COVID-19 SCHOOL CLOSURES AND THE DISTRIBUTION OF FEDERAL FREE/REDUCED PRICE MEALS: A COMPARATIVE ANALYSIS OF TWO HIGH-RESOURCE SCHOOL DISTRICTS

By

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# Abstract

The thesis question is: “How did two ‘high resource’ school districts respond to federal free and reduced-price meal distribution during COVID-19 school closures?” This thesis explores how COVID-19 has impacted children’s access to school provided, free and reduced-price meals during school closures. This thesis examines meal distribution during COVID-19 school closures is crucial for students who rely on school-provided meals. It also allows for examination in how demographic inequalities and geographic concentrations of food insecure children correlate to school district nutrition funding and resources. In comparing two high-resource school districts, we can analyze the differences in resource utilization at the district-level between two districts with similar amounts of resources/funding and aim to understand how these districts differ in emergency meal provision strategies from an equity standpoint.

The research uses the case study method to define more broad topics, cover contextual conditions, and rely on multiple sources of data. This research design is justifiable because examining food insecurity within high-wealth areas is important in policy evaluation among otherwise similar school districts. To answer the research question, data is collected from the two highest-resource school districts in North Carolina and utilized qualitative and quantitative data analysis to examine variation among geographic concentrations of students eligible for free/reduced-price lunch and district meal distribution patterns.

The results of this research study conclude: 1) income inequality among students across high-resource school districts in North Carolina is heightened during prolonged school closures, 2) district resource usage and response to establishing meal distribution sites greatly affects childhood food security, and 3) mode of instruction negatively impacts food security due to resource distribution. The recommendation for this policy issue is to establish emergency meal distribution plans in all school districts to mitigate food insecurity among students during unforeseen school closures; this creates equity among high- and low-wealth students and ensures that every student that needs food has access to it.

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# Chapter 1

This thesis explores how the COVID-19 pandemic has impacted children’s access to school-provided federal free and reduced-price meals during school closures. School districts across North Carolina are operating differently regarding meal distribution while kids are not physically attending school. By comparing two school districts, the thesis examines how childhood nutrition and meal accessibility are impacted by district funding and resources. We do not know the final outcomes of COVID-19’s impact on school meal accessibility, but this thesis examines the differences in responses between two high-resource districts in North Carolina.

## Key Question

The thesis question is: “How did two ‘high resource’ school districts respond to federal free and reduced-price meal distribution during COVID-19 school closures?” Schools are deemed high resource based on the percentage of the school district in poverty, school district expenditure per-pupil, and National School Lunch Program (NSLP) participation, per the North Carolina Department of Public Instruction (NC DPI). The explanatory variable is the school district response, and the outcome variable is the meal accessibility. This question is important because it allows us to see how important nutrition really is in daily lives of kids; kids who are not receiving adequate nutrition face a range of cognitive, physical, and emotional struggles. This topic will provide relevant policy information regarding emergency planning for school districts, as well as insight into the inequities that children face when districts have vastly different expenditures, student populations, geographic makeups, and student demographics. This comparative case study will be utilizing the “best cases” justification for how the sample is determined (see Chapter 3). Analyzing best cases in the sample and examining the differences between each district is that school districts with higher resources and a lower percentage of kids receiving free/reduced-price lunch typically do not have to provide meals for as high of a proportion of students. However, students with need within these districts are not evenly spread out across each district; how the school districts provide for those students who are food insecure and live in poverty is important in creating lasting policy reform regarding emergency meal provisions.

## Background

Food insecurity is most broadly defined as frequently not having enough to eat, “according to accepted cultural norms”. Over time the phrase has expanded to indicate issues based on socioeconomic status and food accessibility (Habicht, 2004). One reason that the term food insecurity is used more broadly than poverty is because it is able to qualify the lack of a necessity, instead of a lack of money. With that being said, food insecure families become disadvantaged when the one consistent source of food (schools) is no longer operating in the same capacity. The coronavirus pandemic that emerged in early 2020 caused business and school closures around the world, with prolonged closures in the United States due to cases continuing to rise (Center for Disease Control and Prevention, 2020). With nationwide school closures and limited-to-no in-person instruction, federally-funded programs such as the National School Lunch Program have been affected in terms of how funding is distributed across states and school districts, and how meals funded by the program are reaching students.

The United States Department of Agriculture Food and Nutrition Services (USDA FNS) provides 15 different nutrition-assistance programs across the country, with the National School Lunch Program serving approximately 5 billion lunches to 30 million children per school year (USDA, 2020). Because COVID-19 caused school closures across the country, many districts opted to use the Summer Food Service Program[[1]](#footnote-1) as meal supplements for children while they were not attending school in-person (Schwabish et al., 2020). Further, the USDA extended free meals to every student, regardless of socioeconomic status, which made meals during school closures more widely accessible (USDA Food and Nutrition Services, 2020). School meals provided with federal funding must meet the established meal requirements, but decisions regarding what foods to serve and how they are prepared are made by school district food authorities (NC Public Schools, 2020). As a result, school districts have had a lot of flexibility in determining what meals to serve and how to distribute them to qualifying students, but this can leave a lot of room for error from people who are not experienced in providing meals during a pandemic. Although districts are operating on different scales as far as in-person and remote instruction is concerned, inequities still exist in terms of the proportion of kids who qualify for free/reduced-price lunch and resources available to establish meal distribution plans. The gap comes into play when those who do not have food at home and/or are food insecure do not have transportation or access to meal distribution sites, thus creating a gap in accessibility.

The United States government enacted bills in 2020 to attempt to mitigate this food insecurity that became more prominent during the pandemic, one of which was the Pandemic-Electronic Benefit Transfer (P-EBT) program, authorized by the USDA. This program provides aid to families who need assistance purchasing food for children who qualified for free/reduced-price meals, whose access to these meals was impacted by COVID-19, as outlined by the North Carolina Department of Health and Human Services. Eligibility for the program is automatically determined through student financial need, and the P-EBT benefits were extended to anyone who met the following eligibility requirements: 1) enrolled in a school that participates in the NSLP, 2) eligible for free/reduced-price meals[[2]](#footnote-2), 3) school closed or operated with reduced attendance because of COVID-19, and 4) the student is learning in a remote or hybrid-mode (NC DHHS, 2021). The program provides an additional $6.82 per day per eligible child in a household, and the monthly amount depends on the statewide average number of days each month that the schools operate on a remote or hybrid schedule—the maximum amount of benefit for those operating fully remote is $115.94 (NC DHHS, 2021). Because schedules of operation can change every single month, no family in North Carolina is guaranteed any set monthly amount; this means that sometimes families must additionally compensate to feed their children. This poses issues of equality across school districts because $60-$115 per month is not enough to feed children nutritious foods, especially in food deserts and/or areas of higher poverty levels.

## Policy Significance

This thesis is policy significant, not only in that it has implications for federal policy, but also because it will identify how high-resource schools are equitably distributing foods to students in low-income households, and their strategies could inform other school districts on how to best meet students’ needs. It will also allow us to see how demographic inequalities and geographic concentrations of food insecure children correlate to school district nutrition funding and resources. Analyzing meal distribution among the two highest-resource districts will bring insight into the extreme differences within North Carolina in terms of opportunities for poor students, how students are getting meals, and potential outcomes regarding how the district-level COVID-19 plans impacted kids. This study will contribute to how economic status and school district resources impact public policy making at the state and local level; the school districts in North Carolina all receive the same federal funding for school meals so scaling down the discrepancies will allow us to analyze local policy and implement change. Comparing high-resource school districts is important to improving public policy because it shows that even districts with the highest resources can still enable a lot of inequality between students from high- and low-income households and their accessibility to meals.

## Thesis Chapters

The next chapter will be a critical review of literature related to the research question, child food insecurity during COVID-19 and equitable nutrition policy initiatives during school closures, both of which involve similar studies and research methods. This literature review will discuss similar research, as well as analyze the limitations in other studies and address how this is accounted for in the research. The third chapter introduces the research methods, sample, and data collection methods. This chapter contains an overview of the case study method and how it was applied it to this research relating to the sample and collected data. Because the thesis will be utilizing a case study approach and analyzing qualitative data, this brings perspective into how school districts have been impacted by the pandemic outside of purely quantitative aspects. The fourth chapter discusses and analyzes the findings of this study, highlighting the major differences between two high-resource school districts in North Carolina and how they responded to provisions of free/reduced-price meals during the COVID-19 pandemic. The final chapter concludes with a discussion regarding the meaning, relevance, and importance of the study findings and how these findings are related to policy initiatives. The thesis concludes with a recommendation for a policy reform that can be useful in emergency planning for meal distribution in the future.

# Chapter 2

This chapter reviews the literature that examines the impact of COVID-19 on childhood meal accessibility. This begins with a discussion about the impact of COVID-19 in schools that vary in location, and nutritional quality of school lunches in areas with varying funding sources and poverty levels. Additional relevant literature pertaining to the research question is summarized.

## COVID-19 and school location

The Coronavirus pandemic has affected both rural and urban school districts, causing prolonged school closures, virtual learning, and a need for updated emergency meal distribution plans. COVID-19 exposed the limitations of school feeding programs across the country, such as the School Breakfast Program (SBP)[[3]](#footnote-3) and the National School Lunch Program (NSLP)[[4]](#footnote-4). This has caused not only a re-evaluation of meal program implementation across the country, but also highlighted the importance of meeting the nutritional needs of children year-round, regardless of being in school (Amolegbe, 2020). In rural areas where there is an increased likelihood of food deserts and lower median incomes (North Carolina OBSM, 2020), more children rely on school-provided meals than their urban counterparts. The discrepancies between urban and rural school districts negatively impacts children, especially when kids are not in school to receive meals. Because of the disproportionate impacts of school closures, millions of students from low-income households no longer have access to free or reduced-price lunch from their schools (Kinsey et al., 2020). Further, in the United States about one-third of families increased the amount of high-calorie and high-sugar snacks in their home, and almost half of all families increased the amount of processed foods in their homes during the pandemic thus far. These foods have significantly less nutritional value, but are more widely accessible in rural areas (Adams et al., 2020). Further, research shows that schools are one of the only places that children residing in low-income households receive nutritious and balanced foods because of the federal regulations surrounding the meals that are served (Micha et al., 2021). School closures bring a lot of uncertainty and concern regarding how children are going to be supplied with nutritious meals, thus meal distribution plans during the pandemic are very important in childhood wellbeing. With all these factors, the impacts of COVID-19 on school closures has widely different effects on children in rural and urban school districts.

There is also variation within school districts as well as far as student support and funding is concerned. While it is known that wealthy school districts have more funding and resources per-pupil, these expenditures can greatly vary between schools within any given district; even a 1000-dollar difference per student can amount to an additional one million dollars in a school’s budget. Variation in school funding leads to an unfair advantage in those schools located in wealthier areas. This creates inequity due to most of those wealthy students being white, stemming from systemic segregation and racist policies in the United States (Matthewson, 2020). When the COVID-19 pandemic hit the United States and schools were forced to close indefinitely, a lot of uncertainty arose in these high-wealth school districts and how to distribute food the most effectively. In school districts that have large wealth gaps, students are at risk of being disadvantaged when meal distribution plans are established because a given plan does not always constitute equity. A high-resource school district can establish meal sites equal distances apart across the school district with the same nutritious option at each one, but accessibility to these sites is not always equal due to within-district wealth gaps and accessibility.

## Nutrition and poverty

COVID-19 has exacerbated the financial burden of purchasing and preparing foods for children, and many families lost their federal nutrition safety net when the pandemic forced school closures across the United States. The USDA did not mandate that schools offer any specific type of food or meal services during school closures, which left it up to school district authorities to decide the best course of action for their students; however, school district authorities are permitted to apply approaches from the USDA’s summer feeding initiatives to “ensure that the needs of low-income children are met during extended school dismissals” (Dunn et al., 2020). Although federal childhood nutrition funding for school districts did not change, ways to get food to students did. School districts that have more resources have access to more ways to get meals to a larger number of children in need; transportation systems, bulk meal delivery and pickup at a multitude of schools and locations, and inclusion of family members outside of the students are just a few ways in which school districts with more resources can effectively provide for those in need in their communities and combat local food insecurity (Kinsey et al., 2020).

In states like Maryland where state approval was granted to deliver meals to students’ homes and to have distribution sites in areas where 30 percent or more of students were eligible for free/reduced-price meals, students are likely to be better off during the COVID-19 pandemic than those in areas without any additional meal delivery options and the resources to make home deliveries and open additional distribution sites (Kinsey et al., 2020). School district funding and resource allocation is especially pertinent when considering the demographic makeups of areas with lower-incomes and less funding. Those living in poverty and/or who are food insecure are potentially missing out on food services worth at least 30 dollars a week, not accounting for the true opportunity costs of grocery shopping, meal planning, and preparing foods (Dunn et al., 2020). Children from low-income households and in low-resourced areas are already at a higher-risk for worse health and educational performance than their high-resourced counterparts. Due to a lack of resources and heightened food insecurity during the pandemic, the equity gap between these groups is widened.

## Analysis of similar prior work

Dunn and colleagues (2020) showed that while school districts are working to figure out the best methods of meal distribution during pandemic-related school closures, marginalized populations living in low-income communities are suffering the most because of the negative outcomes associated with the intersection of race and socioeconomic status that already creates disparities across the country. This study evaluates nutrition policy at the federal level and concludes that the COVID-19 pandemic has highlighted the need for flexible, yet thoughtful solutions through public policy to mitigate food insecurity for children and their families in the United States.

Jablonski et al. (2020) focused on five large cities in the United States- Albany, New York; Cleveland, Ohio; Denver, Colorado; Austin, Texas; and Flint, Michigan. The goal of this study was to evaluate federal policy for meal assistance during the COVID-19 pandemic and examine how this influenced the cities in developing emergency feeding programs. Through interviews and focus groups, the researchers determined that in each city the three main themes present were: cross-sector collaboration to assist in meal distribution, adaptable supply chains to get food to school districts, and gaps in services to increased-risk populations (Jablonski et al., 2020). The researchers found that in the counties that the cities were located, school districts responded by testing out various meal distribution plans, and in the counties with higher populations of people of color (negatively correlated with income) the nutritional needs of children and families were less likely to be met, and meal distribution options were less accessible. The researchers took the cities and collected data from the county that the city was in, but I believe that a more effective way to analyze local response is to look at variation in the school districts and how this varies based on available resources. By only looking at urban areas, this study eliminated the possibility to look at rural areas that have much less resources. Although looking at large cities in the U.S. should be indicative of the types of resources and meal distribution plans available, it leaves out a large portion of individuals who live in food deserts and/or areas that do not have access to any potential meal distribution locations.

Similarly, Mcloughlin et al. (2020) analyzed the four largest urban school districts in the United States—Chicago, Illinois; Houston, Texas; Los Angeles, California; and New York City, New York. The goal of the study was to evaluate emergency school meal service strategies in the largest school districts during COVID-19, and examine the degree to which the districts promoted equitable access to these emergency meal programs. The researchers wanted to prevent the exacerbation of health disparities through understanding the implementation of new meal distribution methods during the COVID-19 pandemic. The results show that all four districts specified that food was available to students, but only three out of the four provided food to the adults of households as well; they also found that some districts provided a large box of food, which can be a barrier for those without a car or transportation to take that home. The school districts also all placed emphasis on placing meal-distribution centers in areas with above average populations of kids and low-income areas. Because they chose the four largest districts in the country, the findings are not very generalizable to other urban or rural districts; however, this study gives an insightful look at how much variation can arise in how federally-funded meal programs are distributed in emergency circumstances.

Parnham et al. (2020) explored the outcomes and consequences of COVID-19 school closures on childhood meal accessibility and food insecurity. The goal of the study was to investigate access to free school meals among eligible children in the UK. The researchers found that half of the eligible children could not access the meal distribution plan in April 2020; even though there was a free school meal voucher program in the UK, it did not act as a sufficient replacement for receiving a meal during school. They also determined that food insecurity increased, due to the increase in food bank usage among eligible free school meal families. This study was important in discussing consequences of COVID-19 in the UK but my study will focus on the outcomes in United States.

The intersectional issues between race, socioeconomic status, and rurality are well-known at this point—people of color statistically live in lower income areas due to lower socioeconomic status (Shah et al, 2020), and these areas can be pushed farther outside of school districts which makes it harder for students to access meals, especially during COVID-19. Not only are Black and Brown communities at disproportionately higher risk of transmitting and being hospitalized due to the pandemic, but they also have higher rates of death from the virus as well (Shah et al, 2020). This is relevant to my research and findings because the groups being disproportionately affected by COVID-19 are simultaneously attending schools within high-resource school districts that are geographically located such that the districts are struggling with distributing meals; not only are they suffering at higher rates from the virus, but the shutdowns caused by the pandemic are creating a loss of equality in meal distribution for Black and Brown children as well.

# Chapter 3

The research question is: “How did two ‘high resource’ school districts respond to free/reduced-price meal distribution for students of low-income households during COVID-19 school closures?” To answer the research question, qualitative and quantitative data from the two highest-resource school districts in North Carolina was collected to examine variation in responses to food distribution. Central Office Administrators from both school districts were interviewed on methods of meal distribution during COVID-19 school closures and information was collected on how COVID-19 meal provisions were implemented, meal distribution site accessibility, the impact on students, and plans for moving forward. This chapter discusses the data and methods of data collection used, as well as the sample and the demographic information of each district within the sample.

Schools are deemed high-resource based on the percentage of the school district in poverty, total expenditure per-pupil, school district expenditure per-pupil, and National School Lunch Program (NSLP) participation, per the North Carolina Department of Public Instruction (NC DPI). These indices deem a district high-resource because there are more households paying for school lunches and generating revenue due to lower poverty levels and NSLP participation, and the per-pupil expenditure rates indicate that more resources are being allocated to each student to improve the quality of their education. This allowed for the analysis of any variation in responses across North Carolina high-resource school districts and the impact of the response on students’ access to meals. In comparing two high-resource school districts, we analyzed the differences in resource utilization at the district-level between two districts with similar amounts of resources/funding and aim to understand how these districts differ in emergency meal provision strategies from an equity standpoint. We do not know the outcomes of COVID-19’s impact on school meal accessibility, and this was a way to examine the differences in responses between two high-resource districts and how they accommodate for their students who live in poverty, live in more rural areas, and/or face food insecurity during COVID-19. The study population consists of school district Central Office administrators from two North Carolina school districts, with the primary research instrument being interviews with participants.

## Methods and Data

The research uses the case study method. Case study research helps to define more broad topics, cover contextual conditions, and rely on multiple sources of data and evidence (Yin, 2003). Utilizing a case study approach to research is useful when the variable one is studying is not always distinguishable from the context that it is in (Yin 2003). This research design is justifiable because examining food insecurity within high-wealth areas is important in policy evaluation among otherwise similar school districts.

The data sources for this thesis are the North Carolina Department of Public Instruction and the National Center for Education Statistics. Data comes from a few different sources—public records, interviews, and COVID-19 meal distribution plans. Public records are used to examine free/reduced-price lunch eligibility, poverty levels, and school funding across all school districts in North Carolina, as well as to gather any demographic information necessary to create a comparative analysis between the two school districts. Public record is also used to gather data on school district administrative roles and to identify points of contact for interviews. Public record allows for the attainment of comprehensive data on schools within a given district, as well as plans of action regarding meal distribution amid COVID-19 school closures. In utilizing records that are publicly available, some data is gathered before interviews which makes the interviews more productive in obtaining more specific and personal data regarding the research question.

For the bulk of the data collection, the thesis utilizes interviews with administration to gather both qualitative and quantitative data regarding the impact of the school closures on meal accessibility (see Appendix 1). The interviews were conducted with school district financial officers, school nutrition directors and superintendents of nutrition. Financial officers understand budget allocations within a district and are responsible for implementing the categorical budgets for the district (PowerSchool, 2016). School nutrition directors oversee all aspects of food service in schools, administering the school meal program in accordance to local, state, and federal policies and became responsible for adapting meal distribution plans during COVID-19 school closures. Lastly, superintendents of nutrition oversee the day-to-day operations of feeding the children in their school district, which is an important position when meals are to be administered during virtual learning (School Nutrition Association, 2020). These individuals are included because they each provide different insights and have different responsibilities regarding pandemic programming and program implementation, food distribution, resources and funding, and district-level spending, all of which are all crucial elements in analyzing the similarities and differences between two high resource school districts.

In creating the interview questionnaire, we formulated questions where we found gaps in the publicly available data. The questions were intended to gain any information that was not available through archival data sources, as well as hear the perspective of administrators that have some role in devising and/or maintaining emergency meal provisions. The interview took place via Zoom, and all participants consented to having the interview recorded. 6 interviews were conducted, and each interview lasted from 15-25 minutes. The recordings of the interviews were uploaded to Tetra Insights, where they were also transcribed. After the transcriptions were complete, the interviews were qualitatively coded in order to group together responses and categorize each response by theme. The purpose of this method of data analysis is to be able to identify patterns across interviews for the same questions, and to pull out any data that helps to identify how these school districts were operating during COVID-19 school closures. This also helped to create a cohesive analysis due to the clear groupings of answers for the same questions.

The purpose of this sample is to be able to see how school districts accommodate their students being remote and still having the same, if not more, needs that they did while in school in-person. Lastly, these education officials can speak to the impact of COVID-19 so far on budgeting, meal availability and distribution, and offer different insights into how the distribution plans have played out thus far. In addition to primary data collection through interviews, district-level meal distribution guidance and any state policies, such as Pandemic-EBT, that were implemented amid school closures are examined. This method helps to gain insight into how COVID-19 has affected meal distribution in each district, as well as any changes in funding and/or district policies since the pandemic hit the United States. Interviews were used to insight is gained not only into the finances and planning aspects of school district administration plans during COVID-19, but also into how the interviewees feel their district has handled COVID-19 school closures and if there are any changes they would like to see regarding their planning and implementation.

## Sample

For my research, the sample is comprised of the two highest-resource school districts in North Carolina. These school districts were chosen using the selection basis of “best cases”, which will allow for the examination of the effectiveness of each program given the amount of resources they have and provides understanding into how these districts are using their resources to ensure equity in meal distribution during COVID-19 school closures (U.S. General Accounting Office, 1990). The justification for analyzing best cases in the sample and examining the variations between and within each district is that school districts with higher resources and a lower percentage of kids receiving free/reduced-price lunch typically do not have to provide meals for as high of a proportion of students, thus they might be able to better provide for the students in need compared to those districts with a high proportion of recipients. However, there is a lot of demographic variation among students within each district, and this study will determine how resources are allocated to accommodate for those living above the aggregate demand for free/reduced-price meals. With these best cases, researchers are ultimately be able to examine variation in meal delivery across the high resource school districts and their geographic concentrations of students.

As previously mentioned, various sources are used and cross-referenced by compiling secondary data within the three categories, which helped to identify a clear top two districts to serve as the cases for the research. The two school districts in the sample have similar statistics regarding poverty rates and percentage of students eligible for free/reduced-price lunch, but diverge in student populations, median household incomes, and district expenditure ratios (Table 2).

## Aggregate District Demographics

District A is located in central North Carolina, with a population of approximately 12,400 students. The county in which the district is located is classified as urban (being at least 50.1 percent urban), with six percent of the children in the school district classifying as being below the poverty line and 27.1 percent of students being eligible to receive free/reduced-price meals (Kids Count Data Center, 2021). Median household income in District A is $73,612 as of 2021, with 96 percent of adults having obtained at least a high school diploma (Census Reporter, 2021). The racial demographics of the students in this school district are as follows: 50.4 percent of students are White, 17.3 percent are Hispanic, 13.9 percent are Asian, 10.9 percent are Black, and 7.3 percent are Multiracial (Table 2). The school district has a per-pupil expenditure of $12,955.82 per student per school year, with $6,331.67 of that coming from the school district (Kids Count Data Center, 2021). While this expenditure rate is slightly above the national average ($12,612 per student per school year), North Carolina ranks 45th in spending with an average of $9,000 per student per year (Education Data, 2021).

In the months leading up to school closures that occurred due to COVID-19 in March 2020, the unemployment rate in the district is in was approximately 3.2 percent (December 2019-February 2020). When COVID-19 was in full swing with school and business closures, the unemployment rate skyrocketed to 9 percent by May, before steadily declining to an average of 4.5 percent by the end of 2020 (FRED, 2021). The unemployment rate is still higher going into 2021 than it was going into 2020, which leads to concerns revolving around food security of students in the school district due to household income insecurity and economic instability that we are still experiencing.

District B is in western North Carolina, with a population of approximately 41,400 students. The county in which the district is located is classified as urban as well, and an aggregate eight percent of students live below the poverty line, with approximately 24.9 percent being eligible to receive free/reduced-price meals (Kids Count Data Center, 2021). Median household income in District B is $85,985 a year, with 90.8 percent of adults having obtained at least a high school diploma (Census Reporter, 2021). The racial demographics of the students in this school district are as follows: 59.4 percent of students are White, 18.7 percent are Hispanic, 11.9 percent are Black, 5.2 percent are Asian, and 4.5 percent are Multiracial (Table 3). District B has a per-pupil expenditure of $9,079.19 per student per school year, with only $2,372.85 of that coming from the school district (Kids Count Data Center, 2021).

Like District A, the unemployment rates in this district spiked during April and May when many businesses and schools were forced to close for an extended period. Prior to the emergence of the Coronavirus, the average unemployment rate in this county was approximately 3.5 percent. It increased to 10.2 percent during the late-spring, before finally decreasing to an average of 5.1 percent by the end of 2020 (FRED, 2021). Unemployment numbers from both districts can be referenced in Appendix 2.1 and 2.2.

## Limitations

All the data collection is done virtually via Zoom, because we are in the middle of a pandemic. This presented a challenge because no meetings with anyone face-to-face can take place and travelling to be able to see the state of the school districts in terms of how funding or resources outwardly reflects on the schools is not happening. Although speaking with someone in-person does not affect the quality of an interview or the data that is being collected, non-verbal cues can be helpful in qualitative analysis. Additionally, being able to physically travel to the school districts in North Carolina and see the differences displayed in living situations, location, and obtain visual representations of population density in these areas would have been helpful as well. COVID-19 also posed limitations to the research and data collection because it limited data collection and interviewee availability. It inhibited data collection and limited access to participants due to the increase in COVID-19 research currently being done surrounding school closures. While these limitations do not largely affect my outcome data, they are small setbacks that come with conducting research amid a global pandemic.

Based on the literature, this study has more variability in terms of the period over which data will be analyzed, because the fact that the pandemic has developed substantially since April when most of the reviewed literature was published. This thesis will bring a more specialized approach in targeting school districts—by only examining two cases of high-resource school districts, the research is able to use a generalizable area like North Carolina and apply it to most other states with similar geographic profiles. North Carolina is roughly 40 percent rural and therefore is considered more rural than average (28.8 percent); 33 other U.S. states are more rural than average as well (Census Reporter, 2021). This means that by examining two high-resource districts in North Carolina, they are still generalizable to the greater U.S. population and thus relevant to reforming policy at both the state and federal level. However, a limitation with only analyzing two school districts is that the sample size is small and these two school districts cannot mirror every school district in the country. To more accurately generalize this to a larger population, a larger sample size would be useful in collecting a wider variety of data from different geographic locations. However, as mentioned in Chapters 1 and 3, utilizing a comparative case study is beneficial for this research because it gives researchers a closer look into how meal accessibility is impacted in two school districts that have similar expenditure profiles.

# Chapter 4

This chapter summarizes key economic indicators and reports the strategies used by each district for meal distribution during pandemic-related school closures. In addition to examining demographic similarities and differences across both school districts we will also be discussing the individual districts, looking at strengths and weaknesses of the meal distribution plans and analyzing any equity gaps that result from the plans. Identifying the differences between both high-resource school districts is important because it allows us to analyze and understand how equitable access to meals during a time where many students are not in school to receive free/reduced-price meals is essential for students.

## The impact of economic downtown

Prior to the pandemic, approximately 60% of children in school in North Carolina received free/reduced-price meals (Tippet et al., 2020). The large spike in the unemployment rate in North Carolina coupled with school closures left many students and their families in dire need of meal distribution services, especially those populations that were vulnerable before the start of the pandemic. Need increases during times of economic downtown, and becomes an even more prevalent issue in times of economic downtown and school closures, because schools were previously a hub for low-income students to guarantee that they will receive at least one meal a day. Those living in lower-income areas within any given county in North Carolina also have the highest rates of food insecurity and job insecurity during the pandemic this far, so meal distribution services are important for this families because of the high rates of insecurity being faced (Tippet et al., 2020). It is also important to note that the need that has been exacerbated by unemployment and school closures thus far will likely outlast the labor market downward trends that we are seeing, which highlights that policy reform is extremely important in stabilizing childhood food security for the remainder of the pandemic and for the future of meal distribution through school districts.

The COVID-19 pandemic caused a widespread economic crisis, which ultimately lead to a food crisis not only across the country, but also within North Carolina school districts as they scrambled to devise meal distribution plans to feed children during abrupt school closures. As previously stated, employment was decreasing as the pandemic continued to effect North Carolina, which ultimately led to food insecurity increasing among children and families of those who became newly unemployed in a downward-spiraling job market. The poorest households in the United States spend, on average, 70 percent of their incomes on food (Laborde et al., 2020). Not only is a significant portion of income spent on food, but when part or all a household income is lost it creates challenges in finding enough food for a family as well as finding nutritious foods. Economic shocks to the market, such as a global pandemic causing business and school closures across the country, causes widespread unemployment which results in increased food insecurity and uncertainty, especially in rural areas and food deserts. As previously stated, unemployment numbers across both school districts more than doubled due to the emergence of the pandemic, causing a lot of families to rely on P-EBT, free meals for children from newly established meal distribution sites, and stimulus checks from the federal government throughout the last year. While these federal, state, and local programs exist to mitigate food insecurity, many families were still having trouble making ends meet due to geographic location within the school district due to rurality, transportation, and lack of resources.

## The Geography of Food Insecurity

As far as district demographics are concerned, both school districts show similar patterns of food insecurity being concentrated in specific areas, with those areas also having the highest rates of free/reduced-price lunch eligibility and the lowest proportions of white students compared to the other schools in the districts. While it is known that low-income areas are typically concentrated within cities, towns, counties, etc., this concentration actually plays an important role in establishing meal distribution plans during COVID-19 school closures. District administrators noted that some parts of the school districts have less than five percent of their students eligible for free/reduced-price lunch, while other parts of the districts have almost one hundred percent of their students eligible. Demand is higher in certain parts of a given school district than others, and the analysis will allow us to determine how school districts accounted for this socioeconomic variation in their meal distribution plans.

## District A Response

This district has operated on a completely remote learning schedule since March 2020; therefore, they have less flexibility in where students would be getting meals from, as opposed to hybrid districts where students have the chance to eat at school some days of the week. Within a week of school closures, over 35 meal delivery sites across the school district had been established, with busses and volunteers delivering food to these sites. Quickly, the district food authorities pivoted to asking, “How do we find kids who need food and get [food] to them?”. In interviews with the Director of Nutrition and Financial Officer for this school district, knowledge and insight is gained into the innerworkings of a high-resource school district that was attempting to mitigate food insecurity for low-resource children while also constantly changing and evolving their implementation strategies to best fit the needs of those facing challenges. This question is especially important for meal distribution during COVID-19 because, as the Nutrition Director notes, there are kids who are home alone all day with no transportation to meal distribution sites while childcare centers were closed, and their parents were at work. The main goal of the district in creating a COVID-19 meal plan was to make meals as accessible as possible for everyone so that no group would be singled out in the process. To create an equitable plan to achieve this goal, the district considered language barriers, where people are living, and how to efficiently use the resources at hand to give everyone a chance to have high-quality, nutritious meals.

Because this district is one of the highest-resource districts in North Carolina, feeding children nutritious foods was not a hard obstacle. The overall low poverty rate and free/reduced-price lunch eligibility when compared to other districts in the state made it possible for food authorities to pack meal boxes for students that contained fresh fruits, vegetables, foods made from scratch by school cafeteria employees, and more to create balanced diets for the children being served. For holidays during school closures, bulk boxes meant to provide food for multiple weeks were provided with foods like eggs, yogurt, milk, 15 pounds of fresh produce, desserts, etc. Clearly the district had no issues serving proper meals, especially thanks to local grants, but the real challenges lie in getting the food out to those who cannot access transportation or means of picking it up. More distribution sites were created, and more busses were added into the rotation of drop-offs, but still they were finding that some sites were not as frequented even though they were in higher-need areas. The district decided to start hand-delivering meals to families who were not able to access distribution sites; this helped to account for the lost opportunity costs between kids attending their classes and trying to find food to eat.

Many of the families in this district are not living in poverty, but demographic breakdowns of every individual school and location showed that those schools with the highest percentages of Hispanic, Black, and Multiracial kids and the lowest percentages of White kids had the highest free/reduced-price lunch participation rates and were similarly geographically located within the district. The range of free/reduced-price lunch eligibility across the district was 27 percentage points, which means that some schools in the district have 27 percent more children in need than other schools. In hand-delivering meals across the district, the school food authorities found that more children were able to receive meals and those in need were getting food instead of having it go to waste at a distribution site that did not have enough demand. Although District A notes that they are aware that not every single food insecure child is being helped, there are still many adaptations that have been made thus far to greatly expand the network to distribute and receive food.

## District B Response

Since the 2020-2021 school year began, every school in the district has been operating on a hybrid schedule. Because of this, there is less transportation available to get meals out to distribution sites because the modes of transportation (primarily school busses) are being used to get kids into schools on various days of the week. To compensate for the reduced operations at distribution sites, the district will send meals for the weekends home with students so that they can establish some sort of food security while they are not in school. However, this poses an issue for those students who are continuing to learn remotely and are not attending school in-person. The students are not required to come to school if they or their parents do not feel comfortable, thus a large gap is created between those who attend school and receive meals there, versus those who are at home and do not have access to those meals.

For District B, I interviewed the Assistant Superintendent of Nutrition and the Director of Nutrition, both of which provided insight into how the district was able to transition from a remote to a hybrid model of learning, and the effects of this on meal distribution and child wellbeing from an administrative perspective. Prior to the pandemic, an interviewee noted that the district was very well-off financially in terms of overriding any student meal debt at the end of the school year; because the school district had low free/reduced-price lunch participants, ala carte sales through schools also generated a lot of revenue that was put back into providing good meal services. These higher-end, ala carte items are pushed more on the side of the district with lower free/reduced-price participation rates because that is where there is additional money to be spent; so essentially, there are more food choices in the area that has less food security, because they can spend more money to get higher quality foods. As far as meal distribution is concerned, school food authorities set up five meal distribution sites across the school district, where students and their families can pick up meals. At the beginning of school closures in March-June 2020, the district tried out meal delivery to students that they knew were homeless or had no way to get to distribution sites, but since converting to a hybrid mode of instruction, the additional resources needed to do that just are not there anymore.

The Superintendent of Nutrition noted that District B is one of the few districts that have some kids, primarily elementary school students, in school for four days a week; because of the amount of in-person school days, the Superintendent notes that they “capture about half of our students that way [in terms of meals distributed]”. Although this seems like a substantial number, this means that about half of students are not regularly attending school in-person, meaning they lose that access to school-provided meals.

The range of free/reduced-price lunch eligibility across the district is 99 percentage points—some schools only have 1-2 percent of students eligible to receive free or reduced-price lunches, while other schools have 99-100 percent of their students eligible. The Eastern part of the school district has a clear concentration of high-need, high-demand students and schools, with many of the schools in that area having 85 percent of more students eligible to receive free/reduced-price lunch. Challenges arose because at some of the meal distribution sites in that area of the district, hardly any meals were being picked up by students or parents; the interviewee noted, “We know the need is here, the problem in that part of the county is that it is very rural, and transportation is a challenge; but we really don’t know how to overcome that.” This is two-sided issue revolving around resources and transportation because students do not have the means to access meals from distribution sites, and distributors do not have the means to get the food transported to students either. This is a huge equity issue revolving around pandemic planning; although the district is high-resource and the average number of students in poverty and eligible for free/reduced-price lunch is low, the combination of a hybrid mode of instruction and the dichotomy represented across the district shows that food security and need-based issues are not adequately being met across all parts of the school district.

## Comparing District A and District B Responses

There are some differences between the approaches and responses both District A and B took to provide meal distribution plans amid school closures in attempt to keep children who rely on free/reduced-price meals in a food-secure position. Interviews show that both school districts highlight the need of individuals who are without transportation, whose parents work during the day and cannot pick up food from distribution sites, those in rural areas, etc., but the approaches to this problem vary, largely because the districts are operating in different modes of instruction. Having a school district that is all on the same schedule in terms of being remote, in-person, or on the same hybrid schedule makes it so that meal distribution sites can operate more consistently, and parents and their children know when and where food will be available to them. Conversely, when schools across a district (elementary vs. middle vs. high schools) are operating on different schedules, creating and maintaining cohesive meal distribution sites becomes a lot trickier due to the increased amount of scheduling and planning involved surrounding the operations behind the site.

As previously mentioned, the first high-resource school district (District A) has a range of 27 percentage points between the lowest and highest free/reduced-price lunch eligibility rates. In the second school district (District B), there was a 99-percentage point difference between the lowest eligibility rates and the highest. While both school districts have average free/reduced-price lunch eligibility rates between 24 and 28 percent, the variation across both districts lead to meal distribution plans that end up being concentrated in some areas and scarcer in others due to need and accessibility. The demographic data across the two school districts highlight that high-poverty students and schools with high free/reduced-price lunch participation are in similar geographic areas, and low-poverty and free/reduced-price lunch participation schools are similarly located as well. In each district, the schools that had the highest free/reduced-price lunch participations had the highest percentages of Hispanic students and lowest percentage of white students, when compared to other schools in the district. On maps of the respective districts (see Appendix 3.1, 3.2), the geographic concentrations of incomes are highlighted in terms of free/reduced-price lunch participation across all elementary, middle, and high schools in the district (with local town names removed for confidentiality).

There are differences between the two school districts that explain for such high variation across free/reduced-price lunch eligibility. District A was almost a third the size of District B and while still present, had much less geographic variation between schools when compared to District B. When comparing free/reduced-price lunch eligibility in sub-analysis of each district, the 27-percentage point range across District A is much less extreme than the 99-percentage point range in District B; because District B has so many more students and a larger range of incomes to account for, it makes sense why there was inconsistent modes of instruction across schools and why transportation to deliver meals was harder to access. District B has more clearly defined geographic separations of high- and low-income student bodies (with respect to a handful of outliers), and this degree of separation directly contributes to the gap in meal distribution site participation rates across the district. Because District A has some geographic separation, but not to a degree as great as District B, they were able to accommodate more quickly and easily to those affected by the income gap. District A is a smaller district than District B in terms of size and student population, which explains why it was easier to transport a meal here and there if it was brought to administrators’ attention that their needs were not being met, in contrast to District B where there is a large portion of students in low-income households concentrated in one rural area where transportation to them is not as accessible. So, while there were differences between District A and B in response to school closures and emergency meal distribution plans, there were also differences in the student body demographics that needed to be accounted for.

District A noticed that parents were losing their jobs and accommodating to job changes throughout the pandemic, so they strategically tried to account for that by having curbside service every day in all parts of the district. In addition to adding weekend meals, District A attempted to mitigate food insecurity in all parts of their district by creating equitable access to meals, regardless of geographic location. District B also noted similar differences in geographic concentrations of those facing food insecurity, in which they identified that a particular cluster of 4-5 schools that had hardly any meals being utilized. Instead of mitigating this by expanding curbside pickups, home deliveries, and hours of meal service, this district did not highlight any solutions due to the hybrid and complex nature of their instruction model across the district. Because District B was operating in a way that kids were going to school anywhere from two to four days a week, any mode of transportation by school bus was extremely limited, and therefore could not be utilized to distribute more meals to the identified areas with the highest food insecurity.

The first major result from this study highlights the idea that income inequality among students across high-resource school districts in North Carolina is heightened during prolonged school closures. Not only were school districts across the state all the sudden in a position where they needed to gather enough resources to be able to provide food for every single child in their district due to the USDA relaxing free meal eligibility guidelines, but the districts also became responsible for providing, distributing, and transporting these meals to any student in need. Although children were in a seemingly comfortable position by residing in a high-resource school district, the primary data show that those located in low-income, rural areas within the district are at a disadvantage because of the lack of flexibility in meal distribution plans at the district level. There was clear variation between District A and District B in our study; District A showed that they have the flexibility to accommodate a smaller number of children who were facing food insecurity, while District B struggled to maintain this food security in its children due to mode of learning and volume of kids in need. The income inequality experienced by children during the COVID-19 pandemic exacerbated the nutritional equity gap between children from high- and low-incomes, regardless of the school district’s resources.

A district’s resource usage and the response to establishing meal distribution sites is another variable that resulted in gaps in meal accessibility in this study. This conclusion was reached because of the differences between District A and B’s number of meal distribution sites and the adaptability of each district’s sites to accommodate to those located in food deserts or without transportation to obtain food. As noted in an interview with an administrator from District A, there are now at least 50 different meal distribution sites across the school district, which has food available for any of the 12,000 students in the district who needed it. District B, a district that has over three times more students, has five feeding sites located across the entire district. One reason for this large discrepancy is the fact that students of District B have the option to attend in-person classes for up to four days a week; however, students are not required to do so, therefore many are put in a nutritional deficit because they are not guaranteed access to the meals provided at school and distribution sites are not supplying as many meals due to a higher demand being in school cafeterias. Resource usage is extremely relevant in interpreting these results, because utilizing various methods of transportation and different strategies to reach those who were unable to get to physical meal distribution sites is how District A was able to continually feed so many of its students throughout the last year of the COVID-19 pandemic. District B’s meal distribution planning was only intended to be used for a short amount of time, so when students had the option to return to school it created a strain on the now-limited resources that were available to be able to accommodate more students. Response and resource usage show to be pertinent details of the emergency meal planning strategies that were implemented, and how they are implemented greatly affects children’s access to food during school closures.

Lastly, mode of instruction negatively impacts food security due to students being expected to receive meals from the school if the school is operating in-person to any extent. As noted several times regarding District B, having duality in the modes of instruction that students could participate in created a gap in resource availability due to the bulk of the resources being put toward making sure the kids attending school in-person were taken care of and safe. Children and their families should not have to choose between their children’s safety during a global pandemic and making sure that they have food to eat, which is exactly what ended up happening in the district that sent children back to school. While there are benefits to in-person instruction, such as visualization, hands-on activities, socialization, etc., food insecurity during the pandemic has skyrocketed and should have been a very important factor in determining plans for the 2020-2021 school year and resource allocation. While it becomes an ethical issue because you cannot force children to either stay home or attend in-person classes because of the severity of COVID-19 and its spread, it shows the importance to establish policy for when situations like this arise in the future to avoid disadvantaging a subsect of students within a school district.

# Chapter 5

## Conclusions and Recommendations

The results of this thesis conclude three things: 1) income inequality among students within high-resource school districts in North Carolina is heightened during prolonged school closures, 2) district resource usage and response to establishing meal distribution sites greatly affects childhood food security, and 3) mode of instruction negatively impacts food security due to students being expected to receive meals from the school if the school is operating in-person to any extent. The differences between the actions taken by District A and District B are highly related to the student demographics and geography of the school districts themselves. While 100 percent of the variation cannot be explained by these differences, it does help to explain why there were such large differences between the approaches taken by the districts.

The results also show that even if you reside in a school district with a high number of resources, you can still be greatly disadvantaged and even become food insecure during prolonged school closures. While the emergence and prolonging of the pandemic certainly has been unprecedented, it truly showed the need for stronger nutrition services and budgets that support children in need, regardless of if schools are operating in-person or virtually. The gap faced by children due to availability and access to meal distribution sites creates equity issues that could easily be mitigated if the district were to prioritize food security when making decisions regarding student safety, especially because nutrition influences a variety of cognitive, physical, and emotional factors that impact schoolwork.

Based on the findings of this study, this comparative case study can be used to demonstrate financial need among students even in high-resource school districts. Both school districts highlight the fact that there is income variation even across the districts with the highest expenditures and available resources compared to other school districts in the state of North Carolina; while several students have been able to maintain their food security status during the pandemic, those who relied on school meals became heavily disadvantaged when the source of most of their meals closed indefinitely. The diverse demographic and geographic profiles of both observed districts allowed us to see how different areas with similar amounts of resources respond to the provision of free/reduced-price meals during COVID-19 school closures. In conducting this research, the importance of emergency meal provision is highlighted as well as the lack of equal opportunities in high-resource school districts when it comes to equitable meal access.

The policy issue at hand lies in the lack of equity in meal accessibility among poor students in high-resource school districts. The policy recommendation is to establish mandatory emergency meal distribution plans for unexpected school closures across every school district in the United States. This includes taking food insecurity, income distribution, and geographic locations of districts to determine where the highest and lowest need for meals is, as well as maintaining a team of individuals who are responsible for emergency meal provisions to ensure that those with no experience are not responsible for handling equitable meal distribution plans. This also involves creating an emergency budget, having the necessary supplies on hand to set up meal distribution sites and patterns, and having written policies for every school district that outline how to handle emergency meal provisions. While this mandate will allow for flexibility based on geography, demographics, need, etc., the goal of establishing this policy is to create equity among students within the same school district in terms of meal accessibility. Based on the findings in related literature, these gaps exist in rural areas as well as urban cities, which identifies that the need is not specific to any one geographic area and needs to be addressed at the national level to mitigate childhood food insecurity, especially during emergency situations. There is national policy to fund summer meal programs and meal programs during the school year, but 2020 showed us that there were no plans for unexpected school closures and that greatly disadvantaged school districts and their children who did not have access to meals while schools were closed.

# References

Adams, E. L., Caccavale, L. J., Smith, D., & Bean, M. K. (2020). Food Insecurity, the Home Food Environment, and Parent Feeding Practices in the Era of COVID‐19. *Obesity,* *28*(11), 2056-2063. doi:10.1002/oby.22996

Amolegbe, K. B. (2020). Hungry birds do not sing: Coronavirus and the school feeding program. *World Development,136*, 105169. doi:10.1016/j.worlddev.2020.105169

Census Reporter. (2021). Profile Data- Census Reporter. Retrieved March 23, 2021, from https://censusreporter.org/

Center for Disease Control and Prevention. (2020). Coronavirus (COVID-19) frequently asked questions. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/faq.html

Dunn, C. G., Kenney, E., Fleischhacker, S. E., & Bleich, S. N. (2020). Feeding Low-Income Children during the Covid-19 Pandemic. *New England Journal of Medicine,* *382*(18). doi:10.1056/nejmp2005638

Education Data. (2021). U.S. public education spending Statistics: Per PUPIL + total. Retrieved April 27, 2021, from https://educationdata.org/public-education-spending-statistics

FRED. (2021). Federal reserve economic data: St. Louis Fed. Retrieved March 23, 2021, from https://fred.stlouisfed.org/

Habicht, J., Pelto, G., Frongillo, E., & Rose, D. (2004, July 13). Conceptualization and Instrumentation of Food Insecurity. Retrieved from https://www.researchgate.net/profile/Gretel-Pelto/publication/237712682\_Conceptualization\_and\_Instrumentation\_of\_Food\_Insecurity/links/5607024008ae8e08c0926f03/Conceptualization-and-Instrumentation-of-Food-Insecurity.pdf

Jablonski, B. B., Casnovsky, J., Clark, J. K., Cleary, R., Feingold, B., Freedman, D., . . . Wentworth, C. (2020). Emergency Food Provision for Children and Families during the COVID-19 Pandemic: Examples from Five U.S. Cities. *Applied Economic Perspectives and Policy*. doi:https://doi.org/10.1002/aepp.13096

Kids Count Data Center. (2021). Child wellbeing indicators & DATA. Retrieved March 23, 2021, from https://datacenter.kidscount.org/data#NC/10/0/char/0

Kinsey, E. W., Hecht, A. A., Dunn, C. G., Levi, R., Read, M. A., Smith, C., . . . Hager, E. R. (2020). School Closures During COVID-19: Opportunities for Innovation in Meal Service. *American Journal of Public Health,* *110*(11), 1635-1643. doi:10.2105/ajph.2020.305875

Laborde, D., Martin, W., Swinnen, J., & Vos, R. (2020). COVID-19 risks to global food security. Science, 369(6503), 500-502. doi:10.1126/science.abc4765

Mathewson, T. (2021, February 05). New data: Even within the same district some wealthy schools get millions more than poor ones. Retrieved April 12, 2021, from https://hechingerreport.org/new-data-even-within-the-same-district-some-wealthy-schools-get-millions-more-than-poor-ones/

Mcloughlin, G. M., Mccarthy, J. A., Mcguirt, J. T., Singleton, C. R., Dunn, C. G., & Gadhoke, P. (2020). Addressing Food Insecurity through a Health Equity Lens: A Case Study of Large Urban School Districts during the COVID-19 Pandemic. *Journal of Urban Health*. doi:10.1007/s11524-020-00476-0

Micha, R., Rehm, C., Li, Y. (2021). Study finds Americans eat food of mostly poor nutritional quality – except at school. (2021, April 12). Retrieved April 12, 2021, from https://now.tufts.edu/news-releases/study-finds-americans-eat-food-mostly-poor-nutritional-quality-except-school

NC DHHS. (2021). Pandemic Electronic Benefit Transfer (P-EBT) Program. Retrieved from https://covid19.ncdhhs.gov/information/human-services/pandemic-electronic-benefit-transfer-p-ebt-program#:~:text=Overview,been%20impacted%20by%20COVID%2D19.

NC Public Schools. (2013). National School Lunch Program. Retrieved from https://childnutrition.ncpublicschools.gov/programs/nslp/nslpfactsheet.pdf

North Carolina Department of Public Instruction. (2020). *Statistical profile*. Retrieved from https://www.dpi.nc.gov/districts-schools/district-operations/financial-and-business-services/demographics-and-finances/statistical-profile

North Carolina OBSM. (2020). NC Population & Demographics. Retrieved from https://www.osbm.nc.gov/facts-figures/population-demographics

Parnham, J., Laverty, A., Majeed, A., & Vámos, E. P. (2020). Half of children entitled to free school meals did not have access to the scheme during COVID-19 lockdown in the UK. *Public Health,* *187*, 161-164. doi:https://doi.org/10.1016/j.puhe.2020.08.019

PowerSchool. (2016). *The changing role of the district CFO.* Retrieved from https://www.powerschool.com/resources/blog/changing-role-district-cfo/

School Nutrition Association. (2020). *School nutrition professionals: Roles and responsibilities.* Retrieved from https://schoolnutrition.org/aboutschoolmeals/snprolesresponsibilities/

Schwabish, J., Joo, N., Spievack, N., & Waxman, E. (2020). Strategies and Challenges in Feeding Out-of-School Students. Retrieved from https://www.urban.org/sites/default/files/publication/102095/strategies-and-challenges-in-feeding-out-of-school-students.pdf

Shah, G. H., Shankar, P., Schwind, J. S., & Sittaramane, V. (2020). The detrimental impact of the covid-19 crisis on health equity and social determinants of health. Journal of Public Health Management and Practice, 26(4), 317-319. doi:10.1097/phh.0000000000001200

Tippett, R., Demography, C., & Bono-Lunn, D. (2020). Hungry children: The increasing demand for free and reduced-price lunch in North Carolina (Publication). Retrieved https://gri.unc.edu/wp-content/uploads/sites/246/2020/04/UNC\_GRIC\_Hungry\_Children-FINAL.pdf

United States General Accounting Office. (1990). *Case study evaluations*. Retrieved from https://www.gao.gov/special.pubs/10\_1\_9.pdf

USDA Food and Nutrition Services. (2020). USDA extends free meals for kids Through December 31, 2020: USDA-FNS. Retrieved March 09, 2021, from https://www.fns.usda.gov/news-item/usda-035520

Yin, R. K. (2003). *Applications of case study research*.

# Appendix

## Table 1: School District Metrics

|  |  |  |
| --- | --- | --- |
|  | District A | District B |
| Student Population | 12,422 | 41,488 |
| Percentage of children below poverty line | 6% | 8% |
| Percentage of free/reduced-price lunch eligibility | 27.1% | 24.9% |
| District per-pupil expenditure | $6,331.67 | $2,372.85 |
| Total per-pupil expenditure | $12,955.82 | $9,079.19 |
| Median household income | $73,612 | $85,985 |

North Carolina Department of Public Instruction, 2020

## Table 2: Aggregate Race/Ethnicity Breakdown of District A

|  |  |
| --- | --- |
| **Race/Ethnicity** | **Percentage of Student Population** |
| White | 50.4% |
| Black | 10.9% |
| Asian | 13.9% |
| Hispanic | 17.3% |
| Multiracial | 7.3% |
| American Indian/Pacific Islander | .19% |

North Carolina Department of Public Instruction Statistical Profile (2020).

## Table 3: Aggregate Race/Ethnicity Breakdown of District B

|  |  |
| --- | --- |
| **Race/Ethnicity** | **Percentage of Student Population** |
| White | 59.4% |
| Black | 11.9% |
| Asian | 5.2% |
| Hispanic | 18.7% |
| Multiracial | 4.5% |
| American Indian/Pacific Islander | .23% |

North Carolina Department of Public Instruction Statistical Profile (2020).

Appendix 1: Sample Interview Questions

**The Plan/Response**

1. Before COVID-19, what kind of meals did children receiving free/reduced-price lunch receive?
   1. How, if any, did children in need get food for the weekend?
2. How are schools currently operating in response to COVID-19? Are they fully remote, fully in-person, or a hybrid of both?
   1. How did the school district determine the best mode of instruction?
   2. Was food insecurity a factor in the decision-making process?
3. What kind of resources are available for the school district to use toward child nutrition?
   1. Where does funding come from?
4. What types of meal distribution plans are/were currently in place to provide free/reduced-price lunches to eligible students?
   1. What, if any, other initiatives exist in your school district to mitigate some of the food insecurity experienced during COVID-19?
5. What are some of the key parts of the plan? Did you get guidance from the state or consults with other school districts?
6. Are students’ needs adequately being met with this form of meal distribution?
7. Could the method of meal distribution be improved? If so, how? If not, explain your reasoning.
   1. To implement an improved method, would you need more resources, more time, or a combination of both?

**Impact on Students**

1. Do you believe that COVID-19 has impacted this district’s children’s access to meals? Why or why not?
2. With Roy Cooper’s plans to move students back to in-person instruction, how do you believe students and their meal accessibility will be impacted?

**The Future**

1. What are the plans for spring (the current semester)? Lessons learned that might lead to changes?

## Appendix 2.1: Unemployment Rate in District A

Unemployment Rate in District A



Unemployment Rate in Orange County, NC

10

9

8

7

6

5

4

3

2

Apr 2020

May 2020

Jun 2020

Jul 2020

Aug 2020

Sep 2020

Oct 2020

Nov 2020 Dec 2020

Source: U.S. Bureau of Labor Statistics

fred.stlouisfed.org

Federal Reserve Economic Data (2021)

## Appendix 2.2: Unemployment Rate in District B

Unemployment Rate in District B



Unemployment Rate in Union County, NC

11

10

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4

3

Apr 2020

May 2020

Jun 2020

Jul 2020

Aug 2020

Sep 2020

Oct 2020

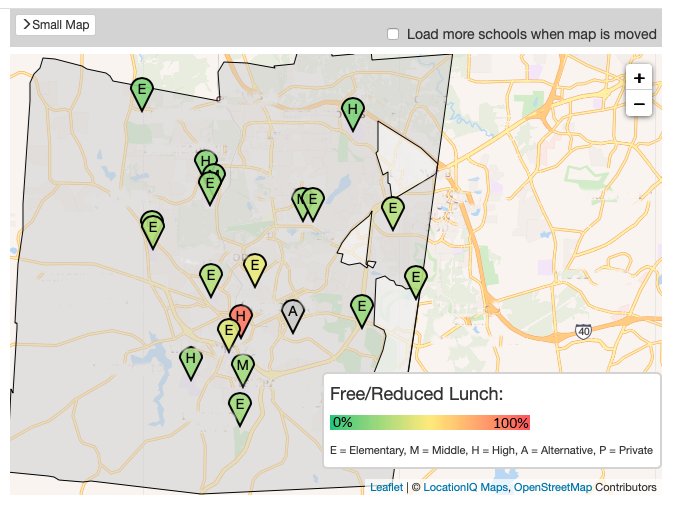
Nov 2020 Dec 2020

Source: U.S. Bureau of Labor Statistics

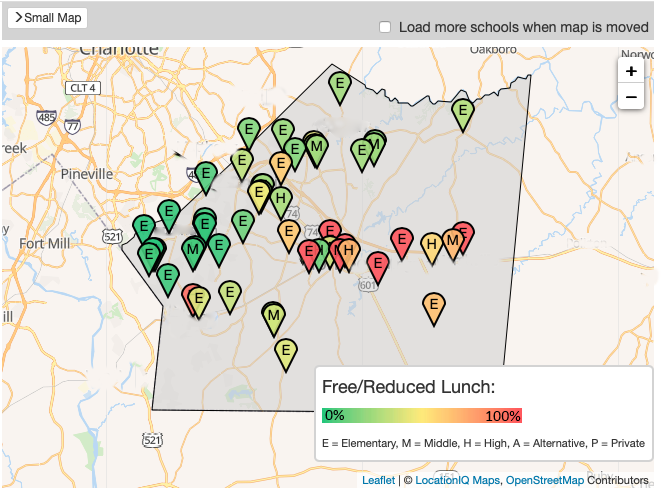
fred.stlouisfed.org

Federal Reserve Economic Data (2021)

## Appendix 3.1: District A Free/Reduced-Price Lunch Eligibility by School

  
Census Reporter, 2021

## Appendix 3.2: District B Free/Reduced-Price Lunch Eligibility by School

  
Census Reporter, 2021

1. The Summer Food Service Program is a federally-funded, state-administered program that operates to serve free healthy meals to children in low-income areas over the summer. The program was established to ensure that children continue to receive nutritious meals even when schools are not in session (USDA, 2021). [↑](#footnote-ref-1)
2. Students in the United States are deemed eligible to receive free school lunch if their household income is at or below 130 percent of the poverty level, and are deemed eligible to receive reduced-price lunch if their household income is between 130-185 percent of the poverty line (NC Public Schools, 2013). [↑](#footnote-ref-2)
3. SBP is a federally funded meal program that provides free and reduced-price meals to low-income students across the United States (USDA, 2021). This program is operated by the USDA under the same guidelines that free and reduced-price lunch is offered. [↑](#footnote-ref-3)
4. NSLP is a federally assisted meal program that operates in public and nonprofit private schools to provide nutritious meals for free or at a low-cost to children of qualifying households (USDA, 2021). About 30 million children participate in this program annually. [↑](#footnote-ref-4)