

"I look to a day when people will not be judged by the color of their skin, but by the content of their character."

- Martin Luther King, Jr.

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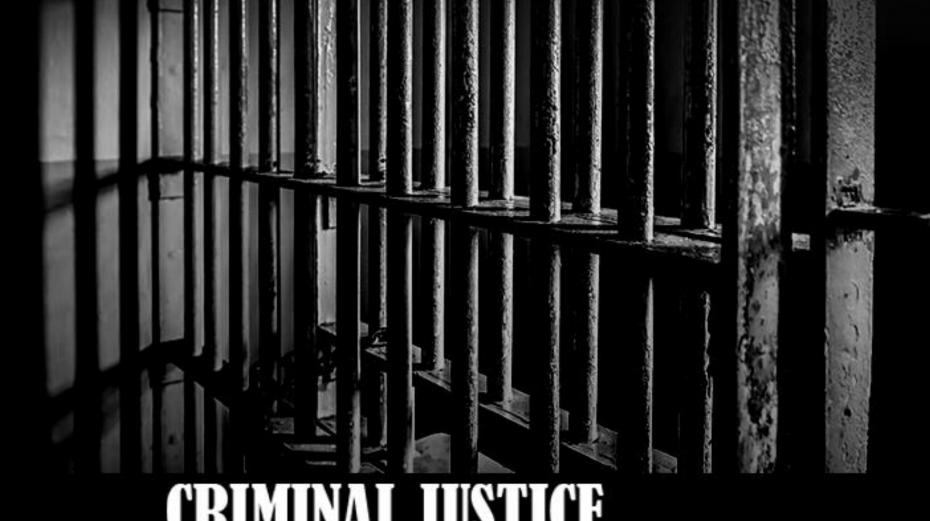
INTRODUCTION CRIMINAL JUSTICE INCOME EDUCATION CONCLUSION

Introduction

1865 marked the end of the American Civil War and ratification of the 13th Amendment to the U.S. constitution, abolishing slavery across all U.S. states. Following from this, the 14th Amendment, ratified in 1868, guaranteed equal citizenship rights to African Americans, and the 15th Amendment, ratified in 1870, guaranteed the right to vote, regardless of race, colour or previous condition of servitude. These significant legal advancements at the federal level, however, were not immediately reflected in the lived reality of African Americans, who continued to live as slaves of poverty and disadvantage, persecuted by a prejudiced legal system, and denied opportunities to advance by a deeply racist society,

Following the abolition of slavery, southern states swiftly enacted laws aimed at restricting African Americans' newly granted rights and freedoms. In many states, discriminatory laws and judicial processes provided African Americans fewer legal protections than they had previously enjoyed as slaves due to their legal status as both property and person (Wacquant, 2000). This facilitated a wave of incarceration of newly freed slaves and "on the morrow of emancipation southern prisons turned black overnight" (ibid.: 384). Soon after, the southern states introduced 'convict leasing', which allowed prisons to lease their inmates as free labour, forcing thousands of African Americans back into forced labour (Mancini, 1978).

Although African Americans had gained the legal right to own land, endemic poverty and a complete lack of decent employment opportunity meant that land ownership remained squarely in the hands of the white population (McMillen, 1990). Through sharecropping (the practice of exchanging labour for the right to farm a small plot of land) and debt peonage the plantation system persisted, as former slaves who were not incarcerated became "dependent, propertyless peasantry, nominally free, but ensnared by poverty, ignorance, and the new servitude of tenantry" (ibid.: 126). As a result of ingrained, systemic racism, some aspects of which have been outlined above, it was nearly a century after the abolition of slavery before African Americans were finally granted equal rights, through the ratification of the Civil Rights Act in 1964, which criminalised race-based discrimination and segregation. Now, over a half century since the Civil Rights Act was ratified, we ask: to what degree are these racial inequalities still and, if present, has the trend been positive in favour of racial equality?



CRIMINAL JUSTICE

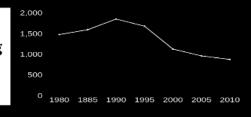
"African Americans are more likely than white Americans to be arrested; once arrested, they are more likely to be convicted; and once convicted, and they are more likely to experience lengthy prison sentences"

- The Sentencing Project 2018





Despite Declining Arrest Rates



African
Americans
Are still
Arrested

At Rates

1.5
Times Higher
Than White
Americans

And Receive Sentences



Longer
For the Same
Crime

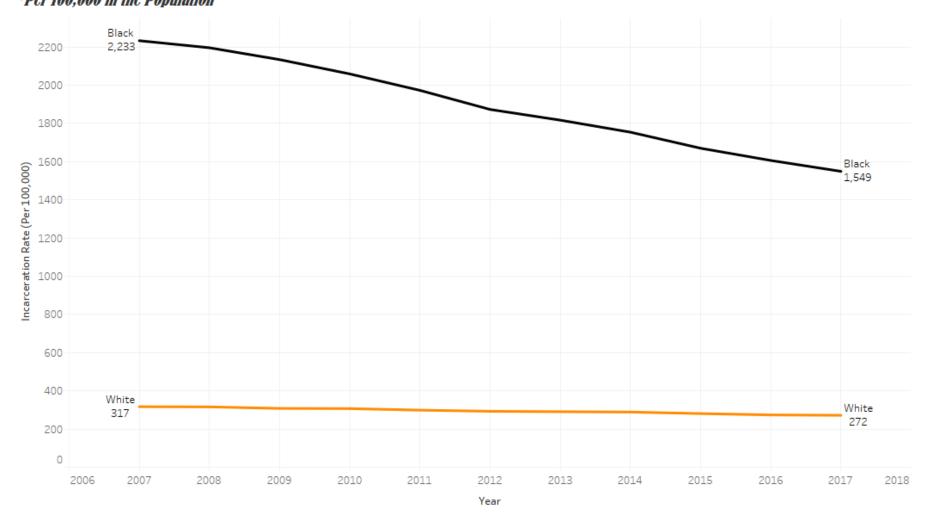
Arrest and Incarceration Rates

In 2014 the African American arrest rate (i.e. the number arrested per 100,000 African Americans in the U.S. population) was 2.3 times higher than the rate for white Americans (1,108 for African Americans, compared to 476 for white Americans). 10 years prior (in 2004), it was 3 times higher (981 for African Americans, compared to 313 for white Americans), and 37 years prior (in 1980), it was 4.4 times higher (1,478 for African Americans, compared to 336 for white Americans). According to a report submitted by The Sentencing Project (2018) to the United Nations Special Rapporteur on Contemporary Forms of Racism, African Americans, once convicted, receive sentences 19% longer than their white counterparts for the same crime.

These combined factors – unequal arrest and sentencing rates – have contributed to significant overrepresentation of African Americans in U.S. prisons. In 2017 the African American incarceration rate (as above, the number incarcerated per 100,000) was nearly six times higher than the rate for white Americans – 1,549 for African Americans, compared to 272 for white Americans. 10 years before (2007) African Americans were incarcerated at a rate 7 times higher than their white counterparts.

These figures demonstrate that significant racial inequality remains in the U.S. criminal justice system but that the trend, although gradual, is positive in favour of equality. The graph on the following page demonstrates that, over the past decade, while the incarceration rate for white Americans has stayed consistent and relatively low (compared to that of African Americans), the incarceration rate of African Americans has been steadily declining.

U.S. Incarceration Rates by Racial Group 2007 - 2018 **Per 100,000 in the Population*



Source: Bureau of Justice Statistics, 2017



"Overcoming poverty is not a gesture of charity.

It is an act of justice. It is the protection of a fundamental human right, the right to dignity and a decent life.

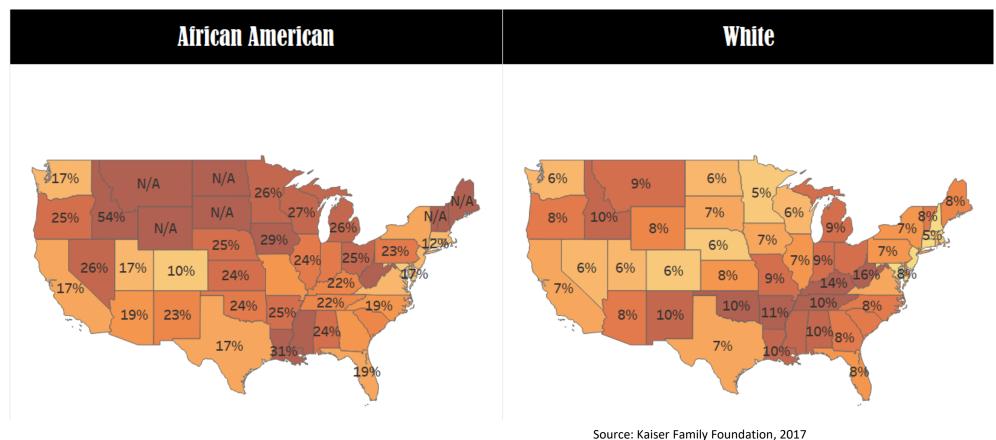
While poverty persists, there is no true freedom."

- Nelson Mandela, 2005

Relative Poverty

As can be seen in the side by side heat maps below, poverty rates among African Americans appear to be on a different scale to those of white Americans. In 2017, the proportion of the African American population living in poverty ranged from 17% (Delaware), to 31% (Louisiana). By contrast, the proportion of the white American population living in poverty in 2017 ranged from 5% (Minnesota and Massachusetts), to 11% (Arkansas). Poverty rates among African Americans, across U.S. states, are therefore 3–3.4 times higher than poverty rates among white Americans.

Average Poverty Rates across the U.S. in 2017

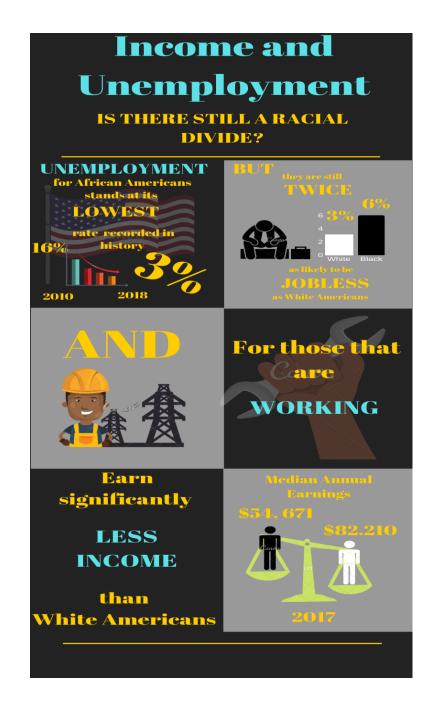


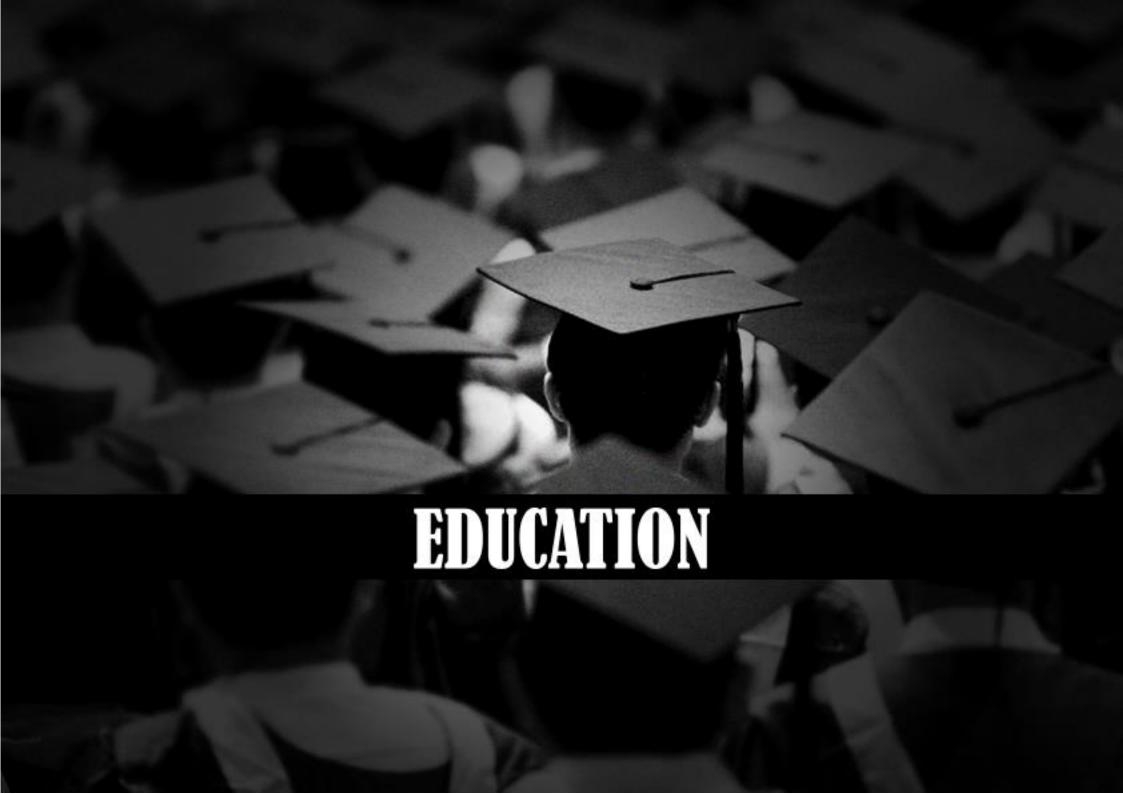
Income and Unemployment

In 2019 the proportion of the African American population who were unemployed was 6%, twice the unemployment rate present in the white American population (3%). Just over a decade prior, in 2008, unemployment rates were higher for both white (8%) and African Americans (15%), however, the gap between them (i.e. 2 African Americans unemployed for every unemployed white American), was the same.

Similar trends are present regarding income. In 2017, for every USD\$1.00 an African American earned, a white American earned USD\$1.50 – i.e. white Americans earned 50% more than their African American counterparts. As with unemployment, between 2002 and 2017, income increased for both white (from \$82,210 in 2002 to 89,632 in 2010) and African Americans (from \$54,671 in 2002, to \$58,593 in 2010). Also, and similar to our findings above, this income gap seems to have persisted, unchanged, with white Americans earning USD\$1.50 for every USD\$1.00 earned by African Americans throughout 2002 to 2017.

These figures suggest that significant racial inequality still exists in the U.S. in terms of relative poverty, income and unemployment rates. This seems to be consistent across U.S. states (as demonstrated in the maps on the previous page), and over time, with little to no evident change in the income/unemployment gap between white and African Americans in 15 years.





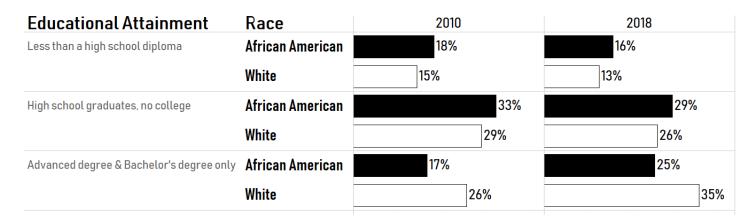
"Education is our passport to the future, for tomorrow belongs only to the people who prepare for it today."

- Malcom X, 1964

Disparities in Educaitonal Attainment

Educational Attainment, across racial groups, has increased in the U.S. over the past decade (see below). In 2010 18% of African Americans had less than a high school diploma (compared to 15% among the white population), and 33% had graduated high school but had not attended third level (compared to 29% among the white population). By 2018 the proportion of African Americans (16%) and white Americans (13%) with only a high school diploma had decreased somewhat, but the gap between them, although small, remained consistent – in 2018 (as in 2010) African Americans completed their education before achieving a high school diploma at a rate 1.2 times higher than their white counterparts. This is similarly so for the proportion who graduated high school without attending university, with both groups experiencing a slight decrease between 2010 and 2018, but with a persistent gap between them. The largest observable difference in educational attainment over the past decade is the increase in the proportion of both white and African Americans attaining third level qualifications. Between 2010 and 2018 the proportion of the African American population who had attained a third level qualification (Bachelors or Advanced Degree) had increased from 17% to 25%. Among the white population, the proportion attaining third level qualifications increased from 26%–35% over the same period. It is only at this higher level that we can observe any closing of the racial gap in educational attainment – in 2010 white Americans attained Bachelor's and Advanced Degrees at a rate 1.5 times higher than their African American counterparts, by 2018 this had reduced to 1.4.

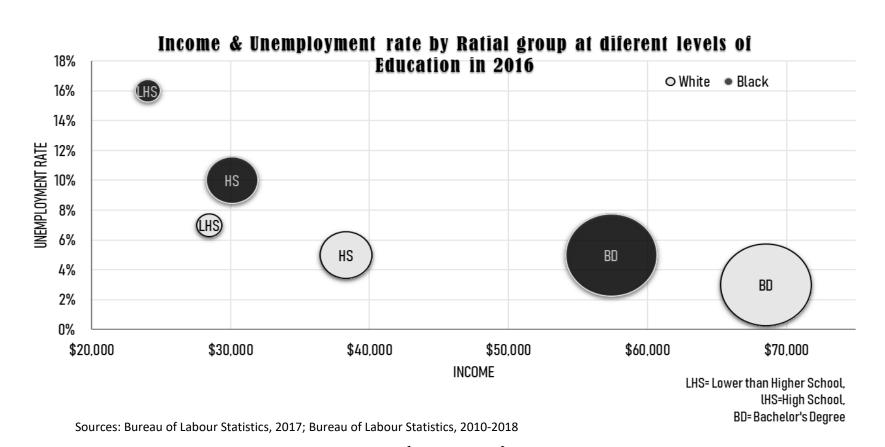
Educational attainment In The U.S. by racial group



Source: Bureau of Labor Statistics, 2010-2018

Disparities Persistent Across Education Levels

Education is commonly considered a vehicle of social mobility, however, as we have seen above, the proportion of the African American population with a third level qualification has increased, but the unemployment and income gap between white and African Americans persists. The below bubble chart demonstrates the interaction between educational attainment and race in determining unemployment and income rates. As can be seen from the below, for both white and African Americans, as educational attainment increases, income appears to grow and unemployment appears to fall. Also suggested by the below is a persistent income gap between white and African Americans; with a similar gap in income between white and African Americans observable at each level of educational attainment. Educational attainment, however, does seem to have an impact on the unemployment gap. The difference in unemployment rates between white and African Americans appears largest at the lowest level of education (i.e. less than high school), and smallest at the highest level of education (i.e. Bachelor's Degree).

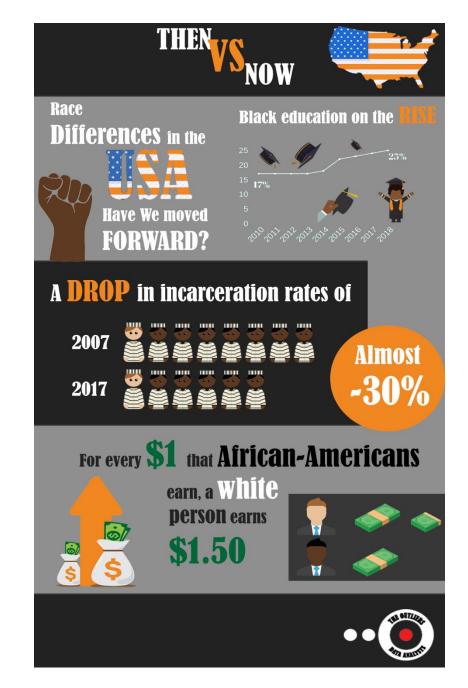


CONCLUSION

Conclusion

At the beginning of this report we briefly described the origins of systemic racism in the U.S., from slavery through the Jim Crowregime, to the Civil Rights Act of 1964. We noted the 100-year gap between the abolition of slavery and the legal establishment of equal rights for African Americans and posed the question: now that over half a century has passed since the ratification of the Civil Rights Act, to what degree have racial inequalities dissipated? To answer this question we looked at statistics on three areas deemed most pertinent: criminal justice, income and unemployment, and education (including the potential of education as a vehicle of social mobility).

We found that racial inequality, across all three areas investigated, appears to remain endemic. African Americans continue to be arrested at a rate 2.3 times higher than white Americans, they are given sentences 19% longer for the same crime, and they are incarcerated at a rate nearly 6 times higher than their white counterparts. We found that poverty rates among African Americans are between 3 and 3.4 higher than they are for white Americans across all U.S. states. We found that African Americans are twice as likely to be unemployed and, among those in employment, they earn, on average, 50% less than white Americans. We found that attainment of third level qualifications has increased for both white and black Americans, but that white Americans still achieve such qualifications at a rate 1.4 times higher than African Americans. We also found that, as African Americans attain higher levels of education, the unemployment gap decreases, but the income gap persists.



Similar trends are present regarding income. In 2017, for every USD\$1.00 an African American earned, a white American earned USD\$1.50 – i.e. white Americans earned 50% more than their African American counterparts. As with unemployment, between 2002 and 2017, income increased for both white (from \$82,210 in 2002 to 89,632 in 2010) and African Americans (from \$54,671 in 2002, to \$58,593 in 2010). Also, and similar to our findings above, this income gap seems to have persisted, unchanged, with white Americans earning USD\$1.50 for every USD\$1.00 earned by African Americans throughout 2002 to 2017.

Over time, some positive trends were observed. For example, although arrest rates are 2.3 times higher for African Americans, in 1980 they were 4.4 times higher. Similarly, the African American incarceration rate seems to be decreasing. Although African Americans are still incarcerated at a rate approximately 6 times higher than their white counterparts, in 2007 their incarceration rate was 7 times higher. In other areas, however, inequalities seem to be persisting over time. For example, although both white and African Americans earn more and have lower levels of employment than before, the gap between them has remained unchanged. Between 2002 and 2018 the income gap remained at 1.5 (for every USD\$1.50 earned by white Americans, on average, African Americans earned just USD\$1.00) and the unemployment gap at two-to-1 (two African Americans unemployed for every unemployed white American).

Given the above we must conclude that, despite some modest positive trends in relative arrest and incarceration rates, systemic racial inequality seems to remain a persistent feature of U.S. society.

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Appendix 1: Graphic Development Process

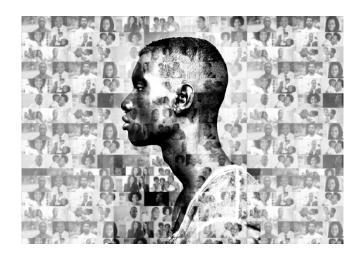
Cover and Body Graphic Designs

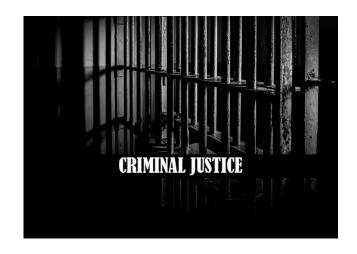
The visual design process for the whole document was conducted in two stages: Definition and Creation. In the first stage, the team gathered all relevant information regarding the topic of the project in order to gain a deeper understanding of the subject matter and define a development plan for the project's overall aesthetic design. The graphic design process was initiated by exploring other similarly themed design works for additional inspiration

Once a final design strategy was devised, several steps were performed to execute its creation. Keeping in alignment with the project's racial theme, the team agreed on black and white scales as colours for the body and cover design of the project. Furthermore the team felt this would be a more effective method in emphasizing the drama of race relations over the years. To compliment the intensity and seriousness of the project's overall design, the main cover of the project consisted of representative side profile image of an African American which was cantered in a collage of different pictures of the same race.; Black and white contrasts and highlights were applied to make it look more vivid. The full process can be found attached in the Photoshop file. Software used: Adobe Photoshop, Adobe Illustrator.

The Back cover is the same collage used for the main cover to keep consistency in the document, only that for the back cover the brightness and opacity were reduced to look like a real book cover. Software used: Adobe Photoshop, Adobe Illustrator. A Logo for the analysts' team was also designed and added in the document, on the bottom of the back cover. The team's name is "the outliers Data Analysts team" which is represented with three circles placed side by side in a horizontal position, where the last one represents an Outlier in a statistical graph. Whites and red were chosen to provide contrast and consistency with the design, but the Logo is planned to be used for future projects made by the team as well. Software used: Adobe Photoshop, Adobe Illustrator.

Bernard MT Condensed and Bahnschrift SemiLight SemiConde fonts were carefully chosen to allow easy read by any person, keeping the high-end design previously proposed





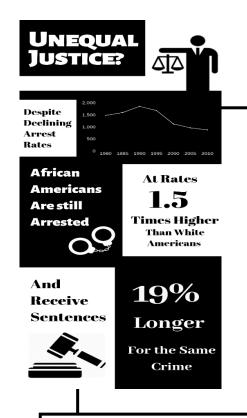






Criminal Justice

The Criminal Justice section of the report contains two key graphics – the infographic (see right) and the time-series graph of incarceration rates over time (see next page). The development of different elements of the infographic is described in more detail on the right. In terms of the overall design, we chose the black, white and, in the case of the below time series graphs, orange. Our reason for this colour selection is that black and white is synonymous with prison uniforms historically, whereas orange jumpsuits are the standard in U.S. prisons today. The black and white square blocks with opposing coloured text were chosen to juxtapose the black on white/white on black for dramatic effect. The infographic was created on Canva, all icons were sourced on Google images and a different text was selected for each box to help the eye read one box at a time and to distinguish them visually as separate pieces of information. The timeseries graph of incarceration rates (see next page) was developed using Tableau and data sourced from the U.S. Bureau of Justice Statistics (2019). A line graph was selected as it very effectively demonstrates (1) the clear difference between African and white American incarceration rates: (2) very little change in white American arrest rates over time (i.e. a flat line); and (3) that the African American arrest rate is on a downward trajectory.



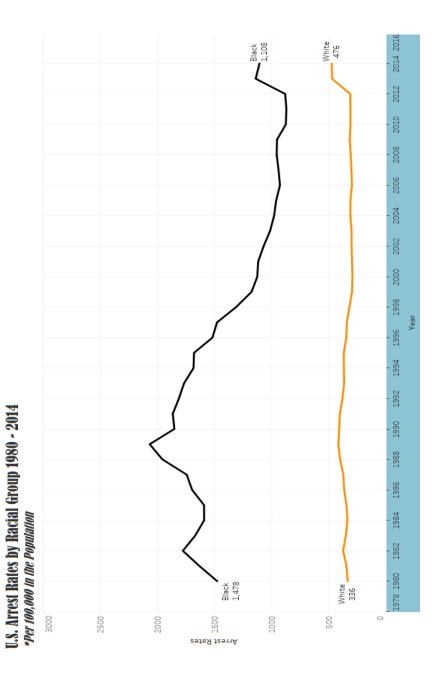
This statistic – that African Americans receive sentences 19% longer for the same crime – was sourced from the Sentencing Project's (2018) report to the United Nations Special Rapporteur on Contemporary Forms of Racism.

This time series graph – showing a decrease in arrest rates was first developed in Tableau (see original graph below) using data obtained from the website of the United States Bureau of Justice Statistics (2017).

First a dataset was created from normalised tables, then Tableau was used to develop a timeseries line graph. However, as we deemed incarceration rates to be a more significant measure for determining levels of inequality in criminal justice and, given that we had already included a time series graph on incarceration rates over time in our report, we decided to integrate this graph of arrest rates over time into our infographic.

The following statistics – that African Americans are still arrested at rates 1.5 times higher than white Americans – was derived from the original timeseries graph created in Tableau (see next page).

Black 1,549 **Year** U.S. Incarceration Rates by Racial Group 2007 - 2018 *Per 100,000 in the Population Black 2,233 White 317 Incarceration Rate (Per 100,000)



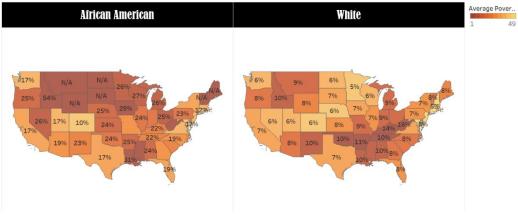
Income

The Data on this visualtion is derived from the Kaiser Family Foundation's most recent estimates based on the Census Bureau's American Community Survey, 2017. As an introduction into the topic wealth inequality, we wanted to first compare the percentage rates of African Americans and White Americans that are living below the poverty line across the states in the U.S.

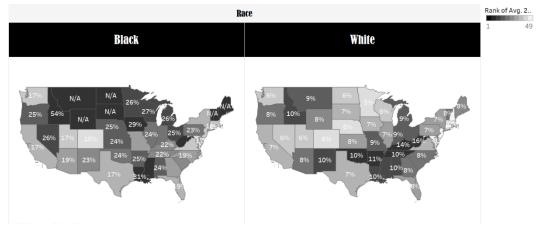
In the top figure on the right, an interactive map in Tableau was employed to illustrate this, which effectively allows the viewer to explore their distribution across each state and observe their difference. An orangegold colour range was selected as the final colour ranking graphic that was used in the report.

To match the racial theme of the project, a black and white colour scheme had been originally selected in order to match the theme of the project. However, after a final review, the team agreed on a brighter sequence to provide easier view for the reader to interpret the percent figures.

Average Poverty Rates across the U.S. in 2017



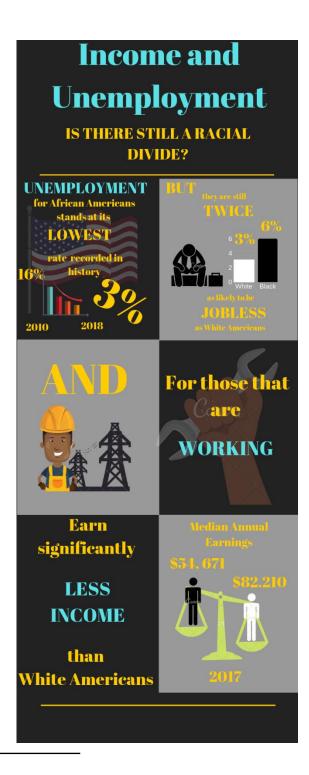
Poverty Rates in the United States by between black and whites

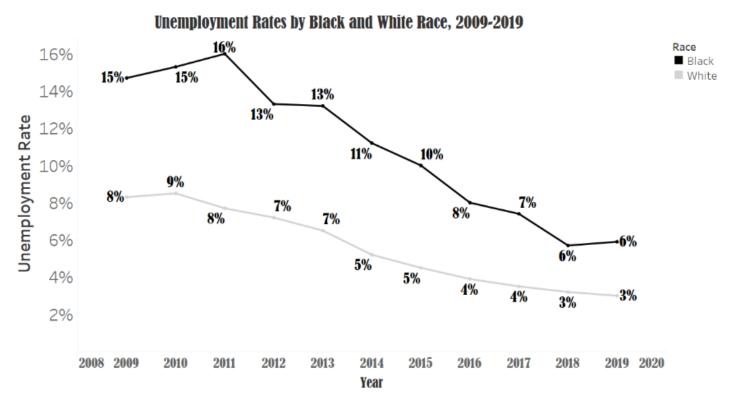


Income

The Unemployment and Income section of the report contains three key graphics – the infographic (see right) and the time–series graph of unemployment rates over time (see next page). The development of different elements of the infographic is described in more detail on the right. In terms of the overall design, we chose two different colour fonts and varying text sizes in order to highlight key aspects of the infographic from the descriptive texts. The infographic was created using Canva.

A linear chart of Unemployment Rates (see below) was developed using Tableau and data sourced from the U.S. Bureau of Labour Statistics' Current Population Survey (2009–2019). Years are shown in the X axis and Unemployment rate (as a percentage) is shown in the Y axis. Font, font size and colours of the chart were chosen to keep consistency with all the other figures of the document. This style of presenting the data was chosen to show the provide the reader with a historic overview of the unemployment gap between African and white American unemployment rates and to visualise if any improvements have been made within the last 10 years. This method provides the viewer with both clear perspective of their declining trends over time but how their differences have still remained unchanged the same today.





The trend of average of Unemployment for Year. Colour shows details about Race. The marks are labelled by average of Unemployment. The view is filtered on Race, which keeps Black and White.

Education

In the Education section of the report, the bargraph below was chosen to compare the differences between educational attainment of African and White Americans over time. To construct this graph data for the years 2010 t-2018 was retrieved from the Bureau of Labour Statistics' Current Population Survey which shows the educational attainment in every level by race.

As we wanted to highlight the differences between a certain point on time in the past and now rather than the evolution over time, we chose this style this graphic. In it, we can easily compare both races in every educational level and can clearly see the changes from 2010 until 2018. For the purpose of this report and to keep consistency throughout the whole document, some educational levels have not been shown. The creation of this chart was done in Tableau. Font, font sizes and colours were chosen to keep consistency with every other chart of the project. Please refer to original Tableau file to see filter between different years and educational attainment statuses.

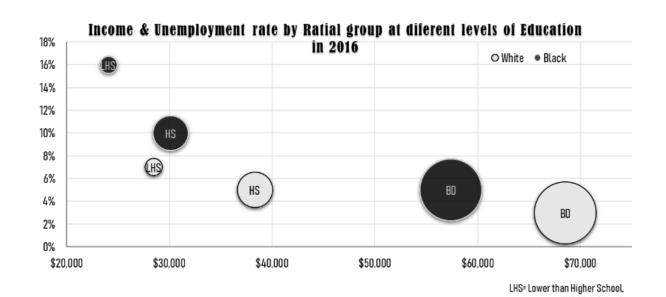
Educational attainment In The U.S. by racial group



To further expand upon the topic of Education; levels, we wanted to highlight the differences between racial groups in terms of unemployment and income. To do that, we decide it to combine the data with a fourth variable that would show the level of education achieved by each group. Differences in unemployment and income were expected to be observed between the two racial groups sharing the same educational level

Given that there were analysing 4 variables of different data types (2 continuous – Income and Unemployment Rate and 2 categorical – Race and Educational Level), we decided that the best way to show this information would be through the use of a bubble chart. To do that, we collected data from 2 different sources of the "United States Census Bureau" and combined them with previously aforementioned educational attainment data. Once the data was gathered and preprocessed for analysis, we charted the variables using Excel.

To show the different levels of educational level we tested how using different colours per group instead of different bubble sizes would look. As we used a very defined palette of colours during the document, we thought that using different bubble size would be better to maintain consistency and show clearly the information we wanted to show.



BD= Bachelor's Degree

Conclusion Infographic

In this infographic we wanted to visually summarize the 3 main key areas of our study (Income, Education and Incarceration).

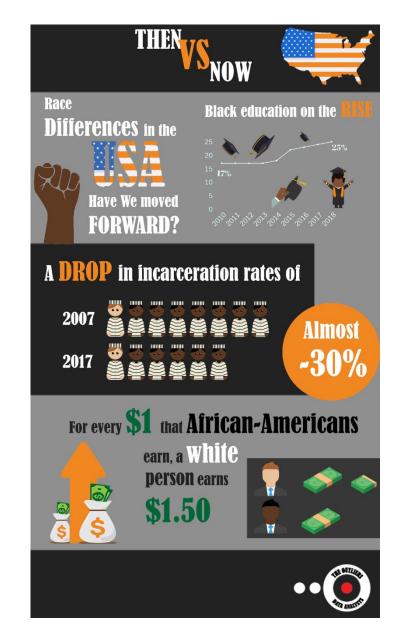
Firstly, we wanted to outline the main differences between white and black people in terms of income earnings. Regarding education we wanted to show the increase in education attainment of black people in the last years. Finally, we wanted to outline the differences between white and black people regarding incarceration rates.

Income and Educational data were gathered from the United States Census Bureau. On the other hand, data for the incarceration figure was taken from the Bureau of Justice Statistics (BSJ).

To show these 3 different topics, we split the visual in 3 different parts (and colours).

We wanted to keep consistency throughout the document in terms of colours. Despite it, we wanted to add some other colours that could help us transmit the information better and get contrast from the black and white tones.

Furthermore, to break with the quadratic schema that we set at the background of the visual, we decide to select rounded icons that would transmit a more vivid and friendly tone to the infographic. All the icons were obtained from Google Images and were modified using Photoshop.



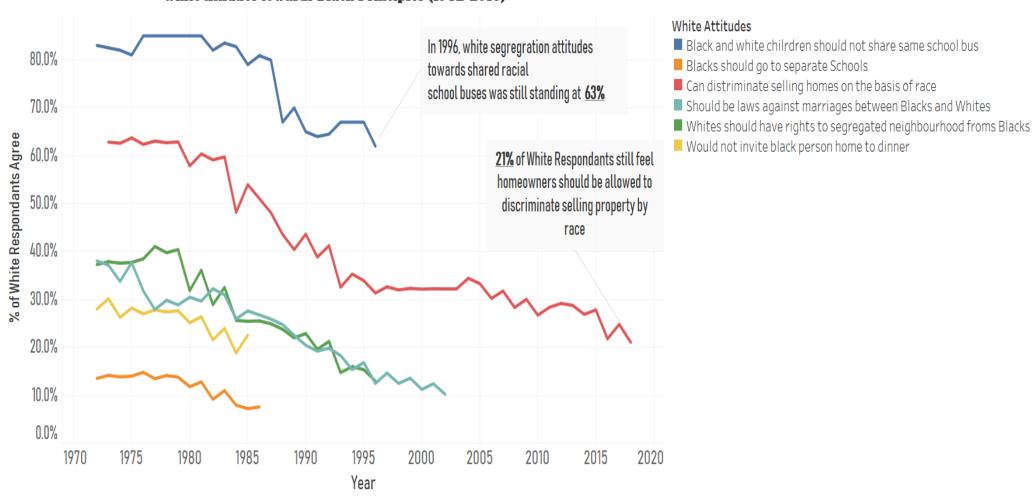
Supplementary

This section of the Appendices contains graphics that were not included in the final written report. The first image (see next page) was generated using survey data drawn from the General Social Survey (GSS) which run by the National Opinion Research Centre at the University of Chicago. The GSS questionnaires have been conducted for more than four decades and contains vital knowledge about the attitudes in American society revealing deep insights into long-term shifts in Americans' attitudes on matters such as race relations. The data that was used for this graphs pertains to the trends in vote % of white respondents that were in agreement with certain black principles they were tracked over the years 1972 and 2018. (General Social Surveys, 1972–2018).

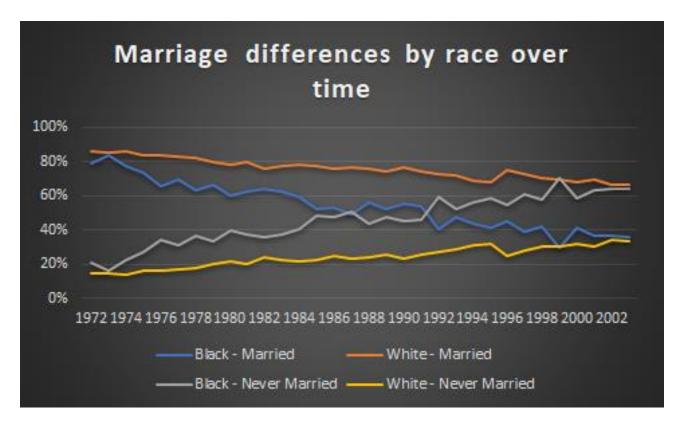
The data was first pre-processed for analysis by excluded all non-applicable (N/A) values in Tableau before providing a trended view of the percentage of survey respondents that shared certain attitudes. Data on respondents' attitudes were expressed as categorical variables which needed to be processed. Firstly, calculated metrics were utilised in Tableau to determine the counts of respondents that belonged to a particular class; in this way categorical data was processed to create new numeric fields for each respective attribute. Following this, these metrics were overlayed onto a single axis to view multiple attitudes over time. One of the key challenges of analysing this data was that certain questions had missing values for years in which the survey had not been conducted. In order to address this data quality issue, all missing survey datapoints were imputed with the calculated average value between the current year and previous year. All calculations were conducted in excel (please refer to excel file in excel analysis folder) The final processed and cleaned data was then reformatted so that it could be compatible for visualisation in Tableau.

Key findings the survey's longitudinal data include: (1). In 1972, "fewer than 15% of whites nationwide thought that black and white children should attend separate schools. That fell below 10% by the early 1980s. By 1985, so few people endorsed the segregationist response that the GSS omitted this item. (2) However, the data do not provide unequivocal support to the idea that the segregationist sentiment has entirely gone away. "In 2008, a nontrivial proportion of whites nationwide, 28%, still support an individual homeowner's right to discriminate on the basis of race when selling a home, and even nearly 1 in 4 highly educated Northern whites adopt this position." Furthermore, in 1990, 85% of black respondents said they felt discriminated in housing. However, while deep insights were drawn from this analysis, they were not in exact alignment with the projects research objective. Therefore, they were only included in the Project's supplementary.

White Attidues towards Black Principles (1972-2018)

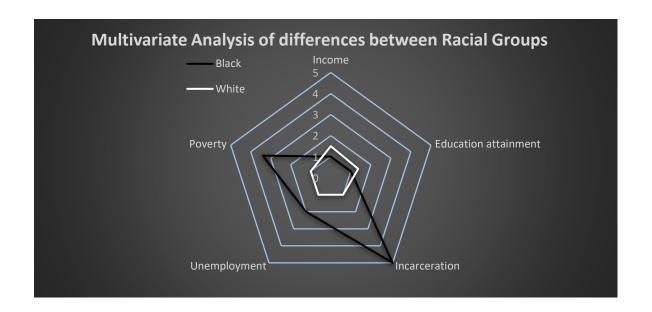


The trend of sum of % of White Respondants Agree for Year. Colour shows details about White Attitudes.



For the second supplementary image (see above), we found that there was some difference in the most recent year's ratios of married black and white people. Going back on time we saw that the ratio in black people was changing year on year until flipping oveR. We thought it was an interesting insight about the difference in black and white culture in the United States now and the evolution of it during the past few years. We first decided to chart a line chart that show the evolution of years. Later we thought that it would be interesting to see the evolution of those 4 groups as a Bar Chart Race. We decide to make the bars static as it is easier to see the actual changes of each bar from beginning to end. However, given that this chart did not align with the research object of our project, we decided to exclude it from the final report

For a full interactive version of this analysis, please refer to the link https://app.flourish.studio/visualisation/462208/edit



In our third and final supplementary image., we wanted to conclude with a graph which summarizes differences between races in all the different topics that were discussed in the report. We decided to use a Radial Chart so that we could plot the differences in all of them at the same time. We finally decided to not include it in the formal report as it was difficult to visualize for people that have not seen this kind of charts before.

