Bagels & Research

Utah Data Research Center & Kem C. Gardner Policy Institute

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Kem C. Gardner POLICY INSTITUTE
THE UNIVERSITY OF UTAH
DAVID ECCLES SCHOOL OF BUSINESS

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Gender Wage Gap for Women of Color in Utah

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April 3, 2024

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Introduction

- Exploration of Utah's gender wage gap with a focus on women of color and historically excluded racial and ethnic groups. Examine job loss and the wage gap during COVID-19 pandemic.

- When talented and skilled women are not fully compensated for their contributions, it represents a loss to human capital. Understanding these economic ramifications is crucial for policymakers, employers, and other stakeholders in developing strategies to mitigate the wage gap's adverse effects and fostering more equitable economic outcomes.

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Literature Review

- The NWLC estimates that Native American women working full-time year-round in Utah could stand to lose $1,226,200 throughout a 40-year career. For Pacific Islander women, the estimate is $1,169,200 over the course of a 40-year career (National Women's Law Center, 2023).

- A recent study found that the gender wage gap is more prominent for women of color than for white women and has not improved significantly over time. The authors suggest this is due to a combination of factors, including occupational segregation, discrimination, and differences in human capital (Blau & Kahn, 2017).

- A policy brief from the Institute for Women's Policy Research (IWPR) found that Latina and Black women were likelier than other WOC to work in service occupations (Hegewisch & Mefferd, 2021).

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Research Questions

1 | Analyze the employment pattern and wage gap faced by WOC compared to white men from one to ten years after leaving postsecondary education, with statistical tests to determine statistical significance of the wage gap.

2 | Decompose the wage gap by the highest educational attainment, by age at the time of leaving postsecondary education, and by CIP.

3 | Using the Blinder-Oaxaca method to break the wage gap down into explained and unexplained portions.

4 | Analyze the impact of the COVID-19 pandemic by studying the year over year wage growth for WOC and the percentage of WOC who experienced a job or income loss during the COVID-19 pandemic.

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Data Sources

- USHE: the highest educational attainment, CIP family, students' demographic data.

- DWS: UI wages for the students after they leave postsecondary education, aggregated to quarterly wages, NAICS industry code for the industry where most wages were received from. Wages prior to leaving USHE were used to approximate prior work experience

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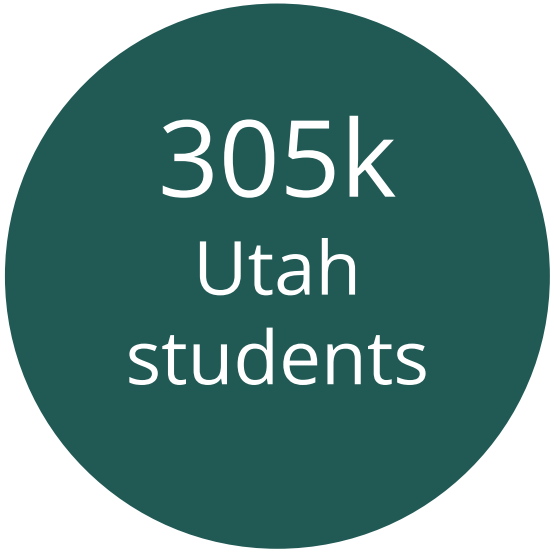
USHE data

- 2011 to 2020 data from USHE. 305,308 students. 56% women, 80% white students.

- Students who returned to school after their highest educational attainment were removed to ensure students were working. Students with unknown race were removed.

- 36% students attended but never received a degree. The last reported gender/race/age/CIP (if available) are obtained for these students.



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DWS data

- Latest wage data available to UDRC is 2021Q4.

- Quarterly wages obtained for each student from 2019-2021. Annual wage obtained for each student up to ten years after leaving post-secondary education. One NAICS sector per student.

- Number of quarters strongly attached to the workforce for each student as a proxy for work experience prior to leaving post-secondary education.

- Strongly attached to the workforce: at least the minimum wage * 40 hours * 52 weeks / 4 quarters. All four quarters.

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Methodology

- Wage gap and earnings ratio defined.
- Statistical tests: Levene's tests, t-tests, two-way ANOVA analyses
- Wage gap breakdowns by the highest educational attainment, age when leaving postsecondary education, and CIPs studied.
- Blinder-Oaxaca decomposition
- A baseline YOY wage growth is calculated using the second quarter of 2019 over the second quarter of 2018. Overall, the baseline YOY growth for the students studied in the section was 16.8%.
- Job loss and income loss defined

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Demographics – Race and Ethnicity

- Women and men each comprised 50% of the sample.

- The top demographic groups were white (80%), followed by Hispanic (11%), Multiracial (3%), Asian (2%), Black (2%), Native American (1%) and Pacific Islander (1%).

Race	women (N)	men (N)	women (%)	race (%)
Asian	3,767	3,361	52.8%	2.3%
Black	2,200	3,295	40.0%	1.8%
Hispanic	18,020	16,057	52.9%	11.2%
Native American	2,055	1,720	54.4%	1.2%
Multiracial	3,967	3,795	51.1%	2.5%
Pacific Islander	1,451	1,785	44.8%	1.1%
White	122,041	121,794	50.1%	79.9%
Total	153,501	151,807		

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Demographics – Age

- At the time of leaving postsecondary education, students aged 16-24 made up 56.2% of the sample, and the proportions of age groups decreased as the age increased.

- Students who left postsecondary education under 16 or over 65 were not included in the age breakdown section due to insufficient sample size.

Age Group	women (N)	men (N)	women (%)	Age group (%)
under 16	--	18	--	0.00%
16-24	99,724	78,949	55.8%	56.2%
25-34	37,834	60,664	38.4%	31.0%
35-44	13,618	12,672	51.8%	8.3%
45-54	6,394	3,937	61.9%	3.3%
55-64	1,977	1,371	59.1%	1.1%
65+	215	303	41.5%	0.2%

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Educational Attainment

- Those with some college (36%) comprised our sample's largest group of students, followed by those with a bachelor's degree (34%). Those with certificates requiring one to two years (4%) and requiring one year or less (5%) made up the smallest portions.

- The educational attainment with the highest percentage of women was an associate degree (61%).

Highest Attainment	women (N)	men (N)	women (%)	attainment (%)
Some College	55,606	60,600	47.9%	36.3%
Certificate requiring less than one year	6,939	8,554	44.8%	4.8%
Certificate requiring one to two years	6,096	5,673	51.8%	3.7%
Associate degree	21,835	14,019	60.9%	11.2%
Bachelor's degree	55,525	53,147	51.1%	34.0%
Graduate degree	14,440	17,405	45.3%	10.0%

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Finding 1: Unconditional Wage Gap

- In general, the gender wage gap grows over time for WOC. Those who were strongly attached had a narrower gap than those who worked.

- For all groups of WOC, the wage gaps for most years were found to be statistically significant where sample sizes were sufficient, and the interaction terms between gender and race were also found to be statistically significant.

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Finding 1: Wage Gap – All

- Native American women who worked experienced the highest wage gap overall, from 50% one year after leaving postsecondary education to 63% ten years later.

- Asian American women who worked experienced the lowest wage gap overall, from 17% one year after leaving postsecondary education to 27% ten years later.

Figure 1: The gap between the wages of WOC and white men after leaving postsecondary education

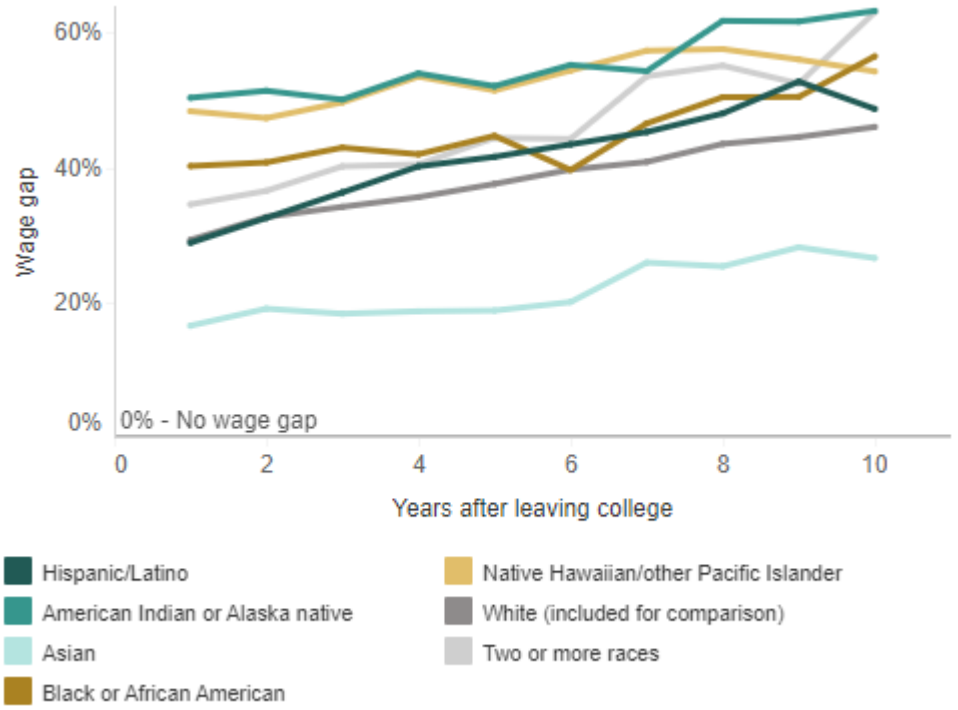

Figure from a draft of data narrative.

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Finding 1: Wage Gap – Strongly Attached

- Native American women SATTW experienced the highest wage gap overall, from 31% one year after leaving postsecondary education to 54% ten years later.

- Asian American women SATTW experienced the lowest wage gap overall, from 10% one year after leaving postsecondary education to 36% ten years later.

Figure 1: The gap between the wages of WOC and white men after leaving postsecondary education

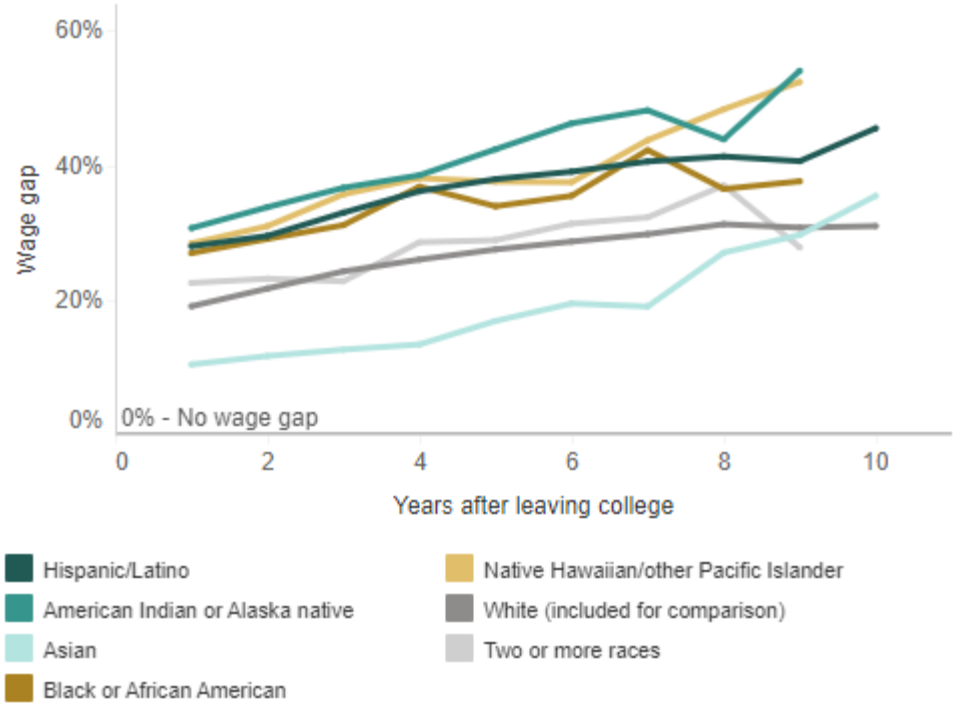

Figure from a draft of data narrative.

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Finding 2: Wage Gap Disaggregated

- As the educational attainment of women of color increases, the wage gap generally decreases.

- WOC who leave postsecondary education at a younger age face a larger wage gap than those who leave postsecondary education at an older age.

- Healthcare programs are the most popular among WOC, but most WOC who studied healthcare-related programs experienced an increase in the wage gap over time compared to white men who studied healthcare programs.

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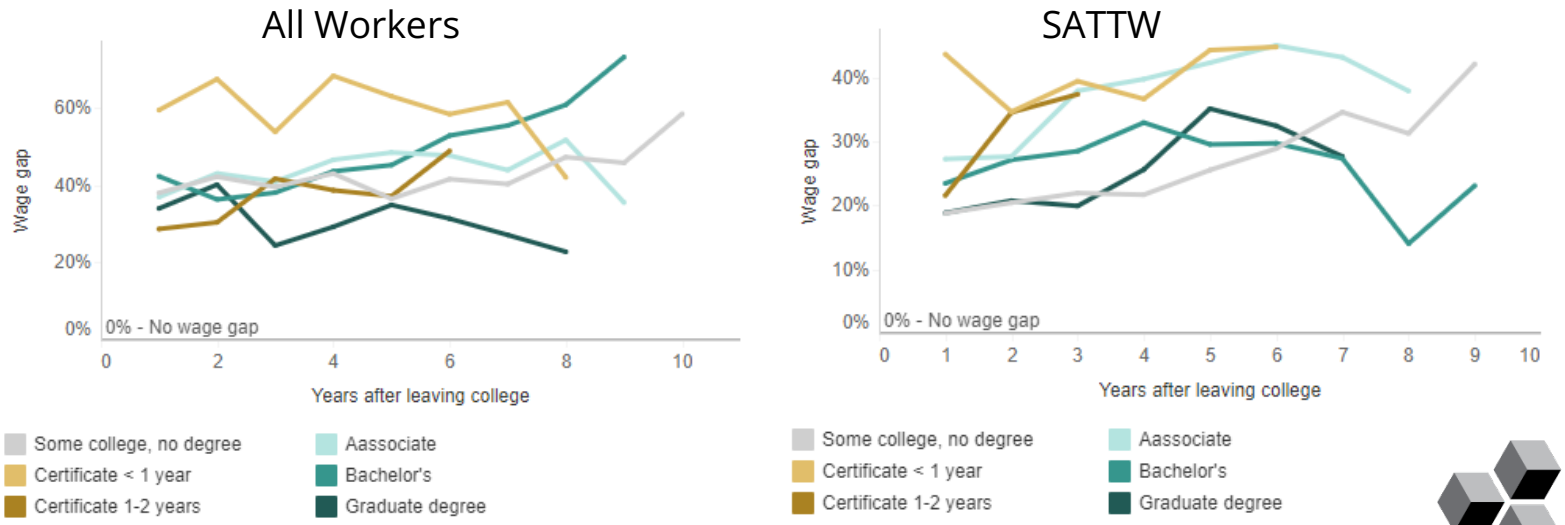
Finding 2: Wage Gap Disaggregated

- Native American women who earned a certificate requiring less than one year and who were SATTW experienced a wage gap of 44% one year after leaving postsecondary education.

- Native American women who earned a graduate degree and who were SATTW experienced a wage gap of 19% one year after leaving postsecondary education.

Figure 2.1: The gap between the wage of Native American women and white men, by age



Figures from a draft of data narrative.

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Finding 2: Wage Gap Disaggregated

- This study found Native American women experiencing the highest wage gap consistently, with the most significant wage gap is experienced by those who leave postsecondary education between ages 16 and 24.

Figure 2.1: The gap between the wage of Native American women and white men, by age

Figures from a draft of data narrative.

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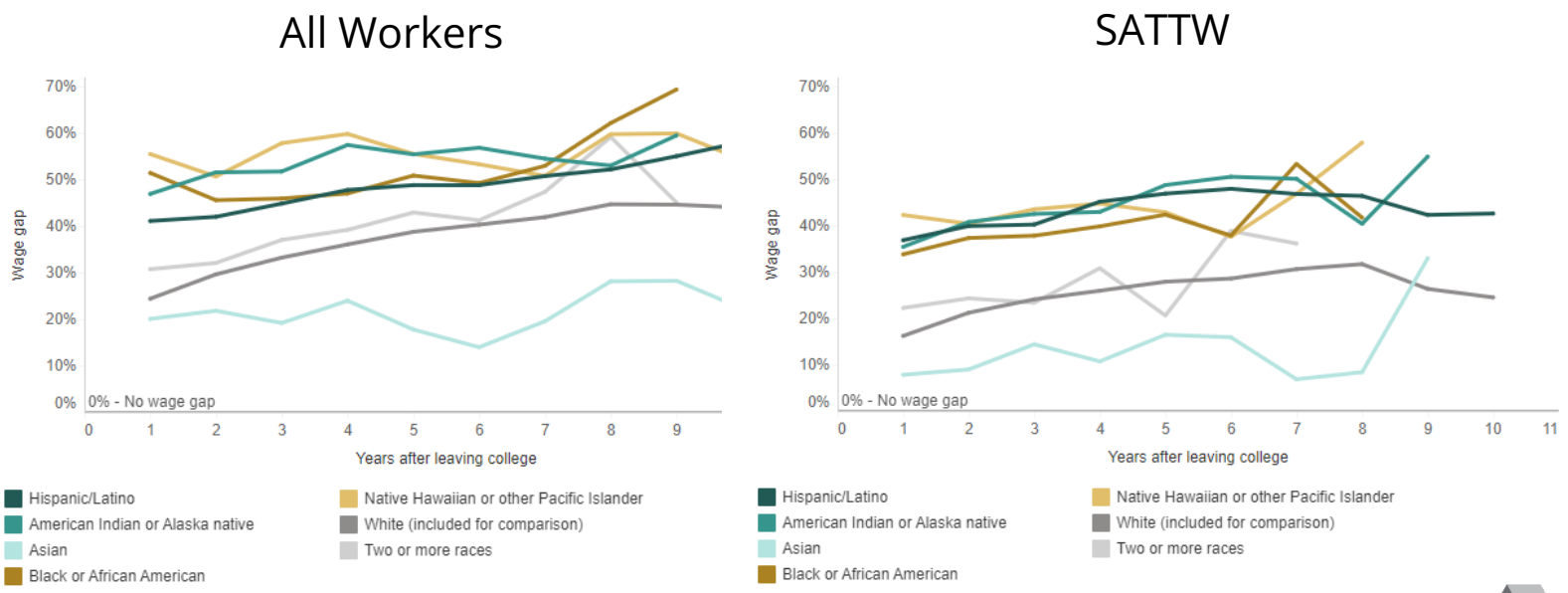
Finding 2: Wage Gap Disaggregated

- Health professions and related programs are the most studied CIPs among WOC. However, for most groups of WOC, the wage gap grew over time for women who studied these CIPs.

Figure 2.2: The gap between the wages of WOC and white men who studied in healthcare-related educational programs



Figures from a draft of data narrative.

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Finding 3: Oaxaca-Blinder Decomposition

- It is assumed wages are (partially) determined by returns to human capital, measured by age, prior work experience, and highest level of educational attainment. The portion of the wage gap that can be explained by differences in the independent variables is the "explained" portion of the wage gap. The "unexplained" portion of the wage gap is the difference in returns to the independent variables.

- In most cases, the portion of the wage gap that cannot be explained by available human capital measures grows over time.

- Women of two or more races experienced the highest unexplained portion of the wage gap at 90% ten years after leaving postsecondary education.

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Finding 3: Oaxaca-Blinder Decomposition

- Native Hawaiian or other Pacific Islander women experienced the lowest unexplained portion of the wage gap at 58% ten years after leaving postsecondary education.

- Hispanic women and Pacific Islander women who were SATTW experienced the lowest unexplained portion of the wage gap at 73% ten years after leaving postsecondary education and 76% nine years after, respectively.

- Among WOC who were SATTW, Asian women typically had the greatest share of the gender wage gap that remains unexplained by available human capital measures. For example, Asian women have the highest unexplained portion of the wage gap ten years after leaving postsecondary education, at 85%.

Figure 3: The unexplained portion of the gender wage gap after leaving postsecondary education

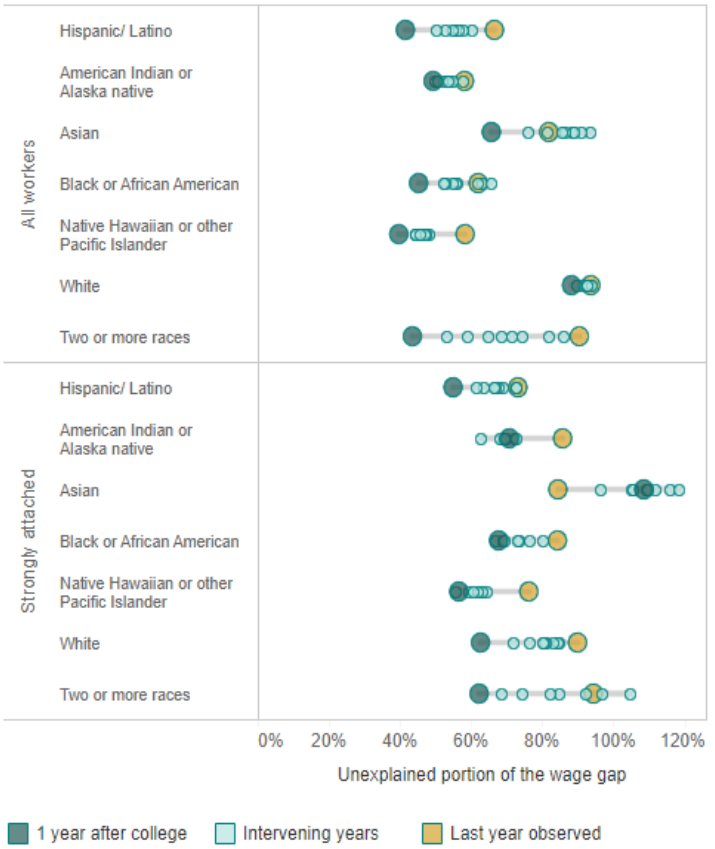

Figure from a draft of data narrative.

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Finding 4: COVID-19 Impacts

- The financial impact of the COVID-19 outbreak has disproportionally affected women of color in terms of wage and job loss.

- Most WOC experienced lower YOY wage growth than white men in the seven quarters following the COVID-19 outbreak.

- All groups of WOC had a higher rate of job loss compared to men of the same race.

- All WOC groups experienced a higher incidence of income loss than men of the same race, except Native American women, who shared the same incidence of income loss as Native American men.

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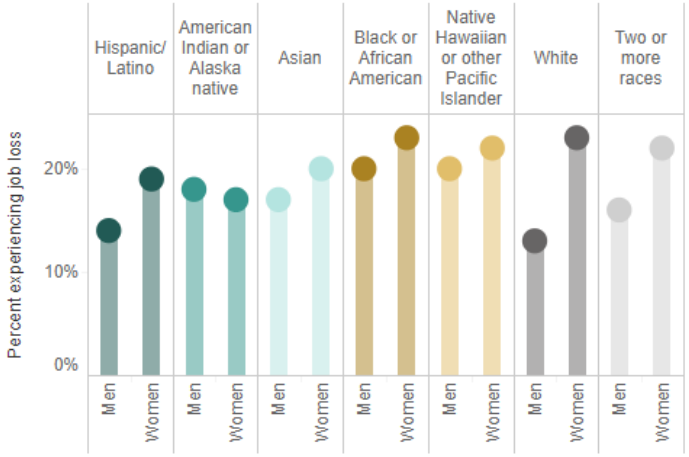
Finding 4: COVID-19 Impacts

- While 13% of white men experienced a job loss during the COVID-19 pandemic, 17% of Native American women, 23% of Black women, and 23% of white women experienced a job loss.

- While 85% of white men experienced an income loss during the pandemic, 93% of Native American women, 92% of Black women, and 90% of Hispanic women experienced an income loss.



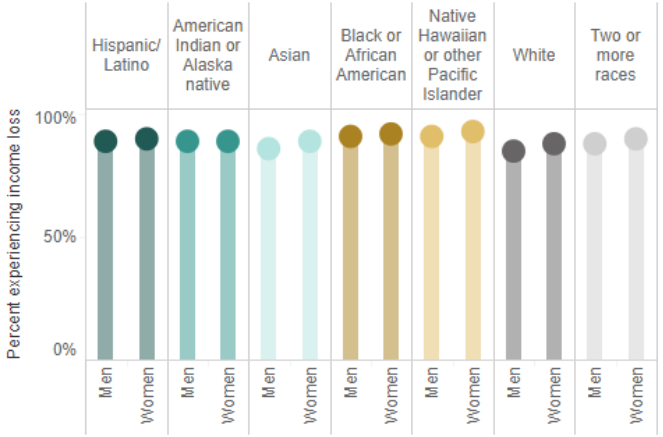


Figure from a draft of data narrative.

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Limitations

- USHE data only include public technical colleges and DGIs in Utah.
- Data for workforce participation outside of Utah are not available. The attachment to workforce status is an approximation.
- Only UI income are included. Narrow definition of job loss during COVID-19 could lead to underestimation.
- The misalignment of academic calendar and quarterly wage report calendar.
- Important variables such as parenthood status and parental educational attainment were not available for the current research.

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Future Research

- The wage gap for those who never enrolled in postsecondary education.
- The wage gap for women who are disabled or experience intergenerational poverty.
- Due to the lack of sample sizes in a few instances for WOC in this study, a qualitative research could provide context on the occupational dynamics and structural mechanisms contributing to wage disparities for WOC.
- A research on the wage outcomes on students who graduate during the pandemic.

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Conclusion

- In general, the gender wage gap grows over time for WOC.
- As the educational attainment of women of color increases, the wage gap generally decreases.
- Most of the wage gap cannot be explained by education or prior work experience for all WOC.
- The financial impact of the COVID-19 outbreak has disproportionally affected WOC in terms of wage and job loss.

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Q&A

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Utah's Cost of Living for Recent USHE Graduates

Connor Hill

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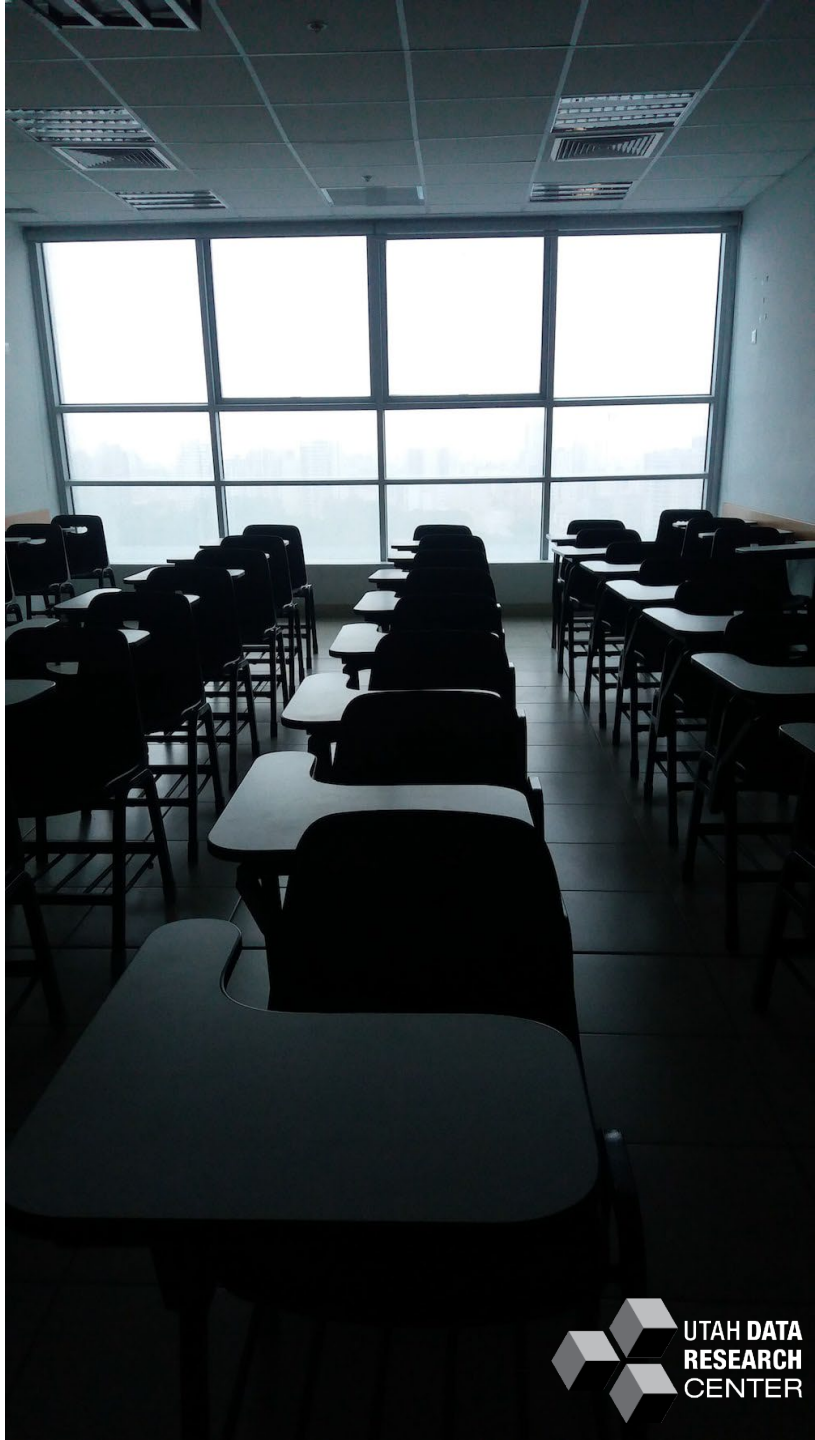
Introduction

- This research demonstrates what proportion of USHE graduates can afford "basic needs" the first year after receiving their award.
- For this presentation, the household budgets for Beaver, Salt Lake, and Summit counties are discussed.
- Examining the cost of living in Utah for recent college graduates, provides greater insight into the potential benefits of higher education for individuals interested in higher education, policymakers, and other researchers.



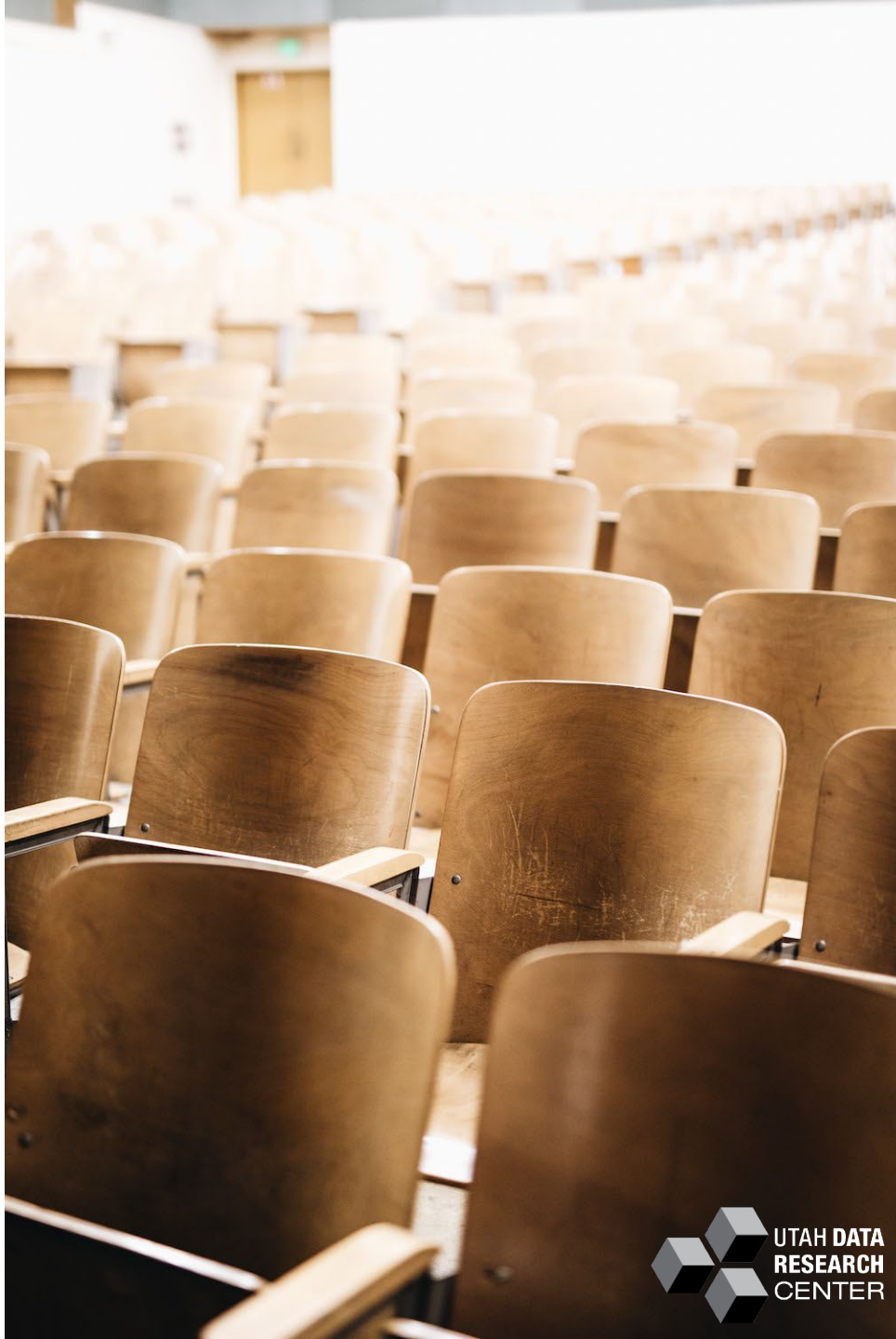
Literature Review

- Before and during the COVID-19 pandemic, the rate of individuals struggling to afford basic needs was similar, ranging from approximately 30-40% (United for ALICE 2023a and 2023b; Karpman et al., 2019; Kucklick & Manzer, 2021; Census Bureau, n.d.).
  - Methodological differences between the two periods prevent any direct comparisons, however.
- United Way of California and the University of Washington found the rate to be 18-20% for college graduates.
- The Census Bureau found the rate of households struggling to afford "usual household expenses" typically between 35% and 40%.
- Corresponding with legislation by Congress that provided Economic Impact Payments, the rates declined by over 7% in March 2021 (Census Bureau, n.d.).
- The CBO had similar findings, stating that all income quintiles spent less of their "income after transfers and taxes," though the lowest quintile had the smallest benefit, whereas the highest quintile had the largest.

Research Questions

1. What proportion of USHE graduates could afford a basic standard of living the first year after graduating?
2. What proportion of quarterly income went to basic needs?

Results are disaggregated by award type and demographics.

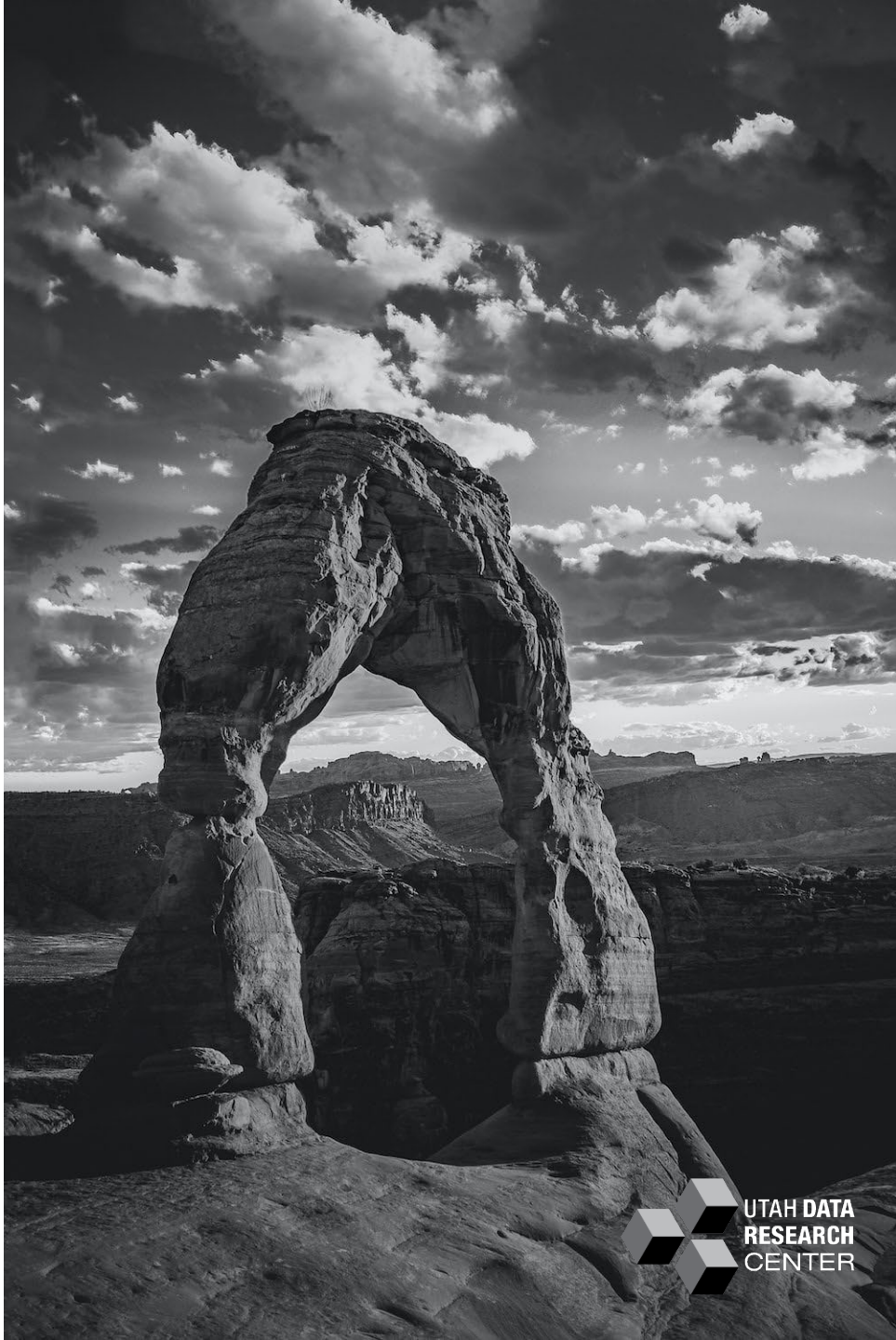


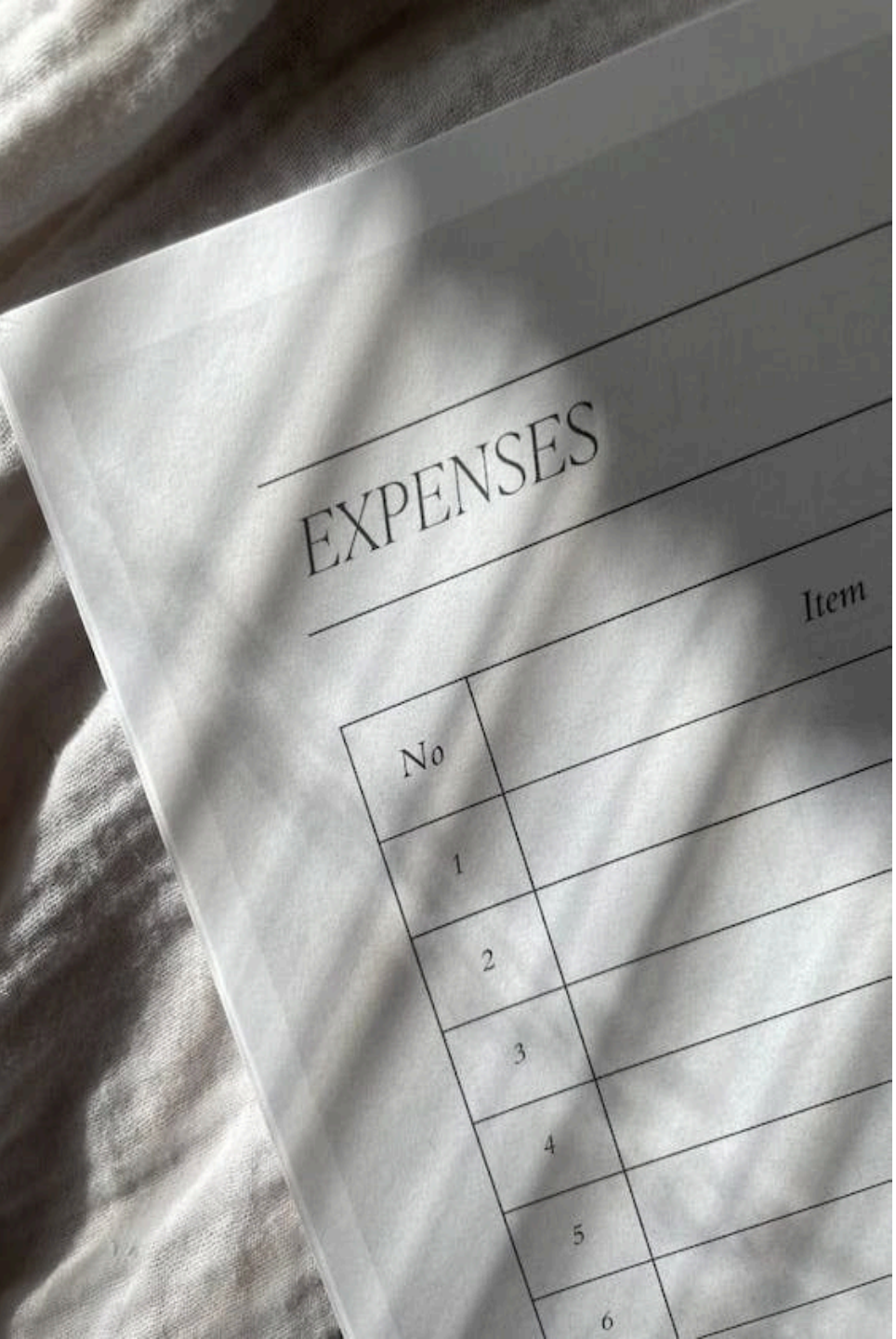
Methodology – Overview

- This research differs from other UDRC reports by taking into consideration not only the income received by individuals but also the cost of living in Utah and its counties.

- The basic household budget includes up to six expenses, though not all of them will apply to every household type.

- Multiple simulated household scenarios will be included in the analysis to account for different family types.





Methodology – Basic Household Budget

- Median household rent and utilities.
- Food expenditure.
  - Includes only food made at home.
- Transportation.
- Student loans.
  - Not included in most cost-of-living analyses.
- Full-time childcare for households with children.
- Miscellaneous.
  - Apparel, personal care, household supplies, and telephone services

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Methodology – Simulated Living Scenarios

- Proportion of graduates able to afford basic needs the first year after graduating for cohorts 2015-2020.
  - Single wage-earning adult with up to two children.
  - Two wage-earning adults with up to two children.

- For two wage-earning households, median wages were used.

Data & Sample – UDRC's Database

- 80,019 USHE graduates from the 2015-2020 cohorts who did not return to school the year after completion and were employed full-time each quarter the year after graduation.

USHE	DWS
Award type, graduation date, demographic data, federal and "other" loans.	Quarterly wages from 2016Q1-2021Q4.

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Data & Sample – Outside UDRC's Database

HUD (US)	USDA	CNT
Housing and Utilities: Fair Market Rent – 50th Percentile.	Monthly Food Plans: Third quartile food expenditure.	Housing and Transportation Index.
DWS' Office of Child Care	US BLS	FSA
2015, 2017, 2021 Child Care Market Rate Studies.	Consume Expenditur Survey.	Interest Rates for Federal Student Loans.

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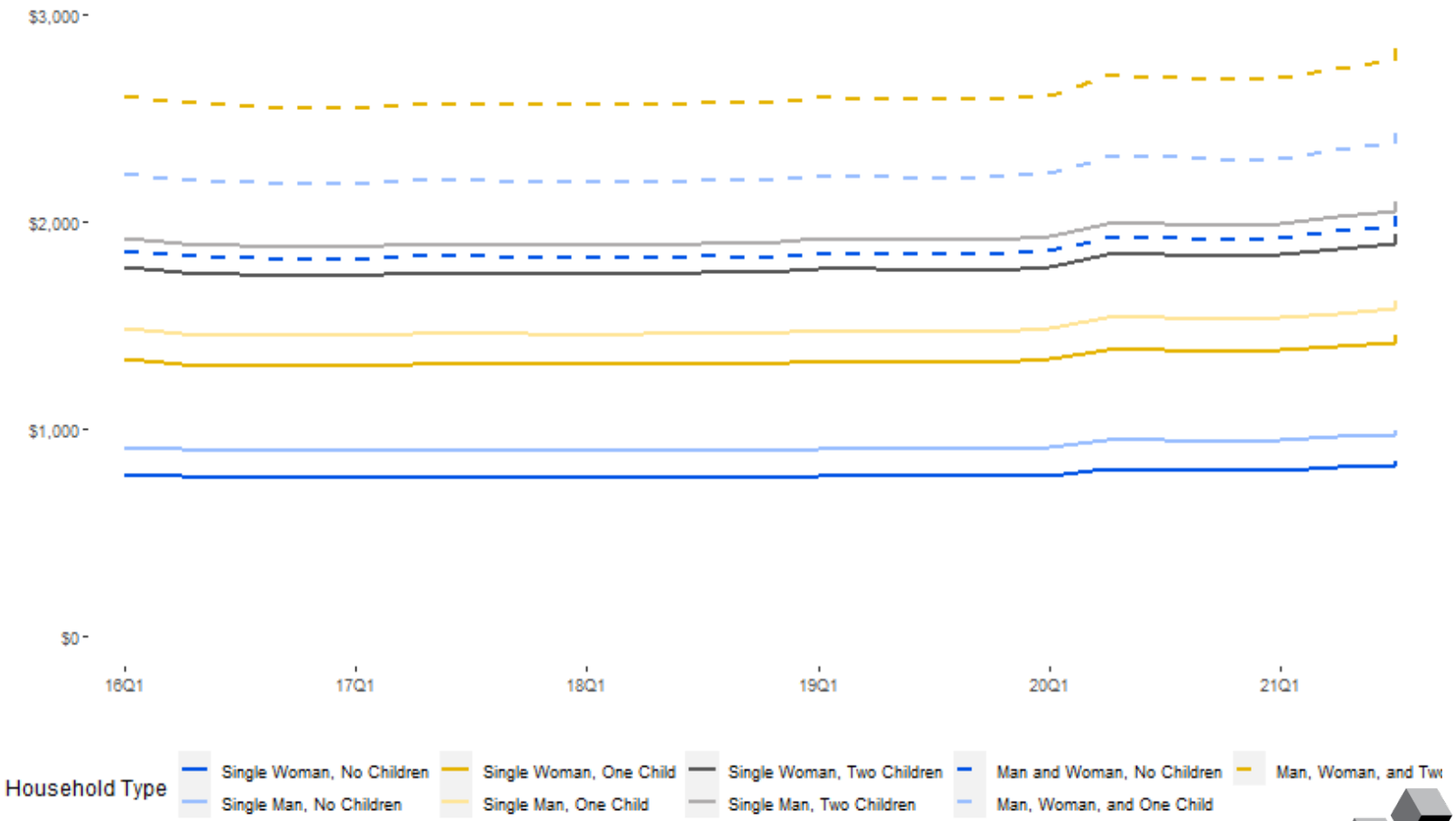
Findings: Cost of Food

- The cost of food was relatively stable until 2020 and 2021.
- Men's expenditure was consistently higher than women's.

Figure 1: The Nominal Cost of Food for All Counties in Utah by Household Type.



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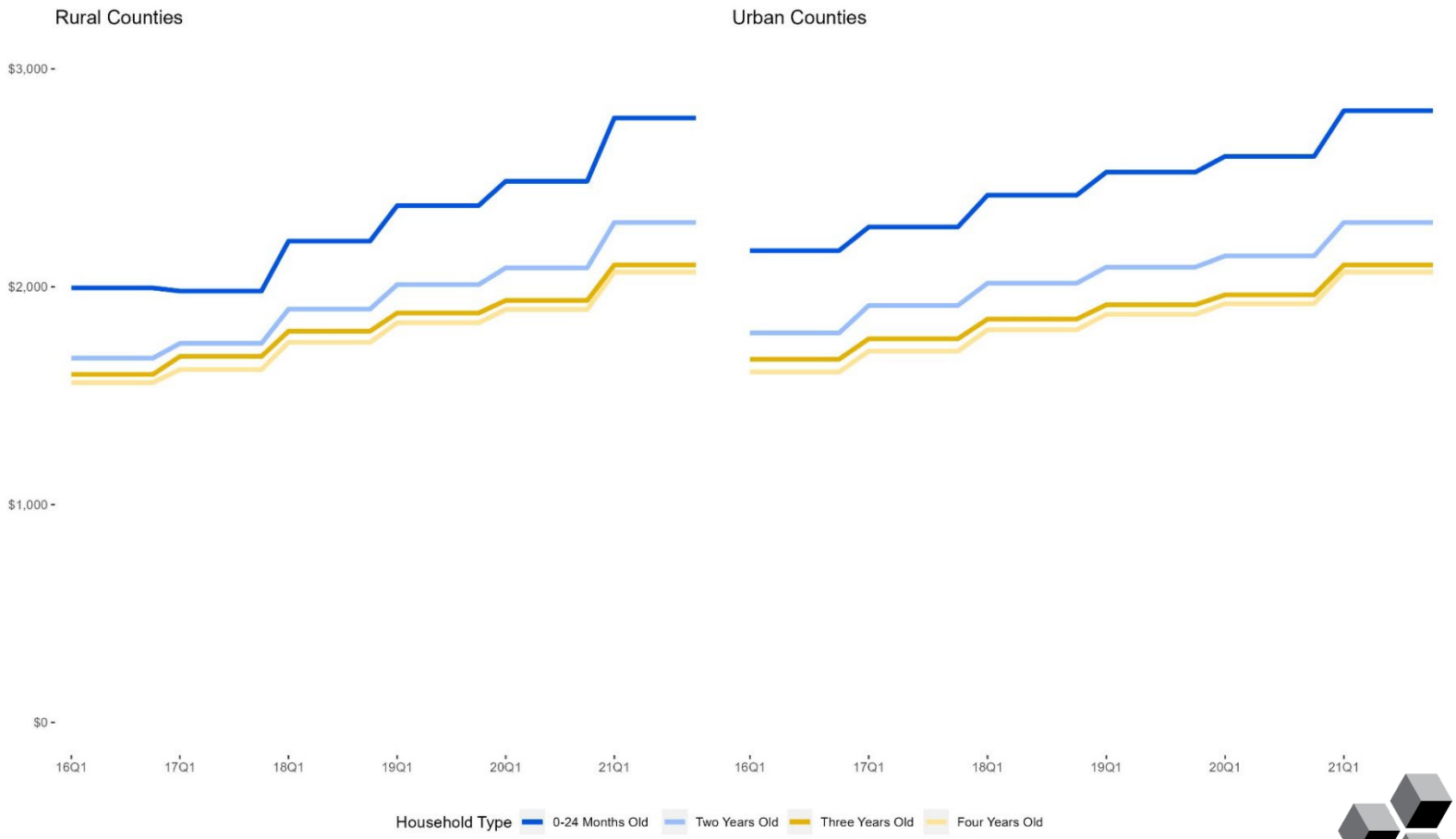
Findings: Cost of Childcare

- The cost of childcare has been steadily increasing since the beginning of the analysis, with the largest increase occurring in 2021.
- Urban counties were consistently more expensive, though the gap declined.

Figure 2: The Nominal Median Cost of Licensed Center Providers for Childcare.



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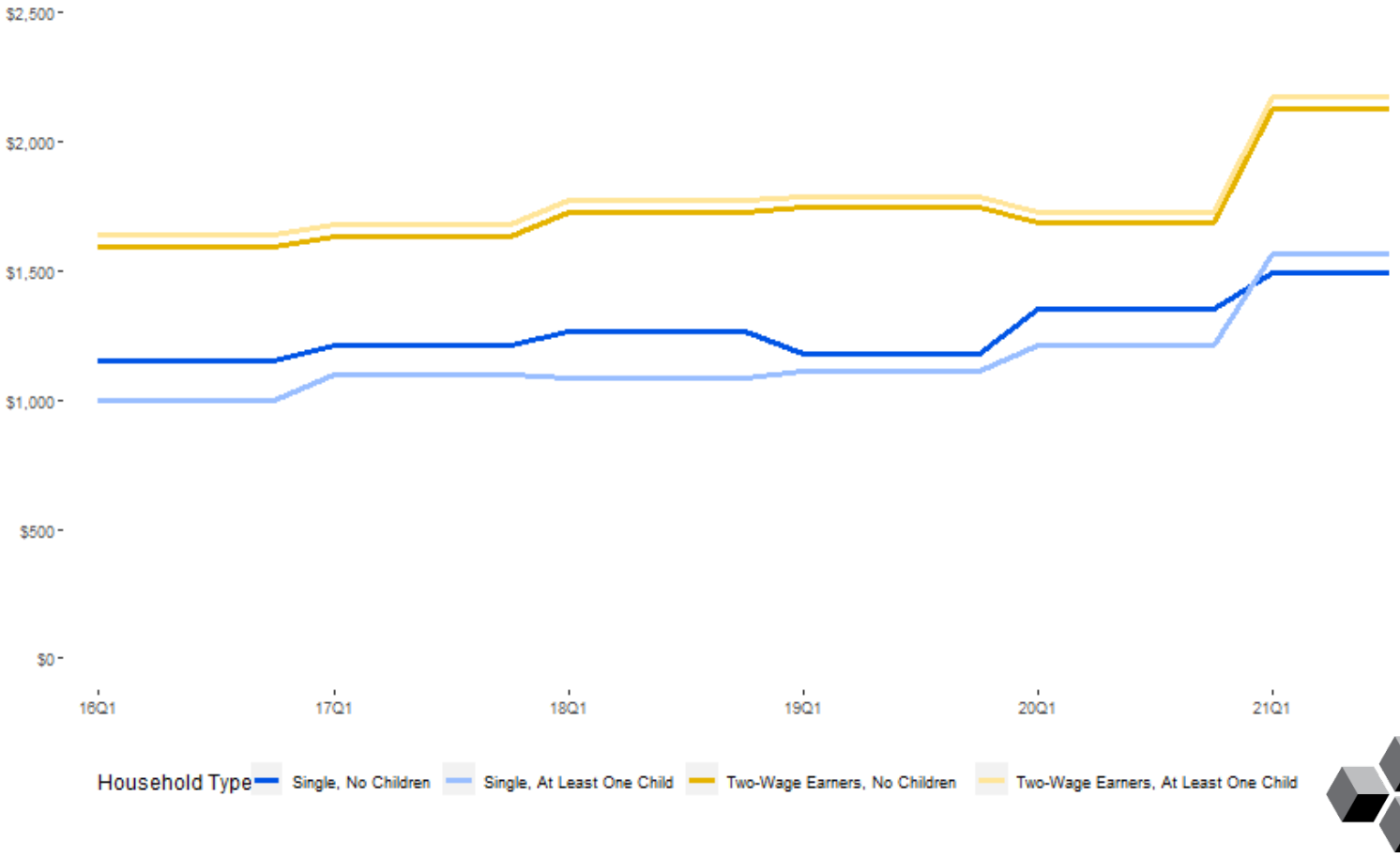
Findings: Miscellaneous Expenses

- Single households without children spent more than single households with children for most of the analysis.
- The largest increase was in 2021 for most household types.

Figure 3: The Nominal Cost of Miscellaneous Expenses for All Counties in Utah by Household Type.



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Findings: Student Loan Repayment

- Less than 40% of USHE graduates from the 2015-2020 cohorts have student loans.
- The cost of quarterly student loan repayment increases for each award type and cohort.

Table 1: The Number of Graduates with Student Loans for Cohorts 2015-2020 and Their Mean and Median Quarterly Student Loan Payments.

Cohort	Total # of USHE Graduates	# of USHE Graduates with Student Loans	Only USHE Graduates with Student Debt	
			Mean Payment	Median Payment
2015	14,128	5,463 (38.7%)	$855	$561
2016	13,868	5,314 (38.3%)	$999	$645
2017	13,226	5,124 (38.7%)	$1,167	$744
2018	13,175	4,965 (37.7%)	$1,218	$774
2019	14,342	5,117 (35.7%)	$1,269	$795
2020	11,280	3,818 (33.8%)	$1,311	$780

Table 2: Mean and Median Quarterly Student Loan Repayment, for Graduates with Student Debt, by Award Type and Cohort

		2015	2016	2017	2018	2019	2020
Certificate	Mean	$475.93	$486.80	$527.51	$498.30	$561.89	$691.31
	Median	$323.24	$321.59	$308.33	$308.59	$341.90	487.30
Associate	Mean	$502.58	$473.12	$579.11	$558.09	$642.34	$689.57
	Median	$367.24	$326.19	$386.33	$386.33	$441.90	$491.17
Bachelor	Mean	$740.33	$880.68	$1,024.38	$1,081.68	$1,154.49	$1,238
	Median	$538.09	$663.64	$749.42	$814.12	$854.77	$941.40
Graduate	Mean	$1,704.16	$2,095.15	$2,376.36	$2,748.84	$3,143.01	$4,060.09
	Median	$1,131.72	$1,259.5	$1,401.52	$1,815.93	$2,012.67	$2,477.71

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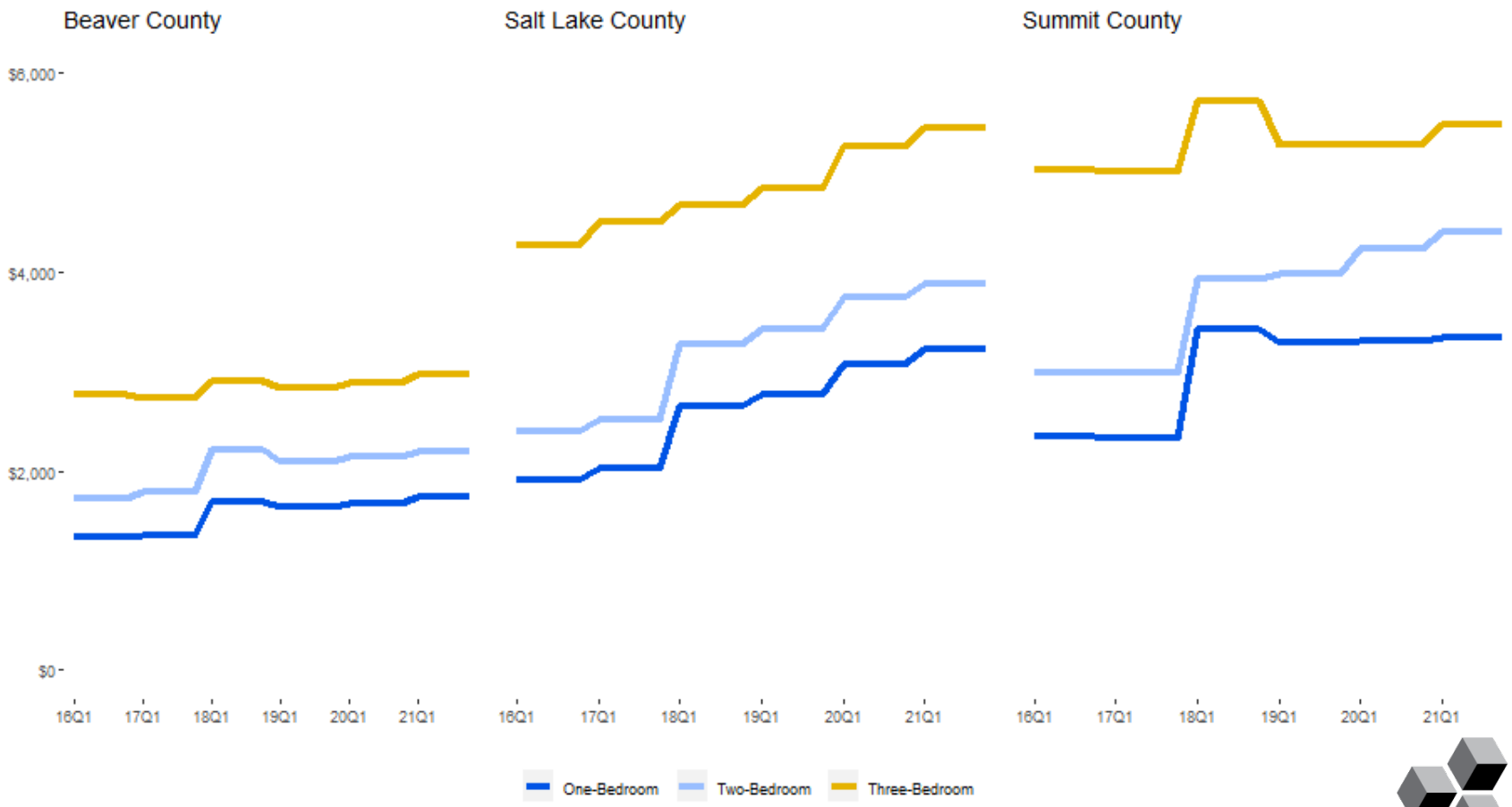
Findings: The Quarterly Cost of Rent

- Most counties in Utah experienced an increase in the cost of rent throughout the analysis.
- The largest increase in the cost of rent occurred between 2017 and 2018.

Figure 4: The Nominal Cost of Rent.



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Findings: The Quarterly Cost of Transportation

- Transportation expenditure was similar across all counties in Utah.
- Generally, urban counties had marginally smaller costs.

Figure 5: The Nominal Cost of Transportation.

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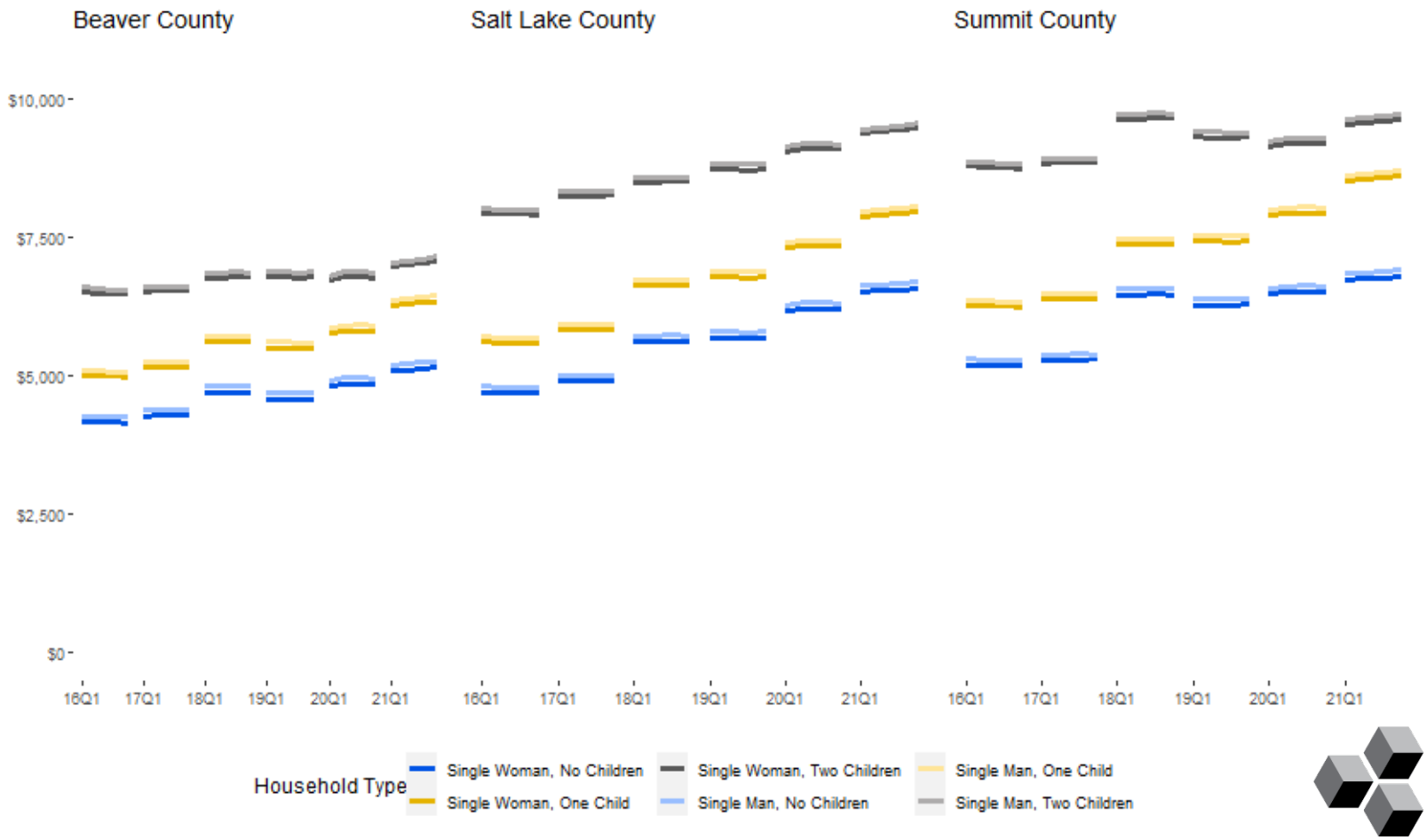
Findings: Household Budget's Total Cost

- The household budget's total cost rose throughout the analysis..
- Increases were not experienced equally across counties.

Figure 6: The Nominal Cost of All Items in the Household Budget Up to Two Children



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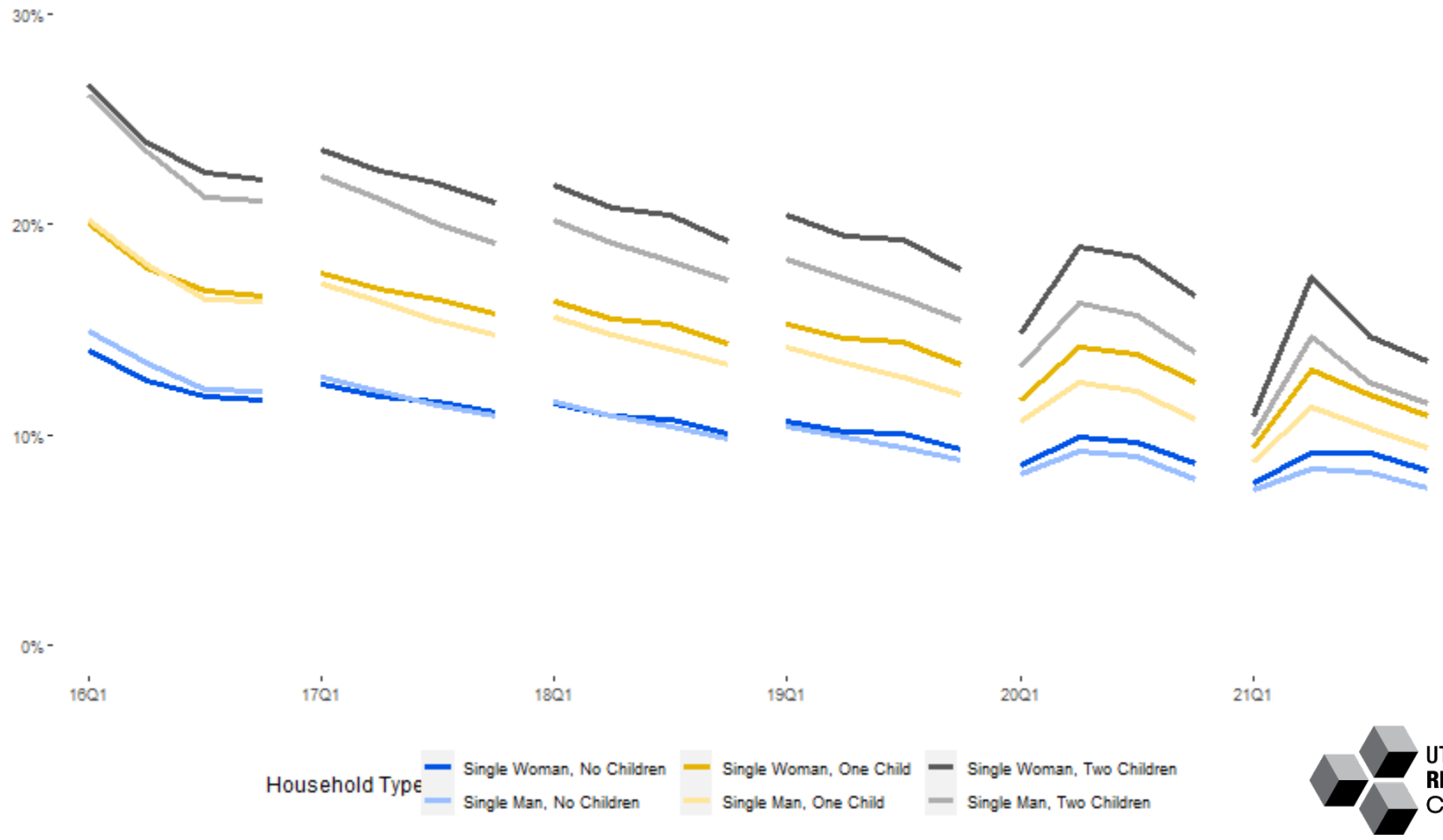
Findings: Proportion of Income – Food

- The cost of food accounted for approximately 15-25% of quarterly household income.
- The proportion of income was higher for women for most cohorts.

Figure 7: Food Expenditure's Average Proportion of Quarterly Income.



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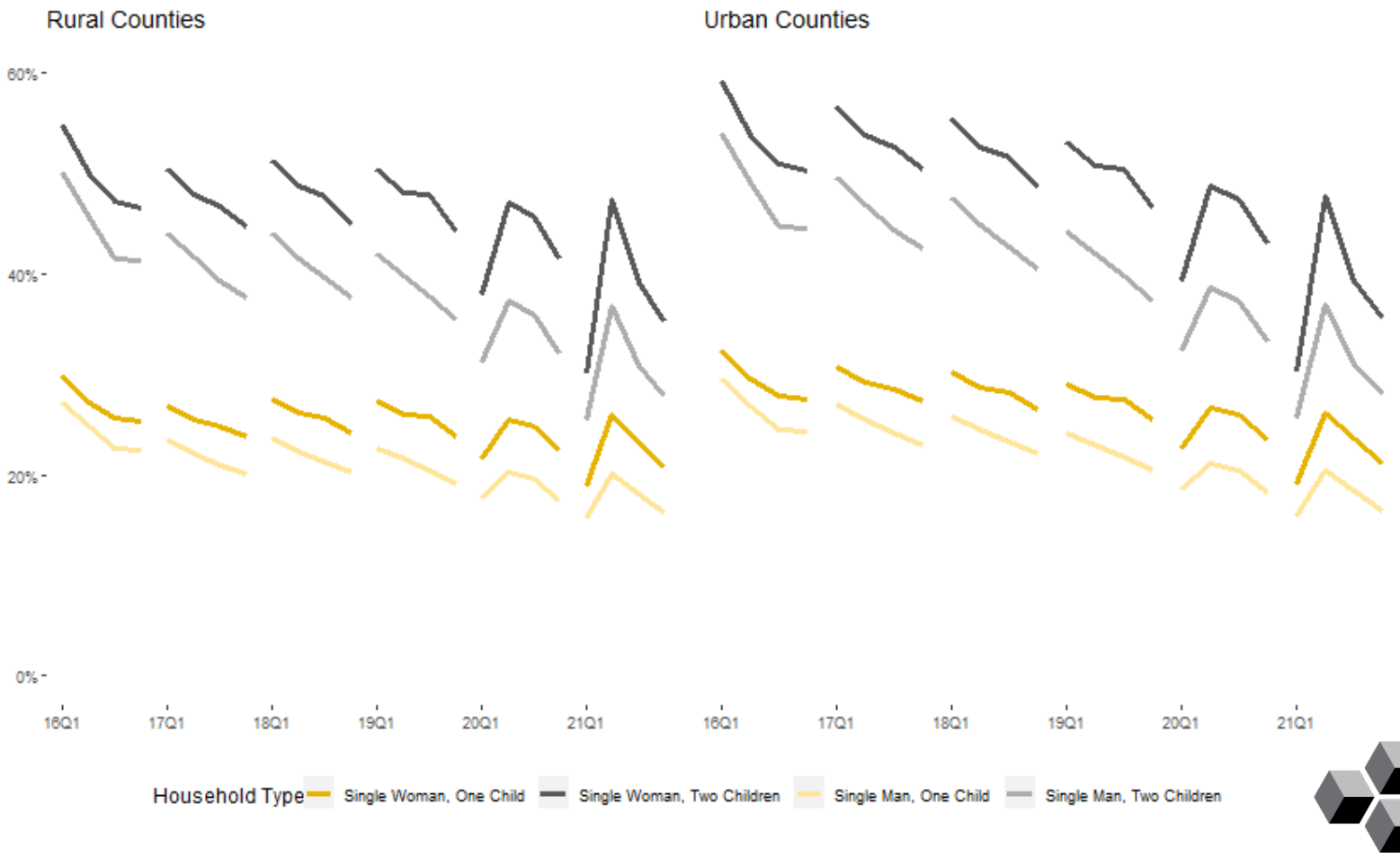
Findings: Proportion of Income – Childcare

- The cost of childcare was above 50% for select cohorts.
- The average proportion of quarterly income spent on childcare has declined over the course of the analysis.

Figure 8: Average Proportion of Quarterly Income Spent on Childcare.



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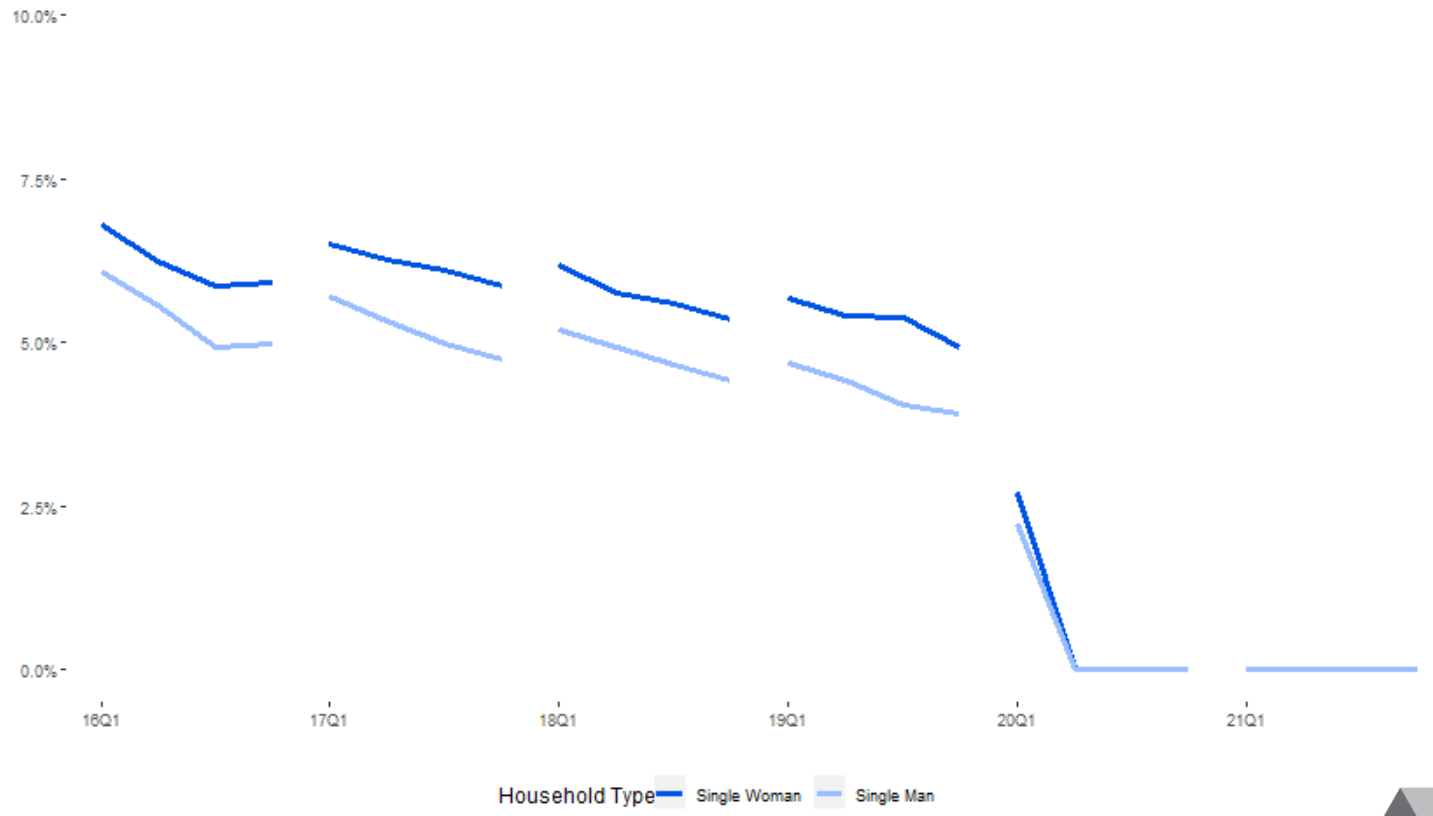
Findings: Proportion of Income – Student Loan Repayment

- Student loan repayment's average proportion of quarterly income was approximately one percentage point higher for women.
- Despite interest rate increases, the proportion of income was similar between 2016 and 2019.

Figure 8: Average Proportion of Quarterly Income Spent on Student Loan Repayment - Bachelor's Degree



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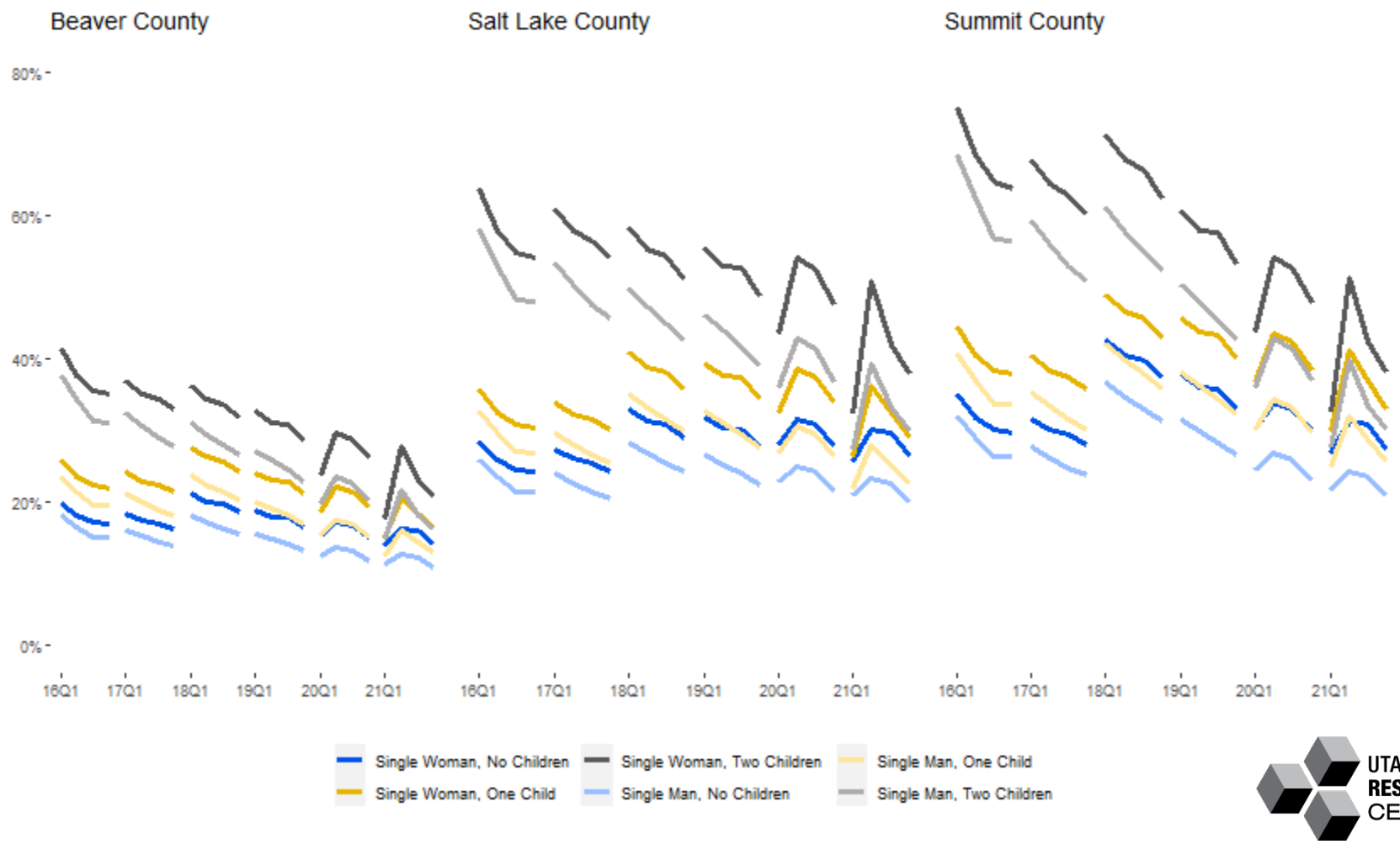
Findings: Proportion of Income - Rent

- The average proportion of income spent on rent declined throughout the analysis.
- Women's proportion of income was consistently higher than men's.

Figure 9: Average Proportion of Quarterly Income Spent on Rent.



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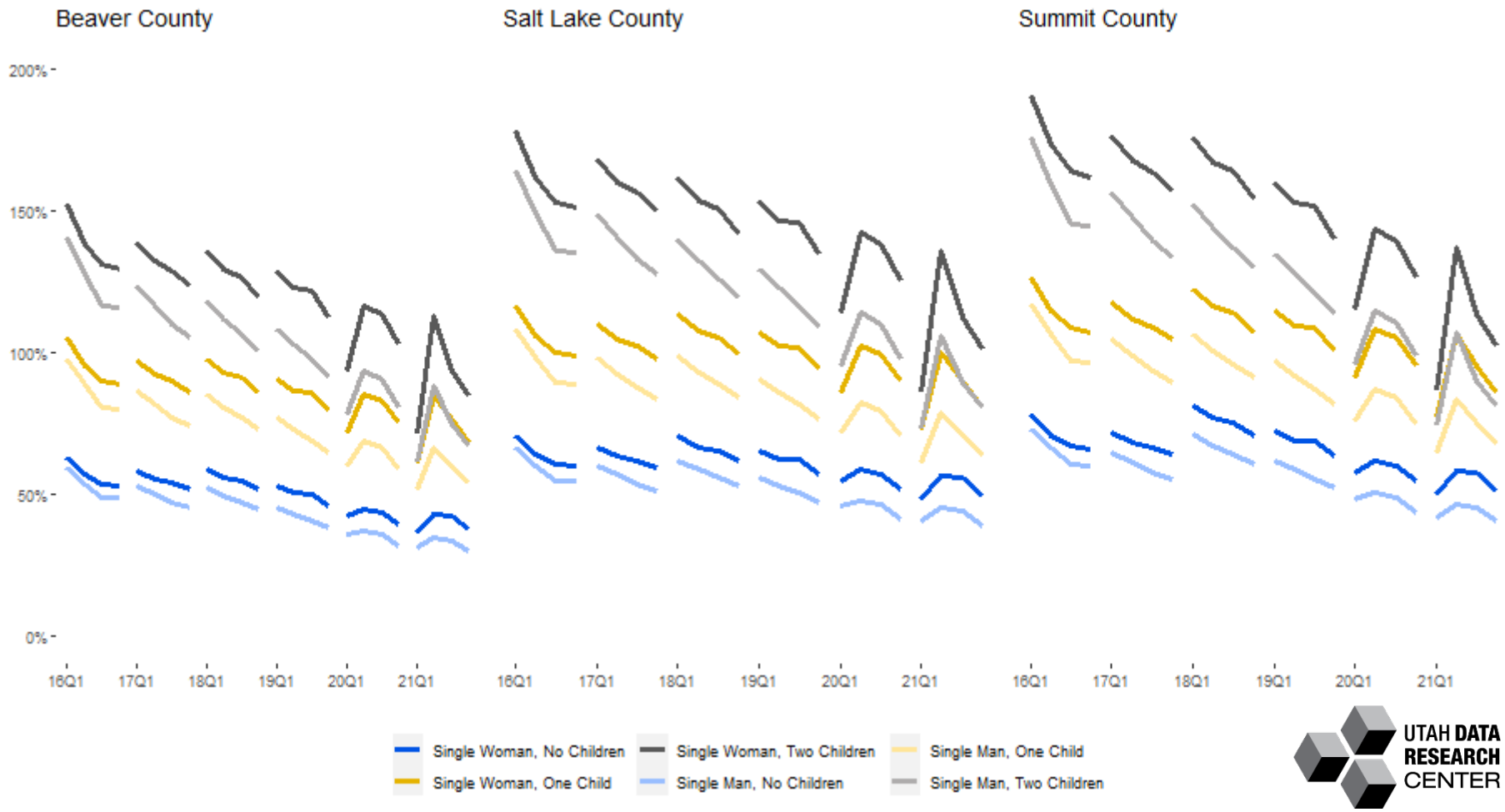
Findings: Proportion of Income – All Items

- For households without children, the household budget accounted for 50-70% of quarterly income.
- Households with two children had upwards 150% or more going towards the household budget.

Figure 10: The Average Proportion of Income for All Items in the Household Budget – Bachelor's Degree



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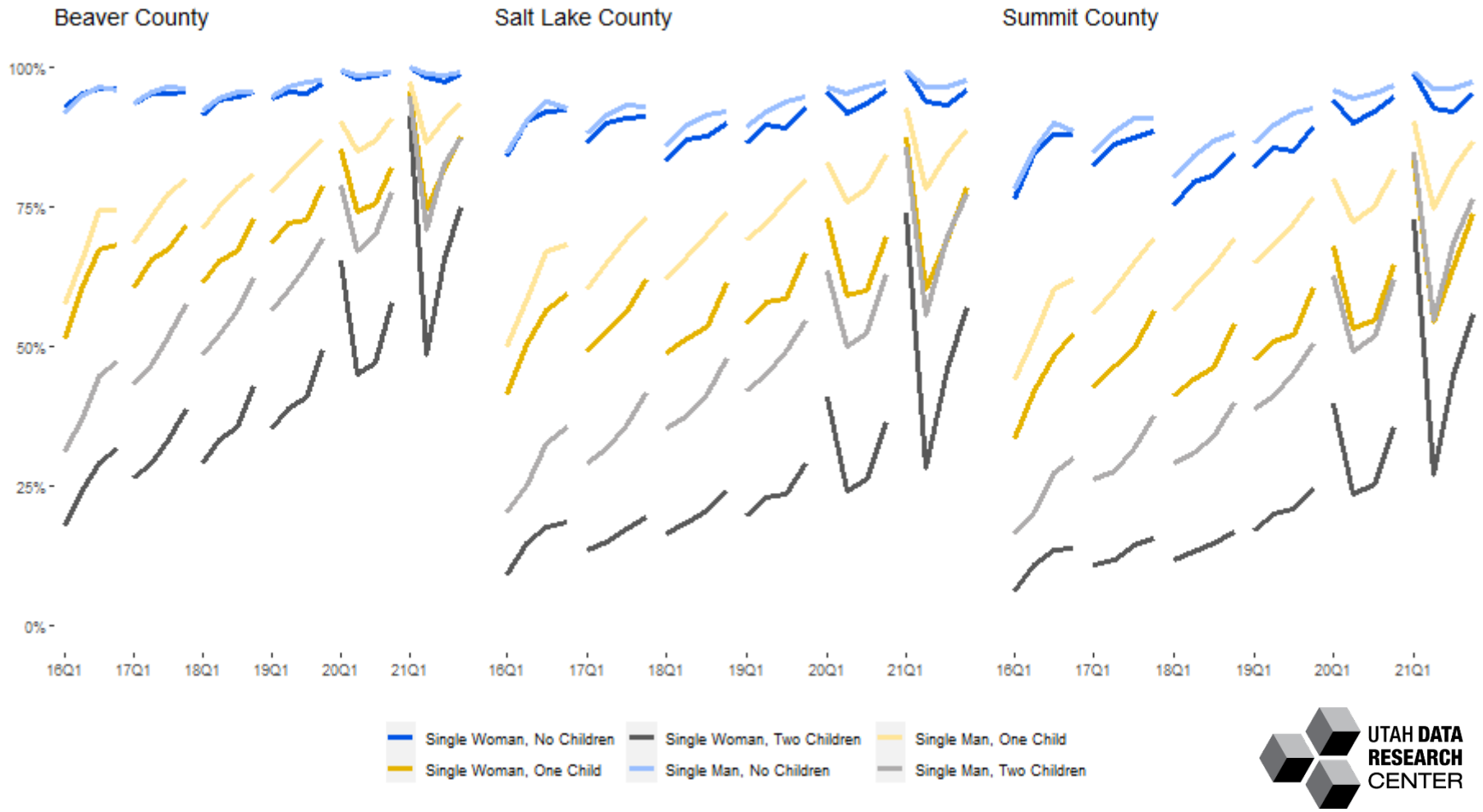
Findings: Percent of Households Earning At or Above the Household Budget

- As low as 6% of women with two children could afford basic needs.
- In 2021, the EIPs increased the proportion of households capable of affording the household budget.

Figure 10: Proportion of Graduates that could Afford Basic Needs 2015-2020 cohorts.



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Limitations – From UDRC's Database

USHE Data Only

Data does not include all postsecondary institutions.

Wage Floor

Quarterly wages had to be $3,770 or more per quarter.

Student Loans

Interest rates for "Other Loans" are not provided and the source is not known.

Student Loans, Cont.

The repayment plan that graduates are enrolled in is not known.

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Limitations– Outside UDRC's Database

HUD (US)	USDA	HHS (US)
Only include rents, not mortgages. Size of unit?	Data is at a national level. Only includes food at home	No out-of-pocket costs.
DWS' Office of Child Care	**BLS and CNT**	**Miscellaneous**
2015 report did not use recommended weighting. Reports do not include all years.	Data is not local. It is national data adjusted at a state level.	May not include all "basic need" items.

FSA
Does not provide interest rates for "Other Loans."

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Summary

- The proportion of USHE graduates able to afford the household budget depended on the size of the household.

- For households with no children, all items accounted for 50-60% of their quarterly income, depending on the county.

- In comparison, households with children had their household budget costing over 100% of their quarterly income.

Q&A

Contact

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Citations

Aklbrecht, Frank (2023). Unsplash. https://unsplash.com/photos/2fYuyBkmmGY

Be, Henry (2018). Unspash. https://unsplash.com/photos/lc7xcWebECc

Deluvio, Charles (2019). Unsplash. https://unsplash.com/photos/S5meg_j_W1U

D'Silva, Ashim. (2016). *Unsplash.* *https://unsplash.com/photos/jVWQtWfvR2Q*

MacDonald, Ian (2021). Unsplash. https://unsplash.com/photos/pmqTJDVbKdM

Murray, Jared (2020). Unsplash. https://unsplash.com/photos/OJefaNf1HH0

The Sunday Collection. (2023). *Pexels.* *https://www.pexels.com/photo/empty-expanse-tables-16037849/*

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Appendix – Childcare Methodology

- DWS' Office of Child Care Market Rate Studies from 2015, 2017, and 2021, childcare costs can be controlled by age, county type, and facility type.
- For years without a report, the cost is the average difference in cost between years evenly distributed.
  - For example, the average cost in 2016 is the difference between 2015 and 2017.

Appendix – Student Loans Methodology

- Student loans only include Federal Loans due to not knowing the interest rates for loans categorized as “other loans.”
- Assume all loans were subsidized.
- Assume that graduates enrolled in the traditional 10-year repayment plan
- To calculate the monthly payment, the loans are amortized using the following equation:

$$MP = \frac{P*r}{1-(1+r)^{-n}}$$

- Where *MP* is the monthly payment, *P* is the principal, *r* is the effective monthly interest rate, and *n* is the total number of payments.

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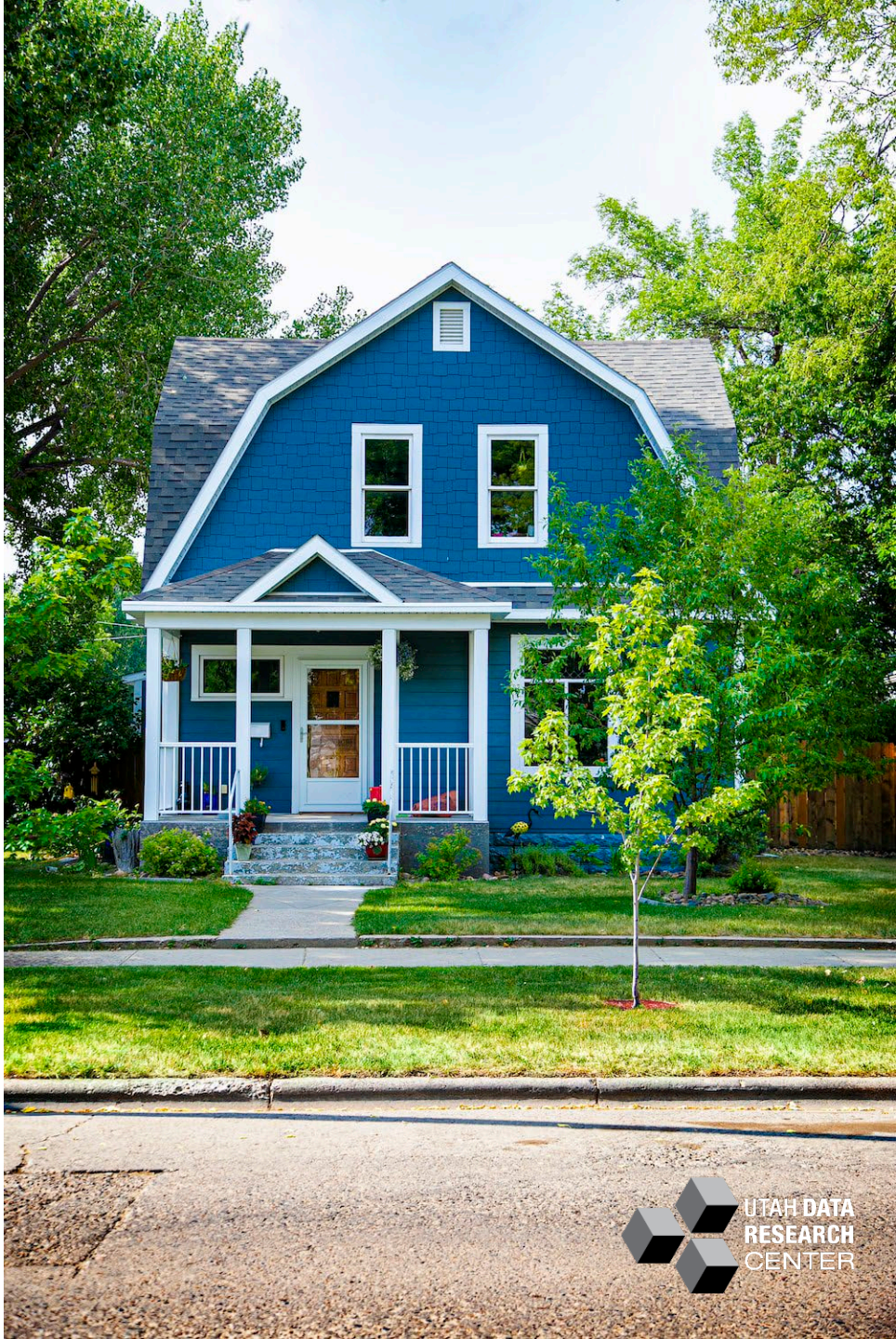
Appendix – Housing Methodology

- HUD provides annual rent estimates for counties.

- The state's median rent is the county population weighted rent Kem C. Gardner Policy Institute's estimates.
  - Data only goes to 2019. For 2020 and 2021, the 2019 population is used.



Appendix – Transportation Methodology

- The Federal Reserve's methodology for transportation was adopted (Atlanta Fed,2021).

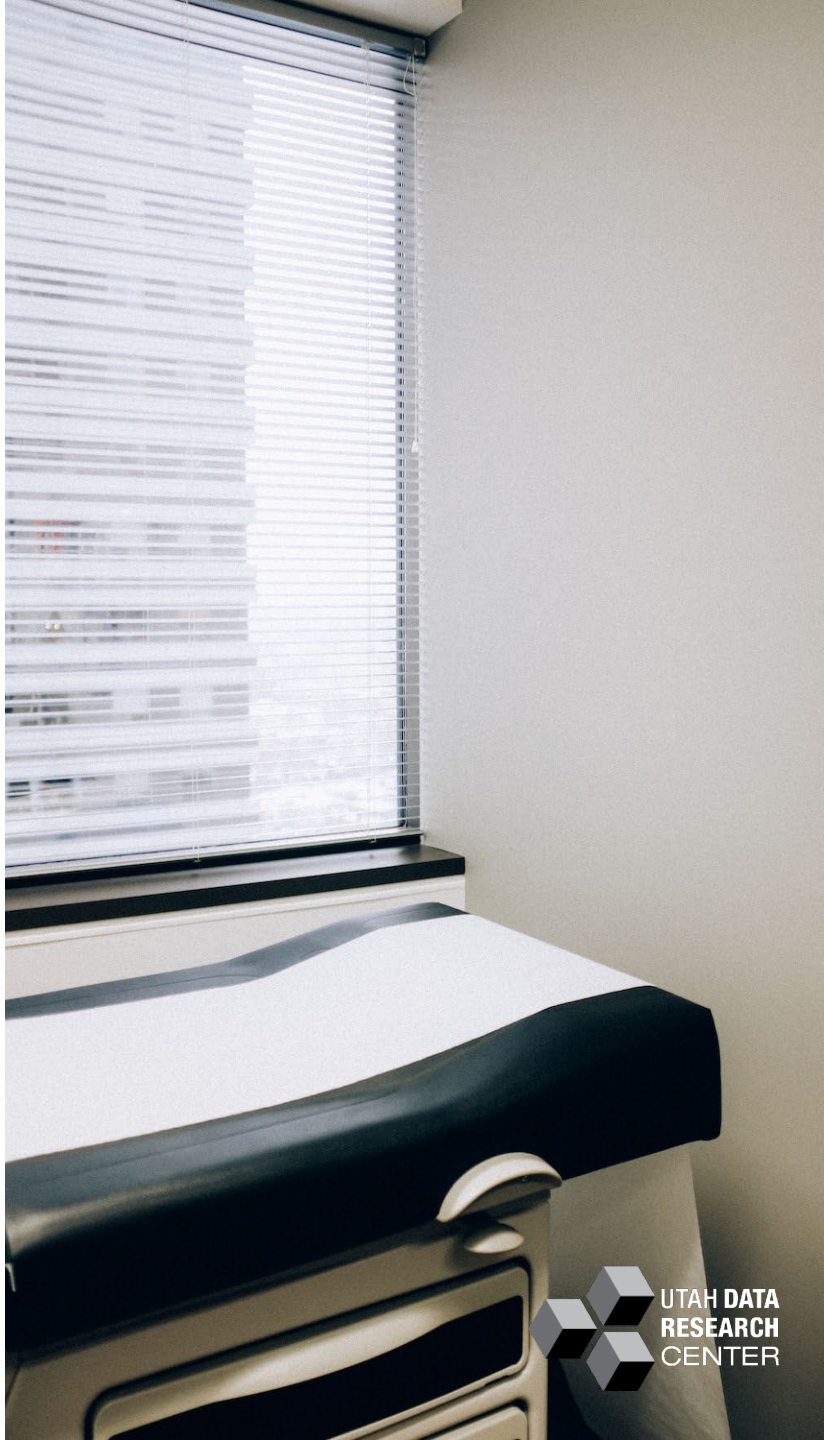
- Using the BLS' Consumer Expenditure Survey (CEX), the quarterly cost of transportation for individuals between the ages of 25-54 was obtained.

- County and state-level transportation costs were adjusted using CNT's H&T Index.

- For example, CEX data estimates that 25–54-year-olds spent $399 a month in 2020. The H&T index estimates that Utah spends about 14% above the national average. So, the monthly cost is about $455.

Appendix – Healthcare Methodology

- Healthcare costs include premiums from Healthcare.gov using its QHP Landscape Medical Files.
  - Premium costs will be controlled by using Utah's Specific Age Curve Variation.
- Out-of-pocket costs are not included.
- ACS data has found that most college graduates obtain health insurance through their employers, so this is not included in the household budget, but the cost and proportion of income is reported.



Kem C. Gardner
POLICY INSTITUTE
THE UNIVERSITY OF UTAH
DAVID ECCLES SCHOOL OF BUSINESS

A Look into the 2010-2020 Decline in Salt Lake City's Youth Population

Heidi Prior
Public Policy Analyst

INFORMED DECISIONS™

Kem C. Gardner Policy Institute | 411 East South Temple Street, Salt Lake City, Utah 84111 | 801-585-5618 | gardner.utah.edu

In 2020, Salt Lake City's population hit a record high: 199,723 residents. Simultaneously, the city hit a record low: the lowest number of residents under 18 in more than a century.

2020: A Record Year

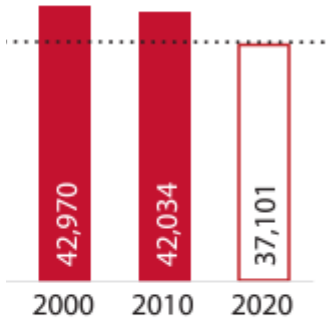
Figure 1: Salt Lake City Decadal Population Under Age 18, 1930-2020

Decade

Source: U.S. Census Bureau Decennial Census Reports, IPUMS NHGIS, University of Minnesota, www.nhgis.org

2020: A Record Year

Figure 1: Salt Lake City Decadal Population Under Age 18, 1930-2020



Source: U.S. Census Bureau Decennial Census Reports, IPUMS NHGIS, University of Minnesota, www.nhgis.org

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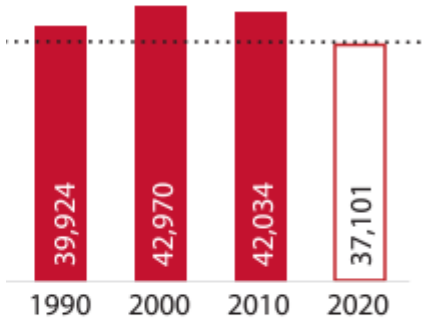

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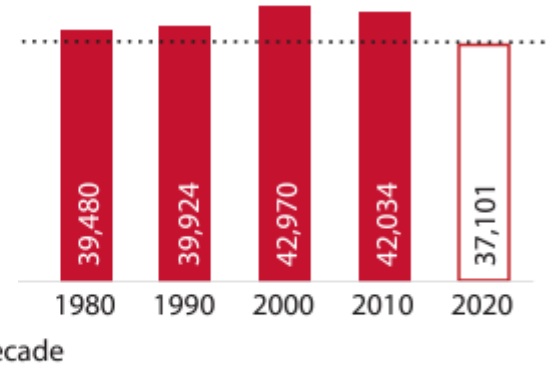

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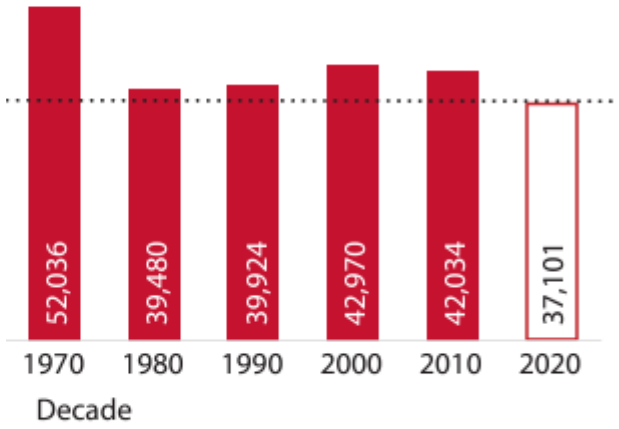

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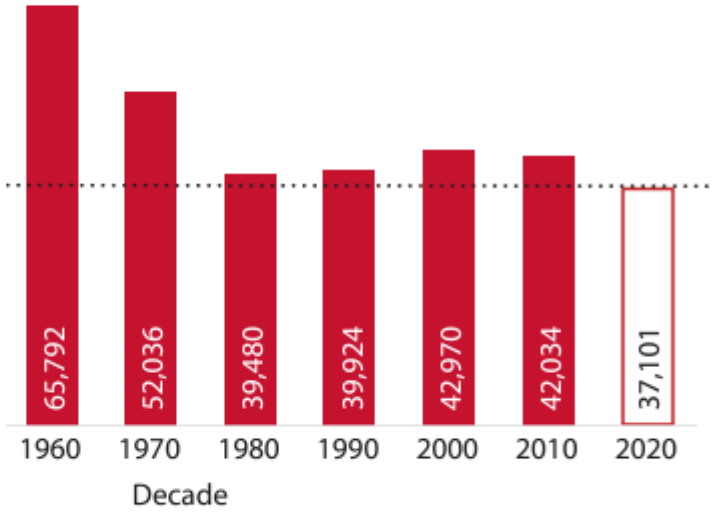

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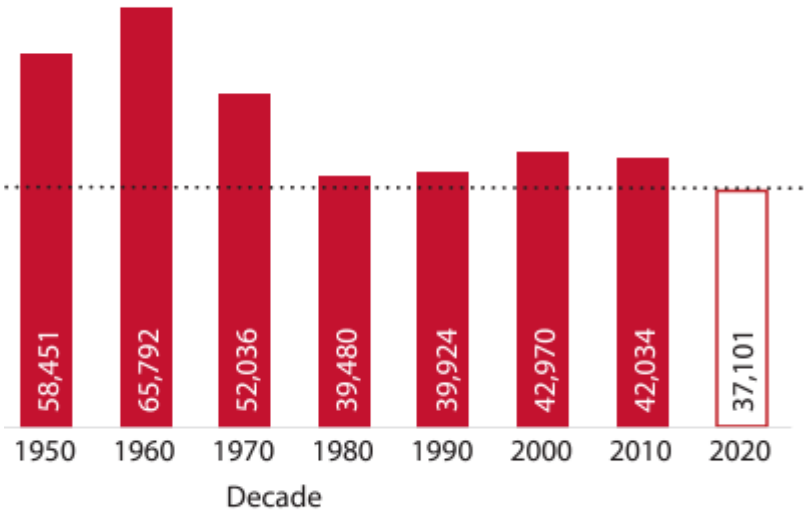

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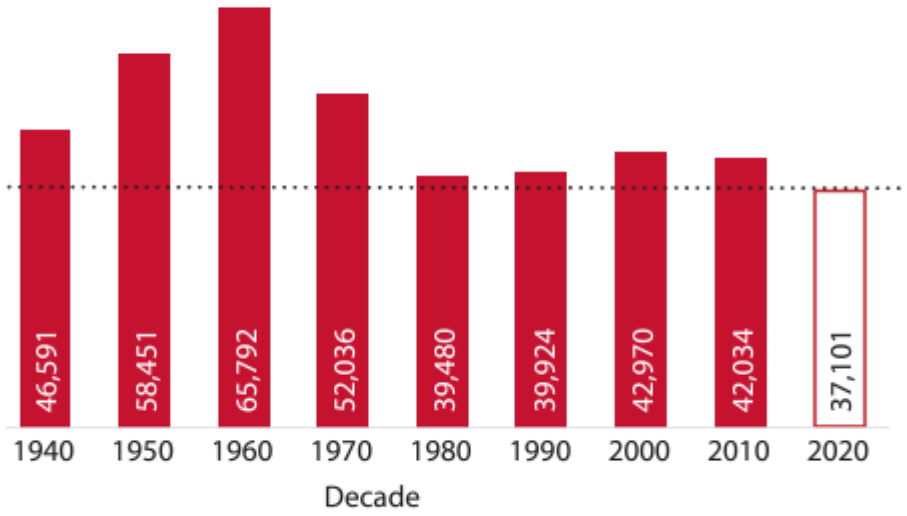

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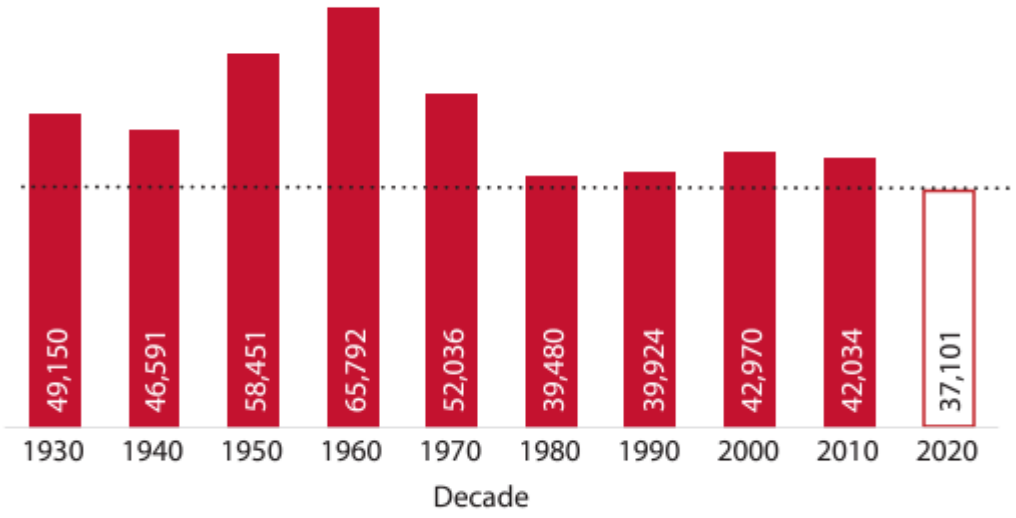

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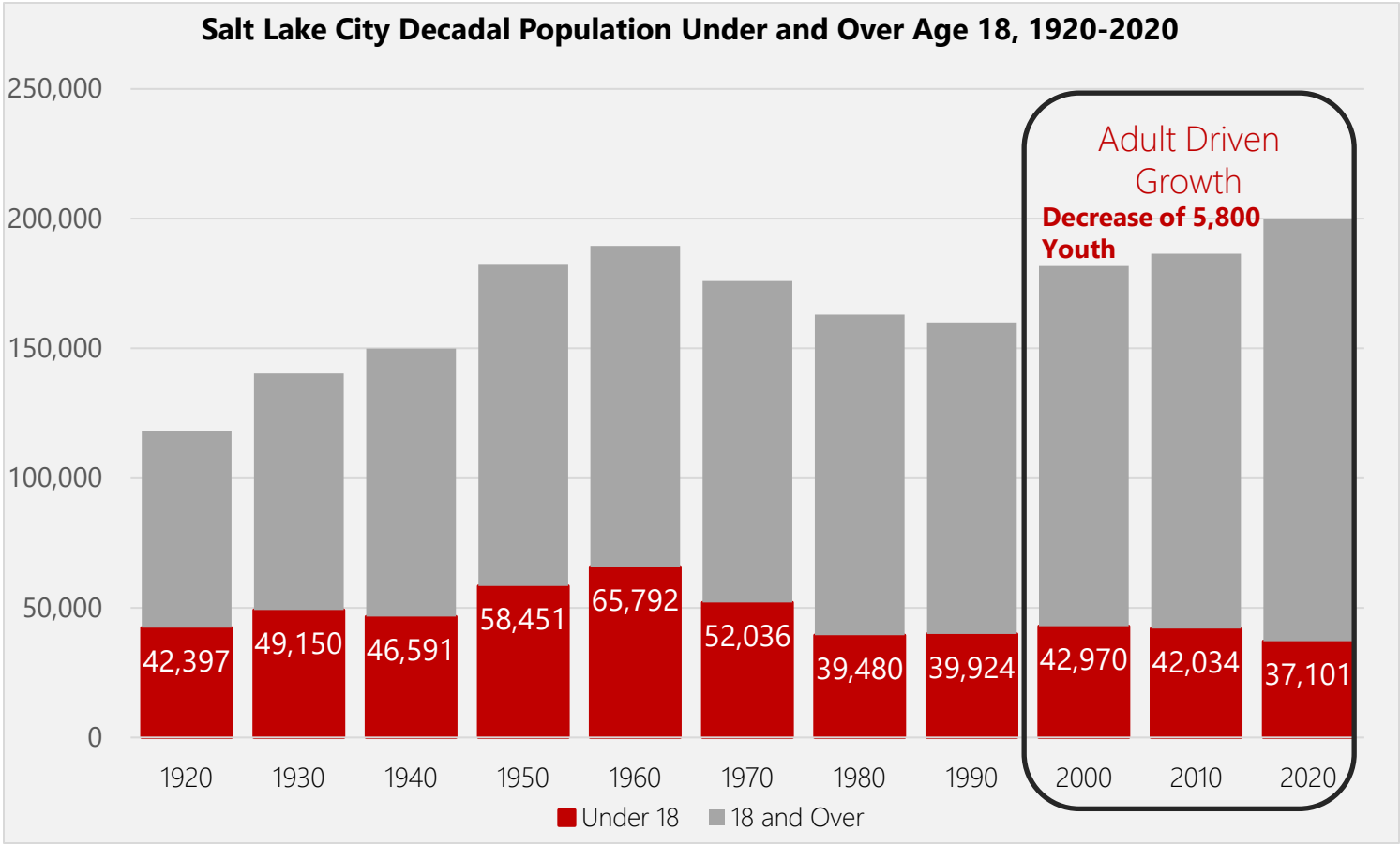

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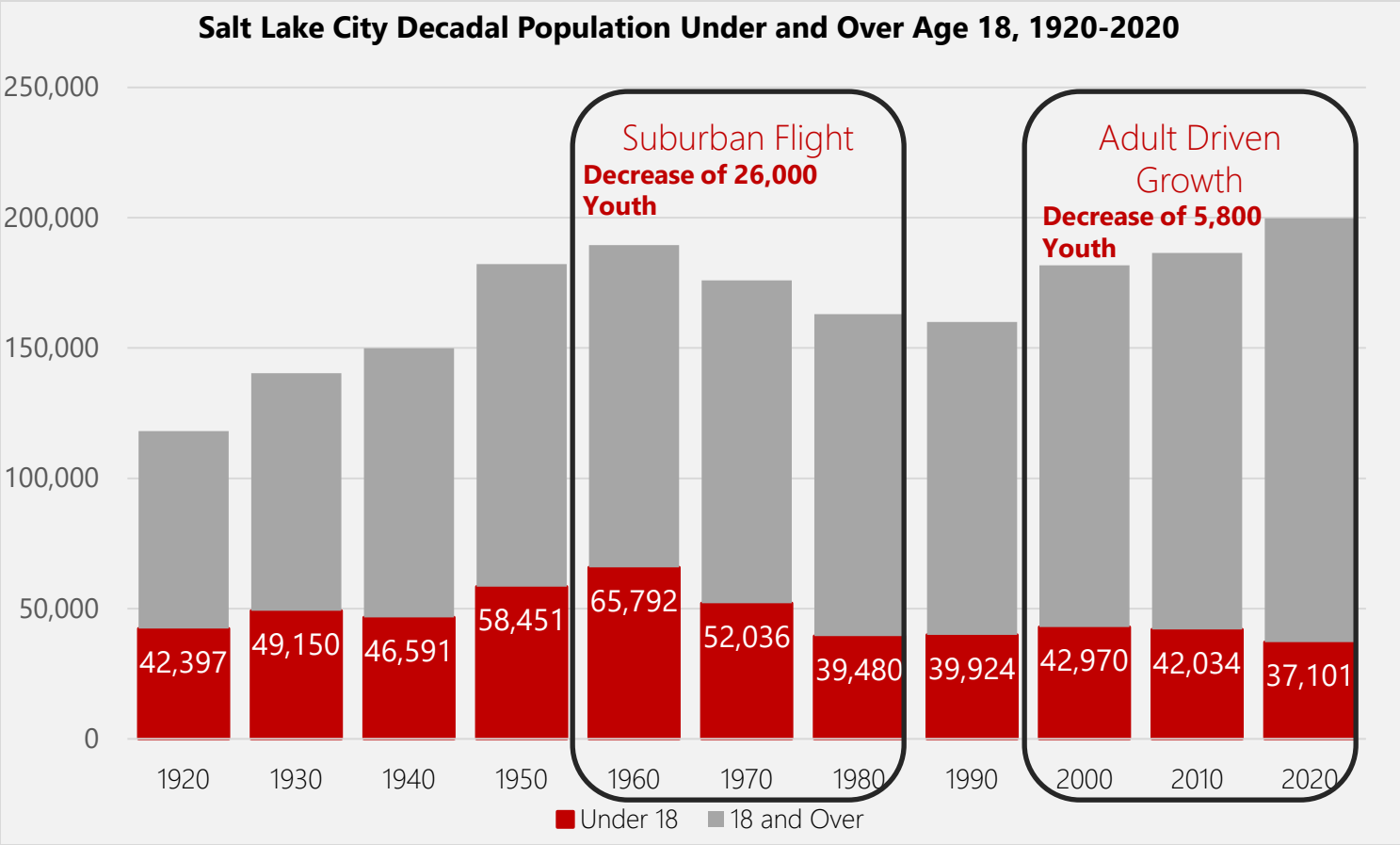

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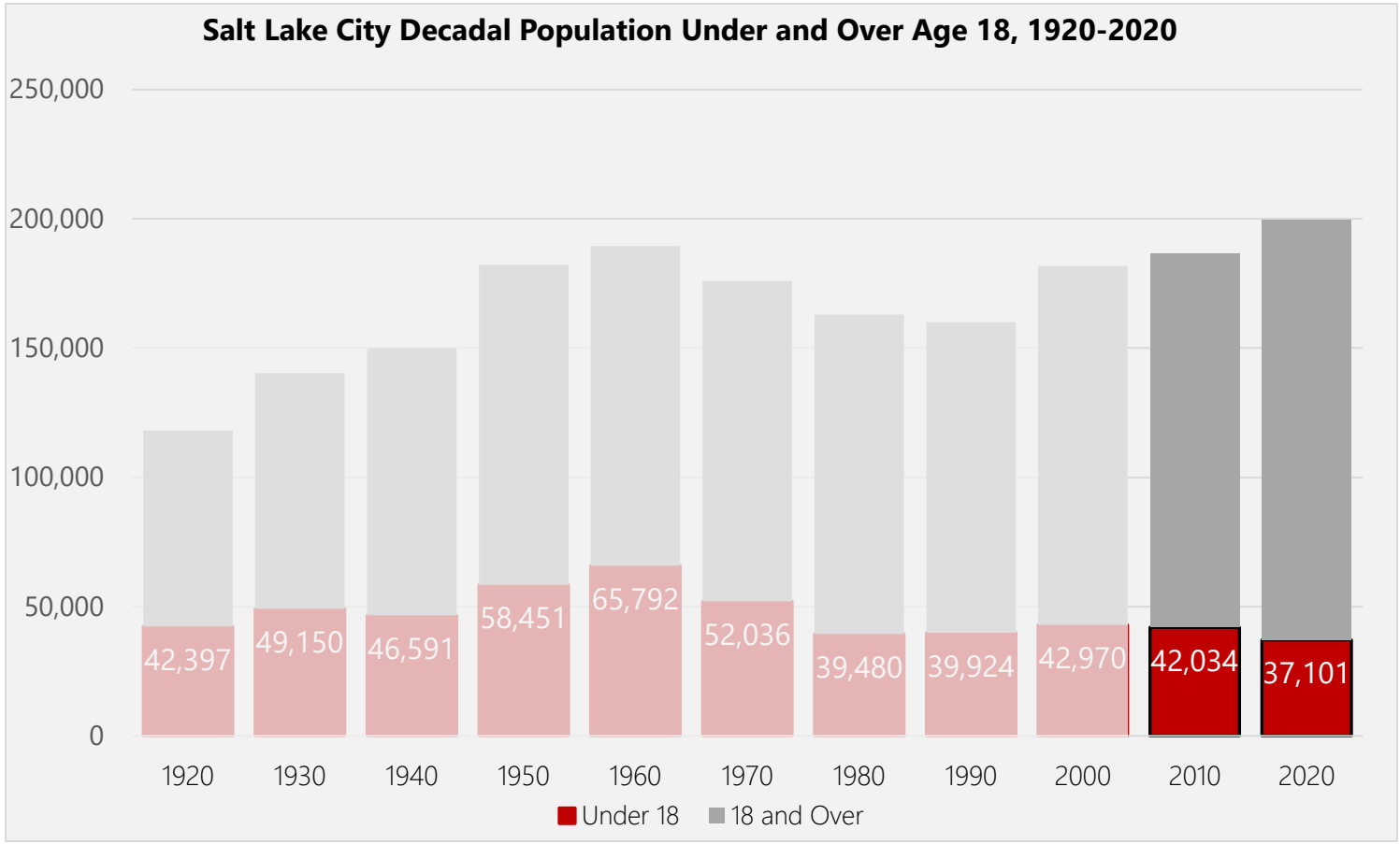
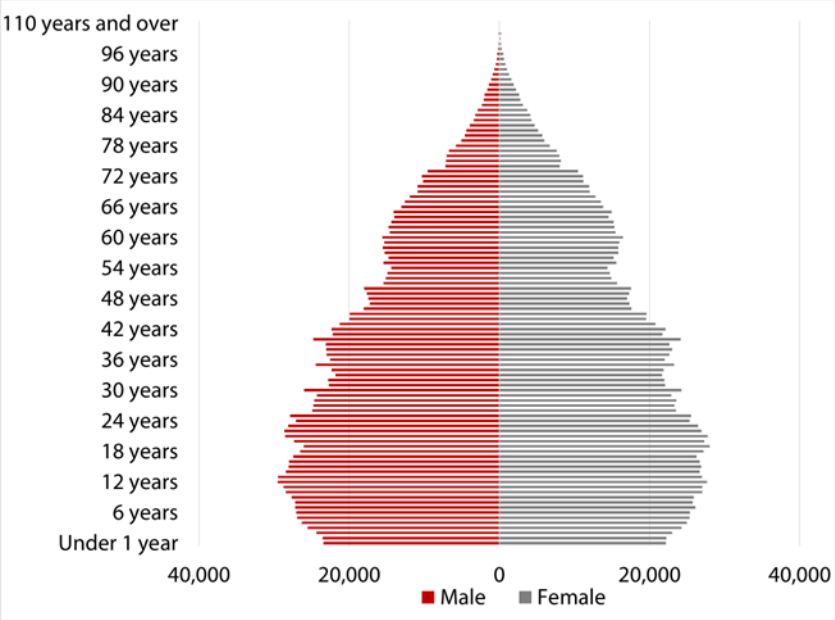
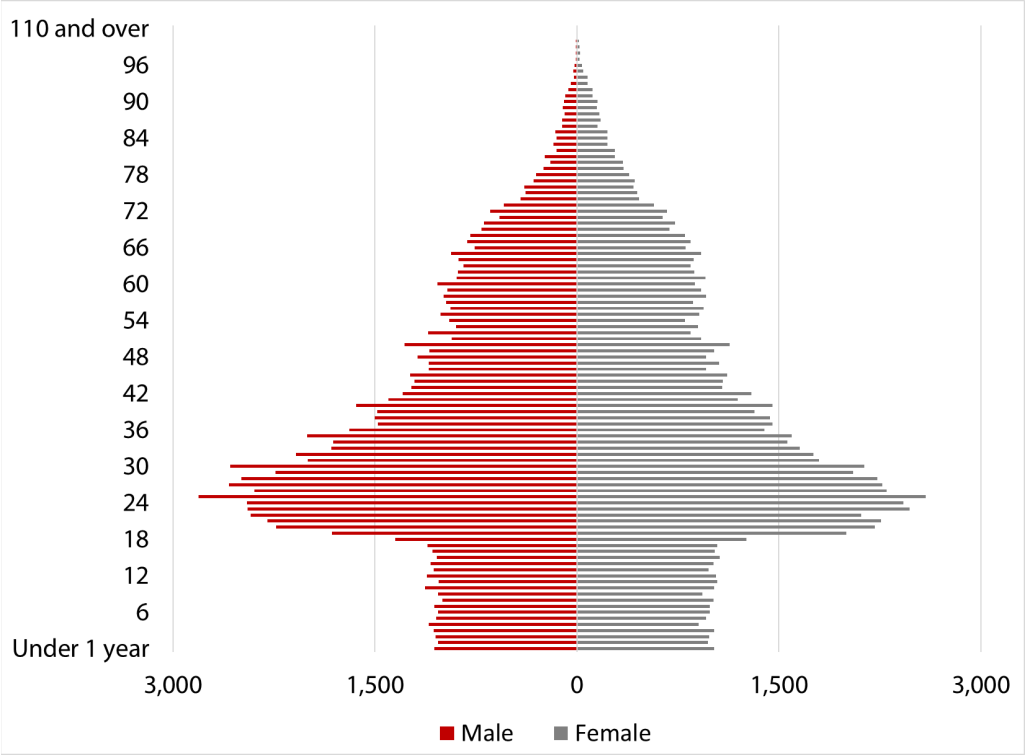


Source: U.S. Census Bureau Decennial Census Reports, IPUMS, NHGIS, University of Minnesota, www.nhgis.org

Utah, 2020

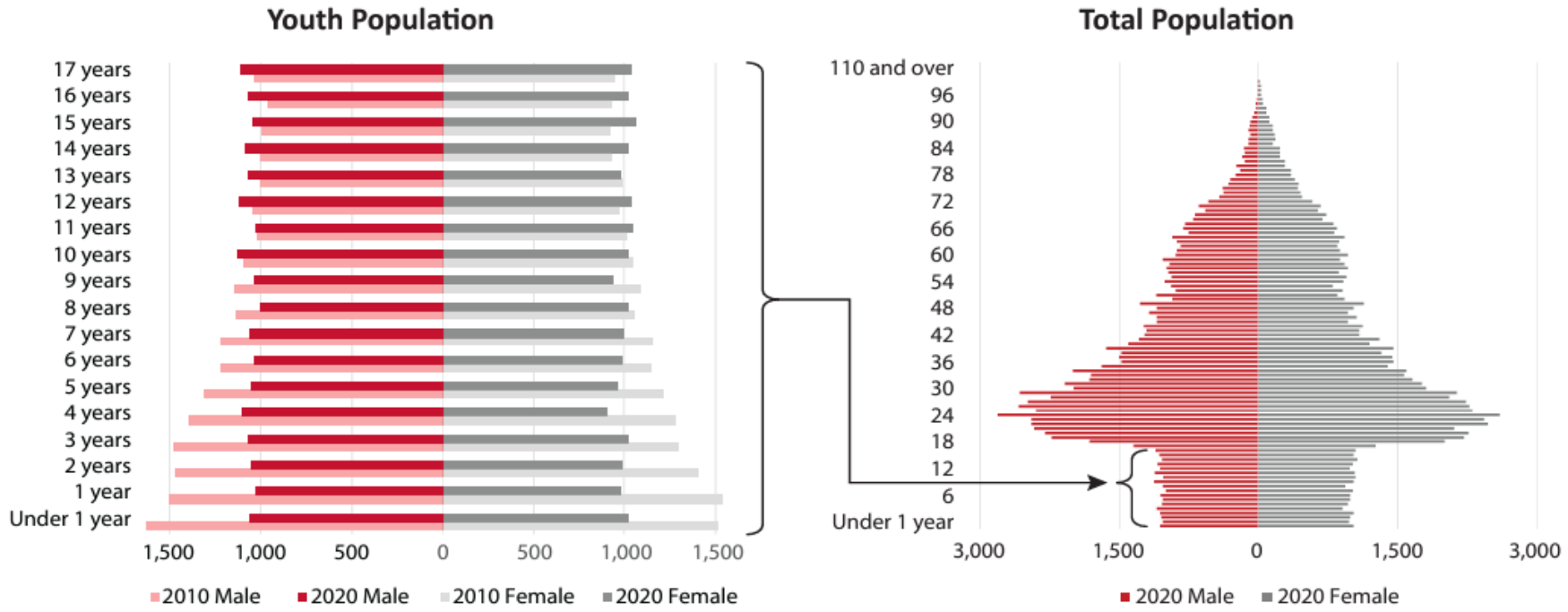

110 years and over
96 years
90 years
84 years
78 years
72 years
66 years
60 years
54 years
48 years
42 years
36 years
30 years
24 years
18 years
12 years
6 years
Under 1 year
40,000
20,000
0
20,000
40,000
Male
Female

Salt Lake City Population Pyramid, 2020



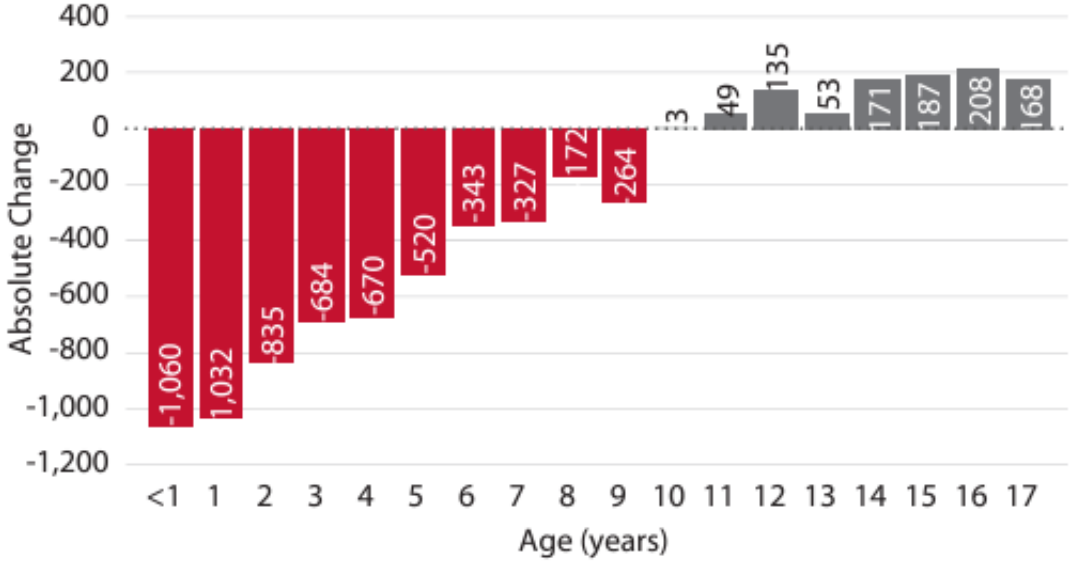
Source: U.S. Census Bureau 2020 Census Demographic and Housing Characteristics File (DHC)

Figure 2: Salt Lake City Population Pyramid, 2010 and 2020



Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

Figure 3: Absolute Change in Salt Lake City Youth Population by Single Year of Age, 2010-2020



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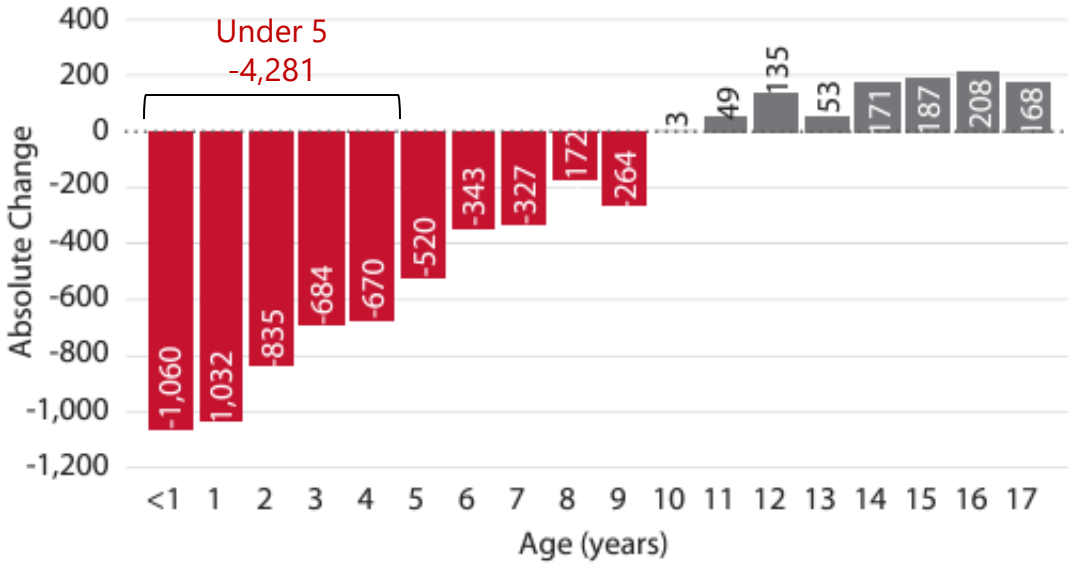

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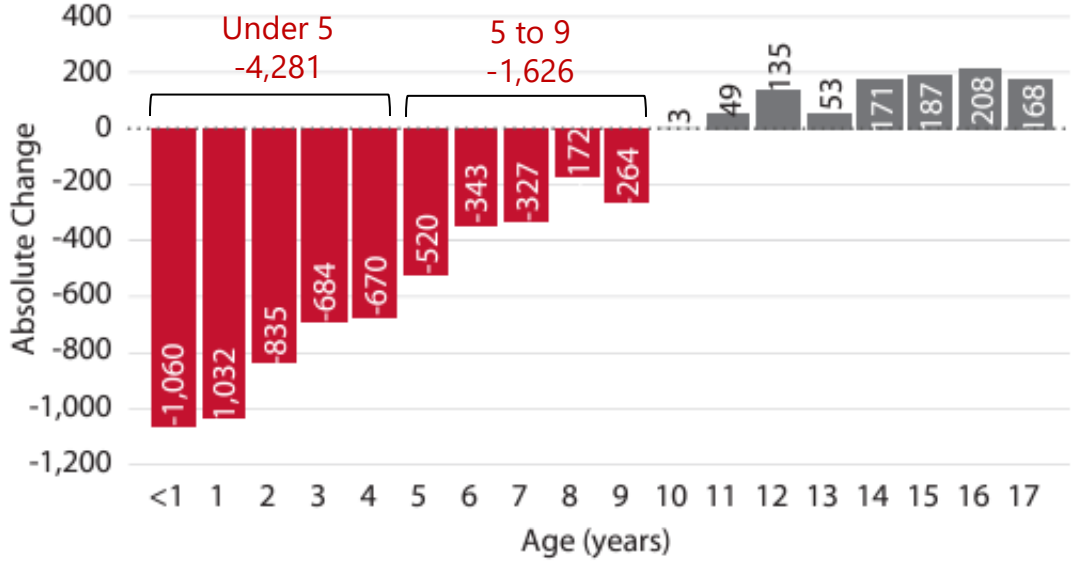

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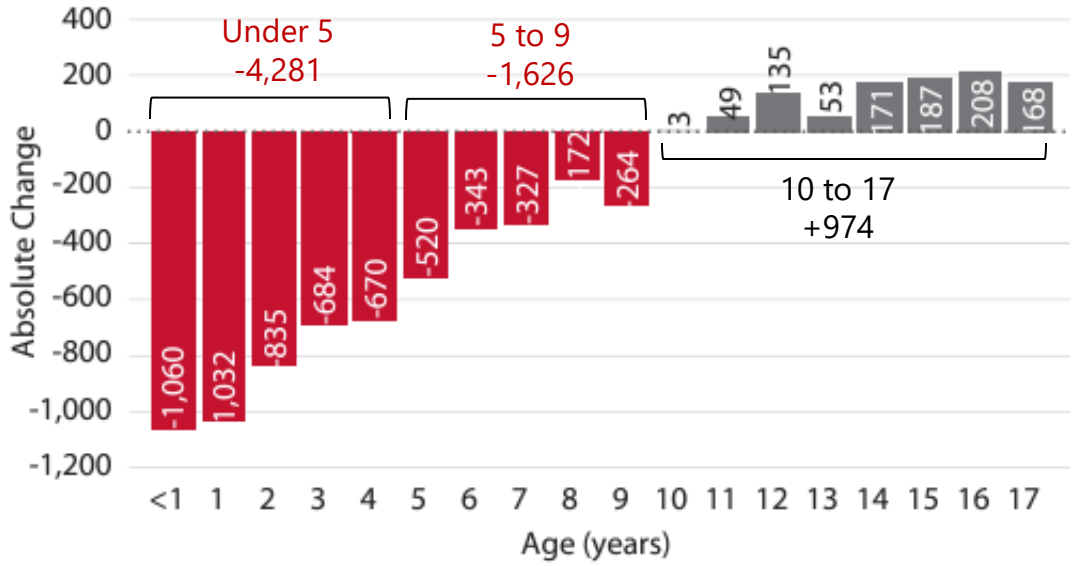
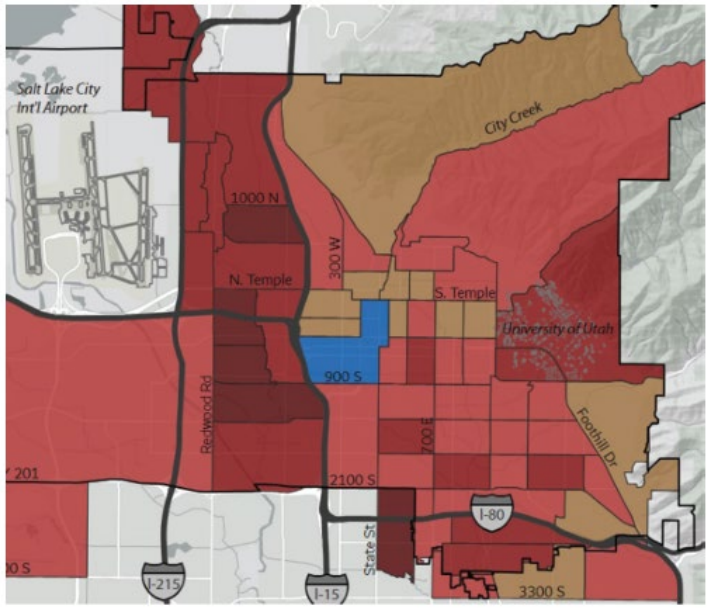


Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

Absolute Population Change in Salt Lake City Youth Age Groups by Census Tract, 2010-2020

Ages 0 to 4

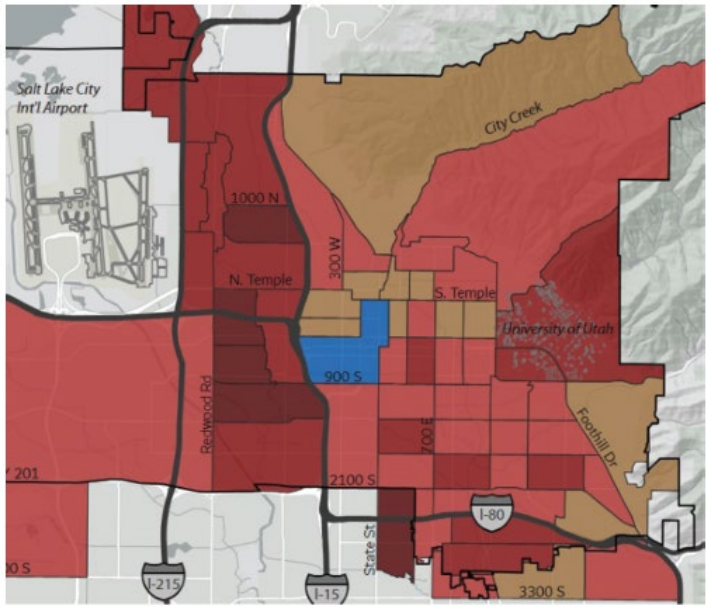


-273 to -200 | -199 to -100 | -99 to -25 | -24 to 25 | 26 to 75 | 76 to 125 | 126 to 182 | Salt Lake City Boundary

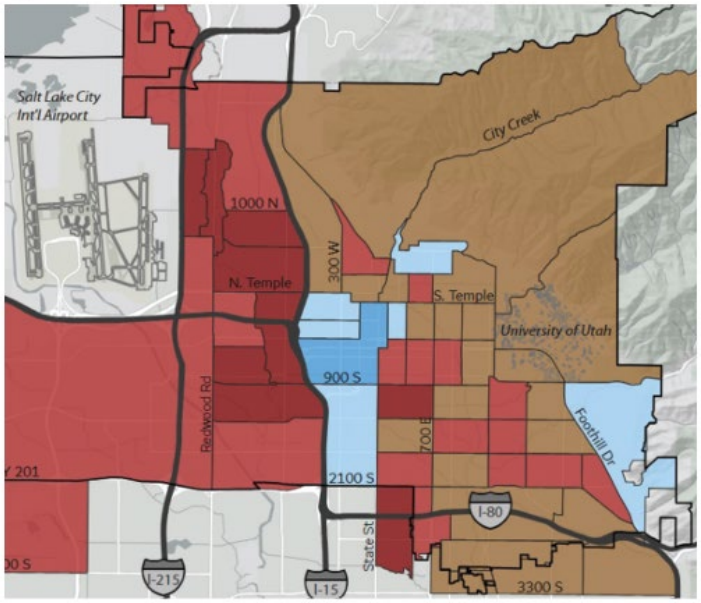
Note: Maps display 2020 tract boundaries. Since tracts 1014 and 1025 were split in 2020, shading reflects the difference between the 2010 tract populations and the sum of the populations of the 2020 tracts.
Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

Absolute Population Change in Salt Lake City Youth Age Groups by Census Tract, 2010-2020

Ages 0 to 4



Ages 5 to 9



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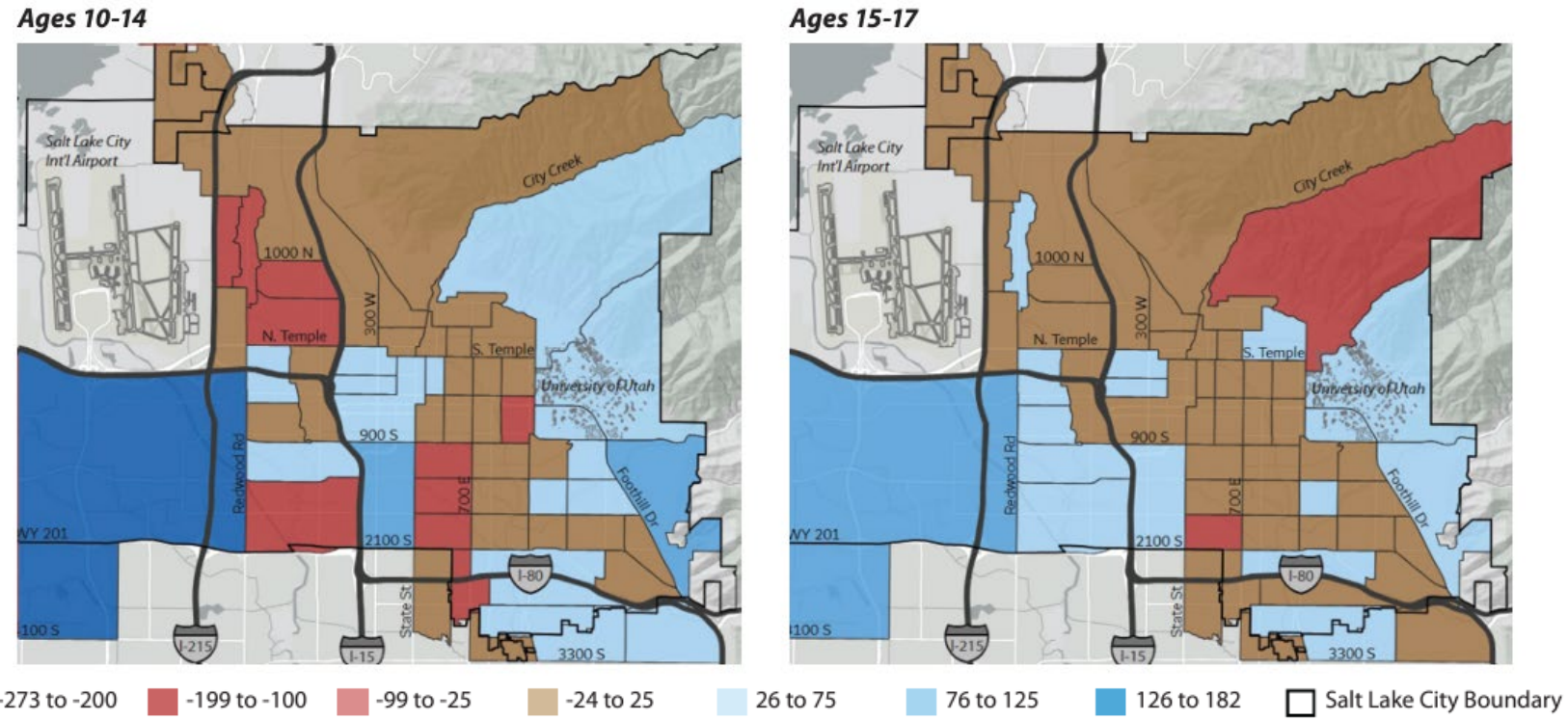
Absolute Population Change in Salt Lake City Youth Age Groups by Census Tract, 2010-2020



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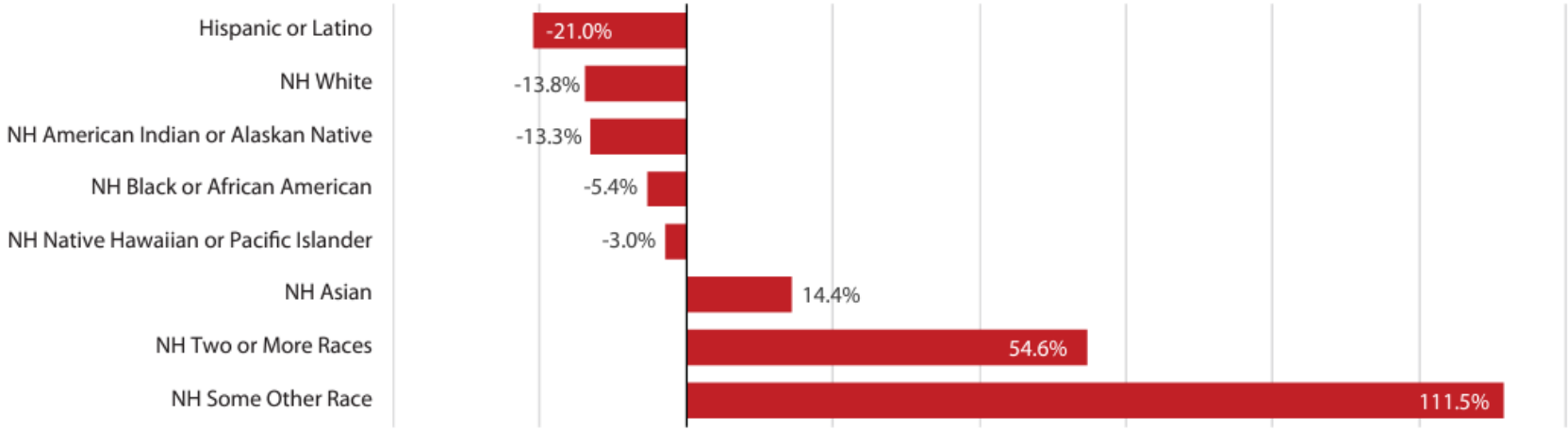
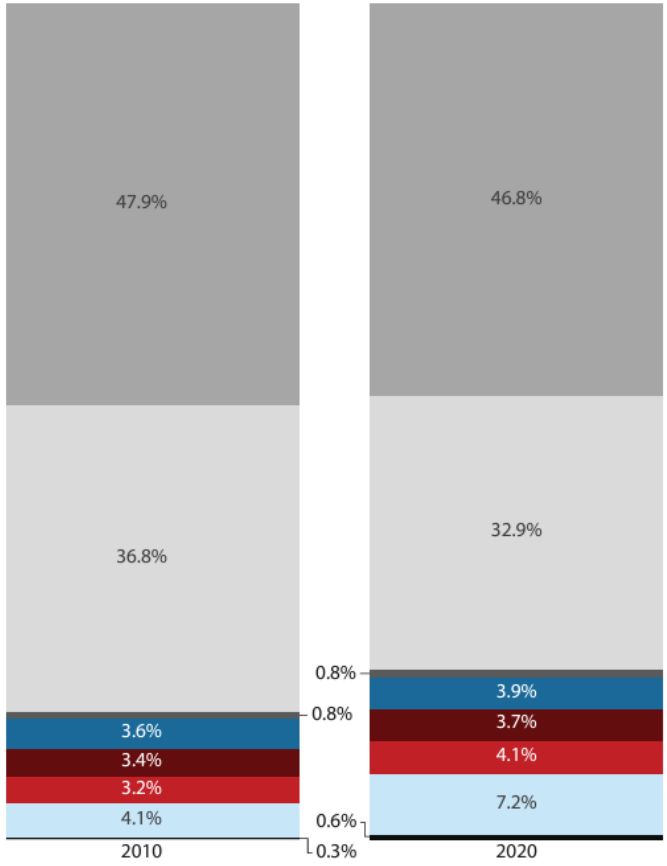
Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

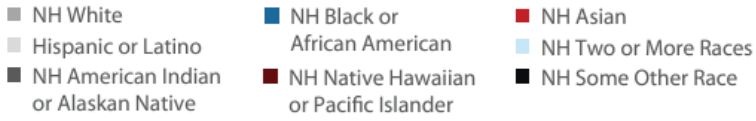
Figure 7: Percentage Growth of Salt Lake City Youth Population by Race and Ethnicity, 2010-2020



Note: NH stands for non-Hispanic. Data users should use caution when comparing 2010 and 2020 Census race data because of improvements to the question design, data processing, and coding procedures for the 2020 census.
Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

Figure 8: Salt Lake City Youth Population by Race and Ethnicity, 2010 and 2020





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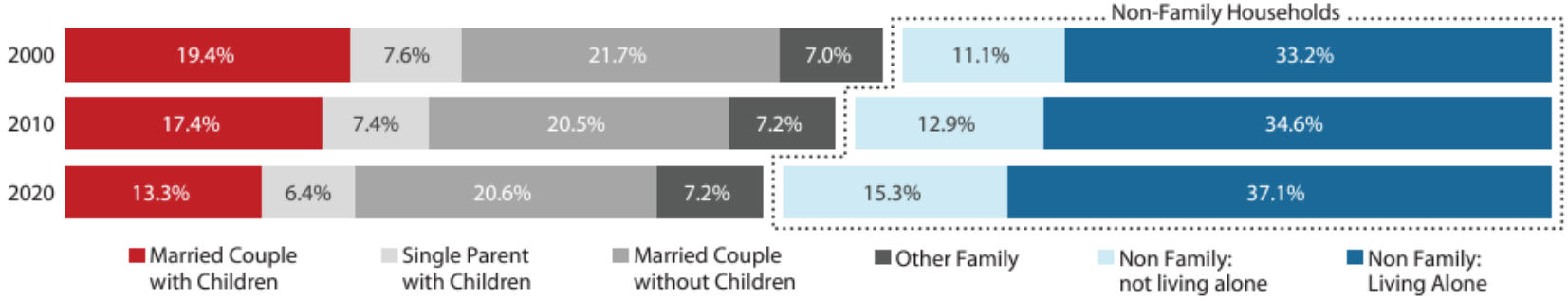
Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

Household Shifts

Salt Lake City Households including at least one or the householder's children under 18

2010: 18,495 households (25%)
2020: 18,398 households (20%)

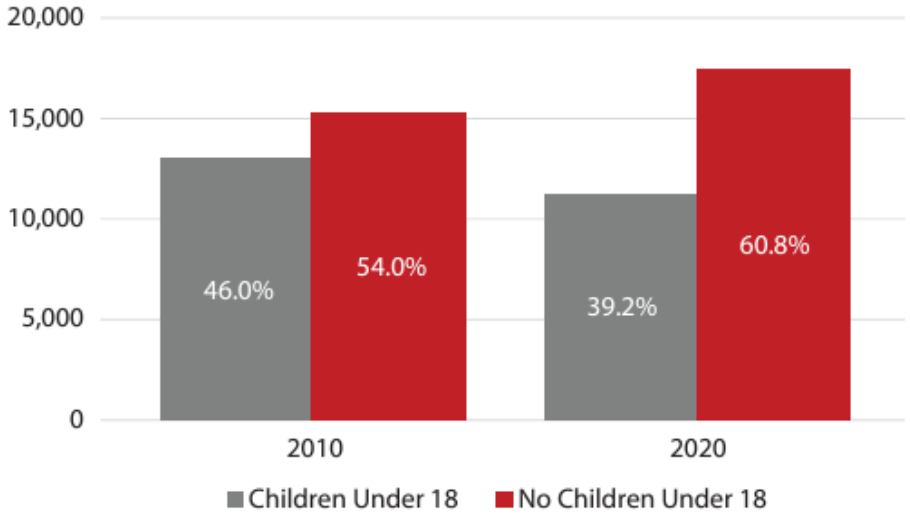
Figure 12. Salt Lake City Households by Type, 2000 to 2020



Source: U.S. Census Bureau, 2020 Demographic and Housing Estimates (DHC), U.S. Census Bureau, 2010 Census Summary File 1 (SF1)

Household Shifts

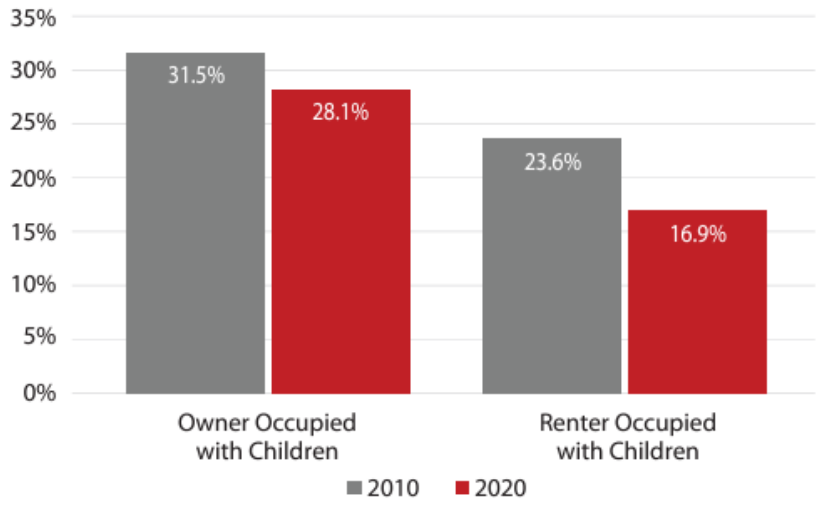
Figure 9: Salt Lake City Married Couple Households by Presence of Own Children Under 18, 2010 and 2020



Note: "Own Children" includes the householder's biological children, stepchildren, and adopted children.[2]
Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

Household Shifts

Figure 10: Share of Salt Lake City Owner and Renter-Occupied Housing Units with Children Under 18, 2010 and 2020



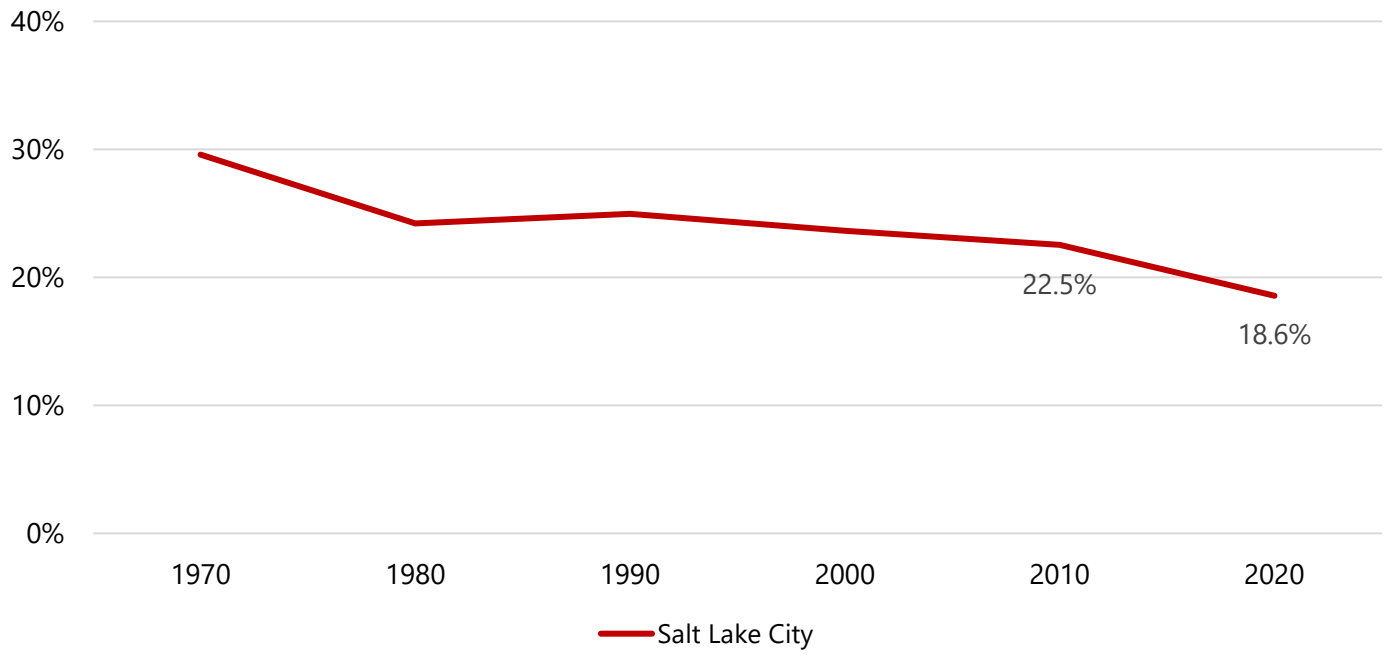
Note: "Own Children" includes the householder's biological children, stepchildren, and adopted children.[3]
Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

Salt Lake City's under-18 population lost 4,933 residents last decade, shrinking by 12%.

Key Findings:

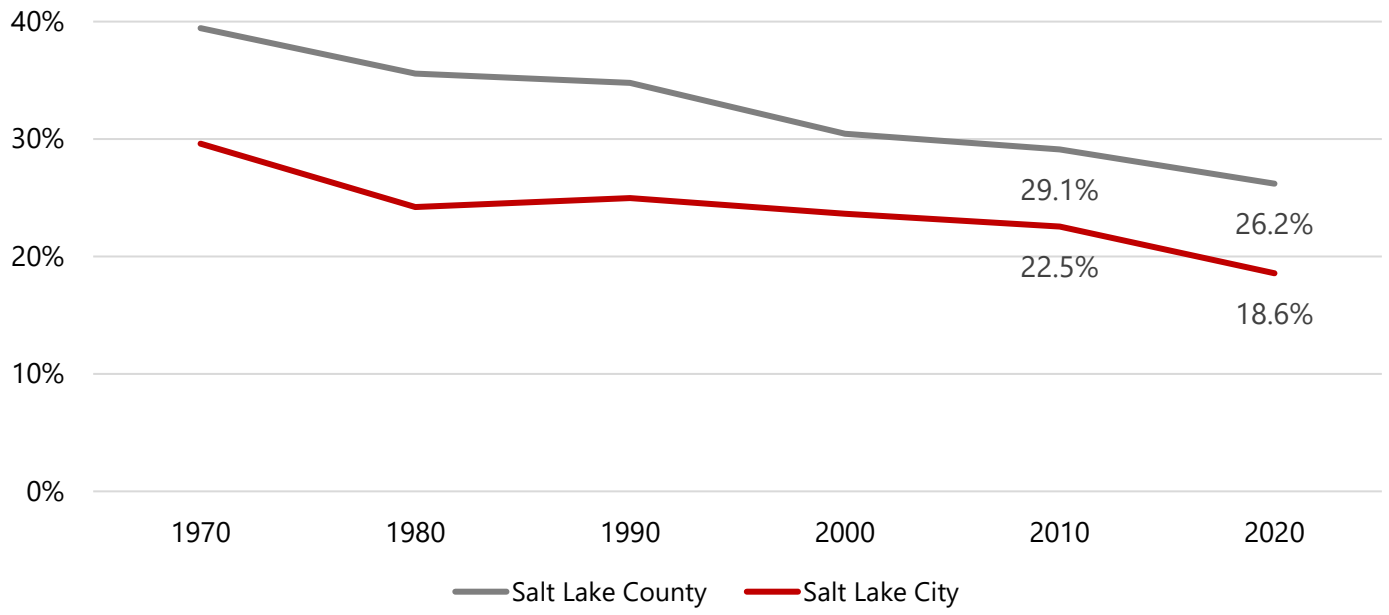
- SLC's total population continues to grow (despite youth decline)
- Youngest age groups decreased most
- Substantial West Side decreases
- Increasing racial diversity
- Households with children compose a smaller share of city households

Youth Share of Population in Salt Lake City, 1970-2020



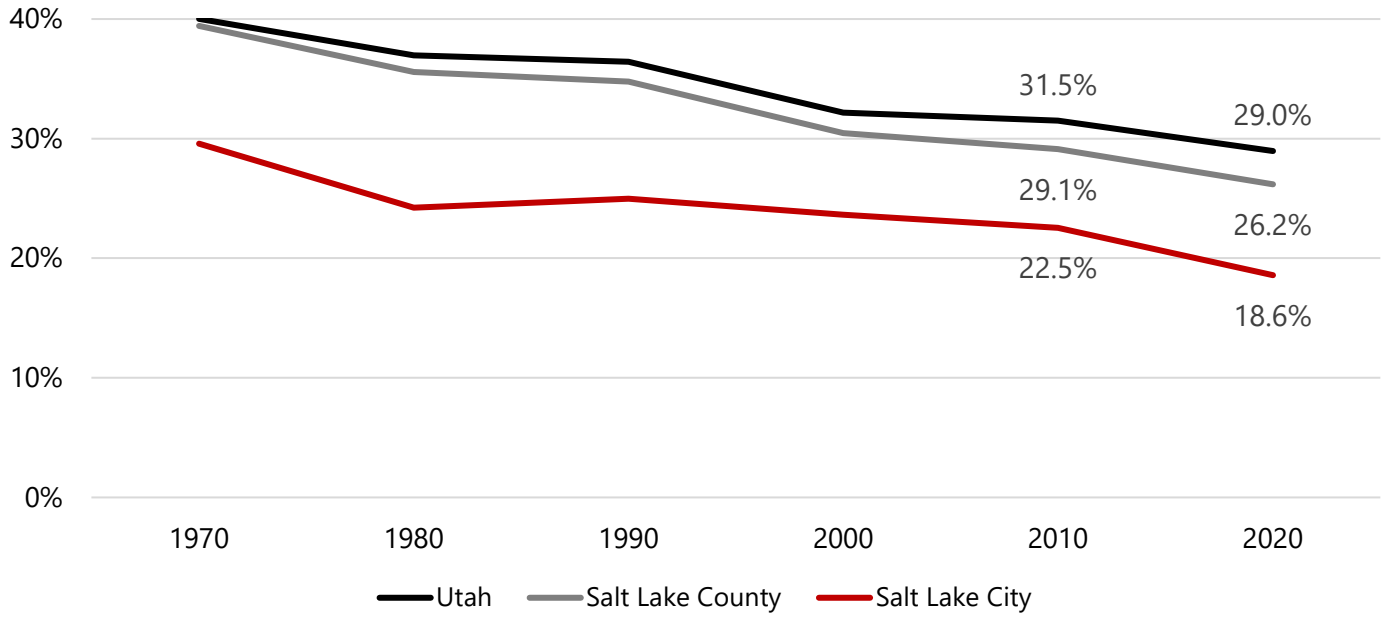
Source: U.S. Census Bureau Decennial Census Reports, IPUMS NHGIS, University of Minnesota, www.nhgis.org

Youth Share of Population in Salt Lake City and Salt Lake County, 1970-2020



Source: U.S. Census Bureau Decennial Census Reports, IPUMS NHGIS, University of Minnesota, www.nhgis.org

Youth Share of Population in Utah, Salt Lake City, and Salt Lake County, 1970-2020



Source: U.S. Census Bureau Decennial Census Reports, IPUMS NHGIS, University of Minnesota, www.nhgis.org

Table 2: Percent Population Change for Select Age Groups and Geographies, 2010-2020

	Salt Lake City			Salt Lake County			Utah		
Age	2010	2020	Percent Change	2010	2020	Percent Change	2010	2020	Percent Change
0 to 4	14,483	10,202	-29.6%	90,106	78,490	-12.9%	263,924	239,780	-9.1%
5 to 9	11,676	10,050	-13.9%	85,529	86,371	1.0%	249,572	264,449	6.0%
10 to 14	10,096	10,507	4.1%	78,783	91,717	16.4%	227,951	280,003	22.8%
15 to 17	5,779	6,342	9.7%	45,363	53,765	18.5%	129,580	163,333	26.0%

Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

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Salt Lake County grew 15.1% between 2010 and 2020

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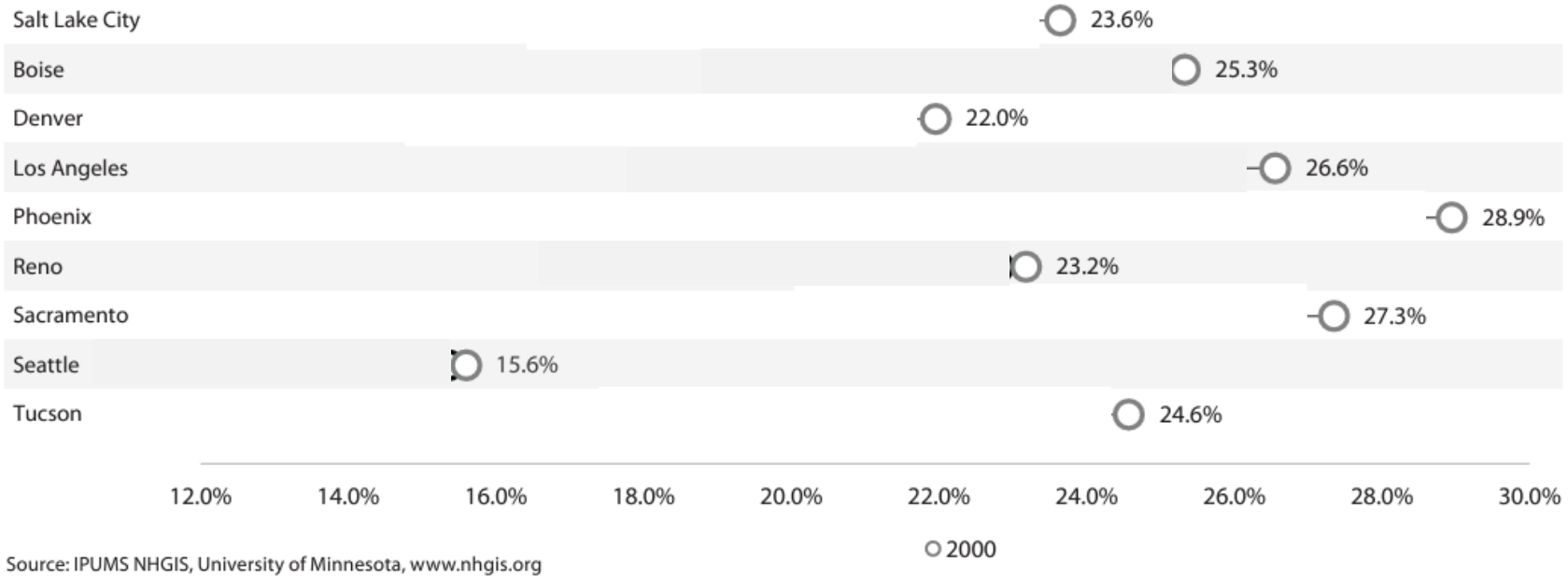
Source: U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File; 2010 Census Summary File 1

Utah grew 18.4% between 2010 and 2020.

Figure 5: Youth Share of Select Western Cities, 2000 - 2020



Source: IPUMS NHGIS, University of Minnesota, www.nhgis.org

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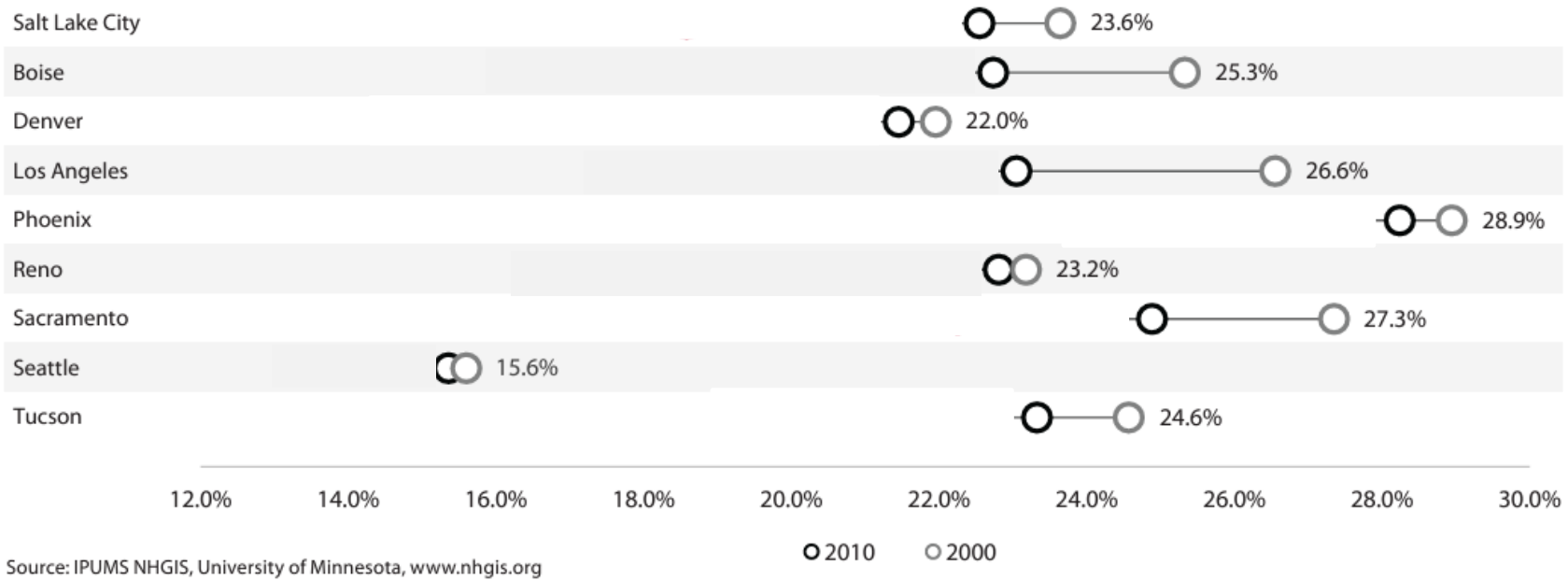

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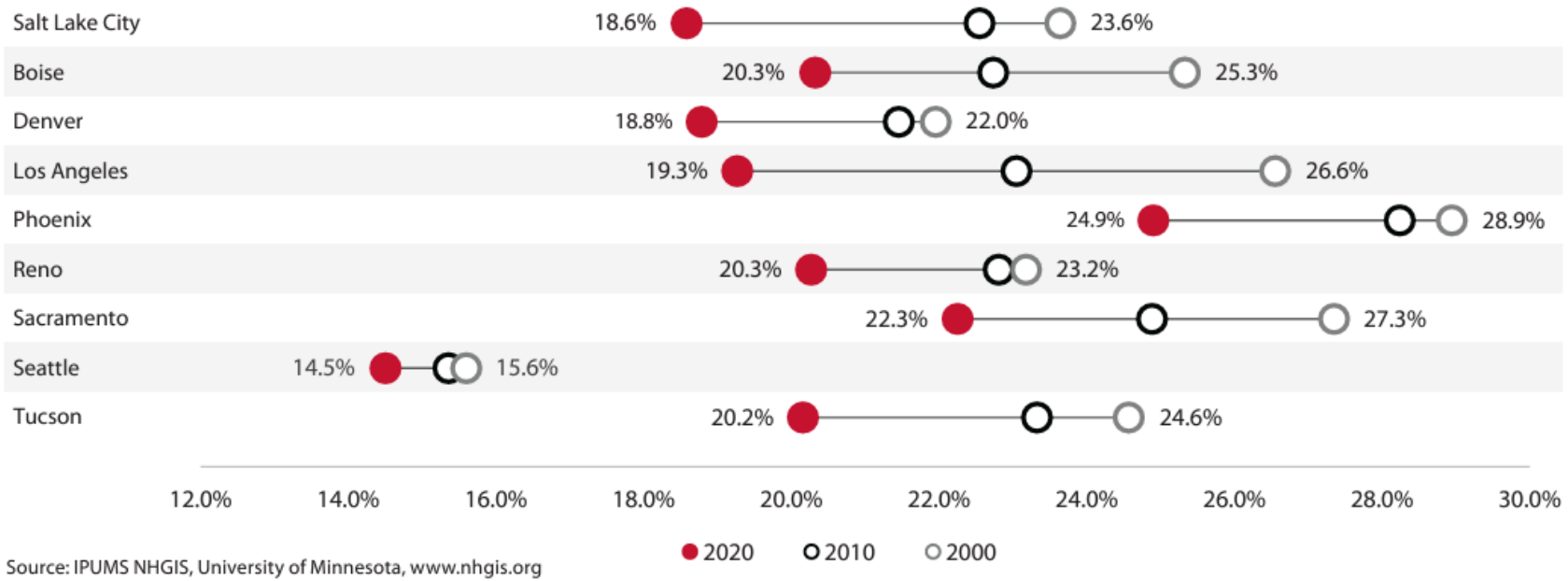


Source: IPUMS NHGIS, University of Minnesota, www.nhgis.org

Between 2010 and 2020, the city lost nearly 5,000 young residents and saw its youth share drop from 23% to 19%.

Additional Notes on Methods

Data Sources
Census Bureau: Decennial Census data accessed on data.census.gov
IPUMS: NHGIS time series data

Data Products
DEC Redistricting Data (PL 94-171): *total population, 18+ population, race* August 2021
Demographic and Housing Characteristics File (DHC): *single year of age, household types, tenure* *May 2023*

Analysis Tools
Excel
ArcGIS

Kem C. Gardner Policy Institute

Thomas S. Monson Center | 411 E. South Temple Street
Salt Lake City, UT 84111 | 801-585-5618 | gardner.utah.edu

DAVID ECCLES SCHOOL OF BUSINESS
UNIVERSITY OF UTAH

In 2020, Salt Lake City's population hit a record high: 199,723 residents. Simultaneously, the city hit a record low: the lowest number of residents under 18 in more than a century.

SLC History

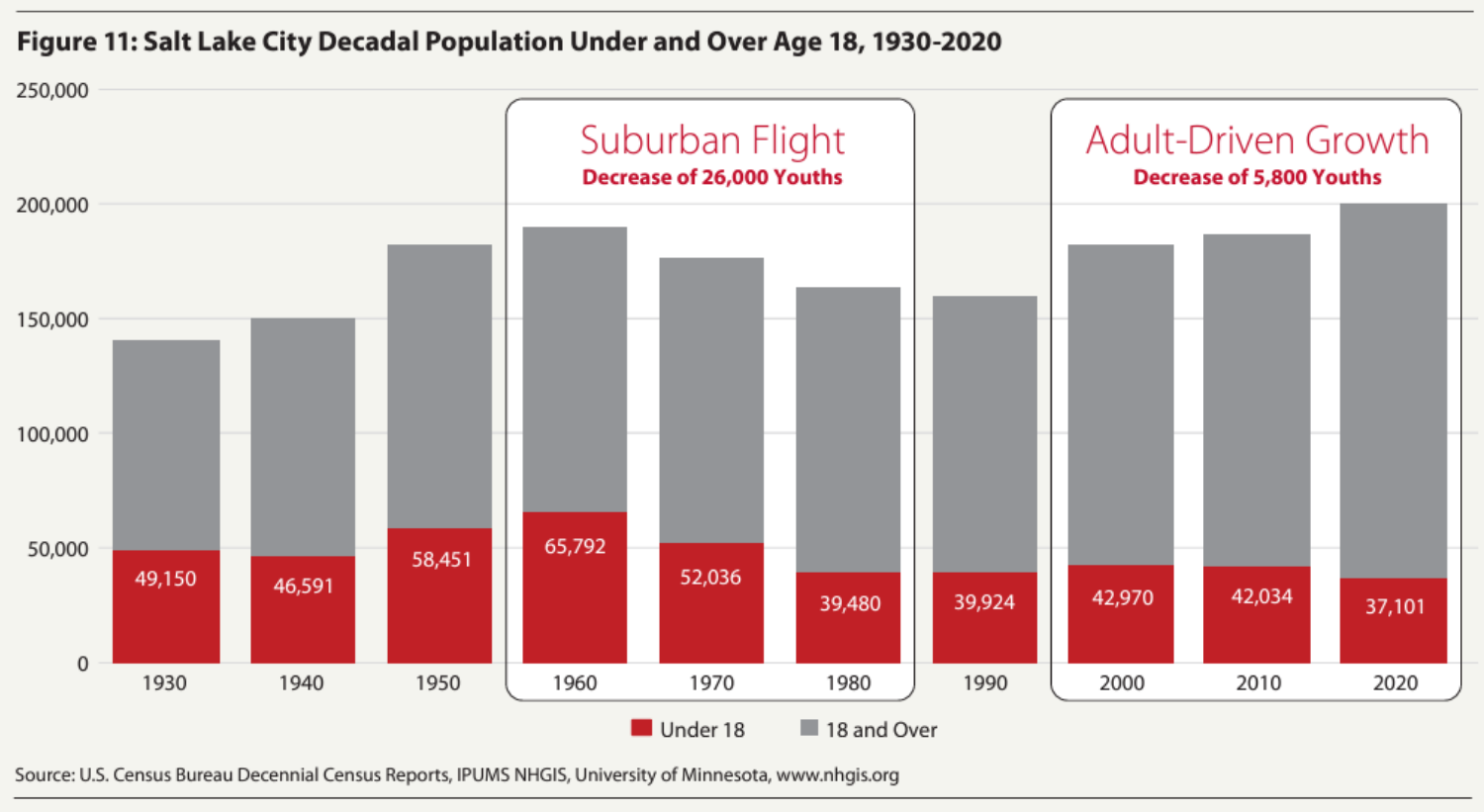
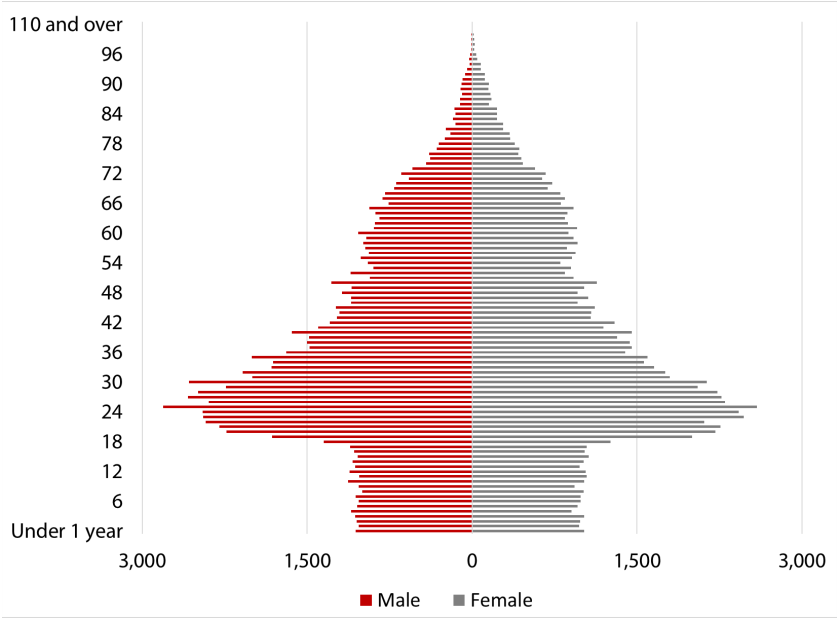
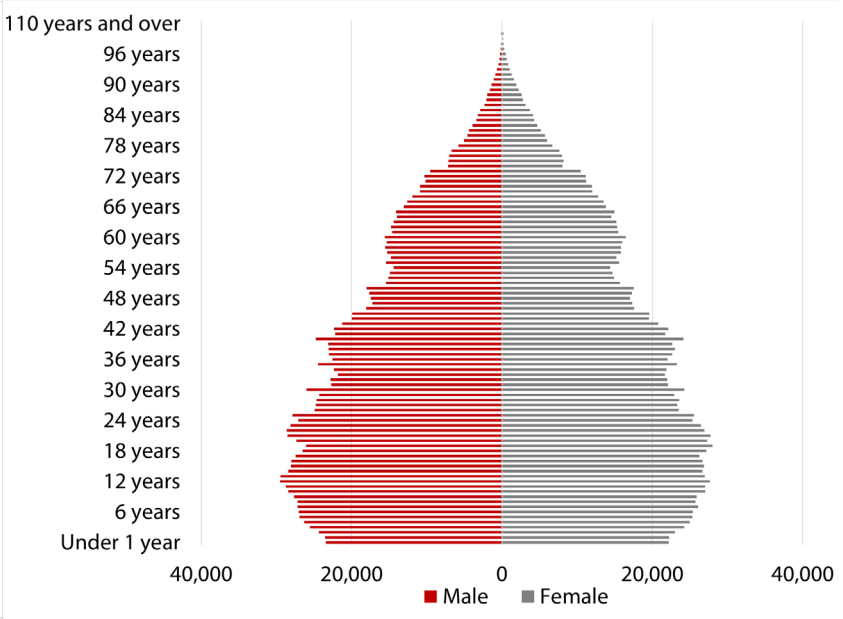


Figure 11: Salt Lake City Decadal Population Under and Over Age 18, 1930-2020
250,000
200,000
150,000
100,000
50,000
0
Suburban Flight
Decrease of 26,000 Youths
Adult-Driven Growth
Decrease of 5,800 Youths
49,150
46,591
58,451
65,792
52,036
39,480
39,924
42,970
42,034
37,101
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Under 18
18 and Over
Source: U.S. Census Bureau Decennial Census Reports, IPUMS NHGIS, University of Minnesota, www.nhgis.org

Salt Lake City, 2020



Utah, 2020



Source: U.S. Census Bureau 2020 Census Demographic and Housing Characteristics File (DHC)

Prior Learning Assessments and their Effect on Education Outcomes

Alicia McIntire

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Introduction

Prior Learning Assessment is a way to award post-secondary credit for equivalent learning that happened outside of the post-secondary institution.

Common PLAs include:

- AP
- CLEP/DSST
- IB
- Challenge exams or language equivalency exams
- Portfolios or oral examinations

Introduction

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- Portfolios or oral examinations

Possible Implications

Students

- Better preparation for college level work
- Higher likelihood of completing a degree
- Possibly less student debt
- Earlier workforce entry

Institutions

- Ability to serve more students
- Possibly decreased cost per student

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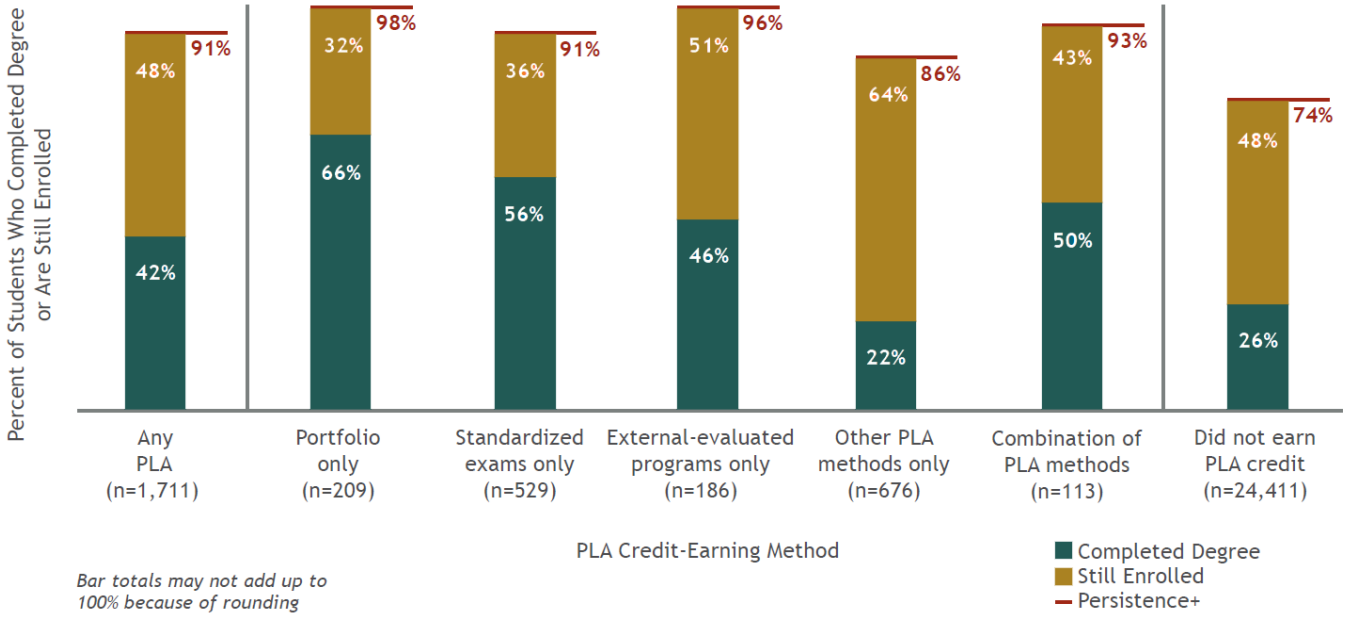
Literature Review

Degree Completion or Continued Enrollment by PLA Credit-Earning Method (Data and graphic from Klein-Collins and Hudson 2018, CAEL)



- Students with PLA credit compete a degree at higher rates and are less likely to drop out
- Students with credit from exams (like AP and CLEP) have even higher rates of completion and persistence

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Research Questions

1 | Do PLAs affect first semester GPA?

2 | Do PLAs affect time to graduation for those pursuing associate and bachelor's degrees?

3 | Do PLAs predict likelihood for dropout/stopout for those pursuing associate and bachelor's degrees?

Sample

USBE

- ACT score
- English language-learner
- Free/Reduced lunch
- HS graduation
- Race/ethnicity
- Section 504 (IEP)
- Other demographic factors

USHE

- AP credits
- Concurrent enrollment credits
- GPA (first term)
- Number of enrollments
- Part-time/full-time
- Other enrollment factors

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Prior Learning Assessments

AP/IB and CLEP

- Total AP credits
- Total CLEP credits
- Does not include those who took a class but not the exam

Control Variables

- Concurrent enrollment credit
- Gap between HS and enrollment
- Institution
- Demographic factors

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Outcomes

First Term GPA

Total GPA from the first term of enrollment as a:

- non-high school
- degree-seeking
- Associate or bachelor's student

Time to Degree

The number of adult degree seeking enrollments for a student to earn their first degree (associate or bachelor's)

Dropout/Stopout

Likelihood of a separation from the institution before graduation or a lack of enrollment lasting more than 7 terms or 2.5 years

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Methods

1. GPA – Regression model with GPA as DV and other predictors as IVs

2. TTD – Survival Model with covariates

3. Retention – Hazard Model for dropout with covariates

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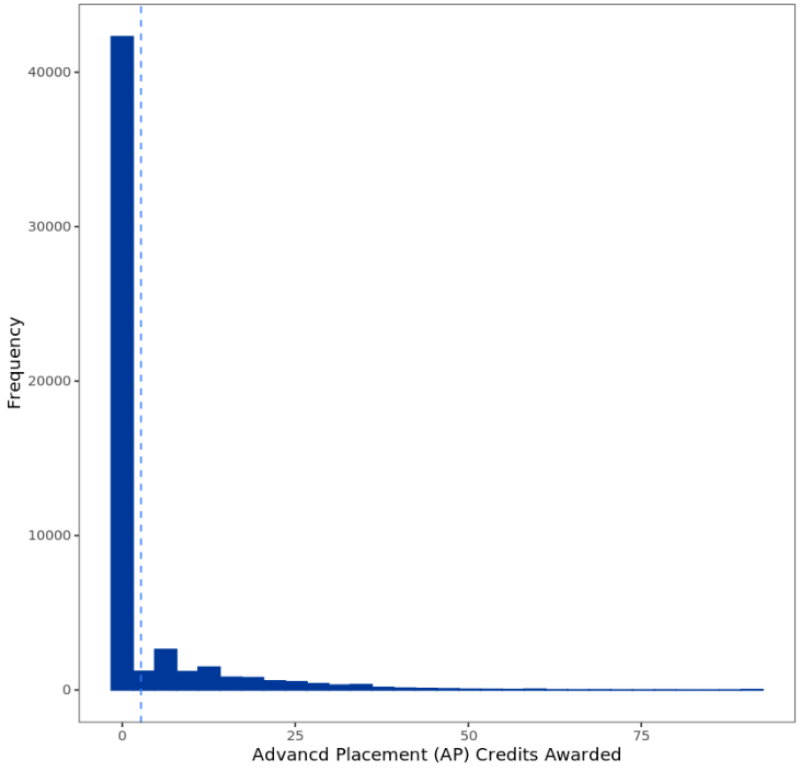
AP Credit

Total Credits Awarded



- More than 75% of students do not have any AP credit
  - Median: 0
  - Mean: 2.7
- Associate students have fewer credits on average than bachelor's

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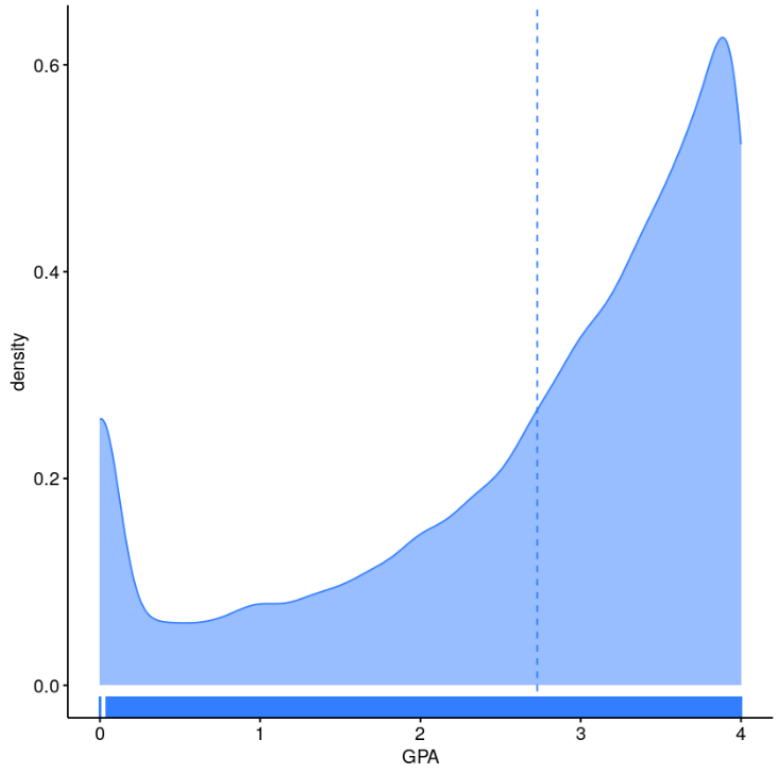
Factors Associates with Higher GPA

First Semester GPA (all FF/FH students)



- AP Credit
- ACT Score
- Concurrent enrollment
- First enrollment during Summer term
- Gap between HS and first enrollment
- Female

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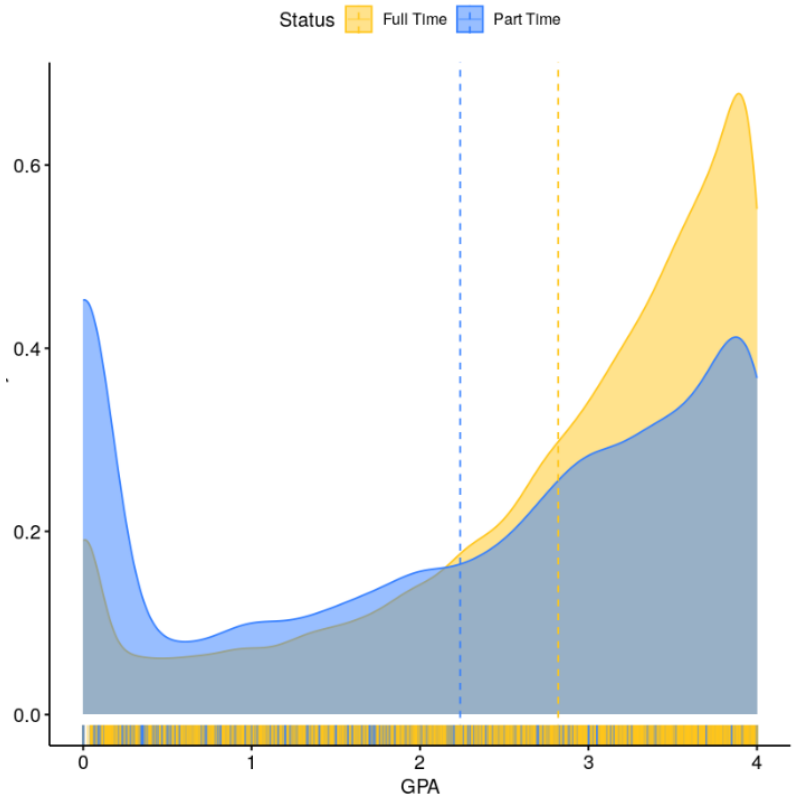
Factors Associated with Lower GPA

First Semester GPA by Enrollment Status



- Undeclared/undec major
- Part-time enrollment
- Identified as Black, Hispanic, Indigenous, multi-ethnic or Pacific Islander (IPEDS)
- Low income during senior year of HS
- Pell eligibility
- Male

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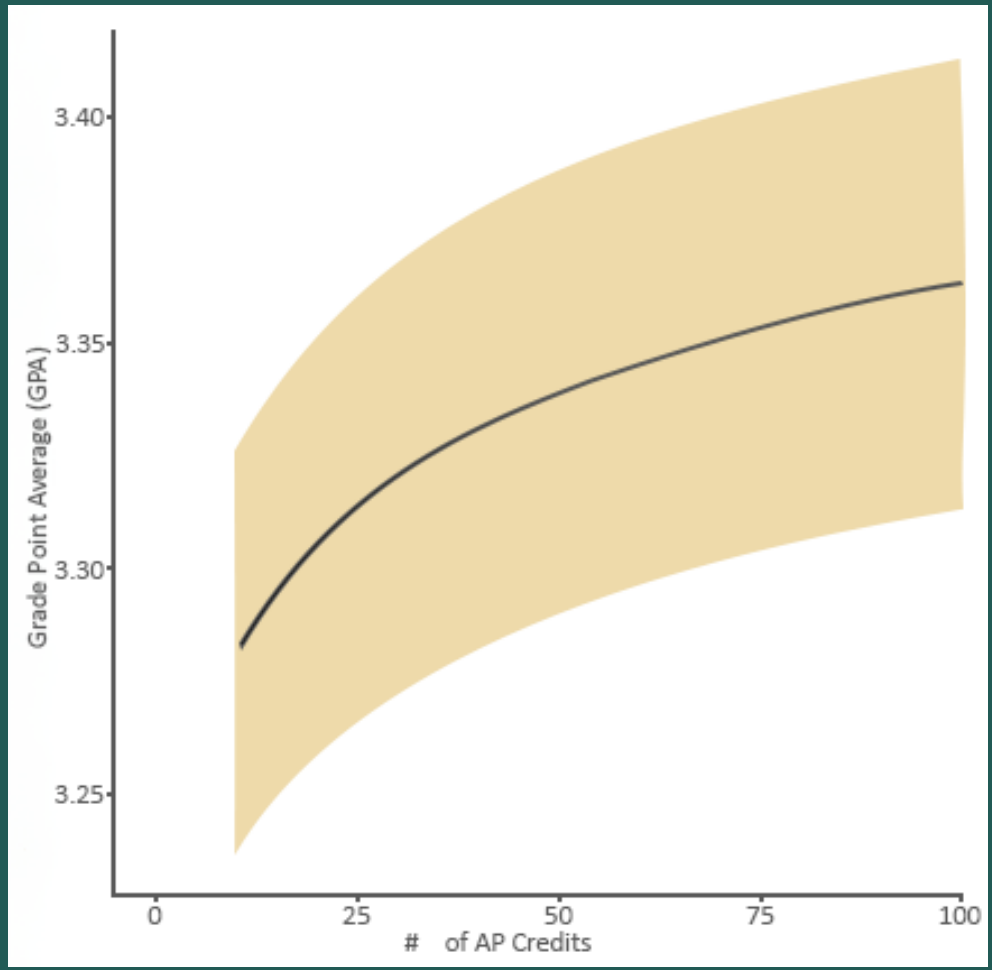
First Term GPA

- AP experience affects GPA
  - Demographic factors may have a larger impact
- AP credits may help make up for some of the negative effects of low income background
- Receiving Pell Grants may mitigate some negative effects of part-time enrollment
- Undecided/undeclared are predicted to have GPAs more than 2 points lower than other students

Predicted First Term GPA



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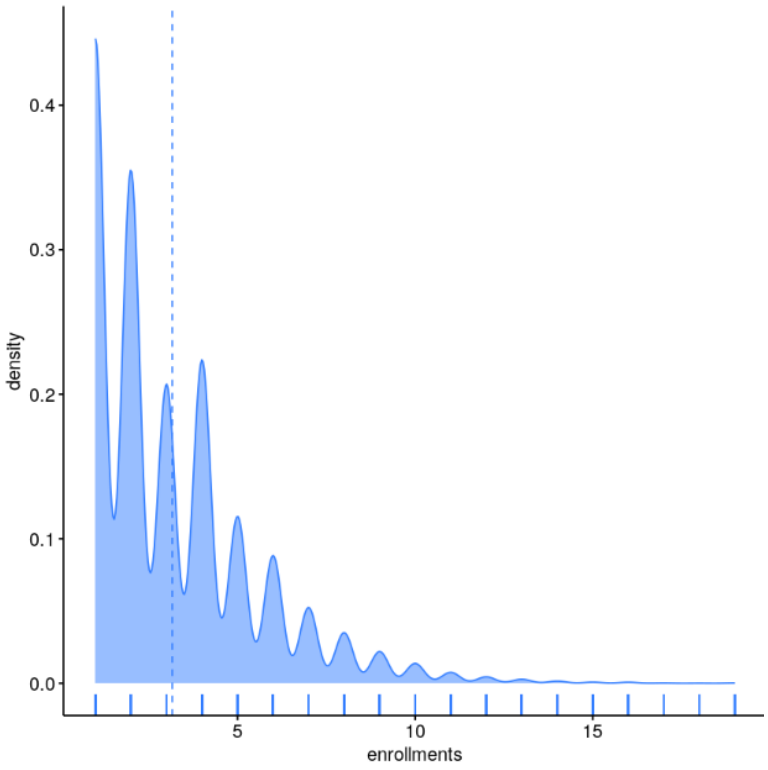
Associate Degrees

Enrollments



Associate Summary

- Enrollments
  - Median: 2
  - Mean: 3.2
- ACT: 20.2 median
- Dropout: 47%

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Associate Degree - PLAs

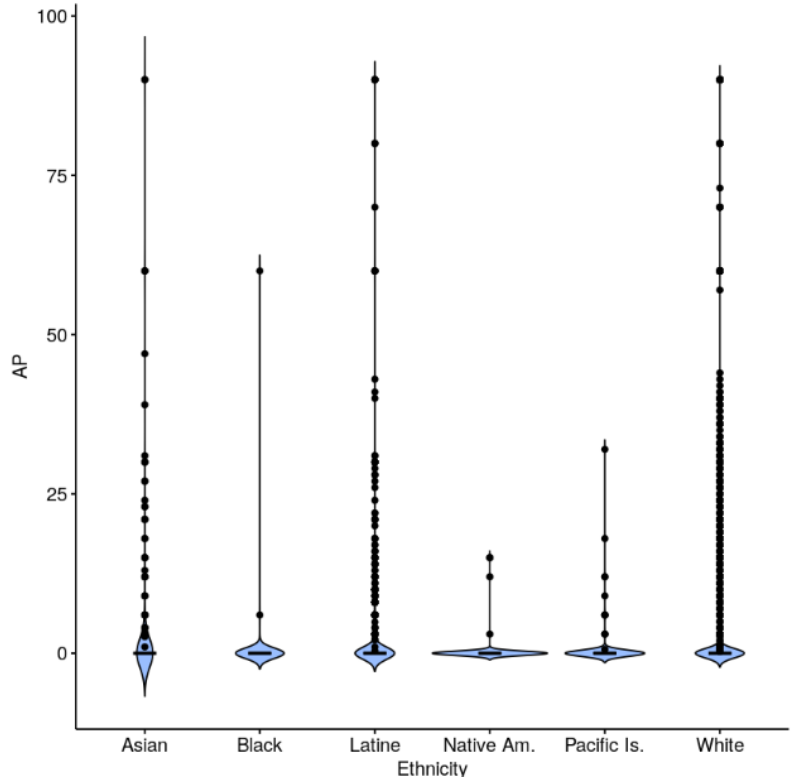
AP

- Median AP credits: 0
- Mean AP credits: 1.4
- Heavily skewed toward 0

CLEP

- Median CLEP: 0
- Mean CLEP: 0.02
- Very few participants

AP (by ethnicity)



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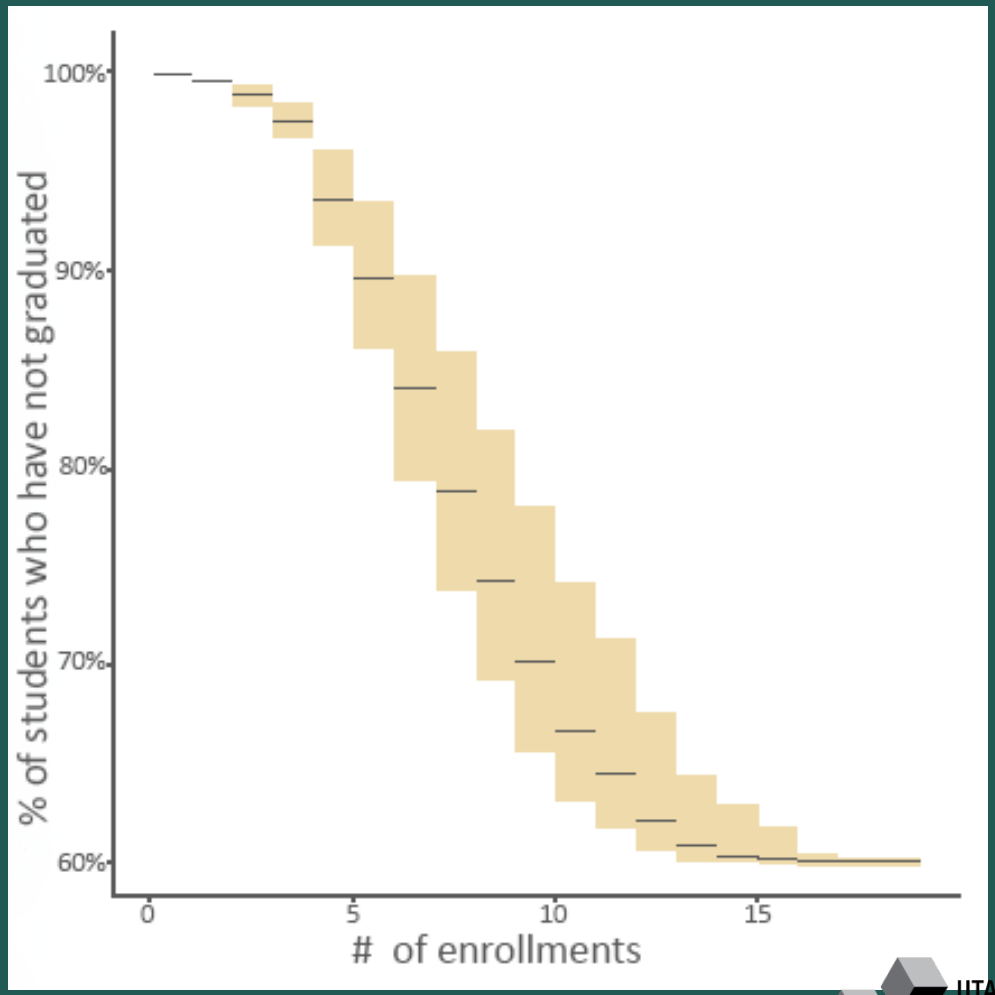
Time to Associate

- AP Credit – students with 3 credits estimated to finish in one fewer enrollment period
- 2 enrollments for 6-12 credits
- Shorter TTD
- College readiness (ACT)
- Institution
- Concurrent enrollment
- Longer TTD
- More semesters of part-time enrollment
  - Can be less for those receiving Pell
- Pell eligibility
- STEM major

Predicted Number of Enrollments



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Time to Dropout (Associates)

Decreased Dropout

- College readiness (ACT)
- 504 during senior year
- CLEP credit
- AP credit
- Concurrent Enrollment

Increased Dropout

- Ethnic minority (especially large effects for Pacific Islander, Black, and Indigenous students)
- Pell recipient
  - Can be mitigated by part time enrollment
- Low income in high school

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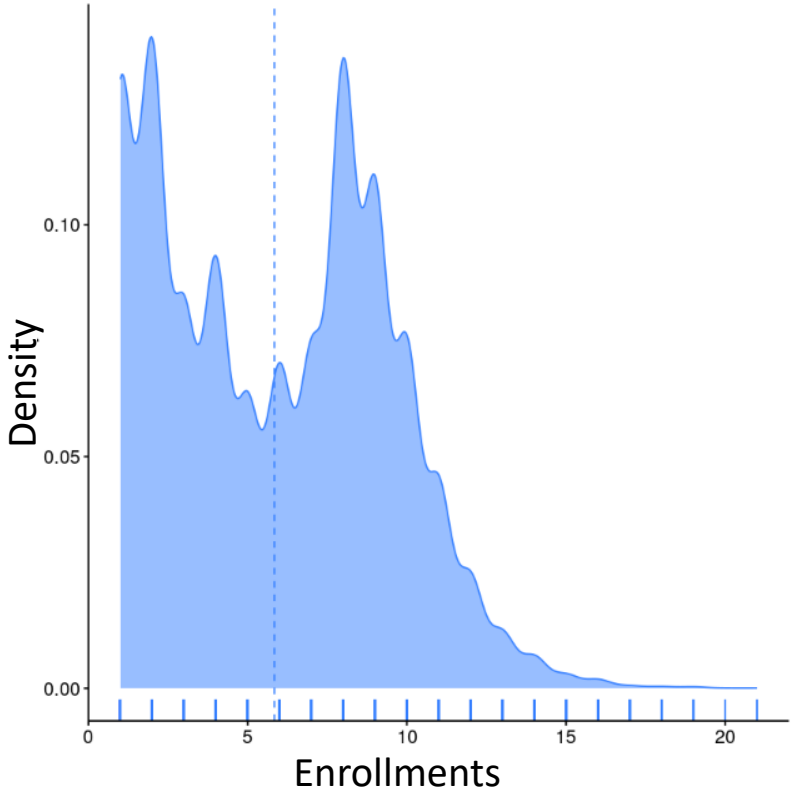
Bachelors Degrees

Enrollments



Bachelor Summary

- Enrollments
  - Median: 6
  - Mean: 5.8
- ACT: 23.4 median
- Dropout: 29%

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Bachelor's Degree - PLAs

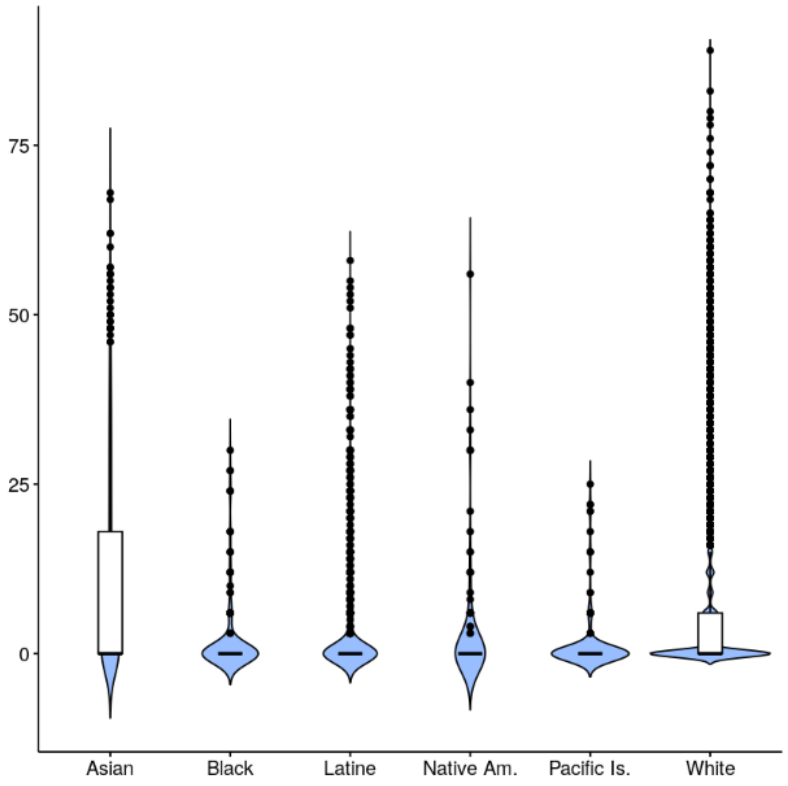
AP

- Median AP credits: 0
- Mean AP credits: 5.2
- Heavily skewed toward 0

CLEP

- Median CLEP: 0
- Mean CLEP: 2.8
- Very few participants

AP (by ethnicity)



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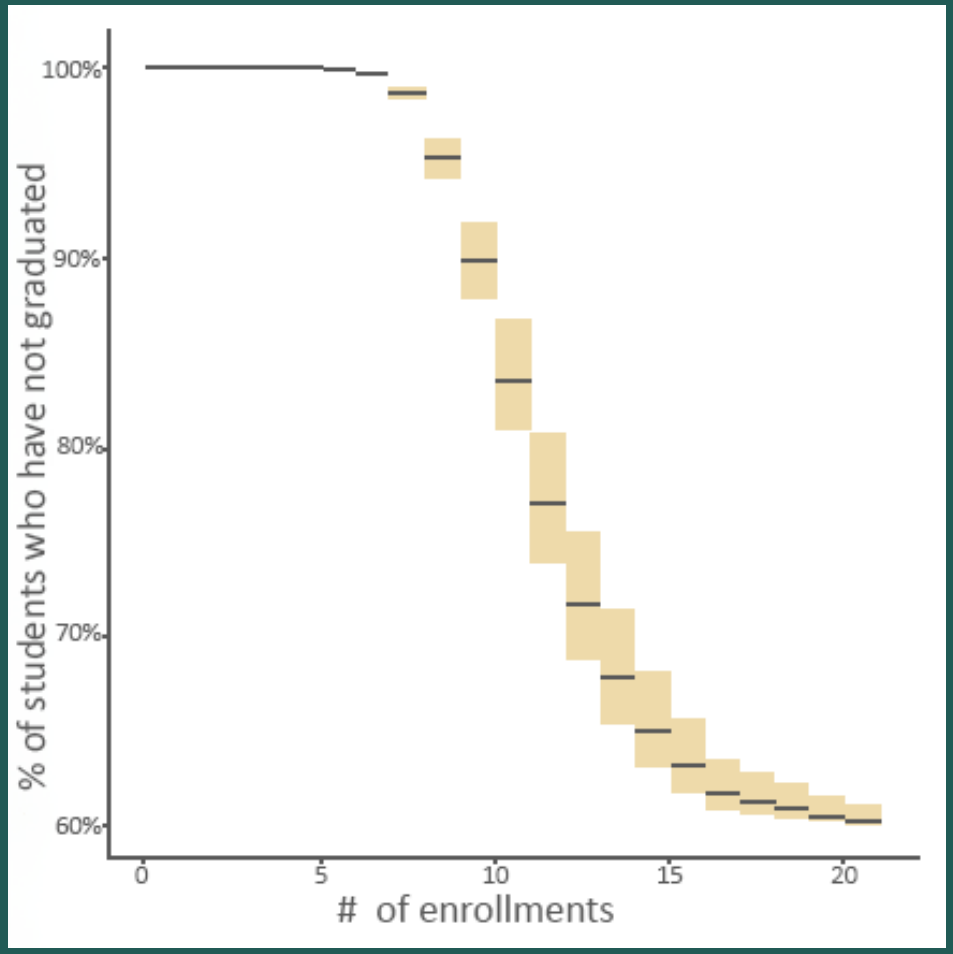
Time to Bachelor's

- AP Credit – students with between 3-18 credits are estimated to finish in one fewer enrollment period
- Shorter TTD
- College readiness (ACT)
- Institution
- Concurrent enrollment
- Longer TTD
- More semesters of part-time enrollment
  - Can be less for those receiving Pell
- Pell eligibility
- STEM major

Predicted Number of Enrollments



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Time to Dropout (Bachelor's)

Decreased Dropout

- Higher ACT
- AP credit
- Concurrent enrollment
- Male
- Pell grants
- Institution
- CLEP credit

Increased Dropout

- Ethnic minority (large effects for Pacific Islander and Black students)
- Low income in high school
- Part-time enrollments

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Main Findings

- PLAs predict better outcomes
  - AP predicts positive outcomes in all models
  - CLEP predicts lower risk of dropout and shorter TTD for associate seekers
- Preparation is key
  - ACT, AP, and concurrent enrollment all predict positive outcomes
- The magnitude of factors goes down over time
  - Only majors increase in influence for longer models
- TTD ≠ Dropout rate
  - Some factors only increase dropout rate without affecting TTD

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Limitations

Missing Variables

Other work suggests that parents' education, family income, and participation in certain programs, but data is unavailable

Limited Sample

Sample can only include those who have had enough time to move through all three stages in Utah

Self Selection

Does not address how or why students participate in PLA programs, especially those from high school like AP

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Questions?

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References

Klein-Collins, R., & Hudson, S. (2018). *Do Methods Matter? PLA, Portfolio Assessment, and the Road to Completion and Persistence. A Study of Prior Learning Assessment and Adult Students' Academic Outcomes at Four LearningCounts Partner Colleges.* ().Council for Adult and Experiential Learning.

Klein-Collins, R., Taylor, J., Bishop, C., Bransberger, P., Lane, P., & Leibrandt, S. (2020). *The PLA Boost: Results from a 72-Institution Targeted Study of Prior Learning Assessment and Adult Student Outcomes. Revised*. ().Council for Adult and Experiential Learning.

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