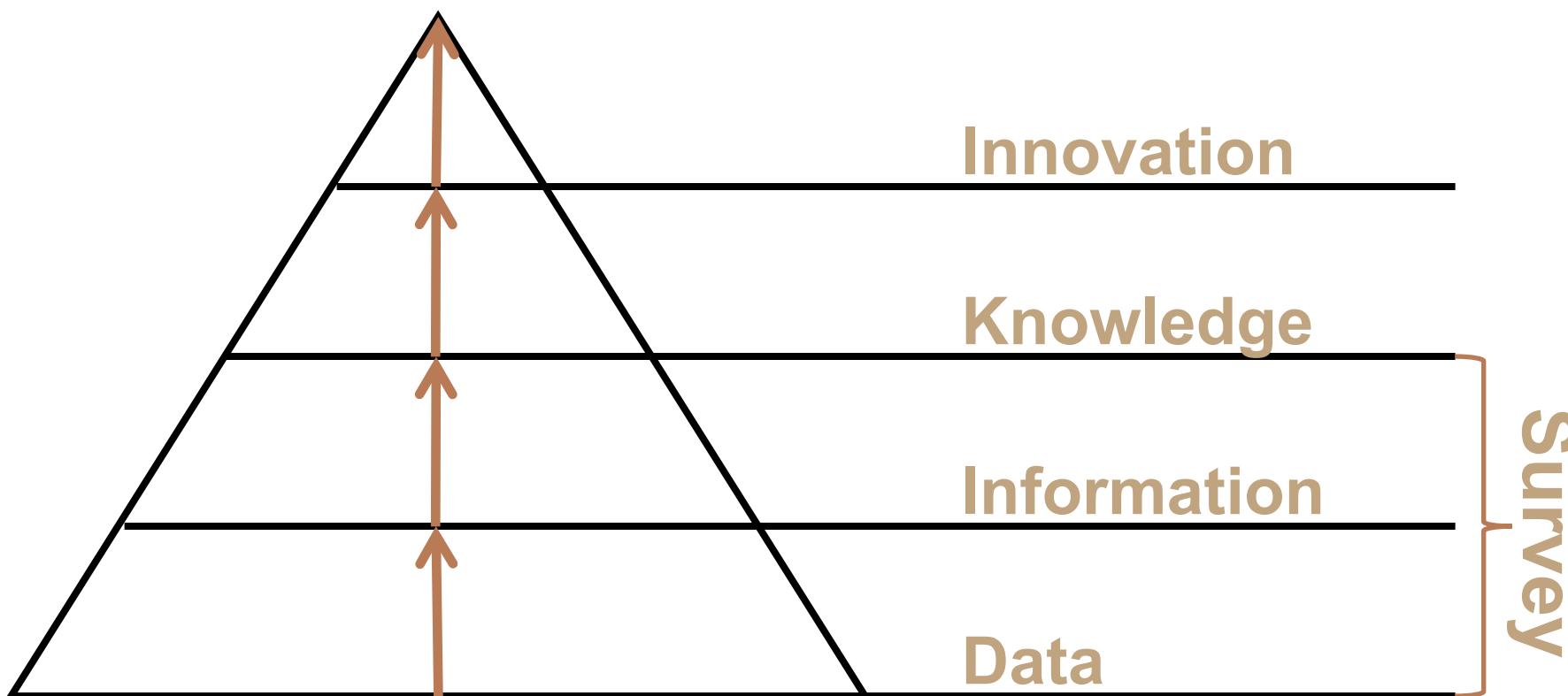


Business Retention & Expansion

Utilizing Secondary Data in a BR&E Program

Why are you here?

This type of activity can move the local development office up the innovation pyramid



Above all

ESCHEW
OBFOSCATION

Objectives

- Develop an understanding of the various types of secondary data that are available
- Understand the limitations and possibilities of various data sources
- Utilize secondary data in understanding the community or region in which you work
- Develop an understanding (primarily through discussion) of presenting *information*, not *data*, to your audience(s)

And by 5:00 this afternoon ...



Definitions

- Primary Data – you collect it yourself (BR&E surveys)
- Secondary Data – someone else collects it for your use
- Federal Data – data reported by the federal govt
- State Data – data reported by state govts
- Local Data – data reported by individual counties/parishes and/or municipalities

Which is the best?

- It depends on your needs!

Why do we need to use data?

- To develop a profile for the community
- To identify niches for new and emerging businesses
- To identify macroeconomic or regional red flags that may impact your community's businesses
- To develop a sense of community, regional and state-level trends
- To have the ability to discuss outside factors with business owners/managers

Why do you want to use secondary data?

Key questions

- Do you want to present data or provide information?
- What is the source of the data?
 - Governmental sources are usually very reliable
 - Anecdotal or locally collected data can be skewed or outright wrong
 - Private data collectors/reporters can provide good estimates
 - KNOW YOUR SOURCE

Key questions

- Geographical Location
 - Many data are only available for large geographic areas – particularly in rural areas
 - Populations (of any type) are seldom homogeneous
- Does it provide info on the relevant audience/issue/topic?
 - Reporting on manufacturing as a whole does little good for a cluster of wood furniture products manufacturers

Key questions

- Is the data current?
 - Many federal data sources are lagged from 2-9 years
 - The economic times are a changin'
- Are the data and their definitions the same across time?
 - SIC vs. NAICS
 - Added racial characteristics of the decennial census

Advantages to secondary data

- They already exist
- Often a less expensive way to gather data
- Quickly provides a handle for current/emerging issues
- Primary data collection is costly
- Large samples provide accuracy
- Can help to fine-tune primary data collection activities and programs

Disadvantages of secondary data

- Inconsistencies in definitions
 - (urban/rural, metro/nonmetro, industry classifications)
- Data may be inaccurate or incomplete; biased
- Potential problems with reliability
 - (sample size, response rate, questionnaire design)
- Usually only an indirect measure of the issue
- Data can be old
- Data interpretation to provide info can be faulty

Federal data sources

U.S. Sources

- Census Bureau – www.census.gov
- Bureau of Labor Statistics – www.bls.gov
- Dept of Commerce – www.doc.gov
- Dept of Agriculture – www.usda.gov
 - Economic Research Service – www.ers.usda.gov

Canadian Sources

- Statistics Canada – <http://www.statcan.gc.ca/start-debut-eng.html>

Census Bureau

- Probably the most often used secondary data site
- Contains a multitude of data sources
- Major drawback is the time frame in which the data is released (the latest availability for many data is 2022)
- Most used sites include population, County Business Patterns, and Nonemployer Statistics

Census Bureau homepage

📍 Geography

- Nation >
- State >
- County >
- County Subdivision >
- Place >
- ZIP Code Tabulation Area >
- Metropolitan/Micropolitan Statistical Area >
- Census Tract >
- Block >
- Block Group >
- All Geographies >

📖 Topics

- Business and Economy >
- Education >
- Employment >
- Families and Living Arrangements >
- Government >
- Health >
- Housing >
- Income and Poverty >
- Populations and People >
- Race and Ethnicity >

📋 Surveys

- American Community Survey >
- Community Resilience Estimates >
- Current Population Survey >
- Decennial Census >
- Decennial Census of Island Areas >
- Economic Census >
- Economic Census of Island Areas >
- Economic Surveys >
- Household Pulse Survey >
- International Database >
- Population Estimates >
- Post-Secondary Employment Outcomes (PSEO) >
- Public Sector >
- Survey of Market Absorption >

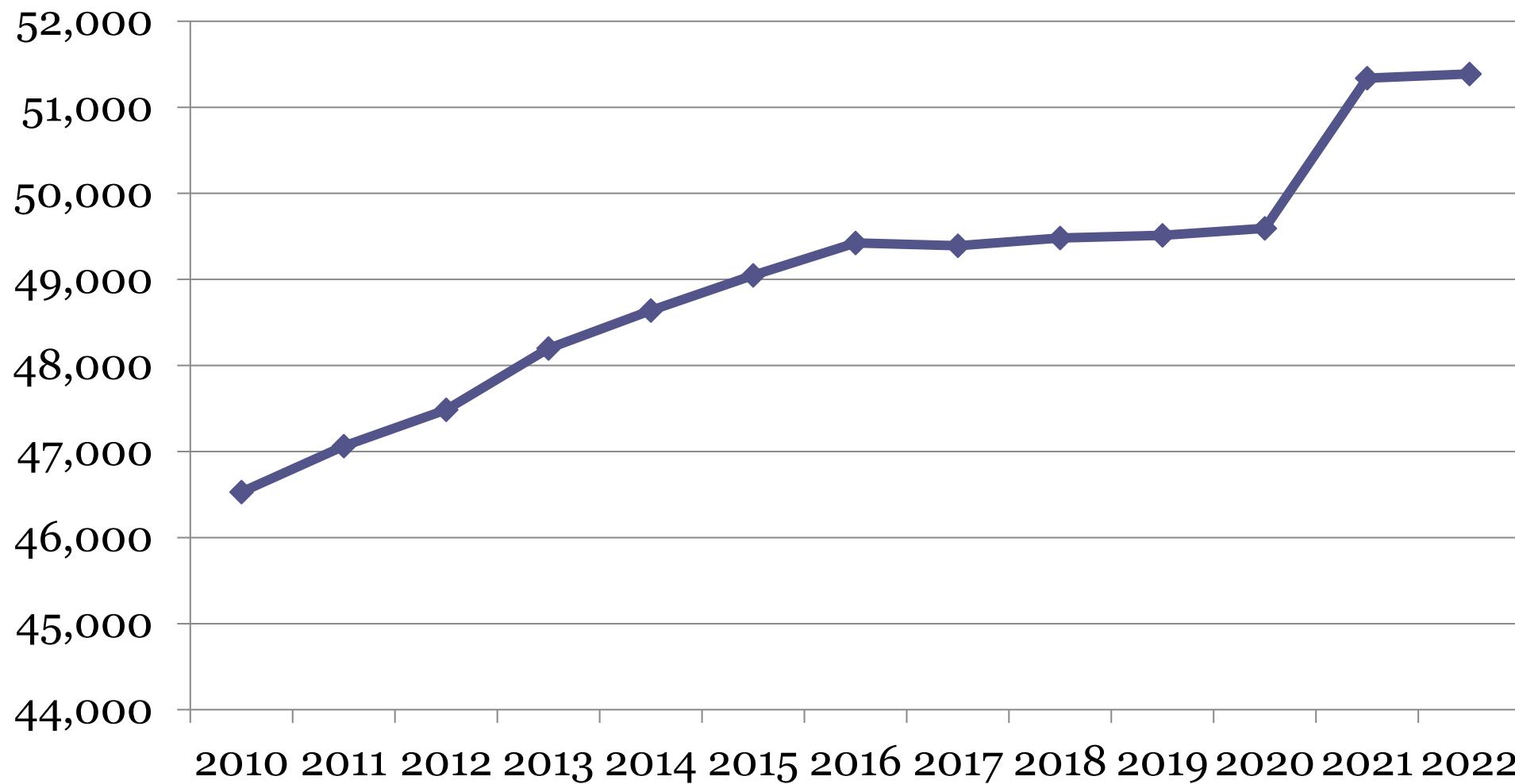
🔢 Codes

- Industry Codes (NAICS) >
- Product and Service Codes >
- Commodity Codes >
- Material/Fuel >
- NAPCS Collection >
- EEO Occupation Codes >
- Harmonized System (HS) Import >
- Harmonized System (HS) Export >
- End-Use Import >
- End-Use Export >
- Advanced Technology Products (ATP) >
- Standard International Trade Classification (SITC) >
- United States Department of Agriculture (USDA) >
- NAICS-Based International Trade Code >

Census populations estimates/projections

- Baseline descriptor of past and future population of the county
- Provides a “market” view of what people think about the county or state as a place to live
- Past populations are “estimates;” future populations are “projections.” Projections are available for states only.
- Not broken down by race and gender
- Are broken down by components of change: Births, Deaths, People Moving In, and People Moving Out

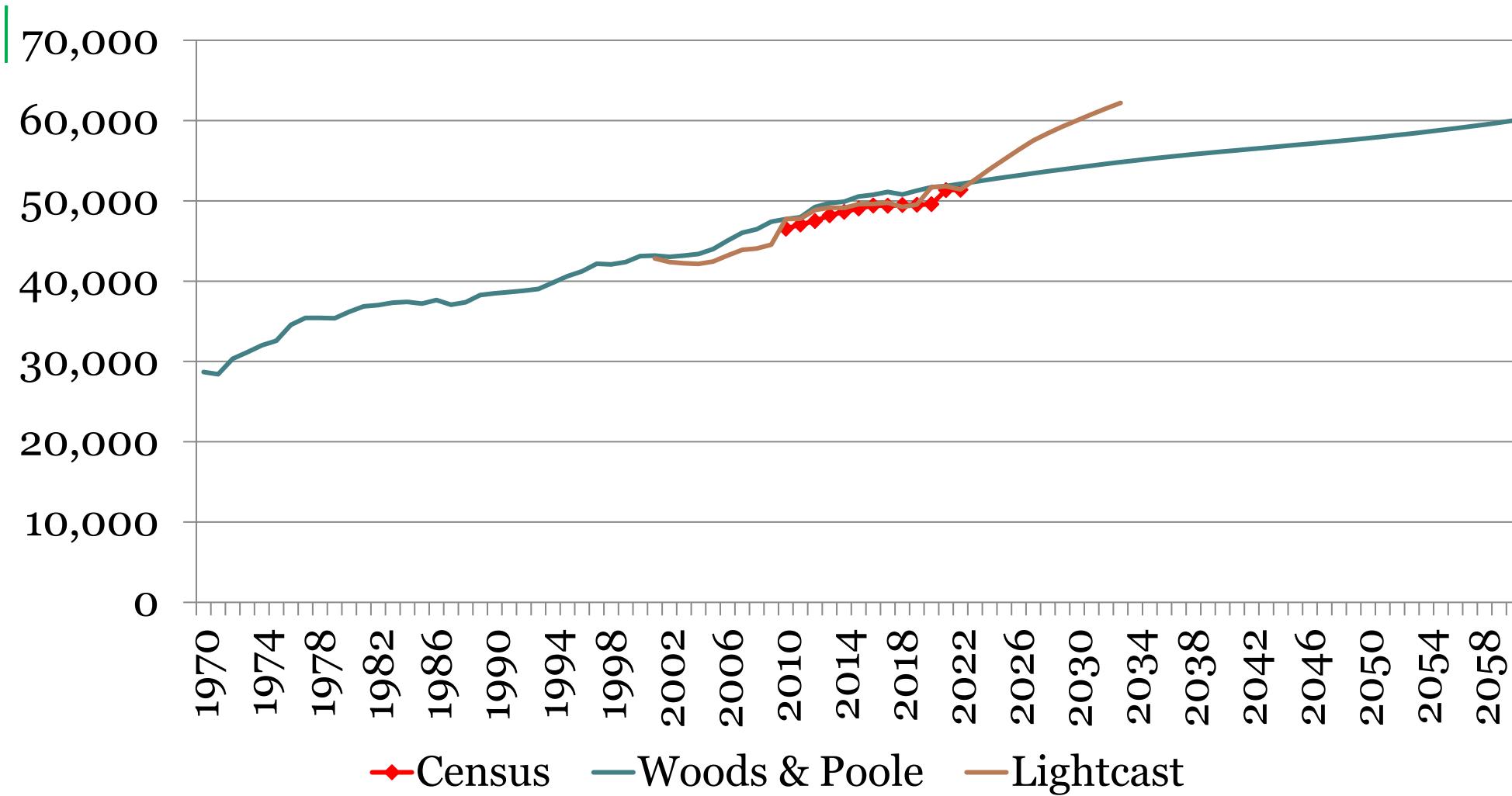
Population estimates (Oktibbeha County, MS)



Private data sources

- There are a number of private vendors that supply data and, in some cases, analyses
- Typically relatively expensive, but can be very useful from a reputable firm
- Firms include: Woods & Poole, Lightcast (formerly Emsi), Esri, IMPLAN, REMI
- These firms gather data from a variety of sources and assemble it to fit their market
- Their estimates may vary from official estimates

Population estimates (Oktibbeha County, MS)

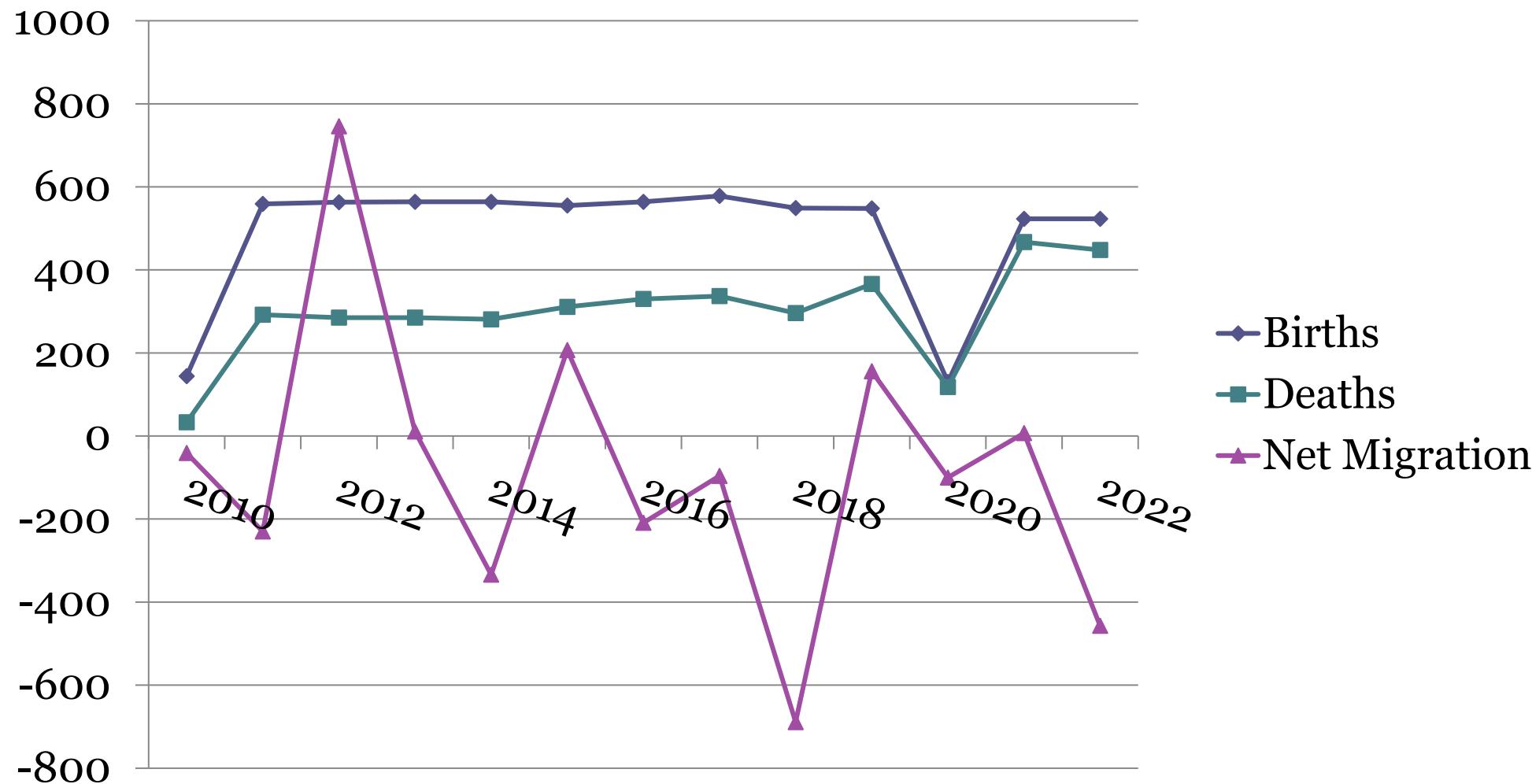


Components of population change

- There are four main components of population change (why the population of a county varies)
 - Births
 - Deaths
 - Immigration
 - Outmigration
- Births and Deaths are natural occurrences
- Immigration and Outmigration are choices “dictated” by the market

Components of Population Change

Oktibbeha County, MS



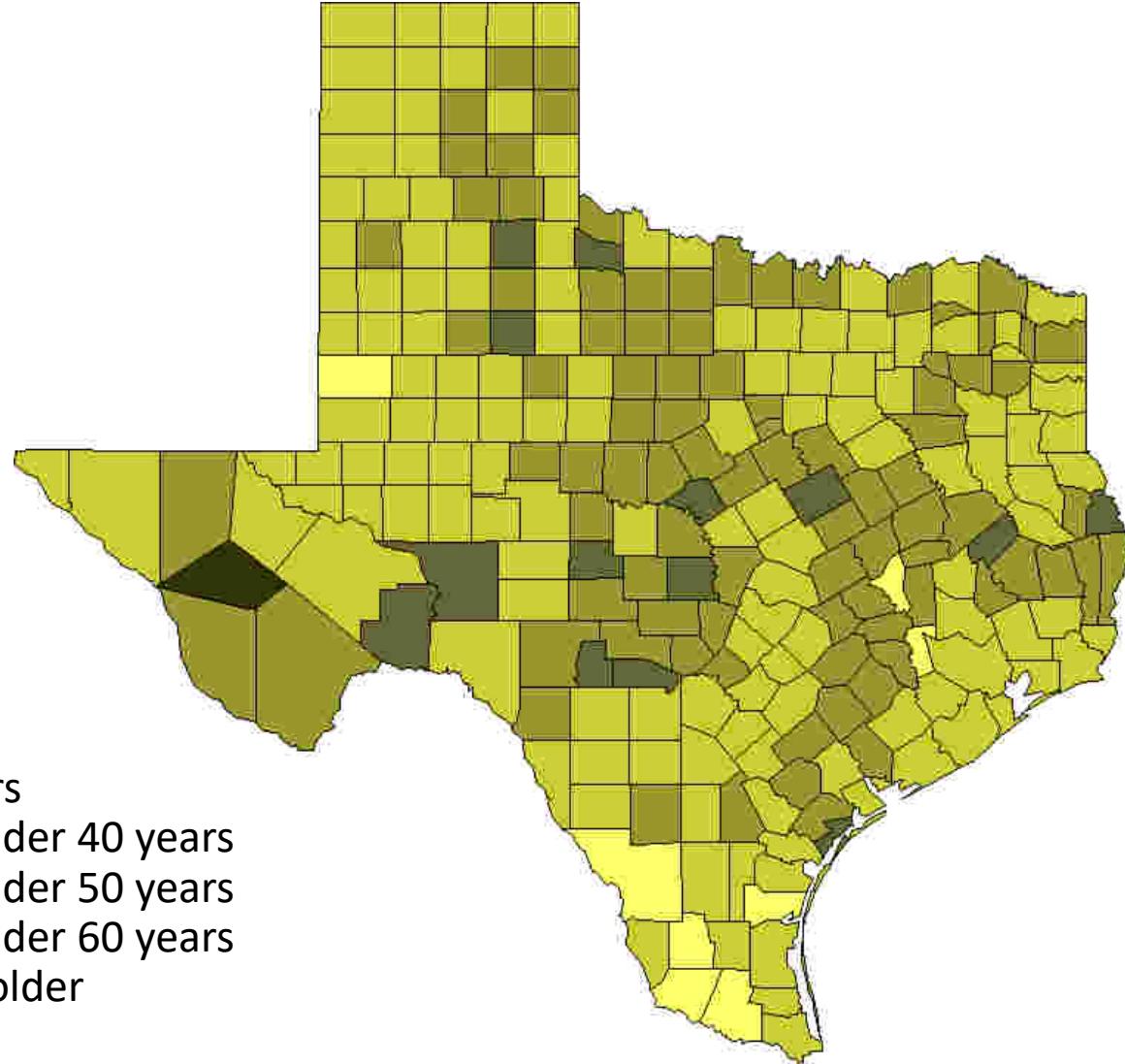
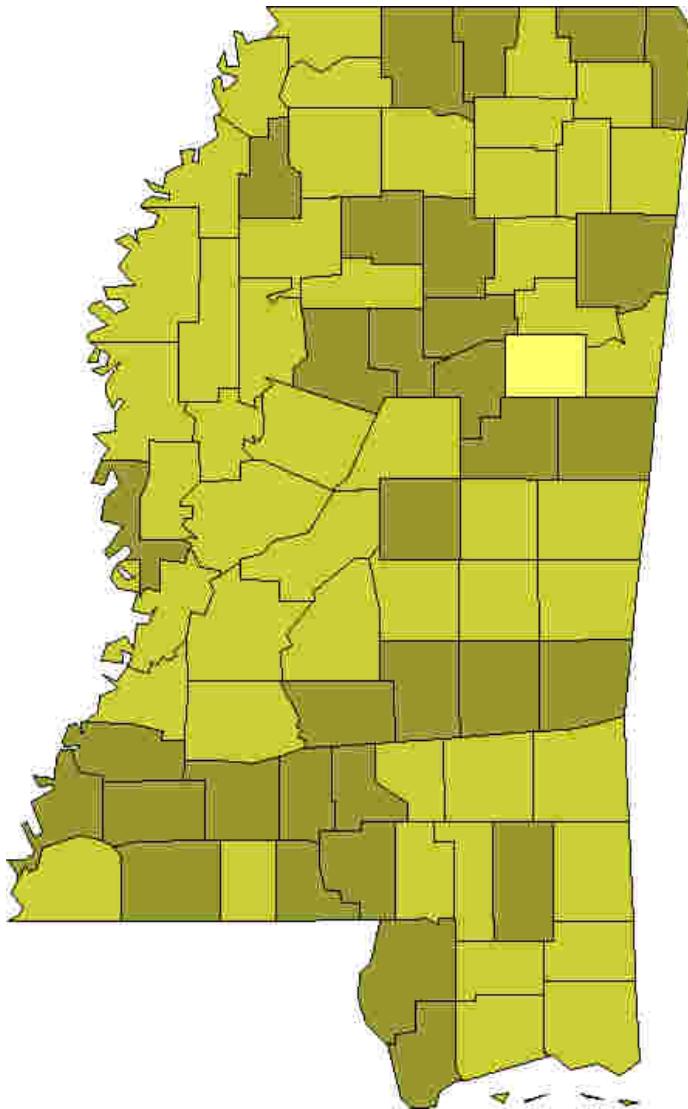
2020 Census

- In the past (before 2010), detailed data was collected from the decennial census by one household in six receiving the “long form”
- The more detailed information is collected through the American Community Survey
 - Provides current data every year
 - Sent to a small sample on a rotating basis
 - No household will receive the survey more than once in five years

American Community Survey

- URL is:
 - <https://data.census.gov>
 - Use the Advanced Search feature
- Annual survey derived from the census long form
- Sent to a population sample to provide update between decennial censuses
- Advantage – it provides a fairly up-to-date look at population and housing; provides more data than the previous censuses
- Disadvantage – the sampling does not include all counties and places (cities and towns) each – relies on 5-year averages for smaller geographies

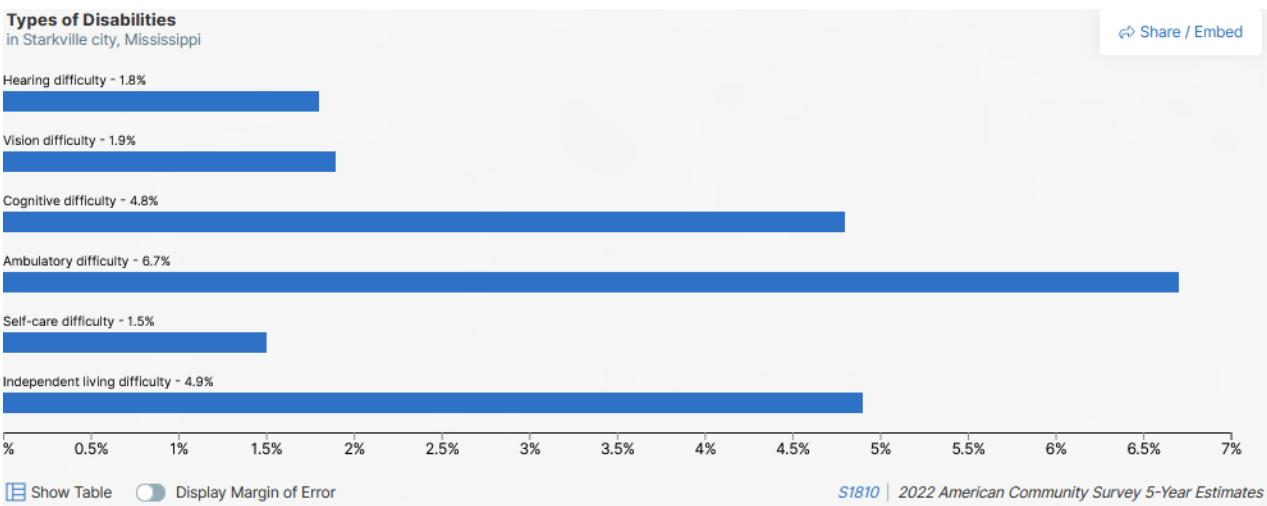
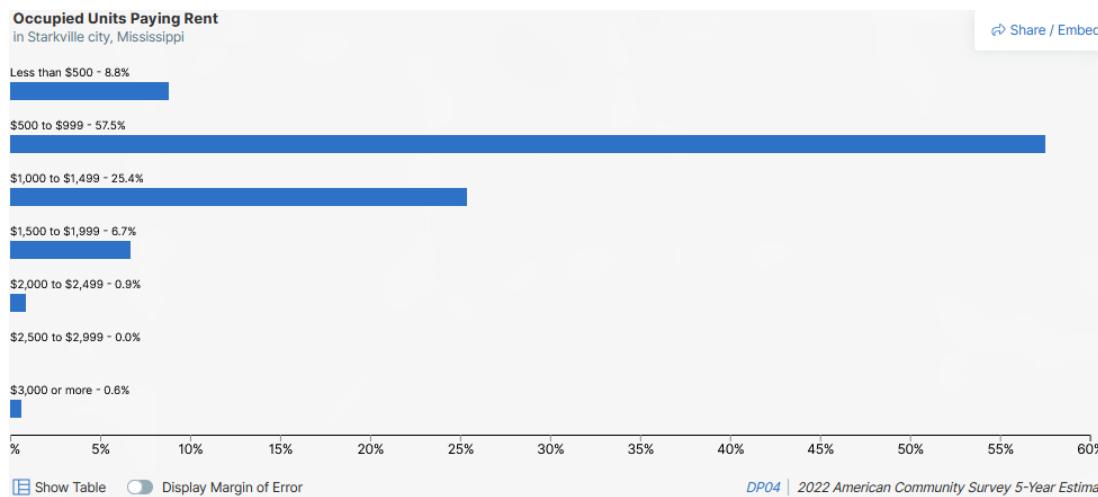
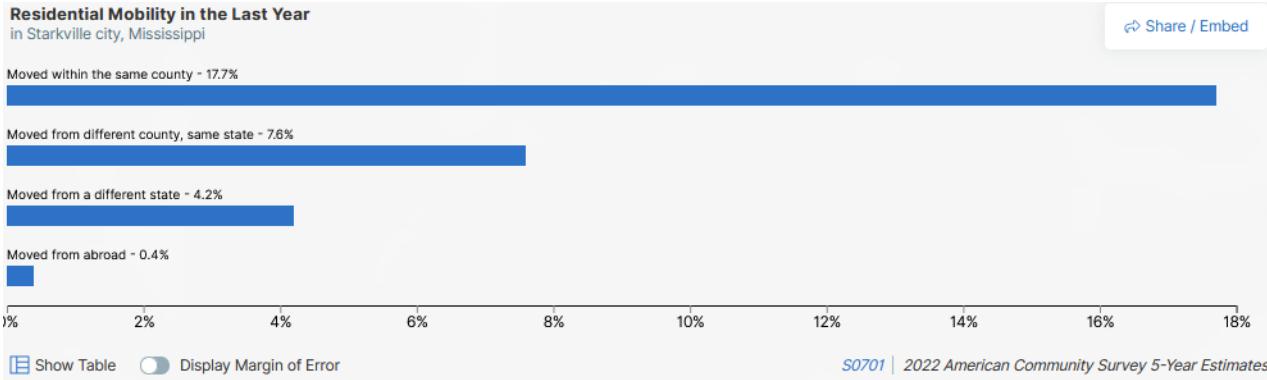
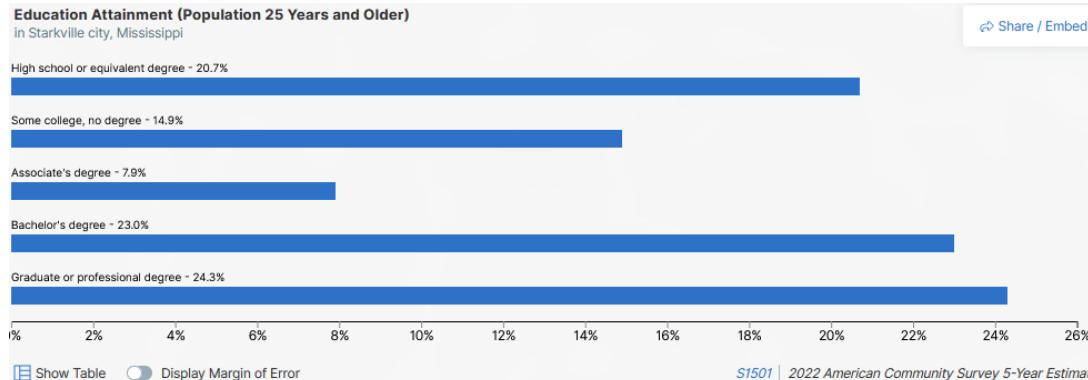
Median age of counties



ACS topics covered

- Age and Sex
- Aging
- Children
- Disability
- Education
- Employment
- Fertility
- Grandparents
- Group quarters population
- Housing
- Housing financial characteristics
- Housing physical characteristics
- Income
- Mobility
- Origins and Language
- Poverty
- Relationships
- Transportation
- Veterans

ACS snapshots



Government statistics – federal, state, local

- <https://www.census.gov/data/datasets/2022/econ/apes/2022.html>
- Provides information on the following:
 - Employment and Payroll
 - Finance Statistics
 - Federal Spending
 - Tax Statistics
 - Government List and Structure
 - Criminal Justice
 - Elementary-Secondary Education
 - Library

Census of Government (Texas)

	Full-Time Employment	Full-Time		Part-Time		Total Payroll
		Payroll (whole dollars)	Part-Time Employment	Payroll (whole dollars)	Payroll (whole dollars)	
Government Function						
Total - All Government Employment Functions	1,177,161	5,600,317,341	172,781	219,371,956	5,819,689,297	
Financial Administration	19,501	107,084,226	875	1,403,622	108,487,848	
Other Government Administration	15,464	86,003,418	2,817	2,379,814	88,383,232	
Judicial and Legal	22,348	123,900,712	2,021	4,163,295	128,064,007	
Police Protection Total	73,018	464,788,605	2,536	3,524,073	468,312,678	
Police Protection - Persons with Power of Arrest	55,516	380,198,792	969	2,039,324	382,238,116	
Police Protection - Other	17,502	84,589,813	1,567	1,484,749	86,074,562	
Fire Protection Total	31,405	231,502,585	2,634	3,418,639	234,921,224	
Fire Protection - Firefighters	28,701	215,582,205	2,262	2,951,315	218,533,520	
Fire Protection - Other	2,704	15,920,380	372	467,324	16,387,704	
Corrections	25,292	117,398,786	587	935,182	118,333,968	
Highways	20,789	90,690,222	990	1,504,982	92,195,204	
Air Transportation	5,195	29,691,174	124	181,864	29,873,038	
Sea and Inland Port Facilities	1,391	10,982,679	70	60,199	11,042,878	
Public Welfare	3,521	14,441,939	538	615,027	15,056,966	
Health	30,381	140,454,072	2,676	5,473,079	145,927,151	
Hospitals	60,136	373,607,403	8,042	22,904,294	396,511,697	
Solid Waste Management	6,899	28,665,228	336	440,926	29,106,154	
Sewerage	8,012	39,124,400	394	261,718	39,386,118	

Annual Survey of School System Finances

- <https://www.census.gov/programs-surveys/school-finances.html>

	Starkville
Fall Membership	4,902
TOTAL ELEMENTARY-SECONDARY REVENUE	73,925
Total Revenue from Federal Sources	15,583
Total Revenue from State Sources	26,538
Total Revenue from Local Sources	31,804
TOTAL ELEMENTARY-SECONDARY EXPENDITURE	34,688
Total Current Spending	33,490
Total Current Spending for Instruction	18,668
Total Current Spending for Support Services	10,789
Other Current Spending	4,033
Total Capital Outlay Expenditure	869
Interest on School System Indebtedness	329
Long-term debt outstanding at end of the fiscal year	11,147
Long-term debt issued during the fiscal year	0
Long-term debt retired during the fiscal year	698

County Business Patterns

- Excludes data on the self-employed, private household, railroad, ag production and most govt employees
- Includes businesses that have paid at least one employee over the course of the year
- Useful for marketing and budgeting analysis
- Info on size of business and number of employees

CBP definitions

- Establishments –
 - An establishment is a single physical location at which business is conducted or services or industrial operations are performed. It is not necessarily identical with a company or enterprise, which may consist of one or more establishments. When two or more activities are carried on at a single location under a single ownership, all activities generally are grouped together as a single establishment. The entire establishment is classified on the basis of its major activity and all data are included in that classification.
 - Establishment-size designations are determined by paid employment in the mid-March pay period. The size group includes establishments that did not report any paid employees in the mid-March pay period but paid wages to at least one employee at some time during the year.
 - Establishment counts represent the number of locations with paid employees any time during the year. This series excludes governmental establishments except for wholesale liquor establishments (NAICS 4248), retail liquor stores (NAICS 44531), Federally-chartered savings institutions (NAICS 522120), Federally-chartered credit unions (NAICS 522130), and hospitals (NAICS 622).

CBP definitions

- Payroll
 - Total payroll includes all forms of compensation, such as salaries, wages, reported tips, commissions, bonuses, vacation allowances, sick-leave pay, employee contributions to qualified pension plans, and the value of taxable fringe benefits. For corporations, it includes amounts paid to officers and executives; for unincorporated businesses, it does not include profit or other compensation of proprietors or partners. Payroll is reported before deductions for Social Security, income tax, insurance, union dues, etc. First-quarter payroll consists of payroll during the January-to-March quarter.
- Mid-March Employment
 - Paid employment consists of full- and part-time employees, including salaried officers and executives of corporations, who are on the payroll in the pay period including March 12. Included are employees on paid sick leave, holidays, and vacations; not included are proprietors and partners of unincorporated businesses.

CBP estimates -

	2019 Employees	2021 Employees	Employee Change
Total	67,774	63,325	-4,449
Construction	4,103	4,139	36
Manufacturing	9,371	8,158	-1,213
Wholesale trade	3,572	3,384	-188
Retail trade	9,206	9,355	149
Transportation & warehousing	2,145	2,404	259
Information	638	640	2
Finance & insurance	2,044	2,332	288
Real estate & rental & leasing	1,059	1,030	-29
Professional, scientific & technical services	3,246	2,378	-868
Management of companies & enterprises	574	406	-168
Admin, support, waste mgt, remediation services	4,451	3,996	-455
Educational services	1,387	1,270	-117
Health care and social assistance	11,104	10,831	-273
Arts, entertainment & recreation	536	481	-55
Accommodation & food services	7,102	6,523	-579
Other services (except public administration)	3,519	2,975	-544
Unclassified establishments	6	3	-3

CBP estimates -

	2019 Establishments	2021 Establishments	Establishment Change
Total	4022	4043	21
Construction	253	273	20
Manufacturing	169	161	-8
Wholesale trade	269	260	-9
Retail trade	605	619	14
Transportation & warehousing	128	141	13
Information	50	54	4
Finance & insurance	277	285	8
Real estate & rental & leasing	192	188	-4
Professional, scientific & technical services	394	387	-7
Management of companies & enterprises	30	21	-9
Admin, support, waste mgt, remediation services	195	213	18
Educational services	28	34	6
Health care and social assistance	453	447	-6
Arts, entertainment & recreation	50	46	-4
Accommodation & food services	372	371	-1
Other services (except public administration)	387	382	-5
Unclassified establishments	6	8	2

Economic Census

- Conducted every five (5) years
- Results for the 2007 Economic Census are being issued on American Factfinder starting in 2009
- Data is reported by NAICS codes
- Data is available from the national to the local level

Core Business Statistics – Panola County, TX

2017 NAICS code	Meaning of 2007 NAICS code	Number of establishments	Sales, shipments, receipts, revenue, or business done (\$1,000)	Annual payroll (\$1,000)	Number of paid employees for pay period including March 12
22	Utilities	11	Q	4246	49
31-33	Manufacturing	12	361,293	40162	1060
42	Wholesale trade	19	71,272	5904	103
44-45	Retail trade	68	237,802	20886	846
48-49	Transportation and warehousing	18	128,182	18202	384
51	Information	D		1118	
52	Finance and insurance	25		9432	177
53	Real estate and rental and leasing	22	14,046	4000	113
55	Management of companies and enterprises	44	30,212	9966	208
56	Administrative and Support and Waste Mang and Remediation Srvs	13	16,509	7800	264
62	Health care and social assistance	34	58,047	19338	568
71	Arts, entertainment, and recreation	3	845	199	11
72	Accommodation and food services	27	21,610	5922	407
81	Other services (except public administration)	26	13,714	3931	127

Nonemployer statistics

- Can be found at <https://data.census.gov>
- Summarizes number of establishments and sales or receipts for business without paid employees that are subject to federal income tax.
- Most nonemployers are operating very small unincorporated business and may or may not be the principal income source

Nonemployer statistics – Anderson County

	2018 Establishments	2018 Sales
Total	3,021	139,045
Construction	498	36,202
Manufacturing	59	1,951
Wholesale trade	35	2,664
Retail trade	285	9,061
Transportation & warehousing	175	16,329
Information	14	315
Finance & insurance	67	2,411
Real estate & rental & leasing	178	12,870
Professional, scientific & technical services	294	12,270
Admin, support, waste mgt, remediation services	368	6,965
Educational services	43	374
Health care and social assistance	230	5,891
Arts, entertainment & recreation	71	2,364
Accommodation & food services	62	1,871
Other services (except public administration)	454	14,118

BEA – Local Area Statistics (bea.gov)

- Choose Data; By Place; County, Metro, & Other Local Areas
 - GDP by County, Metro, and Other Areas (w/ Industry Detail)
 - Regional Price Parities by State and Metro Area
- Personal Income by County, Metro, and Other Areas
 - Interactive Data
 - Interactive Tables: Personal income by county and MSA
 - PERSONAL INCOME AND EMPLOYMENT BY COUNTY AND METROPOLITAN AREA
- Tremendous number of estimates not contained elsewhere

Bureau of Labor Statistics

- BLS is the ultimate (final) reporting source for labor related data
- Significant lags occur; more current data may be obtained from your state's Labor Market Information center or Department of Employment Security/Workforce Development
- The BLS site is confusing and is not very user-friendly
- <https://texaslmi.com>

Texas Labor Market Information (LMI)

LMI by Category



Local Area Unemployment Statistics (LAUS)

View monthly and annual civilian labor force, employment, unemployment, and unemployment rate estimates by state, county, metropolitan area, workforce development area and many cities, by place of residence.

[Watch Video](#)

Current Employment Statistics (CES)

Generate a report for monthly and annual nonagricultural employment data by industry for Texas and metropolitan areas.

[Watch Video](#)

Quarterly Census of Employment and Wages (QCEW)

View and generate a report for quarterly data derived from the state's unemployment tax program measuring employment and wages by industry by state, county, metropolitan and workforce development areas. Last update: February 2024

[Watch Video](#)

Occupational Employment & Wage Statistics (OEWS)

Provides current 2022 annual and hourly wage estimates for up to 800 detailed occupations by state, metropolitan and workforce development area, and industry. Last update: August 2023

[Watch Video](#)

Projections

View and generate a 2-year or 10-year forecast for employment by industry and occupation for the state of Texas and each of the 28 workforce development areas. Last update: April 2024

[Watch Video](#)

Staffing Patterns

View the specific occupations and employment that make up each industry within Texas and each of the 28 workforce development areas. Last update: August 2022

Economic Profiles



Workforce Development Area (WDA) Profiles

A compilation of selected economic data including LAUS and quarterly industry data by Texas' 28 local workforce development areas.

Metropolitan Statistical Area (MSA) Profiles

A compilation of selected economic data including industry composition, current employment statistics by industry, and unemployment information for Texas' metropolitan areas.

Industry Profiles

An economic profile of Texas industry by category to assist in better understanding Texas regional industry dynamics.

Texas Economic Profile

Economic Profile for Texas and US industry data to assist in better understanding Texas industry dynamics.

Popular Downloads



Popular Downloads and Resources

A categorized collection of popular files available for download and various resource links.

State LMI sites typically have information on

- Annual Averages
 - Labor Force
 - Industry Employment
- Annual Manpower Reports
- Commuting Patterns
- Labor Market Data
 - Civilian Labor Force
 - Employed
 - Unemployed
 - Unemployment Rate
- Affirmative Action Reports
 - Race/Gender
- Occupations in Demand
- Annual Labor Force
- Mississippi Business Population
 - Business “Vital Statistics”
- Covered Employment/Wages
- Industry Employment Projections
- Occupational Wages data
- Maps
 - Labor Force
 - Economic/Industry/ Demographic data
- State and Metro Trends
- Unemployment Insurance

Texas Workforce Commission (twc.texas.gov)

LMI Data Resources	Description
Census LEHD Report 	View data from the LEHD program, which produces public-use information combining federal, state and Census Bureau data on employers/employees.
BLS: Texas EAG 	Find economic information to support business development. Research economic indicators such as job growth, unemployment statistics, and wage information.
Jobs Y'all 	Explore well-paying and meaningful careers that match your interests and goals, find information on the top eight fastest growing Texas industries, and locate career events.
Texas OnCourse 	Improve college and career readiness with resources focused on equipping Texas students for an educational and professional future that unlocks their potential.
mySkills myFuture 	Explore career options based on skills you have used in previous jobs. Compare careers, find training and search for jobs.
CareerOneStop: Salary Finder 	Find salaries by occupation and location. Salary information comes from the U.S. Department of Labor's Bureau of Labor Statistics.
Texas CREWS 	Compare Texas public universities and colleges, majors, and career schools based on graduate wages, student loan levels, graduation rates and more.
Texas Internship Challenge 	Search for interns to hire or find internship position opportunities in Texas. This site connects internship seekers and employers statewide.

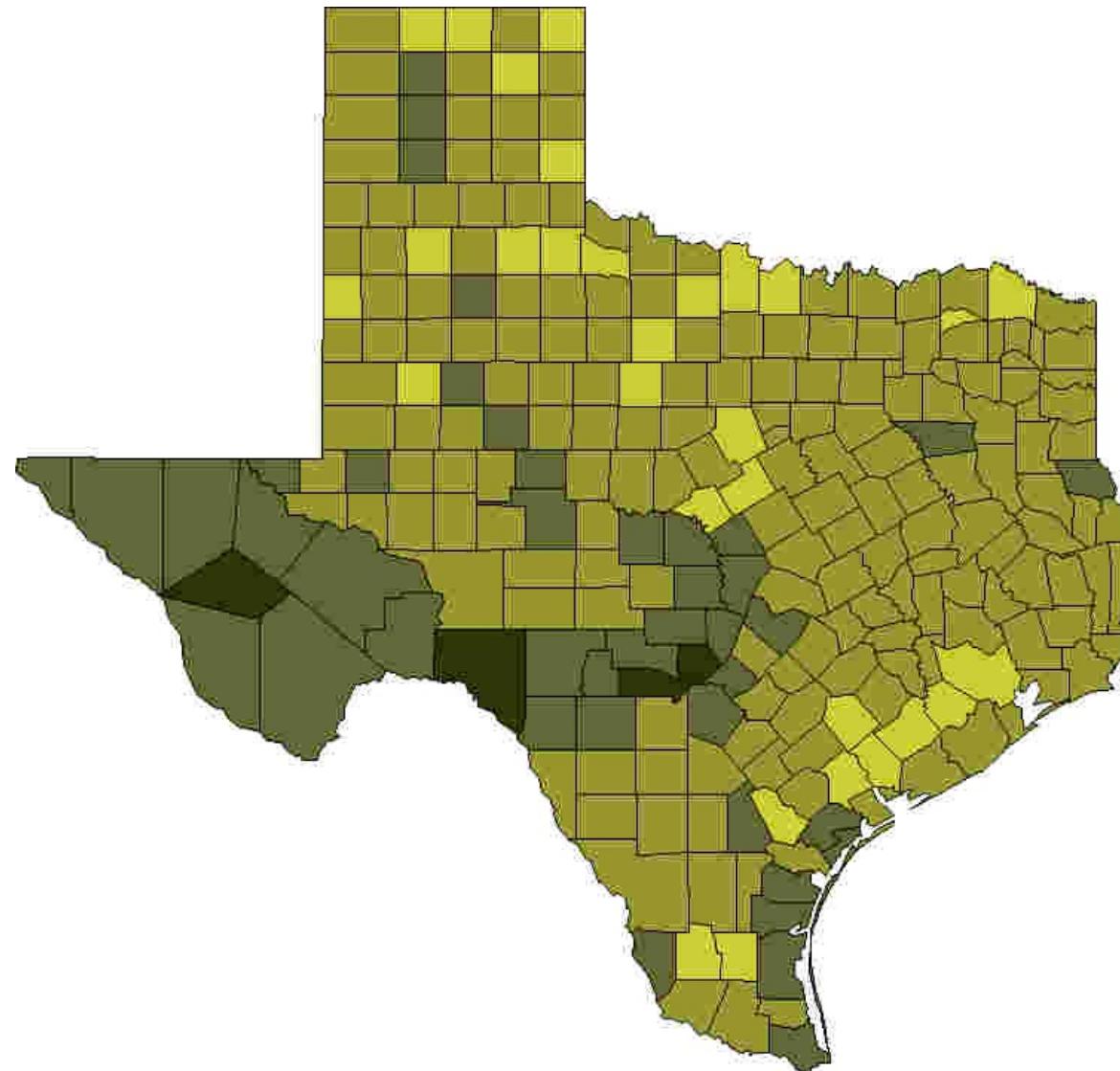
USDA Economic Research Service

- Main URL is:
 - <http://ers.usda.gov>
- Choose Data Products; Rural Economy & Population
- Economic and social research agency of USDA
- Provides a number of specialized data sets
- Time series data often has a significant lag

Natural Amenities Scale

- <https://ers.usda.gov/data-products/natural-amenities-scale/>
- Measures the physical characteristics of a county
- Utilizes measures of climate, typography and water area
 - Warm winter
 - Winter sun
 - Temperate summer
 - Low summer humidity
 - Topographic variation
 - Water area
- Ranked in terms of deviations from the mean

Natural Amenities Scale



Attitudes and beliefs

- Behaviors are easy to measure
 - What time is your alarm clock set on weekdays?
- Attitudes and beliefs are not
 - Should children be punished if they misbehave?
- Attitude- and belief-related responses are:
 - Often imprecise
 - May change from day to day
 - Strength of belief is subjective to the person
 - Issues may not have been thought out in advance

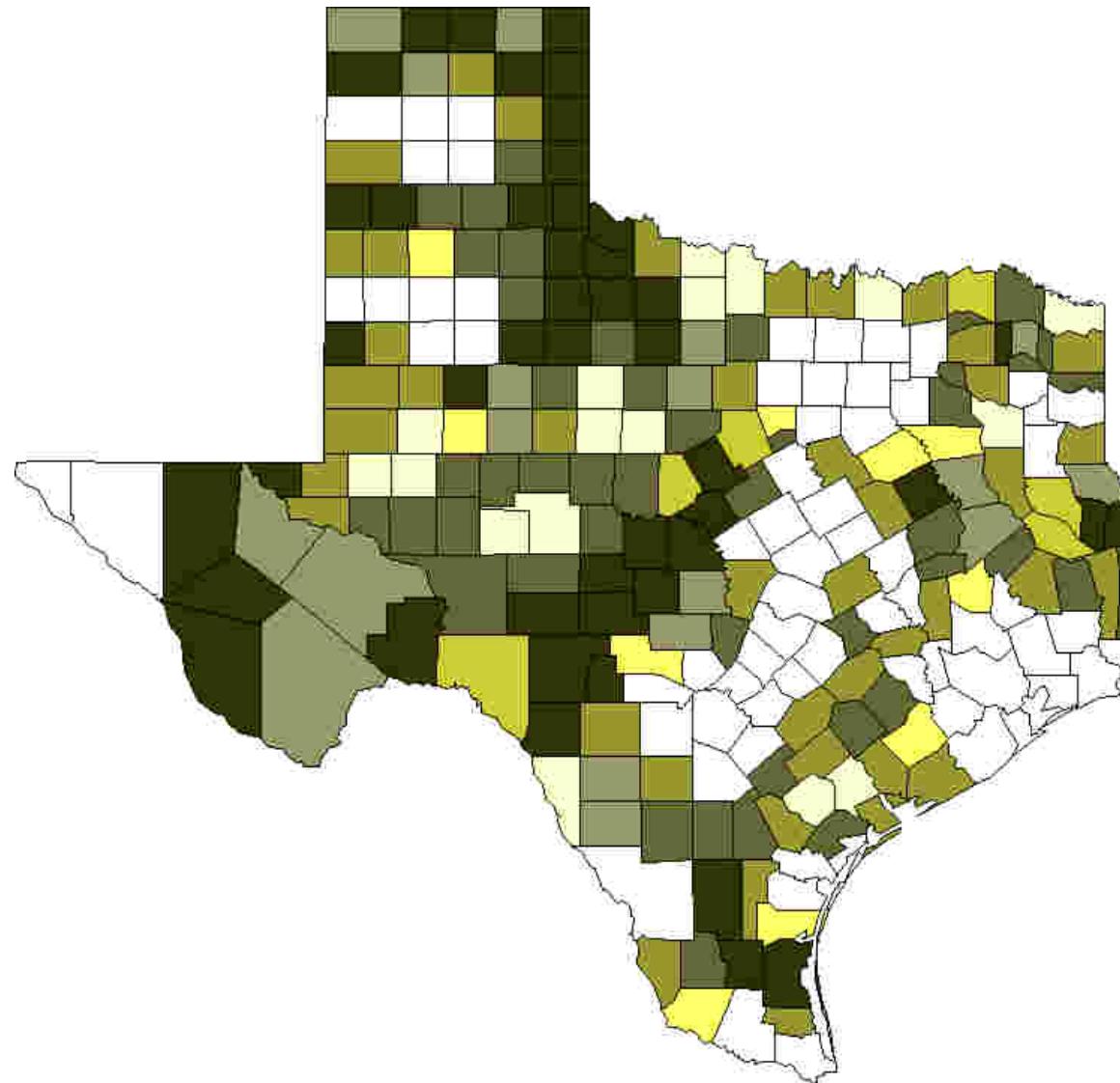
Attitudes and beliefs

- Measurement error can occur because respondents don't think through the issue
- Lead them through the process
- Did you wear or not wear your seatbelt the last time you were an automobile passenger?
 - With a question like this, people may answer off-the-cuff
 - Instead, try the following process

Rural-Urban Continuum Codes

- Data: <https://ers.usda.gov/data-products/rural-urban-continuum-codes/>
- Classifies metro counties by population size
- Classifies nonmetro counties by:
 - Degree of urbanization
 - Adjacency to a metro area or areas
- Counties are divided into 9 categories

Rural-Urban Continuum Codes



Converting data to information

- Shift-share Analysis
- Threshold Analysis/Location Quotients
- Population-Employment Ratio
- Trade Area Capture (Potential Sales)
- Pull Factor

Shift-Share Analysis

- Demonstrates the market-perceived efficiency of firms and the competitive advantage that an industry has in a particular sector
- Divided into three components
 - National Growth Component
 - Industrial Mix Component
 - Competitive Share
- Data needed:
 - Total employment for comparison years (national)
 - Sector employment for comparison years (area and national)

Shift-Share Analysis

- National Growth Component
 - Demonstrates the potential change in local employment from national conditions

$$\text{National Growth} = \text{Local Emp}_{\text{Sector J, Base Year}} \times \left(1 + \frac{\text{National Emp}_{\text{Year t}} - \text{National Emp}_{\text{Base Year}}}{\text{National Emp}_{\text{Base Year}}} \right)$$

- Industrial Mix Component
 - Demonstrates the competitiveness of the sector as compared to the national economy

$$\text{Industrial Mix} = \left(\frac{\text{National Emp}_{\text{Sector J, Year t}} - \text{National Emp}_{\text{Sector J, Base Year}}}{\text{National Emp}_{\text{Sector J, Base Year}}} \right) - \left(\frac{\text{National Emp}_{\text{Year t}} - \text{National Emp}_{\text{Base Year}}}{\text{National Emp}_{\text{Base Year}}} \right)$$

Shift-Share Analysis

- Competitive Share
 - Demonstrates the competitiveness of the local area in a particular sector

$$\text{Competitive Share} = \frac{\text{Local Employment}_{\text{Sector } J, \text{Year } t}}{\text{National Growth}} - \frac{\text{Industrial Mix}}{\text{Local Employment}_{\text{Sector } J, \text{Base Year}}}$$

- If the Competitive Share is positive, it suggests that the local area has a competitive advantage in the industry
- If the Competitive Share is negative, it suggests that the local area has a disadvantage when competing for that particular sector

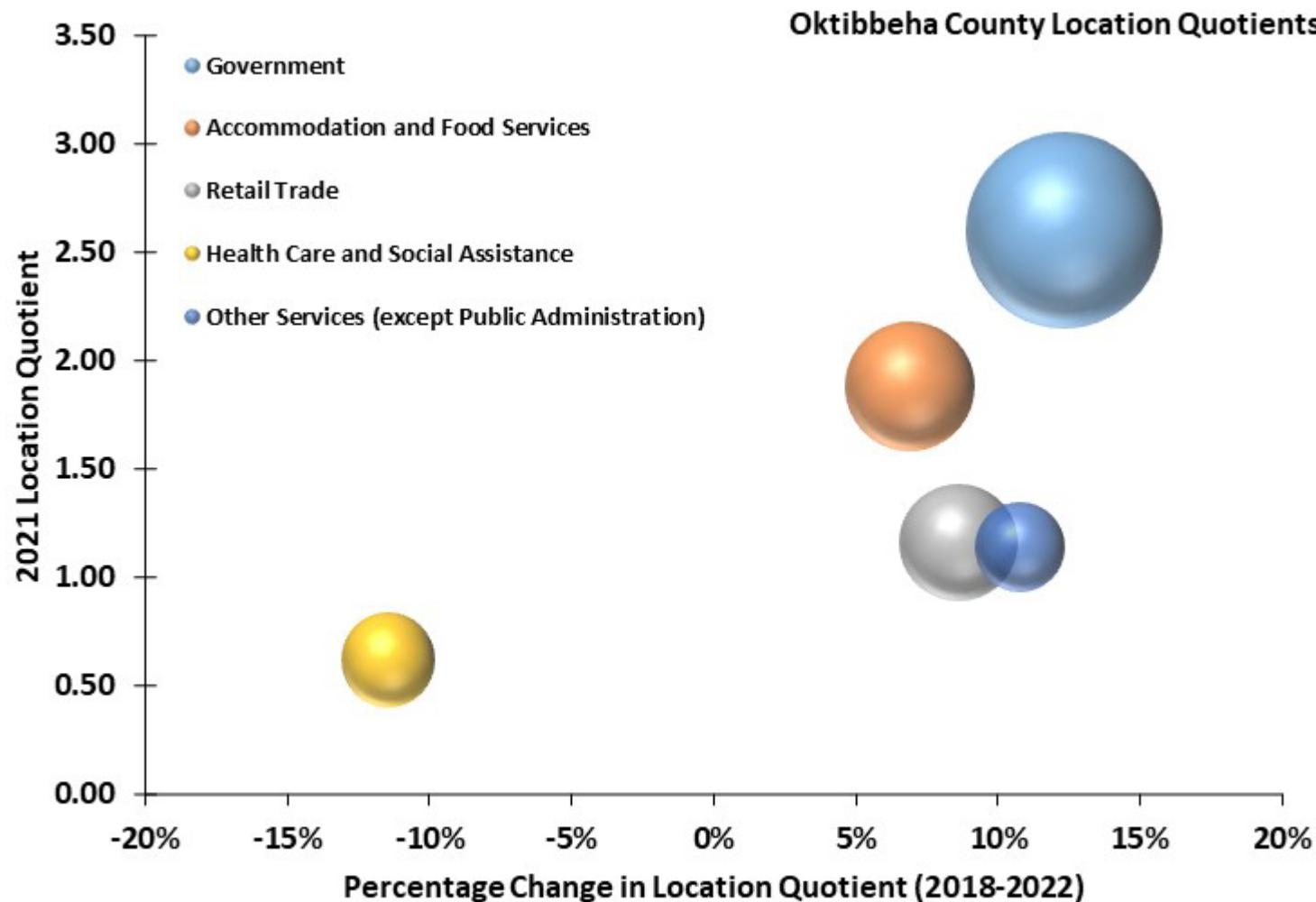
Shift-Share Analysis

Sector	National Growth Component, Jobs	Industrial Mix Component, Jobs	Competitive Share Component, Jobs
Professional and Business Services	44	31	699
Education and Health Services	110	319	217
Trade, Transportation, and Utilities	92	-57	101
Information	5	-24	57
Financial Activities	18	14	-19
Public Administration	33	6	-20
Natural Resources and Mining	3	2	-22
Leisure and Hospitality	81	182	-51
Other Services	12	8	-68
Construction	19	40	-90
Manufacturing	94	-539	-189
	511	-18	615

Threshold Analysis or Location Quotients

- Threshold analysis indicates the average population it takes to support a retail or service business
- Typically compares an area with its state or the nation
- Utilizes the dictates of the market to make a judgment, but cannot predict business success or failure
- Data needed:
 - Number of sector businesses (local and state/national)
 - Population (local and state/national)

Location Quotients



Population-Employment Ratio

- Measures the number of people in the local market per job in a particular trade or service. Also shows competitive advantage of other industries
- Data needed:
 - Area population
 - Area employees for specific sector
- Formula

$$\text{Employment Population Ratio} = \frac{\text{Area Population}}{\text{Number of Employees in Industry for that Area}}$$

Trade Area Capture (potential sales)

- Tells how many customers are drawn to a particular community to shop for a certain type of product at any given time
- Compare to community population (Pull Factor) and across time
- Data Needed:
 - Retail sales data (community and state)
 - Per Capita Income (community and state)

$$\text{Trade Area Capture} = \frac{\text{Area Sales of Merchandise Type J}}{\frac{\text{State Sales of Merchandise Type J}}{\text{State Population}} \times \frac{\text{Area Per Capita Income}}{\text{State Per Capita Income}}}$$

Pull Factor

- Determines the proportion of customers a community pulls from outside its boundaries
- Compare across communities and over time
- The higher the pull factor, the larger the community's customer base
- Data needed:
 - Trade Area Capture Estimate
 - Community Population

$$\text{Pull Factor} = \frac{\text{Trade Area Capture Estimate}}{\text{Community Population}}$$

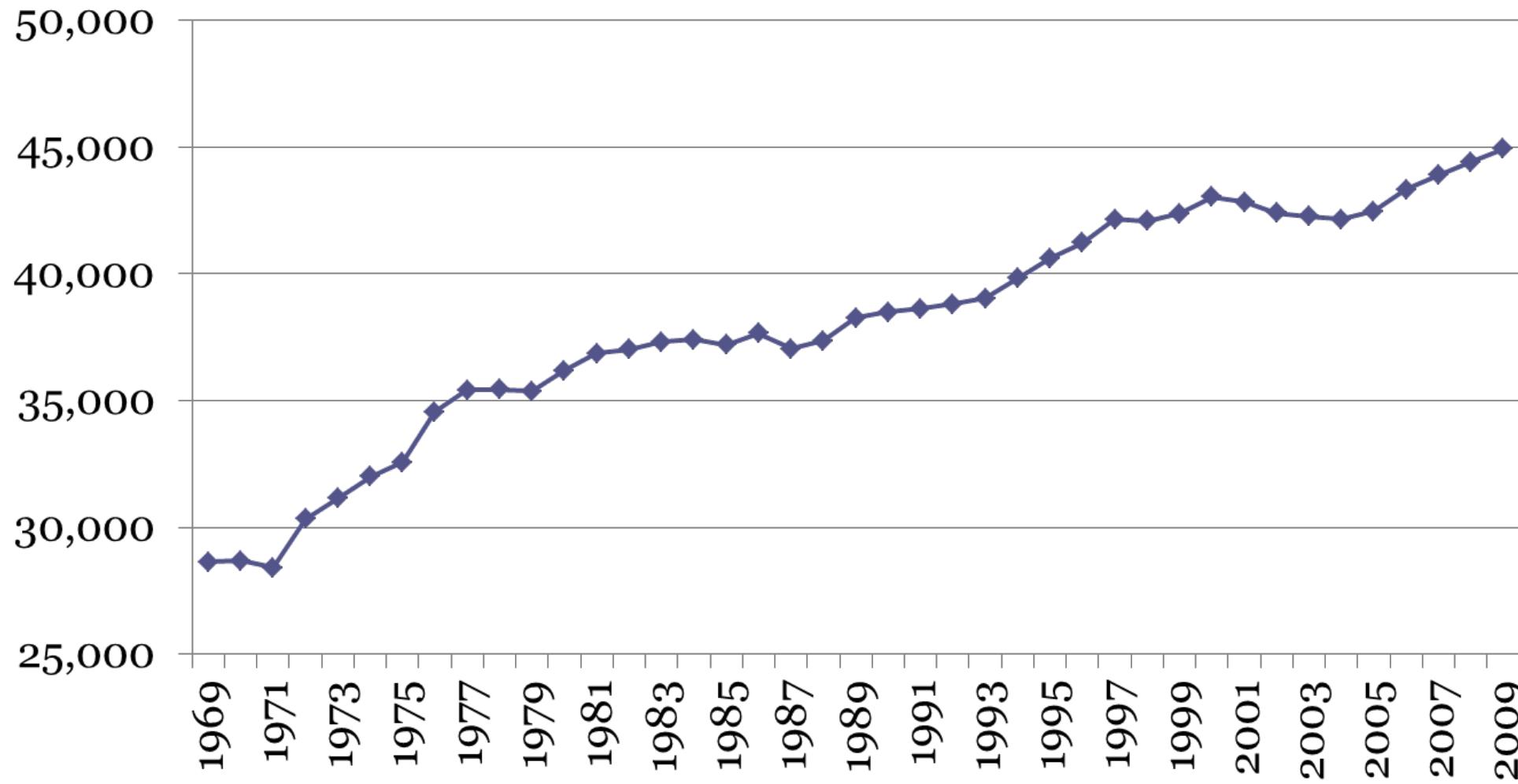
Tips for reporting information

- You basically need five types of software
 - Spreadsheet (Excel)
 - Database (Access – used very sparingly with the features contained in Excel)
 - Presentation/Graphics (PowerPoint)
 - Word Processor (Word)
 - Statistical package???
 - Mapping/Psuedo-GIS (MapViewer: \$249 at <http://www.goldensoftware.com/products/mapviewer/mapviewer.shtml>)

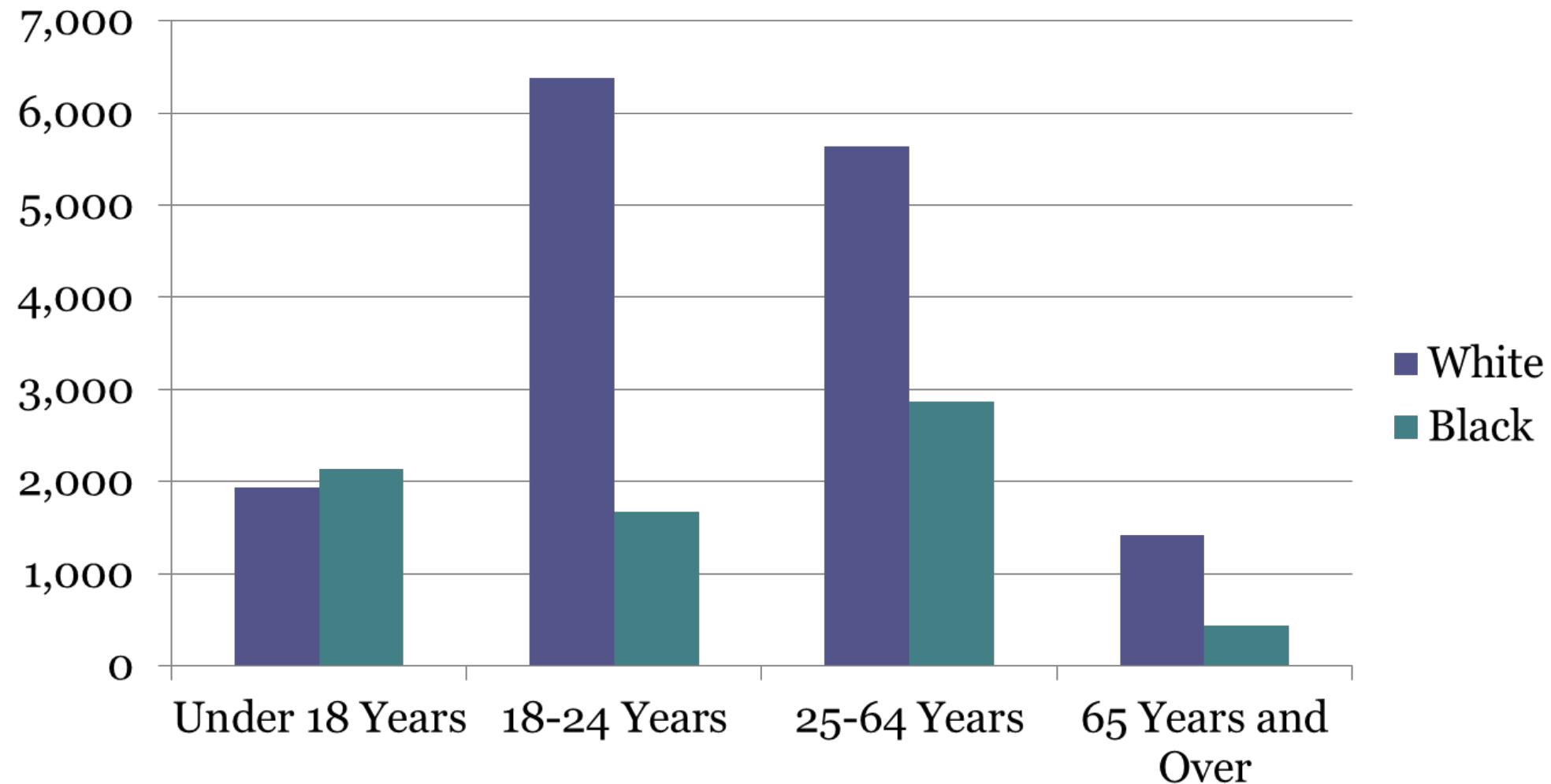
Reporting tips

- Different types of graphs are commonly used to report different types of data
 - Line Graphs – used to report data across time (population from 1969-2009)
 - Bar Graphs – used to report cross-sectional data that does not have a temporal element (2000 population by age group)
 - Pie Chart – used to show the proportion of a data category in relation to the whole (the 45-54 age group as a proportion of the entire population)

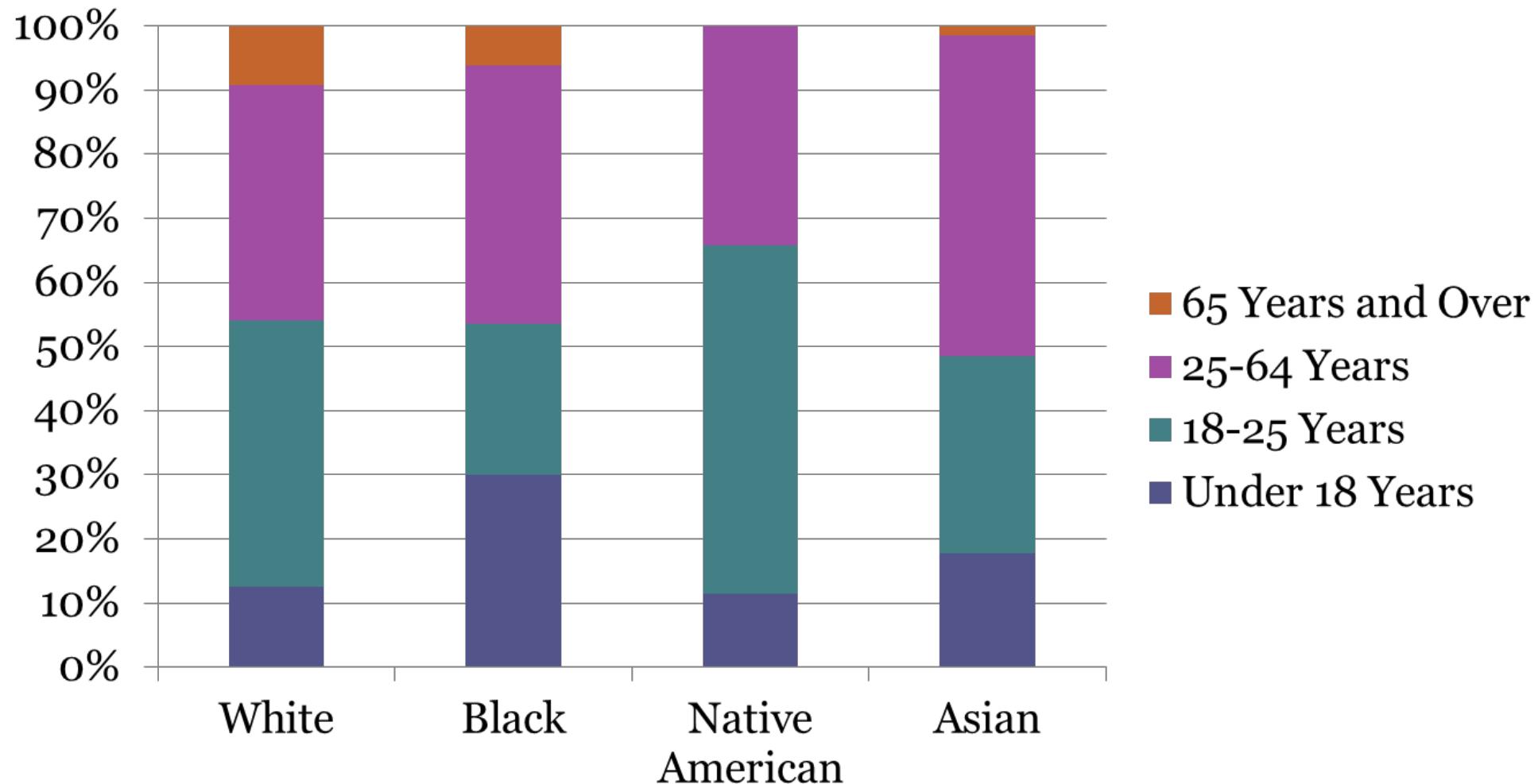
Line graph (population)



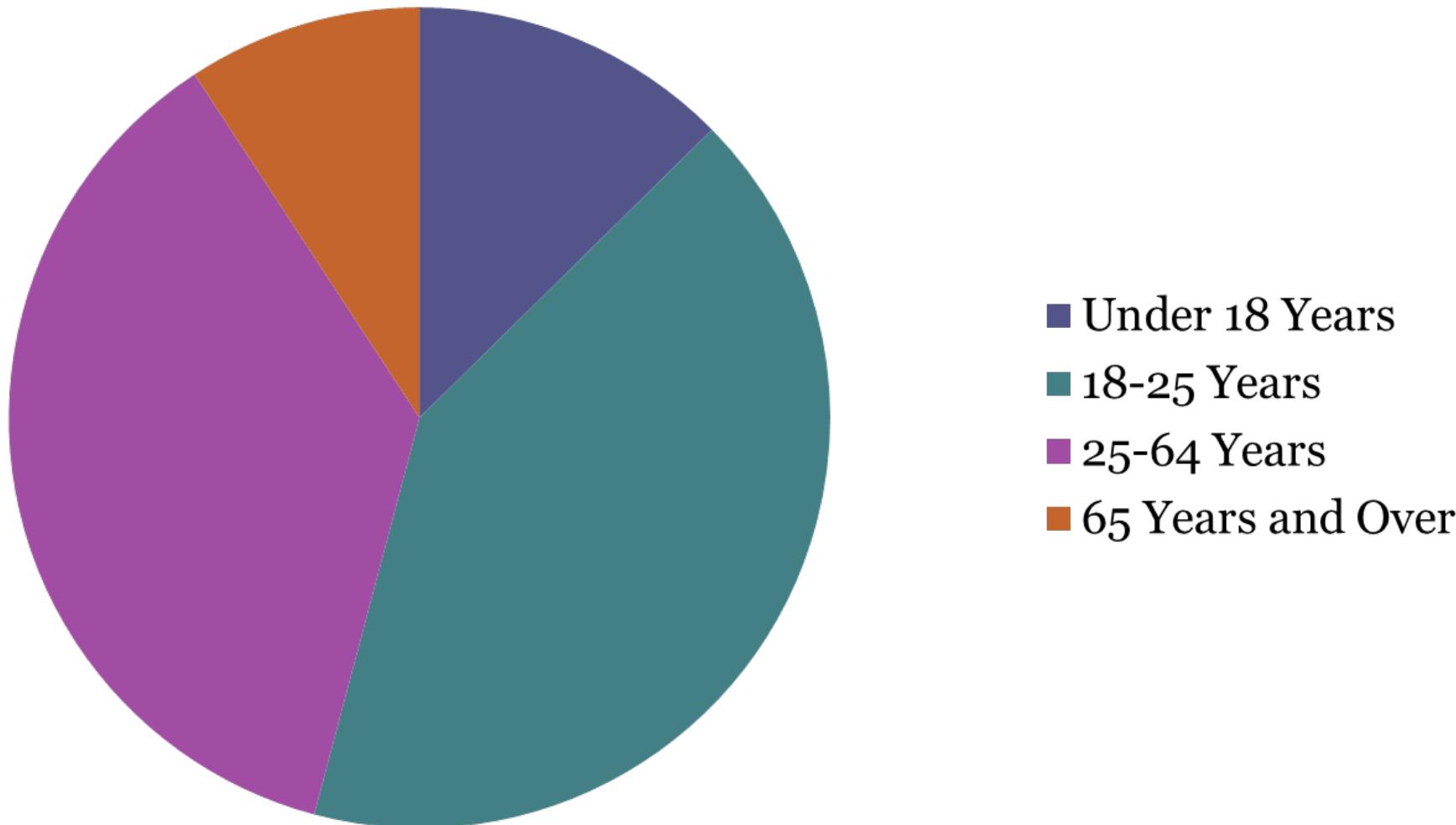
Bar graph (white vs black population)



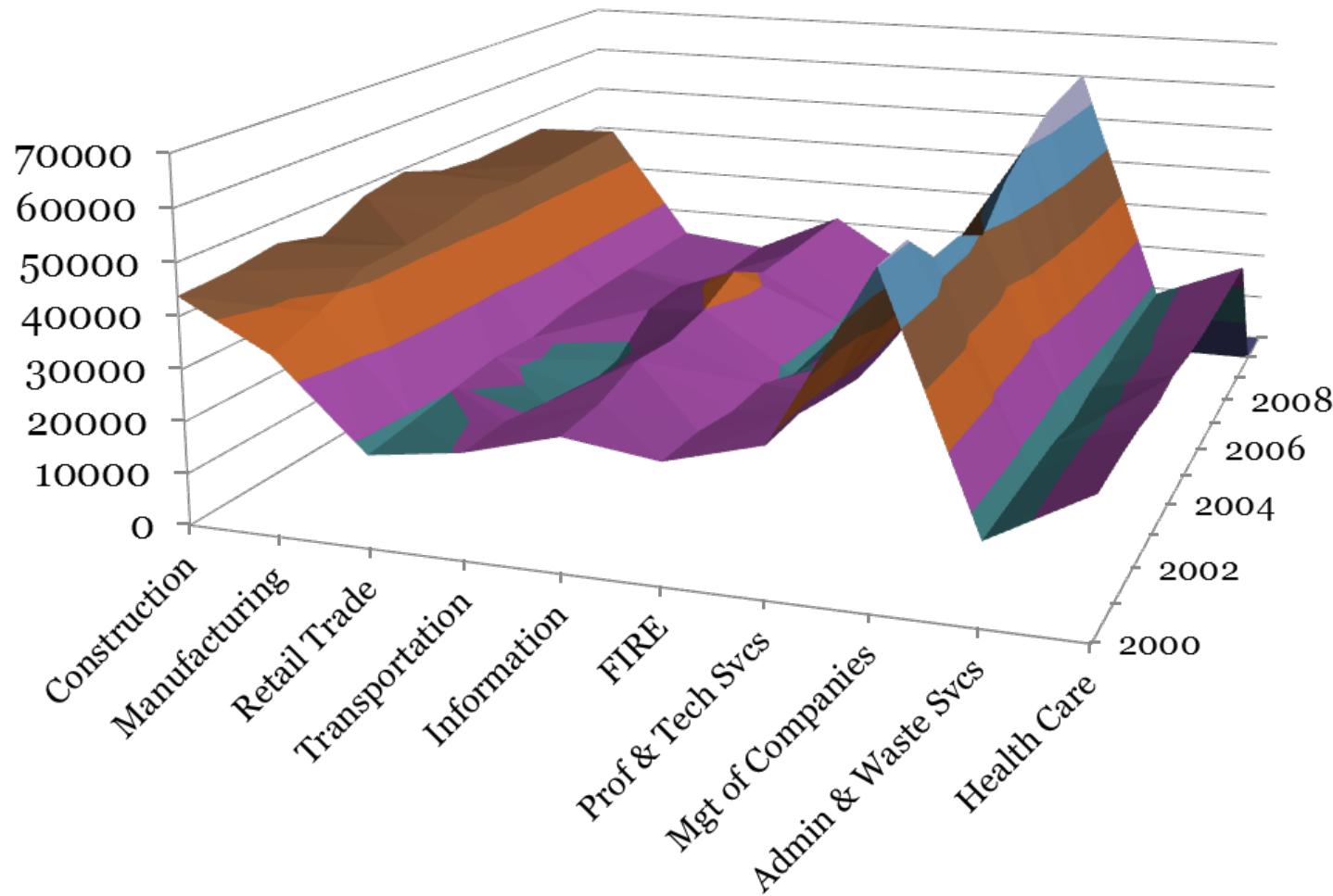
Stacked bar graph (age by race)



Pie chart (white race by age)



Earnings per worker (data or information?)



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