Covid-19 Resiliency in the City of Berkeley

Kung Chen, Annie Miller, Brianna Ong, Britney Wu, Sarah Harte, Weiping Huang

Academic Mentor: Manaswini Rao
# Table of Contents

1. **Section 1 - Executive Summary**

2. **Section 2 - Introduction**

3. **Section 3 - Background and Context**
   - Subsection 1 - Effects on Businesses in the City of Berkeley
   - Subsection 2 - External Relief Programs
   - Subsection 3 - Internal Relief Efforts

15. **Section 4 - Primary Areas of Focus**
   - Subsection 1 - The Impact of the COVID-19 Pandemic on Food Security
   - Subsection 2 - Racial Discrepancies in Economic Resiliency

38. **Section 5 - Conclusion**

41. **References**
Executive Summary

To provide context and explore the broader implications of the COVID-19 Pandemic, we aimed to discuss effects on businesses in the City of Berkeley; external relief programs (relief efforts being carried by non-commercial actors); and internal relief programs (the ways in which local businesses attempted to stay resilient). These were meant to contextualize and center our research for our two topic areas of focus: the impact of the pandemic on food security and racial discrepancies in economic resiliency.

The COVID-19 Pandemic has resulted in unprecedented levels of food insecurity and has created a food insecurity crisis around the country. Communities of color, specifically Black households and Latinx households are disproportionately impacted by food insecurity, and are two times more likely to be impacted by food insecurity compared to white households.

Minority owned businesses are affected disproportionately by the pandemic than non-minority owned businesses. Minority owned businesses - especially those that are Black and Latinx owned - are economically struggling. Utilizing foot traffic data, we discovered that, while there is a general decrease in foot traffic, it is slightly emphasized in areas with higher rates of diversity and lower median incomes. The spread of COVID-19 has exacerbated existing racial inequalities, revealing the deeper impediments that minorities unfairly face when managing their businesses.
Introduction

The SDG Undergraduate Research Group (SURG) is an undergraduate-led research group affiliated with the UC Berkeley Office of Sustainability and guided by the UN Sustainable Development Goals. Through student-led research, SURG aims to take action on the major challenges of our time, expand undergraduate leadership in topics of interest, and increase transdisciplinary learning of these issues. SURG was established during the summer of 2020 in the midst of the Covid-19 Pandemic by Kung Chen, Mikayla Tran, Varsha Madapoosi, and Rohith Moolakatt. The Fall 2020 Semester is its inaugural semester.

SURG’s Covid-19 Resiliency Committee was established to address the impacts of the COVID-19 Pandemic on local businesses in the City of Berkeley and the San Francisco East Bay. Led by Committee Lead Kung Chen, the team consists of Annie Miller, Brianna Ong, Britney Wu, Sarah Harte, Weiping Huang. The committee’s work was guided by our research mentor, Dr. Manaswini Rao.

We made use of a variety of quantitative and qualitative data for our research. We utilized datasets we received from public sites and non-profit organizations (such as Feeding America), ArcGIS Online, and other means to provide quantitative data for our analyses. On the qualitative side, we utilized past research papers to inform our findings. Because of the contemporary nature of the study, Open Source Intelligence (OSINT) was a heavily-utilized tool for both quantitative and qualitative data gathering. By monitoring online platforms - such as Twitter, Facebook, Instagram, Yelp, etc. - we were able to gain a broader understanding of how businesses in Berkeley were faring as well as take a closer look at the specific practices that businesses were using to stay resilient.

This report aims to discuss how the local economy was affected by the pandemic and was guided by a few general thematic questions as well as more specific inquiries. To provide context and explore the broader implications of the Covid-19 Pandemic, we aimed to discuss effects on businesses in the City of Berkeley; external relief programs (relief efforts being carried by non-commercial actors); and internal relief programs (the ways in which local businesses attempted to stay resilient). These were meant to contextualize and center our research for our two topic areas of focus: the impact of the pandemic on food security and racial discrepancies in economic resiliency.
Background and Context

Effects on Businesses in the City of Berkeley

External Relief Programs

Internal Relief Efforts
Effects on Businesses in the City of Berkeley

The shelter-in-place orders starting in March have placed Berkeley's businesses, community service agencies, and arts organizations under tremendous financial pressure. Between March and August 2020, Alameda County observed 3354 business closures, with the top three industries affected being professional, scientific and technical services; health care and social assistance; and retail ("Business Impacts" n.d.). The City of Berkeley had 328 business closures during that same time period - with 86% of those being extremely small 'micro-businesses' with fewer than 10 employees. 3.1 Figures 1 and 2 show the breakdown of business closures by industry in Alameda County and the City of Berkeley, respectively.

3.1 Figure 1: This figure shows the breakdown of business closures in Alameda County by industry. ("Business Impacts - East Bay Economic Development Alliance" n.d.)
The City of Berkeley estimates that the shelter-in-place orders have impacted at least 30,000 jobs in the City of Berkeley. 27% of workers in the city are either already unemployed or are at high risk of unemployment. The city itself believes that it is in a relatively strong financial position, but understands that it will have to make difficult decisions in the future in order to navigate the economic downturn that will come as a result of the COVID-19 pandemic. Without federal or state aid, the city will be stretched to address unmet needs. The first step to creating an effective project plan is to set a baseline. The baseline is the foundation on which the other project elements will be built on.

The pandemic has also disproportionately impacted vulnerable populations and low income workers. While local businesses are affected by COVID-19, the diversity of sectors spanned by these businesses is likely to cushion some of the shock. In the long term, this diversity will help Berkeley’s local economy while recovering from the pandemic. Figure 3 shows the breakdown of all the businesses in Berkeley, as categorized by the city’s internal classification system.
The City of Berkeley has employers in a diverse range of industries, including manufacturing, healthcare, higher education, research, retail, and food service. (Berkeley City Auditor 2020).
External Relief Programs

In response to the negative economic effects caused by the growing COVID-19 Pandemic, various efforts have been taken to keep small businesses resilient and mitigate any harms. This section explores relief programs from different levels of government that have attempted to alleviate small business’ concerns.

Federal Level Programs

Since March 2020, the United States federal government has enacted four major acts in light of the Covid-19 Pandemic (“House Passes Updated Heroes Act” 2020). The following are excerpts or summaries from each act that pertain to small businesses, prepared by the House Committee on Appropriations.

**Coronavirus Preparedness and Response Supplemental Appropriations Act (March 6, 2020)**

- **Small Business Disaster Loans** - Allows $1 billion in loan subsidies to be made available to help small businesses, small agricultural cooperatives, small aquaculture producers, and nonprofit organizations which have been impacted by financial losses as a result of the coronavirus outbreak. This funding could enable the Small Business Administration to provide an estimated $7 billion in loans to these entities. In addition, provides $20 million to administer these loans. (House Committee on Appropriations, 2020).

**Families First Coronavirus Response Act (March 18, 2020)**

- **The Emergency Paid Sick Leave Act** - This section requires employers with fewer than 500 employees and government employers to provide employees two weeks of paid sick leave, paid at the employee’s regular rate, to quarantine or seek a diagnosis or preventive care for coronavirus; or paid at two-thirds the employee’s regular rate to care for a family member for such purposes or to care for a child whose school has closed, or child care provider is unavailable, due to the coronavirus. • Full-time employees are entitled to 2 weeks (80 hours) and part-time employees are entitled to the typical number of hours that they work in a typical two-week period. • The bill ensures employees who work under a multiemployer collective agreement and whose employers pay into a multiemployer plan are provided with leave. The Act, and the requirements under the Act, expire on December 31, 2020 (House Committee on Appropriations, 2020).
Coronavirus Aid, Relief, and Economic Security (CARES) Act (March 27th)

**Paycheck Protection Program** — $350 billion in funding (included in Division A of the bill) for a Paycheck Protection Program (PPP) that will provide small businesses and other entities with zero-fee loans of up to $10 million, with up to 8 weeks of average payroll and other costs forgiven if the business retains its employees and their salary levels.

**Emergency Economic Injury Grants** — $10 billion in funding (included in Division A of the bill) for a provision to provide an advance of $10,000 to small businesses and nonprofits that apply for an SBA economic injury disaster loan (EIDL) within three days of applying for the loan.

**Economic Injury Disaster Loans (EIDL)** — $562 million to ensure that SBA has the resources to provide EIDL to businesses that need financial support.

**Debt Relief for Existing and New SBA Borrowers** — $17 billion in funding (included in Division A of the bill) for a provision to provide immediate relief to small businesses with standard SBA 7(a), 504, or microloans, among other relief for small business borrowers.

**Resources for Business Counseling Services** — $275 million in grants (included in Division A of the bill) to Small Business Development Centers (SBDCs), Women’s Business Centers (WBCs), as well as the Minority Business Development Agency’s Business Centers (MBDCs), to provide mentorship, guidance and expertise to small businesses.

**NIST Manufacturing Extension Partnership (MEP) Program** — $50 million to enable non-profit MEP centers across the country to assist small and medium-sized manufacturers hit by coronavirus and the economic downturn (House Committee on Appropriations, 2020).

Paycheck Protection Program and Health Care Enhancement Act (April 24th)

**Title II — Small Business Administration** — $2.1 billion to administer SBA programs funded in the bill; $50 billion in loan subsidies to fund approximately $350 billion in SBA Economic Injury Disaster Loans; $10 billion for EIDL grants, which can be used for an advance of up to $10,000 on a disaster loan and do not need to be repaid.
Although the House of Representatives had passed the Heroes Act (May 15th) as well as its second iteration (November 30th), the act has not progressed past the House - as of December 1st, 2020.

The Paycheck Protection Program assisted approximately 2.5 thousand applications for loans of up to $150,000 in the City of Berkeley ("Paycheck Protection Program" n.d.). The PPP provided ~500 loans that were greater than $150,000 in value for businesses in the City of Berkeley. However, while a majority of PPP loans went to smaller businesses (~87% of total PPP loans were for loans less than $150,000), more than half of all the PPP funds had gone to larger businesses (those that applied for loans greater than $150,000) - according to the Washington Post (O’Connell et al. 2020). Racial divides are explored in depth later, in the Racial Discrepancies in Economic Resiliency Section.

3.2 figure 1 below shows businesses in Berkeley that were able to receive loans of more than $150,000.

3.2 Figure 1: This is a map of the City of Berkeley, overlaid with dots based on where loans of more than $150,000 were approved. The size of each datapoint also increases the larger the loan.
State Level Programs

The State of California has been providing financial assistance in addition to various programs to help alleviate business’ concerns. Some financial assistance measures include tax relief, debt relief, and various small business loan programs (California n.d.) In November, California Governor Gavin Newsom announced the creation of the California Rebuilding Fund, a program that pairs small businesses with community-based lenders. The state is also utilizing its California Technical Assistance Providers, “state-supported small business centers that provide direct assistance from a local advisor.”

California’s Blueprint for a Safer Economy has also been guiding the state in its attempts to balance safety and economic resiliency. The blueprint utilizes a four tiered approach that gauges each county’s ‘risk level’ by assessing Covid-19 transmission rates within the county (doing so by looking at test positivity and case rate) as seen in 3.2 figure 2.

<table>
<thead>
<tr>
<th>Higher Risk</th>
<th>Lower Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widespread</td>
<td>Substantial</td>
</tr>
<tr>
<td>Tier 1</td>
<td>Tier 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>Higher Risk</th>
<th>Substantial</th>
<th>Moderate</th>
<th>Minimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted Case Rate for Tier Assignment** (Rate per 100,000 population* excluding prison cases^, 7 day average with 7 day lag)</td>
<td>&gt;7</td>
<td>4-7</td>
<td>1-3.9</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Testing Positivity^ (Excluding prison cases^, 7 day average with 7 day lag)</td>
<td>&gt;8%</td>
<td>5-8%</td>
<td>2-4.9%</td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

3.2 Figure 2: This is the State of California’s Covid-19 Risk Assessment Chart (“Blueprint for a Safer Economy” n.d.)
County Level Programs

In November, Alameda County launched the Alameda County CARES Grant Program - meant to direct $5 million from federal CARES Act funds in order to assist businesses in Alameda. The program will prioritize small businesses that have suffered due to the Covid-19 Pandemic ("Grants - East Bay Economic Development Alliance" n.d.). Approved businesses can receive a one-time payment of $5,000 (County of Alameda, 2020). The program will be administered by the East Bay Economic Development Alliance - East Bay EDA.

The East Bay Community Foundation also has a similar program; titled "COVID-19: A Just East Bay Response Fund." Providing its first wave of grants in March 2020, the program is still ongoing - as of December 1st, 2020 ("COVID-19 Fund FAQ" n.d.). Unlike the Alameda County CARES Grant Program, this fund focuses on providing support to organizations in Alameda and Contra Costa Counties that serve vulnerable populations ("COVID-19 Fund" n.d.).

The Alameda County Small Business Development Center (ACSBDC) has also been providing small businesses with information and assistance on navigating through state and federal Covid-19 related aid programs ("COVID-19 | Alameda SBDC" n.d.).
City Level Programs

The City of Berkeley has been active in supporting its local businesses through financial, legal, and other means. Shortly after the Shelter-in-Place order for Alameda County was announced on March 16th, the Berkeley City Council launched the Berkeley Relief Fund - a fund that provided emergency relief grants for small businesses and local organizations in the community (“About the Berkeley Relief Fund” n.d.).

According to Berkeley Mayor Jesse Arreguin, the fund was able to provide $4.4 million to local businesses and organizations ($3 million from the city and the rest from donations) (“Jesse Arreguin #MaskOnToMoveOn on Twitter” 2020). Businesses could have applied to grants of up to $10,000 (Berkeley Law, 2020). On November 30th, 2020, Mayor Arreguin announced a relaunch of the Berkeley Relief Fund.
The city is complying with California’s eviction moratorium, which protects tenants from eviction for non-payment of rent until February 2021. Throughout June 2020, Berkeley’s Office of Economic Development also reached out to small businesses in various sectors to better understand their concerns (“Businesses - City of Berkeley, CA” n.d.).

The city has also launched innovative ways to promote local businesses through the internet and social media. In anticipation of the 2020 winter holiday season, the City of Berkeley Office of Economic Development (OED) launched berkeleyholidays.com, an online platform that showcases the city’s small businesses and places them into categories based on gift ideas (“Berkeley Holidays Gift Guide” n.d.).

Other organizations in the city have also worked to promote local commerce. The Visit Berkeley website has an interactive map that showcases different neighborhoods within the city as well as businesses that are currently open (“Berkeley, California Official Tourism Site - Visit Berkeley” n.d.).
Internal Relief Efforts

A brief overview of the resiliency efforts taken by local businesses in Berkeley.

Businesses all across Berkeley have implemented a variety of measures to recover from the effects of the pandemic. From looking at open source information such as Yelp, Facebook, Instagram, and news sites, we observed how the majority of businesses responded to the shelter-in-place order and the mandates that followed. In addition to mask-wearing policies, reducing operating hours, and limiting the amount of customers in the store, local businesses have also turned to other means to expand their customer outreach, such as increasing social media presence on popular social platforms, and using Yelp and tailored websites to allow for online business transactions. This shift to e-commerce has indicated the change in consumer consumption patterns, as people now prefer the use of online shopping and curbside pickup over shopping in store (Donthu and Gustafsson 2020).

With a decrease in revenue, many local businesses have had to dip into their savings to pay for business expenses. Business owners have applied for loans and federal grants, such as the Paycheck Protection Program (PPP) of the CARES Act. However, many businesses have had to cut down on employees drastically, as they struggle to keep their doors open. It is also important to note that the Berkeley City Council has approved a 3 million dollar emergency relief fund (as discussed above) that is intended to grant small businesses, non-for-profit arts organisations, and residential tenants with funds. While this is a great initiative, and undeniably this fund has assisted in alleviating the effects of the global pandemic, the threshold for small businesses to meet the requirements of eligibility are fairly difficult. This is unfortunate because these small businesses experience the largest damaging economic effects of the global pandemic (Bartik et al. 2020).
Primary Areas of Focus

The Impact of the COVID-19 Pandemic on Food Security

Racial Discrepancies in Economic Resiliency
The Impact of the COVID-19 Pandemic on Food Security

The United States Department of Agriculture (USDA) defines food insecurity as “a household-level economic and social condition of limited or uncertain access to adequate food”. A household is food secure if, at all times, there is access to enough food for every household member to lead an active, healthy life. Every year, the USDA conducts a survey to measure the extent and severity of food insecurity in households across the country. These statistics are then released in an annual report called Household Food Security in the United States (Gundersen et al. 2020). There are many adverse social, physical and psychological outcomes associated with food insecurity. Those experiencing food insecurity — especially children — have higher rates of diabetes and hypertension, depression, behavioral issues or developmental delays in early life (Odoms-Young and Bruce 2018, S3 - S6). Food insecurity has also been shown to affect children’s behavioral, academic, and emotional problems from infancy to adolescence. (Shankar et. al 2017, 135-150) An analysis examining trends in food insecurity from 2001 to 2016 found that food insecurity rates for Hispanic and non-Hispanic black households were at least twice that of non-Hispanic white households. It was also found that from 2000 to 2010, 25% of Native American households remained consistently food insecure and were twice as likely to be food insecure compared to white households. The relationship between race and food insecurity is intertwined with the racial biases that affect unemployment, incarceration, poverty, and disability. Structural racism as well as social and economic biases that BIPOC experience over their lifetimes is a significant diver of higher rates of food insecurity. Along with that substantial wealth gaps between BIPOC and white people have historic roots in the United States. The Pew Research Center estimates that the wealth of white households was 13 times greater than the median wealth of black households and 10 times greater than Hispanic households (Odoms-Young and Bruce 2018, S3 - S6).
4.1 Figure 1 shows the racial disparities in food security prior to the COVID-19 pandemic. When food insecurity numbers peaked during the Great Recession, around 25% of Black households and 27.5% of Hispanic households were food insecure compared to an average of about 15% of households. Figure 2 displays the marginal food insecurity rates — which includes those who are food insecure and those who are marginally food secure — by census tract in the City of Berkeley. Alameda County Community Food Bank agencies are represented as dots on this map. Berkeley has the fourth highest marginal food insecurity (MFI) rate in Alameda County. Berkeley’s MFI is 25%, Emeryville is 25.1%, Ashland is 28.5%, and Oakland is 30.7%. Berkeley has the third highest overall population of marginally food insecure people with 40,070 marginally food insecure people, this follows Hayward with 41,490 marginally food insecure people and Oakland with 193,340 marginally food insecure people.
The estimates in 4.1 Figure 2 are conservative numbers as they do not capture the full extent of college hunger, which is significant in Berkeley as there are over 41,000 graduate and undergraduate students attending UC Berkeley and over 7,000 students attending Berkeley City College (Alameda County Community Food Bank). As of 2018, 39% of undergraduate students and 23% of graduate students at UC Berkeley experience food insecurity. This amounts to about 14,000 UC Berkeley students experiencing food insecurity. The highest levels of food insecurity were seen in students that identify as BIPOC, LGBTQIA+, and independent (without family support). 74% of students in this population were found to be food insecure. These numbers have likely increased due to the current pandemic and economic hardships many students and families are facing. Historically food insecurity rates are higher for college students compared to the general population. This is due to insufficient financial aid, high housing prices, limited to to prepare food, limited or no access to a kitchen, and very limited affordable prepared meals for sale near or on campus. This negatively impacts the quality of student life as well as the time it takes to complete their degree (Prier 2019).
The census tracts with the highest marginal food security rates were also those spending the greatest percentage of their income on rent. In some census tracts average percentage of income spent on rent was as high as 70-75%. Most of the census tracts in Berkeley averaged 50-60% of their income spent on rent (Alameda County Food Bank 2018). Food insecurity cannot be understood in isolation of other basic needs. People who have limited financial resources make tradeoffs between various basic needs. Those who are spending more on housing are likely spending less on food, due to their finite financial resources. (Prier 2019)

The Alameda County Community Food Bank estimates that it takes a family of four in the Oakland metro area $97,267 to meet their basic needs. Yet around 65% of people that the Alameda County Community Food Bank serves have incomes less than $28,290. Before the pandemic 20% of households that the Alameda County Community Food Bank served included one member with diabetes and 39% of households have a member with high blood pressure. Food insecurity has serious impacts on health. The increase in food insecurity numbers will affect the health of many households long-term. (Alameda County Community Food Bank)

It is estimated that in April, the number of households in Alameda County that were at risk of being food insecure was as high as 50%. As of August food insecurity in Alameda County has increased by 50% compared to pre-shelter-in-place numbers. The Alameda County Community Food Bank estimates that, at least 1 in 4 residents of the county is at risk or experiencing food insecurity, as we enter the winter this number is expected to increase. (Alameda County Community Food Bank)
This map uses projections from Feeding America to show the percent change in food insecurity numbers due to the Coronavirus pandemic. The percent change is calculated by using the number of households in each county that were insecure in 2018 and comparing it to projections made by Feeding America for 2020 as a result of the COVID-19 pandemic. Predicted changes in food insecurity rates are based on predicted changes in unemployment and poverty, which are highly correlated with food insecurity rates. Alameda county saw a 48% increase in food insecurity rates due to the coronavirus pandemic. Food insecurity in Alameda County went from 9.1% to 13.5% due to the pandemic. This means that 71,520 new households are now food insecure in Alameda County, on top of the 150,140 households that were food insecure prior to the pandemic (Gundersen et al. Oct. 2020).
Individuals who participate in CalFresh by race/ethnicity raises concerns about predominantly the African American/Black community struggling to maintain food security, with Asian/Filipino/Pacific Islander households also doubling in participation when looking at the data comparing the entirety of California and specifically Alameda County. In 4.1 Figure 4, we see a parallel trend with businesses that are also owned by African American/Black and the Asian/Filipino/Pacific Islander communities suffering (Kidsdata 2020). In turn, as these businesses are going through hardships, the communities surrounding them also fail to secure food availability (namely the predominance of increased likelihood of the similar race residing by the minority-owned businesses as well). However, the data shows a significant decrease between the Hispanic/Latino community using CalFresh in Alameda County as opposed to in California on a larger scale. What we have seen according to our Food Justice and Food Security research, on the other hand, is the detrimental impact on the Latinx community as a subcomponent of people of color who have been more negatively affected by Covid-19 and predominantly Latin-owned food businesses in Alameda County and within Berkeley.
Income remaining after food and rent is represented by varying colors corresponding to the severity of food insecurity within California counties. A dark red indicates an extreme dependence on income for necessities, as the lowest value on 4.1 Figure 5 is -$1,641 which can be determined within Alameda County as well as surrounding counties within the Bay Area as having the greatest dependence for food, rent, and other necessities to sustain life (California Elder Economic Security Index 2020). In contrast, a lighter hue of blue means having more means to gain better access to entities that may be classified as luxuries as compared to things of greater necessity. We can conclude from 4.1 Figure 5 that food insecurity remains a strong issue within Alameda County when contrasted to all other counties within the entire state of California.
Alameda County Community Food Bank offers a visual representation of food insecurity across different areas within Northern California, and we see the heightened prominence of food insecurity in District 13, where Alameda County is located. With this data we can see the massive wealth inequality gaps within Berkeley and surrounding areas, indicated by a darker red tone as contrasted with the rest of California (Alameda County Community Food Bank 2020).

A further analysis of 4.1 Figure 6 suggests that between the 13th, 15th, and 17th Congressional Districts, varied rates of food insecurity occur. District 15 has 8.1% of its population, or 63,510 individuals, being food insecure. District 17 has 10% of its population, or 77,290 individuals, being food insecure. However, we see a sharp increase within District 13, where 15.9%, or 121,840 individuals, being food insecure in 2020. With barely enough income to sustain themselves and their families after having to pay for necessities such as food and rent as well as healthcare, food insecurity is a large issue among families in poverty and especially larger families with lower incomes around Berkeley.
The disruptions to daily life that have been caused by COVID-19 have created unique hardships for BIPOC communities and lower-income households. These communities have historically been at a higher risk for food insecurity and are also disproportionately affected by the current COVID-19 pandemic in terms of risks for negative health and economic outcomes. The health of local businesses and the local economy is vital to the health of a community and the number of households that are food secure. The factors that make a household more likely to be food insecure also influence the resiliency of local businesses. The correlation between race and food insecurity parallels the correlation between race and the resiliency of local businesses.
Racial Discrepancies in Economic Resiliency

It is unequivocally clear that COVID-19 has changed the economic, social and political landscape of the world. The United States has felt the effects within its domestic economies with businesses closing and buyers purchasing power being greatly affected across the country. Thus, it is clear that the virus has caused a downward economic spiral for economies on a national scale and importantly, as our research reveals, the City of Berkeley is not an exception to this trend.

However, it is paramount to note that the virus has affected diverse social and ethnic groups with varying levels of severity and proportions. That is to say, from our research minority owned businesses within Berkeley were more likely to be adversely affected by the economic instability of the local economy, with many closing doors and having to reduce their staff considerably. The impact upon minority populations has been extensive: For example, the racially diverse South of Berkeley population has experienced a significantly lower income level, and are currently observing record high unemployment rates when compared to the less diverse population of North Berkeley who seem to possess a higher level of economic resilience to mitigate the effects of COVID-19. Not only does our research suggest racial discrepancies in the severity of the economic effects upon small businesses within Berkeley, it also shows that these businesses have attempted to mitigate the severity of the economic downturn. That is to say, many minority owned businesses have taken advantage of the many financial programs offered by the state government and local governments.

In addition, when we researched the resiliency efforts outside of the formal financial assistance programs it was clear that many of these businesses that had been adversely affected by the pandemic had employed other strategies to increase their economic resiliency: such as online shopping platforms. In short, the following analysis demonstrates racial discrepancies within economic resilience in the City of Berkeley.
Quantitative Data Analysis

Our research group sought to analyze the correlation between this unemployment rate with business resilience in areas affected by racial and socioeconomic factors. To examine primary areas of Berkeley that were affected by racial/socioeconomic factors, we looked at census data that tracked the spread of race, unemployment, and median income within Alameda County.

On the above 4.2 Figure 1, while analyzing racial diversity levels within Berkeley city limits, there is a striking trend of the Northeastern areas are less racially diverse, while Southwestern areas have a greater percentage of diversity. (City-Data)
As we take a closer look at the breakdown of demographics in the area on Figure 2, it confirms that there is a much higher percentage of white population living in the less racially diverse areas in the Northeast, while Black populations are clustered in the South, primarily Southwest. (City-Data)

We can then consider the overlap race has with socioeconomic demographics. Median household incomes for both Black and White populations are much higher in the northern areas, particularly in the Thousand Oaks and Cragmont areas. With economic disparities of more than $125,000 in income between block groups on the map, there is a correlation between race and median income. (City-Data)
Unemployment rates, shown on 4.2 Figure 4, are at a record 18.7% in the Southside neighborhood (highlighted on the map in a deep purple); it is also high in the Southwest areas. However, the unemployment rate is only 4.09% in the northeastern Thousand Oaks neighborhood. Noticeably, the unemployment rates are highest in areas with higher levels of racial diversity. (City-Data)

On 4.2 Figure 5, we plotted businesses with Berkeley business licenses on a map to observe the spread of minority owned versus non-minority owned businesses. The first map presents data from non-minority owned businesses, while the second map presents data from minority-owned businesses. While non-minority owned businesses have an even distribution across Berkeley city limits, there is a pronounced absence of minority-owned businesses in the Thousand Oaks/Cragmont/Berkeley Hills area, which we established as areas with little racial diversity. (City of Berkeley Open Data 2020)
4.2 Figure 6: Map showing the distribution of foot traffic within Berkeley city limits. The top map shows foot traffic from March 2020, while the bottom shows the foot traffic from November 2020 overlaid the previous data set. (Safegraph Places for ArcGIS 2020)

4.2 Figure 6 identifies the points of interest (POI) of businesses. The data points displayed on the map documents the foot traffic of consumers and their interactions with businesses. The blue data points represent foot traffic in March 2020, and the orange data points represent the foot traffic in November 2020. There has been a decrease in foot traffic from March to November, indicating that the pandemic was the cause for these business closures. (Safegraph Places for ArcGIS 2020)
In 4.2 Figure 7, the visualization compares the foot traffic of various places throughout Alameda County to the baseline from before the pandemic. Foot traffic has been quite affected by COVID-19 in retail and recreation, as well as grocery and pharmacy. “Retail and recreation” on this graph includes mobility trends for places like restaurants, cafes, shopping centers, theme parks, museums, libraries, and movie theaters. “Grocery and pharmacy” includes mobility trends for places like grocery markets, food warehouses, farmers markets, specialty food shops, drug stores, and pharmacies. This figure shows the extent to which local businesses were affected by the loss of customers. (California COVID-19 Community Mobility Report 2020)
Qualitative Data Analysis

In addition to the map data, we looked at qualitative open source data from Yelp, Instagram, and news websites. While minority-owned businesses have been greatly affected by the pandemic, they have also shown a considerable level of economic resiliency in order to mitigate the effects of the pandemic. We found resiliency efforts of businesses such as outdoor dining, takeout and delivery, online business transactions through Yelp, as well as increasing social media presence.

Vik’s Chaat, a minority-owned business in Berkeley, converted its parking lot into a socially distanced dining area. (East Bay Food Scene 2020) Another minority-owned business, Mint Leaf Vietnamese Restaurant, had very convenient takeout and delivery services in its Yelp page where customers could directly pay online. Rasa Caffe, yet another minority owned business, used Instagram (@rasacaffe) to advertise its sweet tea bags as well as show its business’s spirit by selling T-shirts and sharing activism stories.
Another prominent example of economic resiliency was observed through the black-owned businesses: Lola’s African Apparel and Feelmore. These businesses transitioned to a more convenient online shopping platform that helped to mitigate the economic downturns they felt through their traditional ‘brick and mortar’ store (Lola’s African Apparel, Feelmore Adult). The convenient online shopping platform was realized through the help of organizations such as the Uptima Business Bootcamp, the Bay Area Organization of Black-Owned Businesses, and City of Berkeley’s Business Retention Program (Black-owned Businesses 2020). This can be confirmed by BAOBOB’s Facebook site (@BAOBOBdirectory), which provides black-owned businesses with plenty of e-commerce workshops. Therefore, we see a direct relationship between several organizations’ help on e-commerce workshops and the resultant online shopping technology in these black owned businesses’ websites.
However, we also saw instances of some struggling businesses, eventually having to permanently close. The Albatross Pub, a minority-owned bar, had to permanently shut down because it was an enclosed gathering space with no ventilation, which is not suitable for pandemic safety (Yelimeli 2020). It also did not have an outdoor dining space, and landlord’s cancellation of a rent discount caused a financial blow (Yelimeli 2020). Another restaurant, Munch India, immediately saw the financial impact of COVID-19 lockdowns as a family-owned small business. Because the business had no reserve and back-up funds, it had incurred a six-figure loan without loan forgiveness (Munch India COVID-19 Relief Fund). They set up a desperate GoFundMe page, but this did not prevent them from permanently closing. These are only a few instances of the thousands of business closures across the country.

4.2 Figure 13: The Yelp page that indicates the Albatross Pub is closed.

4.2 Figure 14: Munch India’s GoFundMe page
Connections between Race and Business Resiliency

During the COVID-19 pandemic, small businesses everywhere in the United States were hit hard financially. According to the Current Population Survey, the number of business owners declined sharply from 15.0 million in February 2020 to 11.7 million in April 2020. Though a large percentage of business owners were and still are affected, minority-owned businesses were hit the hardest. African American businesses were extremely disrupted, with a 41 percent drop of active business owners. Latinx businesses dropped by 32 percent, and Asian business owners by 26 percent, in comparison to the 17 percent drop in white-owned businesses. (Fairlie 2020)

Historically, the racial wealth gap has greatly been influenced by the ownership of financial and business assets. (Klein 2017) The pandemic has amplified the financial and socioeconomic problems that were experienced by BIPOC businesses even before March 2020. Minority-owned local businesses are less likely to have savings to fall back on, thus having to rely on federal grant programs and bank loans. In a McKinsey & Company poll of over 1,000 small businesses, they had found that Black-owned businesses start out with lower levels of capital, compared to white-owned businesses. (Dua et al. 2020)
In a 2018 Small Business Credit Survey, data was collected on the approval ratings of loans granted to small-business owners. 60 percent of loans applied for by white business-owners were approved, compared to the 29 percent of loans applied for by Black business-owners. In a McKinsey & Company survey, 42% of minority owned businesses in the survey responded that keeping a consistent level of credit was difficult during the pandemic, which ultimately affected their ability to obtain loans. This data is visualized below in 4.2 Figure 9. (2018 Small Business Credit Survey 2019)

Another factor of low business resiliency among minority-owned businesses is also the greater distribution of these businesses within the service industry. Service industries, such as retail and restaurant businesses, were hit the hardest during the pandemic. Though these services have done their best to adapt, applying different methods to increase revenue and community engagement, many of the businesses that have had to close their doors are owned by minorities, particularly Black and Latinx groups. (Fairlie 2020)
It has become clear that Berkeley follows the national trends outlined above. In short, the Coronavirus while devastating for all has disproportionately affected minority communities locally and on a national scale. The virus has magnified already deeply entrenched cultural and economic disparities within the Berkeley community. The economic disparity becomes even more striking when looking at the economic risk that each group feels due to the economic implications of COVID-19. It was found that 31% of white respondents felt that COVID-19 posed a major risk to their overall income, while 22% said it posed no threat. This increased dramatically among Latinx respondents with 59% calling it a major threat, with this again increasing to 79% among those that primarily speak Spanish. In addition, 49% of Black respondents and 45% of Asian Americans and Pacific Islanders shared this view. Thus, it becomes unequivocally clear that within Berkeley minorities feel much greater the economic impacts of global pandemic upon their livelihoods. More importantly, minorities feel the effects of COVID-19 upon not just their economic stability but also within their day–today lives. (Lempinen 2020)

"People of color feel the threat more sharply than other Californians." (Lempinen 2020)

4.2 Figure 17: Visualization of data from poll from UC Berkeley’s Institute for Governmental Studies (IGS). It showcases the percentage of respondents that believed they were financially at risk because of the pandemic, separated by race. (Lempinen 2020)
When we researched the economic stability of businesses on a national scale we found that the number of small businesses permanently closed across the country has hit 3.3 million (and still counting). Alarmingly, many of those businesses that permanently closed doors were minority owned-businesses. Thus, this clearly supports our own data and findings. In short, it has become unequivocally clear that minorities have felt the effects of the pandemic more so than others. (Sierra 2020) On a more local scale this translates to some 6000 businesses that have closed since March. Again to reiterate our own data and to reinforce the national trends, this has affected minority-owned businesses more so than non-minority owned businesses. It was found, according to Oakland's Economic Development strategy for 2018-2020, 51% of the city's small businesses are owned by people of color. (Louie 2020) Hence, the connection between race and the pandemic's effects on businesses is unambiguous.
Conclusion

The COVID-19 pandemic has exacerbated and exposed the disparities along socioeconomic and racial lines in the United States. As a consequence of shutdowns, many Americans lost their jobs or saw their incomes dramatically reduced, this led to an increase in poverty rates around the country. As a consequence, many Americans are struggling to afford food, shelter, and other basic needs. This is widening the existing gap and will have long term health implications for many Americans. Projections and surveys have found unprecedented levels of food insecurity in the United States. Based on the USDA estimates, in the past five years food insecurity has remained around 11 - 12%. In April 2020, national estimates had food insecurity levels at 38%. At the height of the pandemic in the spring of 2020, as many as 50% of households in Alameda county were food insecure. The current pandemic has resulted in unprecedented levels of food insecurity, and has created a food insecurity crisis around the country. Communities of color, specifically Black households and latinx households are disproportionately impacted by food insecurity, and are conservatively two times more likely to be impacted by food insecurity compared to white households.

In order to combat food insecurity and its disproportionate impact on people of color, the existing federal food and nutrition safety net must be expanded and made more accessible to families in need, increase access and expand federal income support benefits, allow individuals to earn liveable wages, train health care providers to screen for food insecurity and refer those in need to appropriate resources. In order to truly address the racial disparities in food insecurity structural racism must be addressed, doing this will promote equity in food access. If the current crisis of food insecurity is not addressed, existing health disparities will be exacerbated and there will be long-term health consequences for many communities, especially communities of color and lower-income communities. (Wolfson and Leung 2020, 1763 - 1765)
Through careful examination of our data and research, we came to the conclusion that minority owned businesses were affected disproportionately by the pandemic than non-minority owned businesses. We identified the quantity of minority-owned businesses in the northern areas of Berkeley compared to other areas, which directly corresponds to our map of median income, race distribution, and unemployment levels. Northern areas with lower diversity had higher levels of median income, and jobs with higher incomes were able to return almost completely to the level of employment that was present at the beginning of the pandemic. When the distribution of diversity and wealth in Alameda County was overlaid on a map comparing the foot traffic of March and May 2020, we observed that there is a general decrease in foot traffic, slightly emphasized in areas with more diversity and a lower median income, though not significant enough in any particular area. Further investigation into foot traffic data could be useful in expanding this research.

By looking at existing articles and research papers conducted on the difficulties faced by minority businesses, we were able to link our data to the economic struggles faced by minority owned businesses, especially those that are Black and Latinx owned. Within the Oakland area, minorities felt the effects of the pandemic on a magnified scale. Their businesses faced financial instability difficulties that were magnified due to racial barriers they had always faced, even before the pandemic. The spread of COVID-19 has exacerbated existing racial inequalities, revealing the deeper impediments that minorities unfairly face when managing their businesses.

In addition, minority-owned businesses are less likely to have savings to fall back on due to racial wealth gaps, and oftentimes black-owned businesses start out with lower levels of capital. Minority-owned businesses are less likely to receive loans due to systemic racism in lending, as well as a lower credit due to more financial struggles. When businesses turned to emergency loans in the early stages of the pandemic, POC business owners were rejected from PPP loans because of systemic racism; they also lacked resources to help them navigate loan applications, such as an unavailability of translators through phone calls, lack of communications, or they simply did not understand application requirements.
Although this report was able to discuss a few of the impacts of the COVID-19 Pandemic - mainly on food security and racial discrepancies in economic resiliency in the City of Berkeley - there are still many areas that have yet to be addressed. This research was limited by the fact that the issue is not only contemporary, but also quite novel. Even now, in December 2020, approximately nine months after the first shelter-in-place orders were announced in California, the situation is constantly evolving and we may not be able to fully understand the impacts of the COVID-19 Pandemic until years after the pandemic. For future researchers of this topic, we hope that our research may act as a foundation as well as a snapshot of how the pandemic and its impacts were being perceived during the Fall of 2020.
References

About the Berkeley Relief Fund.”

“BARTable Walk: Downtown Berkeley to

Berkeley Law. “Small Business Crisis
  Hotline: Guide to COVID-19 Resources and Relief”
  https://www.law.berkeley.edu/wp-content/uploads/2020/04/4-17-20-Small-


“Berkeley, California Official
  https://www.visitberkeley.com/.

“Black-owned Businesses in Berkeley Demonstrate the City's Economic Resilience.”
Berkeleyside.
  October 06, 2020. https://www.berkeleyside.com/2020/06/26/black-owned-

“Blueprint for a Safer Economy.”
  https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-
  19/COVID19CountyMonitoringOverview.aspx.

“Business Impacts - East Bay

“Business Impacts.” n.d. East Bay

“Business Licenses | Open Data |

“Businesses - City of Berkeley, CA.”
  business/#outreach.


“Lola’s African Apparel.”

Louie, David. "Microloan Helps

"Munch India COVID-19 Relief
Fund, Organized by Chef Afroza." GoFundMe.


“Paycheck Protection Program.” n.d.

Prier, Meg. "UC Berkeley Basic Needs Today." Berkeley Food Institute, 6 Mar. 2019,
food.berkeley.edu/from-the-field/uc-berkeley-basic-needs-today/.


