# Is Choice Enough?

## *Assessing Equity and Access in New Orleans Charter Schools from a Geographic Perspective*

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# Abstract

Over the past thirty years, the school choice movement has sought to open up new, privately-owned opportunities for students to access publicly-funded education. An experimental education system was implemented in the city of New Orleans in 2005, whereby all public schools began transferring to private ownership, and the geographic boundaries that previously determined a student's place of enrollment were eliminated. With the elimination of these boundaries, reformers hoped that students in failing schools or dangerous neighbourhoods would be free to apply to any school in the city, and in any geographic area. This study investigates the role that geography plays in the charter school system of New Orleans – the only city in the United States where all public schools are privately run charter schools. Where do students go to school now that there are no geographic boundaries for enrollment, and are there barriers in place preventing students from accessing opportunities equally?

Using the framework of Torsten Hägerstrand's *time geography*, questions of equity and access within the system will be investigated. Through the analysis, it is determined that geography plays a shaping and constraining role in determining which students are able to access which schools. The wealthiest areas of town house the best performing schools, admit the lowest number of special education students, the lowest proportion of Black students, and are least likely to provide transportation services. Meanwhile, economically-disadvantaged students are more likely to attend lower-ranked schools, and schools that are geographically closer to home.

The results of this study have important implications for those advocating the use of charter schools and the transition of public schools in the United States to private operation. As systems considered for transition are primarily urban and low-income, the numerous barriers faced by economically-challenged families should be of particular concern to policymakers and community leaders.

# Acknowledgements

I would like to thank my supervisor Lihong Huang for her knowledge and guidance throughout this project. She has consistently pushed me forward, challenged me to think through data in new ways, and made me a stronger and more confident researcher. I am also grateful to Camilla Bakke, our Comparative and International Education Senior Executive Officer, for her support throughout my studies at the University of Oslo.

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# Table of Contents

# List of Figures and Tables

# 1 Introduction

Over the past thirty years, the delivery and organisation of public education in the United States has dramatically changed. Historically, the rationale for the organisation of public education based itself on providing everyone in the country with accessible, quality, tax-funded education – regardless of race, income or gender. Run as a state-operated system, schools were established and planned in relation to population and geography – and with a varying rigidity but strong adherence to geographical borders (Construction, 1958). For students enrolled in the public school system, this generally meant that students attended schools in a local geographic area, with all children in a neighbourhood attending a common school (Benson, Harkavy, Johanek, & Puckett, 2009). Over the past thirty years, a significant shift has occurred in both the delivery and organisation of public education, notably in the form of charter schools. Together, this diversification is known as the "school choice" movement. Taking a variety of forms across the United States, the delivery of public education is increasingly transferred to private actors, both in non-profit and for-profit forms (Thiem, 2009).

The subject of this study is to examine what happens to students when a school district eliminates all geographic attendance boundaries. In most school districts in the United States today, geographic boundaries still determine how students are assigned to a school. The role of these boundaries can have far-reaching consequences – positive school ratings by the state can increase the value of homes in the neighbourhoods associated with them, and the shared experience of attending the same schools, playing on the same sports teams, and attending the same social events creates a shared community identity and social network that spans multiple age cohorts.

In 2005, Hurricane Katrina made landfall outside the city of New Orleans, Louisiana, taking the lives of over one thousand people and destroying much of the city. In its wake, stakeholders at the local, state, and national levels decided to implement a new type of school system heretofore never seen in the United States – a public school system comprised of only privately-run charter schools. Unlike other school districts, where a centralised body oversees all schools, those in the charter system would be self-regulating and self-governing, while students would be given the freedom to apply to any school in the city, regardless of their home address. Stakeholders based the system redesign on several untested rationales. First, that by giving students and families the freedom to choose their school, a competitive,

market-driven environment would emerge. In this environment, schools would need to compete against each other for students, and unpopular or underperforming schools would close due to a lack of interest while popular schools would thrive. Secondly, allowing private citizens and entrepreneurs to open their own schools would create a more efficient system, free of government bureaucracy. Schools would also have the opportunity to differentiate themselves by specialization area, such as the visual arts, STEM (science, technology, engineering and mathematics), or college preparation. Finally, by eliminating geographic boundaries, students previously tied to failing schools would have the ability to pursue better opportunities in different areas of the city. For a system already deeply segregated from school to school, it was theorised that better diversity could be achieved as students made use of the freedom of movement within the system (Kristen L. Buras, 2012; Henig & MacDonald, 2002).

Conversely, many stakeholders at both the city and higher levels worried about transferring the control of a public education system to private actors with their own educational agendas (Kristen L. Buras, 2011). The lack of a centralised administrative body meant far less oversight of issues such as ensuring that students with disabilities received acceptable, equitable instructional supports. The freedom given to schools regarding admission criteria would also mean than not all students met the enrollment requirements of all schools, and the lack of a central administration would lead to the loss of comprehensive transportation systems – individual schools would now be responsible for organising the transportation of students to and from school. Finally, the geographic disbursement of students could have a significant impact on the decades-spanning communities and social networks built around neighbourhood schools. What would happen to those relationships when neighbourhood children no longer attended the same schools and shared the same teachers or social groups?

These motivations and concerns also need to be considered within the context of the New Orleans public school system at the time of implementation. With most middle- and high-income families choosing to enroll their children in private schools, the public school population in New Orleans in 2005 was primarily made up of non-white and low-income students. In the current system, 85% of families are considered “economically disadvantaged.” Eighty percent of students identify as Black, while only 9% of students in the system identify as White. The remaining 11% identify as Hispanic, Asian or “Other.” Making drastic, systemic changes to a system mainly comprised of families with limited

resources carried the risk of disproportional consequences for families already facing challenges.

This study of the New Orleans charter system experiment is important for a variety of reasons. A dislike of slow-moving, large bureaucratic systems is the motivating factor for many stakeholders and politicians in the United States, and those stakeholders hope to improve public services and make them more efficient by transferring them to private ownership. Those adhering to strict, market-based competitive environments hope the larger role of the corporation in education will better prepare students for the workforce, and successes in the system are often heralded as innovative examples for school districts across the country. Conversely, problems arising in the system serve as red flags to other cities hoping to implement similar schemes (Kristen L. Buras, 2011). The investigation is also important given the scale of the implementation. Around the United States, charter schools exist independently alongside traditional, geographically-organized neighbourhood schools. School populations in those charter schools are thus heavily affected by self-selection. In New Orleans, there is no choice but to participate in the charter system, as all schools are independently run.

The implementation of the New Orleans charter system celebrated its tenth anniversary in 2015, and a consortium of different social organisations came together to construct an online data centre detailing the current state of the system. Were students leaving their neighbourhoods to take advantage of better opportunities in different areas? Were classrooms becoming more diverse as schools improved and more white students chose to enroll in the charter system? How did the decentralization of transportation services affect students and families? Did the new enrollment guidelines lock certain students out of better opportunities? While school-level data for all New Orleans charter schools has been published on an annual basis, a new publication, *The New Orleans Equity Index*, made the data searchable and comparable, and added metrics related to geography and distance to school profiles. For the first time, information regarding how far children live from school and where their current school is in New Orleans is available to the public alongside existing information such as enrollment costs, state test performance, and racial breakdowns. With these data, alongside historic, cultural and demographic contexts, it is possible to analyse which schools attract students from longer distances, which schools have student populations that come from primarily local areas, and which areas of the city have the most diverse student bodies.

To better understand these issues, Torsten Hägerstrand's theory of *time geography* will be used to analyse where schools exist in the city and how their location relates to the movement of students throughout the charter school system. Additionally, the external forces that could affect the movement of students within the system will also be thoroughly considered. Hägerstrand's theory sets the location of one's home as the primary organising factor of one's day-to-day life. Whether one's day entails going to work, running errands – or, in many cases – taking one's children to school, transporting oneself to and from work, shuttling children to different afterschool activities and stopping by necessary extra destinations such as a grocery store or medical appointment – we start and end our days at home. A person's ability to achieve all of these tasks is directly related to the resources one has available, and one's ability to overcome a variety of obstacles outside of one's control.

Over the past century, the potential limits of what one can achieve in a day has also drastically changed. From the development of transportation networks to having the world at one's fingertips in the form of the Internet, our days and the tasks we need to achieve within them have become both easier and more complex. Hägerstrand categorizes the limiting forces one faces into three types of *constraints*: *capability, coupling* and *authority*. Each accounts for different challenges, from the biological factors that may limit one's mobility, to the role of time and how certain events take longer than others, to the role of larger social forces such as economic barriers that prevent us from achieving everything we set out to do. Finally, Hägerstrand uses the concept of *domains* to take into account the structural forces that shape everyday life. Larger social forces such as city infrastructure and historic settlement patterns permeate our daily lives. Hägerstrand emphasizes the idea that society is made up of highly institutional power structures by noting that – "a society is not made up of a common group of people which decides in common what to do a week ahead of time." We live within the larger systems created by those who came before us.

Given these framing concepts, two central research questions can be generated in conducting this study: Where are students attending school in New Orleans following the elimination of geographic boundaries? What barriers exist within the system that may prevent students from exercising their right to choose from any school in the system?

Following this analysis, discussion will occur around the questions of whether the implementation of the charter school system was successful in its aims. Do people take advantage of the freedom of movement? If not, is that due to barriers that would also be an important factor for other cities looking to privatise public education services? If a lack of

resources means that some students attend neighbourhood schools even when they have the option of leaving, is it more sensible to leave the traditional system the way it is?

# 2 Background

Today, the vast majority of public schools in the United States are organised within larger geographical districts featuring discrete boundaries. “School catchment areas,” the geographic areas that determine which school a student is assigned to, extend outwards from individual schools, with neighbourhood residents generally attending their closest public school. According to Benson et al, schools with strong ties to the surrounding community have existed throughout the history of the United States, and predate the country back to colonial America (2009). The interdependence of school and community was later a centre point in the writings of John Dewey, one of the most significant shapers of public education in the United States (in Valli, Stefanski, & Jacobson, 2014). “The conception of the school as a social centre is born of our entire demographic movement. Everywhere we see signs of the growing recognition that the community was to each one of its members the fullest opportunity for development” (Benson et al., 2009, p. 24).

As the guidelines of school systems and school locations became formalised, geographic concerns played a key role in how schools were geographically organised. Early documents from the United States Office of Education (now the Department of Education) outline the guiding concerns for school locations, and a school's geographic and community-centred roles are presented as key organising factors. In addition to recommending that schools be placed as close as possible to their respective population centres, warnings about the role of transportation distances and other potential barriers to students were routinely emphasized (Construction, 1958, p. 28).

In more recent times, state education boards like that of North Carolina continue to acknowledge the interconnected role of schools and the local community:

> “In many communities, school facilities are frequently used for purposes other than those directly related to the learning activities of students; such as: adult education, public assembly, recreation, election polling places, meetings that require food services, etc. There is a trend toward increasing this multi-use function of school facilities. Some schools are now being built as a part of a larger complex of community service facilities: recreation grounds and parks, health and social services centers, libraries and cultural centers” (Carolina, 1998, p. 2).

Some geographic characteristics of schools have changed over time. With an increase in suburban development and the associated urban population shifts, school sizes and catchment

areas have increased accordingly. While still organised in tandem with surrounding population "swells," the distance that students travel to school has increased. While just 54.8% of students lived more than a mile away from their school in 1969, that figure had increased to approximately 75% by 2001. For those who still lived within a mile of their school, 89% were urban students, compared to only 11% of students in rural areas. However, rural public schools are still organised in discrete geographical school districts (Transportation, 2008, p. 1).

As detailed in this chapter, the relationships between schools, community, segregation and the role of larger policy initiatives play an important role in analysing both the education system of New Orleans and the historic human geography of the city.

## An ethnic history and geography of New Orleans

### Education segregation in New Orleans

Segregation, desegregation and education have a long, winding relationship in the city of New Orleans, much like the greater United States. The city also has a unique history, compared to many other examples of southern metropolitan areas, of racial integration and varied French and Spanish colonial influences. Following the American Civil War (1861-1865) and the emancipation of slaves in the American south, the population of black residents in New Orleans doubled – from 25,423 (14,484 enslaved) in 1860 to 50,456 in 1870 (Campanella, 2007, p. 708). The state constitution of Louisiana, enacted in 1867, formally required that no public school deny admission based on a student's race. The immediate response by the city of New Orleans was to establish new public 'negro schools' with the aim of creating a system that was 'separate but equal' (Harlan, 1962).

The state superintendent at the time (the highest ranking education-related post in the state government), left his government posting in order to lobby for a system of private white schools (Harlan, 1962). Unlike the second wave of American desegregation in the 1960s, the varied quality of the newly established schools resulted in only a minor and temporary exodus of white students from the mixed school system. The high availability of quality public schools attracted students of all races. However, low achieving schools began to show a trend that would continue to the present day – most "negro schools" were ranked lower than their white counterparts, and a report from the time describes the school system as such: "The

mixed schools are the best in the city, and the colored schools the poorest – the poorest in quarters, furniture, and in every way" (Harlan, 1962).

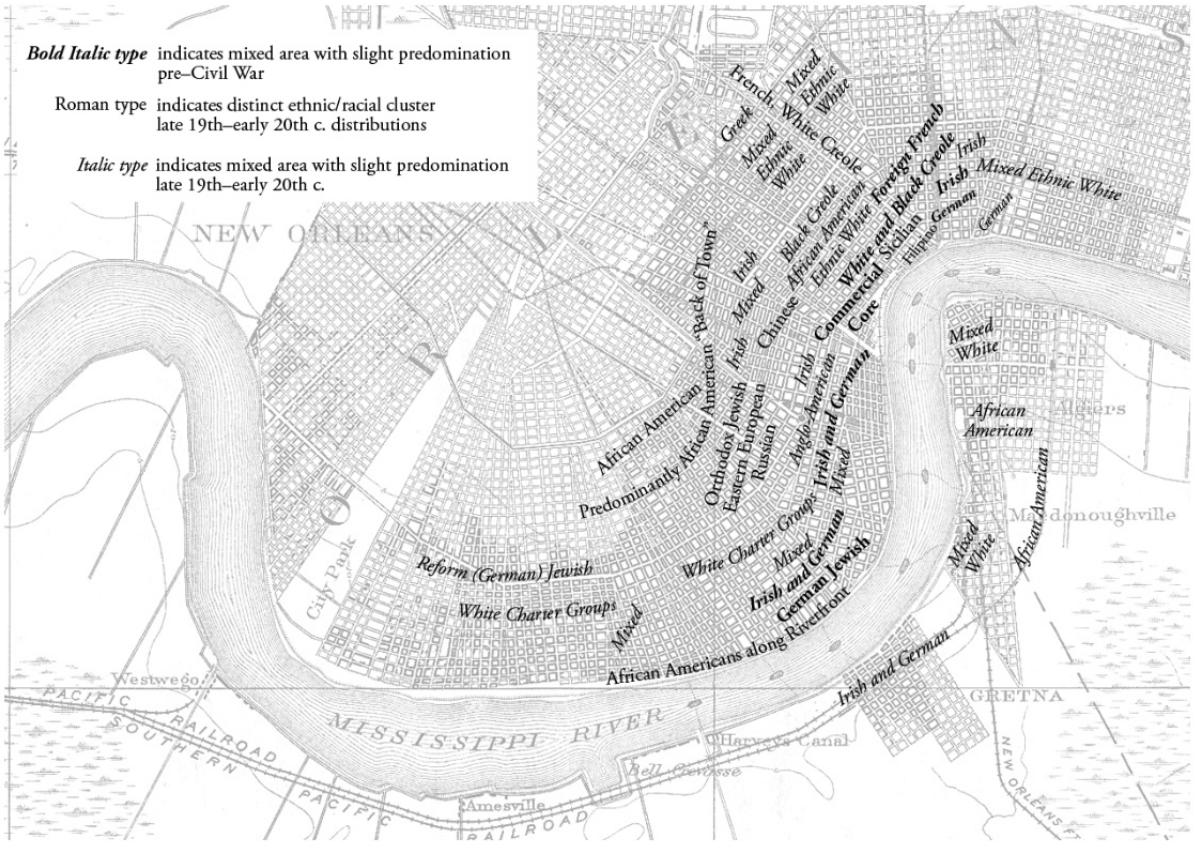
In 1879, the Louisiana state government formally permitted separate schools for negro children. Just under twenty years later, the Louisiana state government moved toward total segregation, formally requiring the separation of white and black students in an era now known as "Jim Crow" (Fussell, 2007, p. 708; Harlan, 1962).

**Social segregation in New Orleans**

At the same time, the location and distribution of black families in the city began to change. Beginning in 1893, engineers were able to begin draining swamp areas surrounding the city and create new home development opportunities. Prior to (and immediately following) the Civil War, the distribution of African-Americans in the city was considered "salt and pepper," in that whites and blacks lived interspersed throughout the city, as many were employed as domestic workers and lived close to their employers. Three shifts occurred that resulted in a significant reorganisation of white and black residents in New Orleans. First, streetcar lines were installed and began operation in the 1830s, which resulted in a portion of well-to-do residents moving to peripheral areas of the city, where posh suburbs emerged in previously inaccessible or underdeveloped areas of the city. This growth took off particularly in the areas of Uptown, Carrollton and Mid-City. Secondly, a massive shift of the wealthy classes to suburbs followed the Civil War, leaving many housing units in the inner city available as tenement housing. Thirdly, industrialization brought unskilled jobs into the inner city, in contrast to the widespread unskilled farm work seen before the Civil War (Campanella, 2007).

Later into the early 20$^{th}$ century, land deed restrictions prevented African-Americans from purchasing land and homes in the newly opened areas of the city, further entrenching the physical placement of non-white New Orleanians in the city. Behind the "Back of Town" strip of African-Americans, as shown in Figure 1 below, wealthier white families filled new areas such Lakeview to the northwest, and the exodus of whites from the city centre "helped disaggregate the historically intermixed racial geography of New Orleans" (Campanella, 2007, p. 710). These trends were not unique to New Orleans, as the concept of "white flight" was coined to describe the departure of white families in response to desegregation efforts across the American south (Fussell, 2007).

**Figure 1: The Ethnic Geography of New Orleans in Three Phases**




Note: Ethnic geography map of New Orleans showing generalized distributions of ethnic and racial groups in the city, c. 1850 to c. 1910. Adapted from Richard Campanella, Geographies of New Orleans: Urban Fabrics before the Storm (Lafayette, 2006), 193–370. Base map adapted from 1891 U.S. Geological Survey map of New Orleans, courtesy Perry-Castañeda Library Map Collection, University of Texas, Austin (Campanella, 2007).

Campanella's map above allows us to see the distribution of different ethnic groups in New Orleans over time – specifically pre-1850, post-1865 and the end of slavery, and in the early 20th century following the draining of the swamps. The darker shaded neighbourhood blocks hugging the east and west banks of the Mississippi River indicate settlements made prior to the draining of the surrounding swamps, while settlement following that process is shown in the lighter grey neighbourhood blocks.

**The Civil Rights Movement**

The Unites States Supreme Court's unanimous decision in *Brown vs. Board of Education* in 1954 spurred further changes in the human geography of New Orleans , as the practice of racial segregation in public schools was ruled unconstitutional (Kristen L. Buras, 2011). Compared to many southern cities in the United States, New Orleans held a favourable reputation in regards to race relations, and was in fact ranked the least segregated city in America (Fussell, 2007). This could be attributed to the city's deep history of cultural

diversity and its interspersed residential patterns. With a large Creole population, the city also features a "grey area" within the typical discourse of 'white versus black.' Creole Louisianans descend from intermarried African, Caribbean, Native American Indian, and European immigrants from the 19th century. Within the Creole group itself, different sub-classes existed, depending on one's French, Spanish or African ancestry. Historically, Creoles enjoyed a social status above non-mixed Black Americans, and by law were guaranteed the same rights and privileges as whites (Campanella, 2007, p. 706).

This reputation of cultural diversity was tested – and tainted – following the decision in *Brown*, with continuous political jockeying between the Orleans Parish School Board, parents, the state government, and the federal judges tasked with implementing desegregation orders. Candidates from all parties running for Governor in 1960 ran on platforms promising to block the desegregation of public schools, with the victor Jimmie Davis going to extreme lengths to deliver on his election promises (Klarman, 2007). Beyond the political leadership, public opinion in New Orleans could not be seen as a counter influence on the actions of the government. Considered to be the most moderate area of the state (due to its history of multiculturalism and it being an urban centre), white parents in New Orleans favoured the closing of schools to "token integration" by a margin of four to one – meaning that they would prefer to close schools than allow a limited or "token" number of African-American students who met strict criteria to enroll (Klarman, 2007).

Governor Jimmie Davis enacted over twenty segregation orders in Louisiana, including authorising the state government to take over New Orleans schools, giving the Governor the power to close those schools, allowing for the arrest of any federal judge found trying to implement desegregation orders, barring state funds from desegregated schools, seizing the bank accounts of the Orleans Parish School Board, and banning banks from lending money to the Orleans Parish School Board (K.L. Buras, 2014). Federal judges rejected each of the policies, and in 1960 four African-American girls met the criteria to attend two public schools in New Orleans – William Frantz Elementary School and McDonogh No.19 Elementary School, both located in the Lower 9th Ward. White parents responded by withdrawing their children from the schools, and the girls spent their first year educated alone. Over the next ten years, the surrounding area's population of white residents plummeted, with most moving east to St. Bernard Parish (Kristen L. Buras, 2012; Klarman, 2007).

Prolonged violence accompanied American desegregation efforts, in both New Orleans and the southern United States. Schools in neighbouring states such as Tennessee

and Arkansas were bombed, while in New Orleans hundreds of white protesters would gather daily outside of integrated schools to taunt the small number of black students (Klarman, 2007). From the 1970s to the 2000s, the number of neighbourhoods with concentrated poverty grew by two-thirds, while general poverty levels remained stable. By the year 2000, the city seen as the least segregated in America earlier in the 20th century surpassed the national average for white-black segregation in the 21st century (Logan, in Fussell, Sastry, & VanLandingham, 2010).

Currently, New Orleans has the highest rate of private school enrollment in the United States. In addition to the white flight from the public system in the 1960's, there is a strong preference for parochial education, particularly Catholic. These private institutions all feature tuition fees, though some families receive scholarship grants and others are able to apply for state-issued vouchers that allow them to re-allocate the per-pupil spending for their student in the public sector to the private school that offers their student admission. With a reputation for high quality and a range of tuition options, many parents who are able to afford tuition choose to opt out of the public school system. Consequently, the public school system in New Orleans is primarily made of students from low-income families

## Geographies of Poverty in New Orleans

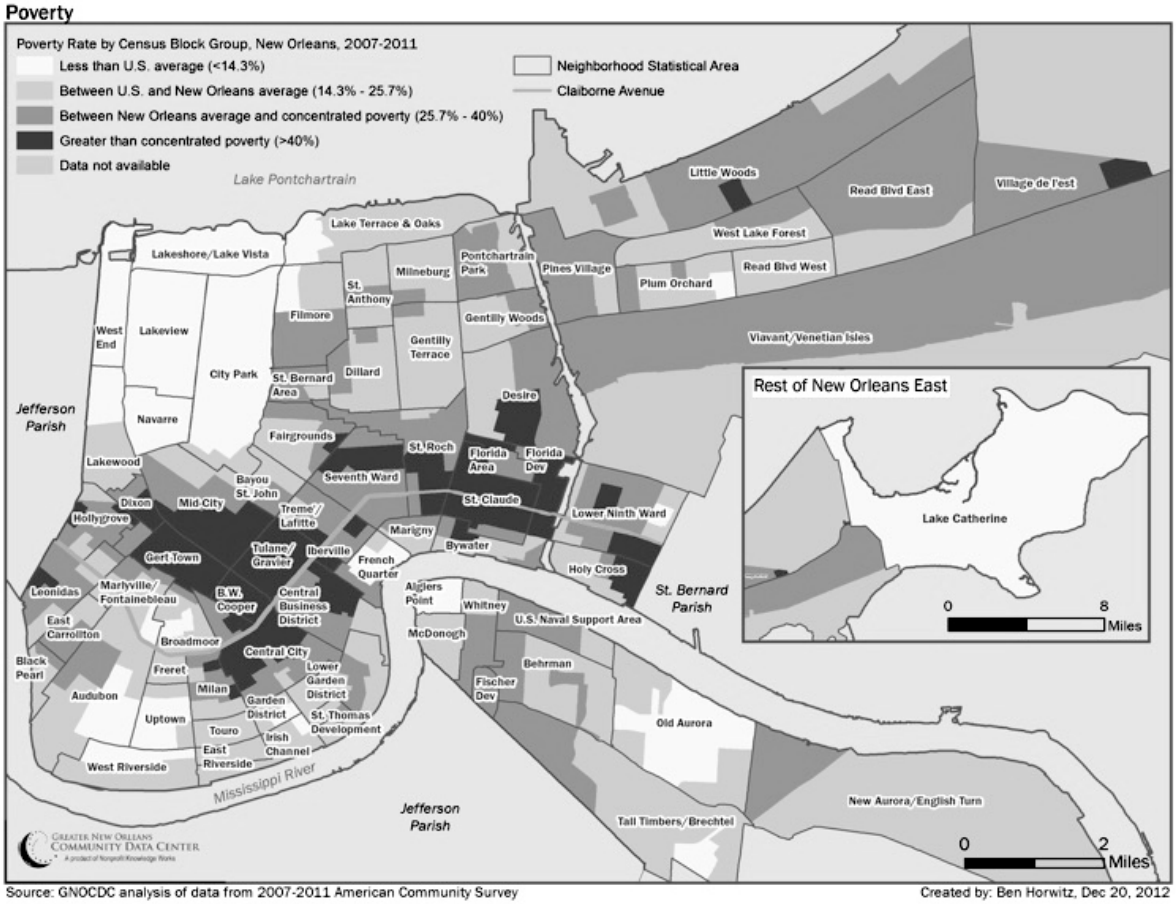
Like most cities, New Orleans is subdivided into many different neighbourhoods. Locally, different areas of the city carry with them not just a geographic location, but also markers of class, race and income levels. As seen in Figure 2 and Figure 3 below, many neighbourhood names included on city maps will play an important role in explaining different features of the charter school system in New Orleans. As an introduction to the geographic layout of the city, and to the broad breakdowns of its geography of wealth and poverty, three maps of poverty, of high-wage workers, and low-wage workers are presented.

As seen below in Figure 2, certain areas of New Orleans stand out for being below or above national average poverty levels. To the top left, the neighbourhood of Lakeview can be found in the centre of an area of low poverty (shown in white on the map). To the bottom left, the neighbourhood Uptown can be found. In the centre of the map one can find the historic French Quarter and Algiers Point – two of the oldest settlements in the city, and the New Orleans East neighbourhood of Lake Catherine in the top right quadrant.

Areas considered above the New Orleans average for poverty levels but below the US levels are found in light grey. Here one can find neighbourhoods such as Gentilly just north

of the map's centre, New Aurora on The Westbank, and areas of New Orleans East. In the medium grey, one can find the neighbourhoods of Central City and Lower 9th Ward. Finally, the areas in black represent neighbourhoods where over 40% of residents live in poverty, and are considered "concentrated poverty." Here, one finds the neighbourhoods of Mid-City and parts of Downtown and the Lower 9th Ward.

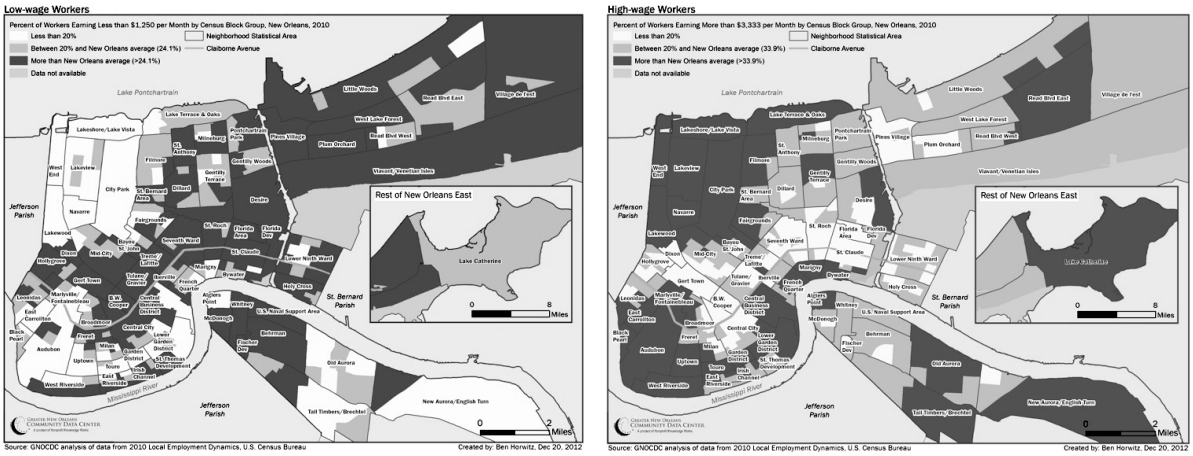
**Figure 2: The Geography of Poverty in New Orleans**




Note: Lighter areas indicate lower poverty rates, while the darkest areas indicate neighbourhoods where poverty levels are "greater than concentrated poverty" (Horwitz, 2012).

These differences in poverty levels play an important role in the study of public education in New Orleans. Prior to Hurricane Katrina in 2005, students were primarily zoned to their closest school, which was likely to mirror the low-income population surrounding them. With the conversion to an all-charter system, those geographic zoning boundaries were eliminated and students had the freedom to apply to schools anywhere in the city. Similarly, in Figure 3 below, a geographic view of both low-wage and high-wage workers is presented. With this data, the disparity between neighbourhoods in terms of earning power is made clear.

**Figure 3: The Geography of Low- and High-wage Workers in New Orleans**




Note: The figure "Low-wage Workers" to the left features individuals making less that the New Orleans average wage in black. To the right, the figure "High-wage Workers" features individuals making more than the New Orleans average wage in black (Horwitz, 2012).

Together, these geographic overviews provide current insights to where high levels of poverty can be found in the city, and where low- and high-wage earners live. The following sections will explore further in-depth information on how the public school system functioned in its prior format, the introduction of the charter system, and how parents navigate the system ten years into its introduction.

## The public school enrollment process before Hurricane Katrina

The process for parents or guardians to enroll students in the public school system before Hurricane Katrina mirrored the norms found across the United States. Systems were organised into districts, which would use a family's home address to determine the nearest school, and a proof of residence such as a utility bill or rental lease would confirm enrollment. Importantly, the use of residency would guarantee that siblings would attend the same school, and that neighbourhood students would attend the same schools. A small number of public schools offered enrollment to students from across the entire school district, and had special enrollment requirements or talent thresholds. These "magnet schools" were operated by the same school district and funding systems, and often focused on areas such as the arts or sciences. As they are run by the district, magnet schools differ from charter schools in that they are publicly owned and subject to state oversight (Kristen L. Buras, 2012).

## Hurricane Katrina

In 2005, New Orleans was rocked by the most extensive natural disaster in its history – Hurricane Katrina. Over the course of three days, close to 1,500 New Orleanians died, 80-90% of the city flooded, and 80% of public schools were destroyed or deemed unusable (Kristen L. Buras, 2011). Over the next few months, as the result of local, state, and national factors, the public education system would go through radical, untested, and systemic changes.

The worst of Katrina's damage was felt by lower-lying areas of the city. At its highest, the city sits 4-8 meters above sea level. At its lowest, -1 to -4 meters below sea level. Due to decades of specific settlement patterns and white flight, African-American families overwhelmingly lived in low-lying areas such as New Orleans East and Central City, while affluent white families populated the higher ground of Uptown and the Garden District. However, one of the lowest areas of the city was Lakeview, the former swampland drained in the early 20th century and known for deed clauses that prevented African American homeownership. Many families in Lakeview lost their homes and property in the storm, but were also more likely to return, having comprehensive insurance, access to transportation, and a social network that extended into the higher areas of the city. Many areas of the Lower 9th Ward and New Orleans East were completely destroyed, and families were never able to return, resettling in cities in different states such as Texas and Georgia.

In the days following the storm's impact, state and national level stakeholders saw the opportunity to take control of a public school system that – on almost all available metrics – was failing. 73% of students were considered economically disadvantaged (compared to a city-wide rate of 41%), graduation rates hovered at 56% (compared to a state average of 66% and a national average of 74%) and ranked 67th out of 68 districts in the state of Louisiana in quality. (Group, 2007; Perry, Harris, Berger, & Mack, 2015) By the end of November 2005, 7,500 mostly-black New Orleans teachers and school employees had been fired, making way for new teachers, many uncertified, sourced from different states via the Teach For America organisation (Kristen L. Buras, 2011).

The unbalanced effects of the storm's impact also contributed to where schools were reopened in the city in the aftermath of the storm. Some areas took longer to recover, and the School Facilities Master Plan (SFMP), published by school officials and private consultants, shaped where schools could be located. The SFMP was authored by New Orleans Public Schools (the governing body representing all public school students in New Orleans) and the

Recovery School District (one of numerous charter sub-districts), and determined which schools would remain open, which would close, and which could be sold as land or property. As many new school operators and entrepreneurs entering the charter system were from outside of the city, they sought to establish schools in prestigious areas of town, in hopes of attracting the best and brightest students. In the early days of the charter-focused district, a lack of coordinated standards and processes resulted in many barriers for New Orleans families. By 2007, New Orleans had 82 public schools, 42 of which were charters run by private companies. Lacking a centralised enrollment system, most schools featured selective admissions criteria and limited enrollment opportunities (Kristen L. Buras, 2011, 2012).

**The School Enrollment Process in New Orleans Post-Katrina**

Two phases of enrollment took place in the charter school system following Hurricane Katrina. Largely by necessity, geographic boundaries were erased, as 80% of public schools were destroyed by the hurricane. People also came back to the city in different waves, if at all. The ability to return depended on if families had insurance on their homes, could afford repairs, or if they had support systems in the city. As the charter system continued to grow, the system was criticised for not allowing students equal access to school, of using too many different application systems from school to school, and for not providing parents with enough information or resources to determine where their student should attend. In 2011 (six years following the charter system introduction) the OneApp system was introduced to unify the application process for almost all schools, but was ultimately not required. Some schools still require separate or in-person applications and set different enrollment standards.

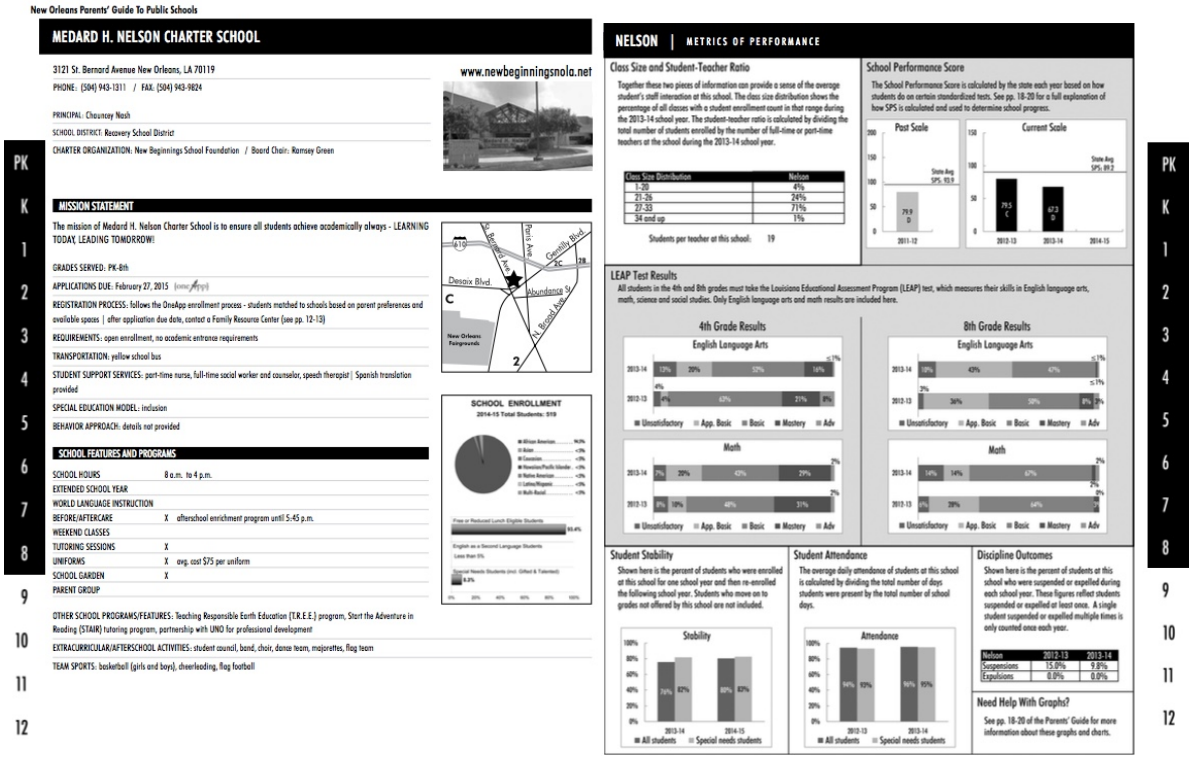
**The Enrollment Process in 2017**

EnrollNOLA, the organisation in change of the OneApp system, allows for both online and in-person applications, so long as a valid email address is available. Each year, a School Guide is published for parents and guardians interested in enrolling their student in school for the first time, transferring their student to a new school, or transitioning them to a middle or high school. The guide is between 150 and 200 pages long, and includes a profile of each charter school in New Orleans that details key data such as location, grades offered, transportation options, school performance in statewide tests, and after-school programming.

The following example in Figure 4 below is for Medard H. Nelson Charter School in the Mid-City/Lakeview geographic zone. From the 2015 School Guide, you can learn the following: It serves grades Pre-Kindergarten to 8$^{th}$ grade, the application deadline is February

27th, there are no additional academic requirements for enrollment, 94.5% of currently enrolled children are African-American, most class sizes range between 27 and 33 students, and it received a School Performance Grade of "D" in the 2013-2014 school year. Results from state testing are included, as well as stability scores showing that, of the students able to return to the school the next academic year, 80% of typical students chose to re-enroll, and 83% of students with special needs re-enrolled.

**Figure 4: An example of a school profile in the New Orleans Parents' Guide to Public Schools.**




Note: Each year, the guide is distributed to parents and made available online as a PDF document, with updated information on school quality ratings, program offerings, grade offerings, and standardized test results (EnrollNOLA, 2015).

Currently, 84% percent of the public school population lives beneath the poverty line. For those not able to submit an application online at home due to lack of internet access, enrollment services are offered in-person in January and February. Additionally, three permanent Family Resource Centers are open year-round for enrollment assistance in Uptown, New Orleans East, and on the Westbank.

When applying to schools, parents or guardians can select up to 8 schools, ranked in preference from 1 to 8. This applies to all grades from Pre-Kindergarten (Pre-K) to 12th grade (the last before graduating from high school). Since the launch of OneApp in 2011, the roles of siblings and geographic location have been integrated into placement allocations to better serve families. Schools can choose to prioritise the admission of students who have a sibling

at the school and have them “moved up in the line,” and others can now reserve 50% of open seats to those who live within the school’s geographic zone. Returning students do not have to reapply to the school and are guaranteed enrollment, but also have the option of applying to a new school each year. Alternatively, some schools do not provide preference for the presence of siblings or geographic location, and use additional enrollment requirements such as past academic success, talent, or foreign language competency to determine their student enrollment (EnrollNOLA, 2015).

To place these system characteristics in the wider practices of education in the United States, the following chapter will focus on the rationales for charter schools compared to traditional systems, the relationship between schools and communities, and the experiences of families choosing to enroll their children in local neighbourhood schools, versus taking advantage of the freedom of movement within a city.

# 3 Literature Review and Analytical Framework

To better understand charter school systems in a geographic context, multiple themes will be examined. First, the rationales for charter schools will be explored, as well as each rationale's relationship with private and public service provision, followed by different explanations for why charter schools are established in the areas of cities in which they are found. Secondly, the role of family, community and social networks will be examined be better understand the choice process and the preferences of parents. Finally, the theory of *time geography* will be introduced to fully analyse the interrelationships of these factors in the charter school system in New Orleans.

## The rationales for charter school systems

In their study of how charter schools choose their locations, Jeffrey Henig and Jason McDonald seek to reconcile two competing arguments: that charter schools engage a "classical market" rationale that expands educational opportunities for minorities and the poor, and that charter schools employ a "biased market" rationale that exacerbates educational inequality. Within their research, Moe posits that systems attempting to establish a classical market hope to harness the power of "colourblindness" and that racial minorities will have more equitable opportunities in a system that pays no attention to race, income, or geographic location (Henig & MacDonald, 2002, pp. 962-963). Schools independent from the government run public system would also be able to provide more community-specific, responsive action for improvements. Additionally, Solomon believes that since families with more financial resources will seek out private school opportunities, the lack of private actors in the lower-income charter school system would provide an incentive for organizations to work in the inner cities, where there is less competition among schools for students (Henig & MacDonald, 2002).

Conversely, the biased market rationale accounts for the systemic biases that can lead to greater inequality within the system. This reasoning comes from a variety of sources, including a renewed push in the education sector towards privatizing public services, the lack of proactive private action regarding services for people with disabilities, and to the weakening of the political capital of low-income groups by decentralizing community

networks and neighbourhoods. Henig and McDonald also warn of the preferences held by higher-income individuals to prefer more racially homogenous settings, which could lead to increased segregation in schools (Henig & MacDonald, 2002).

In their analysis of charter school locations in Washington D.C., Henig and McDonald find evidence to support both arguments and identify four market models: the "needs-responsive" market where schools are more likely to establish themselves in neighbourhoods needing the most support and housing the most children, the "market creaming" market where schools are more likely to establish themselves in higher status neighbourhoods with local children more prepared for school success, the "pragmatic-situational" market where schools would establish themselves in areas where suitable buildings were available and the location was most convenient for students and families, and the "political-institutional" market where schools establish themselves in areas with high political or social support (Henig & MacDonald, 2002, pp. 963-964).

In general, schools in Washington D.C. are usually established in minority-dominated areas, but they tend to be established in the middle-class areas of minority communities. However, this only held true for non-profit or community-managed charter schools. Schools with "business founders, for-profit partners, or entrepreneurial designs" were much more likely to be established in "higher clout" areas (Henig & MacDonald, 2002, pp. 962, 977). Additionally, in a study of how D.C. parents use Internet-based information on schools, Schneider and Buckley find that parents are more likely to look at a map showing the location of a school than to consult information about test scores, programs, staffing, or facilities (2000, in Henig & MacDonald, 2002).

These tendencies are important when considering the current trends in the expansion of charter schools across the United States. Nationally, 12.3% of charter schools were run by EMOs – for-profit Education Management Organisations – in 2011. While only a small portion of schools, the figure represents a 20% increase in the number of EMO schools from the 2007-2008 school year. At the state level, these percentages can vary widely based on local laws such as restrictions on school administration. For example, while states like Alaska and Oklahoma have no for-profit charter schools, 61% of charter schools in Michigan are for-profit enterprises, as well as 32% of Florida charter schools, and 20% of Arizona charter schools. Louisiana's charter schools (including New Orleans and their charter-only district) are only 5.8% for-profit schools, but that figure also represents an increase of 65% since 2007 (Authorities, 2015).

With an increase in for-profit management, more schools could be established outside

of areas where the neediest populations live, which can result in consequences for the relationships between students, families, communities, and their schools. While this has different implications for urban districts that may be geographically dense and be equipped with comprehensive, affordable public transportation, many cities in the United States are geographically broad and have limited transportation options (Williams, 2014). Additionally, 25% of charter schools in the United States are rural, where even public school students can travel long distances to their closest school. (Authorities, 2015; Transportation, 2008)

## Charter schools and geographic shifts

As posited by Bell, "The importance of spacial dimensions of geography should not be underestimated. They create real logistical constraints that may be impossible for parents to mediate" (C. A. Bell, 2007). The geographic shifts occurring with the school choice movement are clear, and inflict change on a student's lived experiences as a result. From different amounts of time spent in one's neighbourhood (the time spent in one's neighbourhood, interacting with friends and neighbours changes drastically when 3 hours a day are spent travelling to and from school) to transportation to different spacial locations, students attending charter schools are experiencing geography in demonstrably different patterns and contexts (Harris & Larsen, 2015).

In examining this analysis as a whole, certain issues should be taken into consideration. First, in regard to the removal of children from their neighbourhoods, this objective is often specifically identified by school choice advocates and some parents as a positive opportunity. Whether parents are concerned with violence in their community or that their local school fails to meet their education needs, some parents do indeed want the option to leave their neighbourhood school. Additionally, schools pulling students from a wide catchment area sometimes select these students in an effort to create a diverse student body representative of various ethnicities, classes, and language backgrounds. However, in reality, charter schools on the whole are more racially and class segregated compared to the student's original neighbourhood school. Also, because inner city populations in many areas are primarily comprised of minority and low-income students, certain diversities are only achieved in varying the distances that students travel from home (Jacobs, 2011).

In studies related to themes like desegregation efforts, community identity, and access, the role of geographic proximity to school has emerged as a key issue. Following efforts by the state to integrate schools along racial and class lines, Pride and May note that

parents in Tennessee ended up "strongly support[ting] sending children to neighbourhood schools, even if a higher quality school existed elsewhere" (1999, p. 399). In Chicago, parents cited children's peer networks, neighbourhood relationships and school pride as factors that led them to place their children in schools close to home over better quality schools in safer neighbourhoods (C. Bell, 2009). Finally, in a study specific to New Orleans, researchers found that while legislators assumed that academic reputation and special curriculums acted as the most important choice markers for parents when choosing schools, geographic proximity outranked both school quality and extracurricular activities for many parents (Harris & Larsen, 2015).

While schools may provide close education opportunities, with reasons pointing both to parental choice and lottery-determined placements, some students in New Orleans travel 1.5 hours each way to school (Jewson & Hasselle, 2013). Neutral lottery systems can provide a more equal playing field to low-income families looking to attend schools in wealthier and safer neighbourhoods, but the barrier of resources needed to travel around town has been shown to "tilt the reality" in favour of those with more social capital (Williams, 2014).

Due to the recency of organisational change in the public school system in New Orleans, there is a lack of research related to the schooling experience in the new charter system. While issues tied to proximity have been raised, the accounts are mainly found in media outlets. Additionally, due to the recency in the surge of charter schools, the literature included in this review does not always specify whether charter schools, which are privately run but publicly funded, are included or excluded from how authors define "public schools."

## Family impact on school success

A wealth of knowledge on how different relational, socioeconomic and environmental factors influence a student's success in school has amassed over the past 40 years. Between its original publication in 1966 and a 1972 reanalysis, *The Equality of Educational Opportunity* report continually determined that "family factors matter more than school characteristics in predicting the educational outcomes of economically disadvantaged children" (Weiss & Stephen, 2010). In an effort to promote family-school relationships, the United States' federal government began designating funding for "involvement programs" in 1965 with the Elementary and Secondary Education Act (ESEA). This policy specifically addressed "the importance of family and community involvement" in schools and aimed to improve the performance of disadvantaged children (2010, pp. 450-451).

As explained in a review of literature related to the 2001 No Child Left Behind Act, Kyshun Webster finds that parental involvement continues to show strong relationships with student achievement – regardless of a student's race, ethnicity, or socioeconomic status (Webster, 2010). From his review, Hoover-Dempsey, Bassler & Brissey (1987) determine that "The outcomes of effective parental involvement initiatives have yielded increased student attendance, fewer behaviour problems, increases in literacy, higher graduation rates, and increased admittance into higher education" (in Webster, 2010). Parental involvement programs were further promoted through their inclusion in 2001's No Child Left Behind (NCLB) school reform legislation. In his detailed analysis of how parental involvement programs supported in the legislation continue to be ignored or underfunded, Webster provides a history of the value of these programs in the school experience. He details findings from Dauber and Epstein (1993) that find school practices have a stronger effect on inner-city and low-income families than socioeconomic qualities. Additionally, Montemayor and Romero (2000) and Voorhis (2000) note that "most parent involvement studies have examined family patterns and fixed variables such as parent education, socioeconomic level, and relationships at home" (as cited in Webster, 2010). Hofferth, Boisjoly, and Duncan (1998) determine that "extra-familial resources in child development, such as a family's human and financial resources are strongly associated with children's schooling success, with The National Center for Education Statistics mirroring all of these findings, and concluding that "as a family's income and education increases, the percentage of students whose parents reported attending a meeting, conference, school event, or volunteering increased" (Webster, 2010, p. 32).

All of the aforementioned data relates to traditional public school systems – ones with discrete geographic boundaries where students attend the nearest school. With the markedly different organisation of charter school systems compared to traditional public school systems, variables such as socioeconomic level could have significant impact when considered together with geography and social network relationships.

Smrekar, Cohen-Vogel, and Jie-Eun (2010) have established four thematic typologies of family-school relationships specific to reform models and charter schools: cooptation, management, engagement, and coalition, with charter schools most closely aligning with the management typology. However, these typologies correspond primarily to "general school climate" as seen through "parental contracts" that charter schools often have parents sign. With these contracts, parents promise a certain level of school involvement. Unsurprisingly, data from the national *Schools and Staffing Survey* shows that, on average, charter school

parents are more engaged and active than their public school counterparts. However, outside of New Orleans, parents have the freedom to select between public and charter schools, allowing the possibility that in most school districts, the parents choosing charter schools have the ability to voluntarily select those schools. If families in a city like New Orleans are "forced to choose," one should question if they can be appropriately accounted for by the current typologies. Are these parents "signing on" to schools' involvement-specific expectations if a lack of social capital restricts their choices for certain schools? Finally, the authors emphasize that published research detailing parent-school relationships in these school types are scant (Smrekar et al., 2010).

## Schools, communities, and social networks

Alongside changes in educational organisation and the geography of schools comes changes in how students and their families interact with each other. We must consider that communities and social networks are not just concerns of geography, but of individual and collective identities. How are the characteristics of schools, communities, and social networks changing with shifting geographies? As the conversation moves to the community, Bell's second conceptualisation of geography – the geography of place as "the social, economic, and political meaning people assign to particular spacial locations" can provide insight (C. Bell, 2009). In this instance, a sense of community and the social networks within it are not created merely by "social contagion" or geographic proximity. They are dependent on the social patterns and interactions of their residents (Arum, 2000).

The geographic mapping of the traditional public system features a strong overlap between students and their communities, while the charter school system presents a more complex relationship. "In most American cities," Bell reminds us, "schools were deliberately spread out to serve neighborhoods. This has had the consequence of producing a collective memory – real or imagined – around the neighborhood school" (C. Bell, 2009, p. 493). Similarly, Hurt and Kamenetz embrace the distinction made between geographic and politically constructed space introduced by Bell, Cooper, and Henig: "Boundary lines" they argue, "...are more than simply markers on a map... They mark our political identities and give shape to the contours defining 'us' in contrast to 'others'" (Kamenetz, 2014).

Even when parents have seemingly unlimited choice in their child's school, identity and community play a much larger role than originally thought. In many cases, wanting to keep children in their local community outweighs the prospect of better academic

opportunities. In understanding their spacial lives, parents connect location to other notions of parenting, and identity, and social status (C. A. Bell, 2007). In her 2009 study of geography in parental choice, Bell catalogues the rationales of many parents choosing poorer or even failing schools in an effort to keep their children in or near the neighbourhood:

> "Mr. Dish explained that many of Tasha's friends' parents think he is crazy for sending her to Wilson, but there are three things that make him feel calmer about his decision. First, he knows the Wilson neighbourhood, and it has a strong neighbourhood watch group. That makes him less concerned about neighbourhood problems. He also said that Appleby, Tasha's previous school, was not in a good area of town and that all the kids have been fine there. Second, Tasha's older brother and aunt attend Wilson, so they can look out for her. Third, she is going there with a group of children she has known since kindergarten. The kids are 'tight with one another, they will all be on the same team and rotate through classes together.'" (C. Bell, 2009, p. 507).

In the above case, Tasha's father is seeking a geography that connects the social networks of his children's peer groups, family members, and the pride for a neighbourhood he, his children, and his parents have called home.

Similarly, child social networks also play a key role in creating ties within communities. The role of children in community bonds has been credited by numerous social psychologists and sociologists. Children were identified by Keller in the 1960's as facilitating the creation of community bonds and information and social networks (Riger & Lavrakas, 1981). In measuring a "psychological sense of community" Riger and Lavrakis cited young adults with families as creating more social linkages in the community by discussing issues with neighbours and being active in community groups. Specifically, the number of children familiar to and known to residents emerged as a key factor in creating bonds to one's neighbourhood (Glynn, 1981; Riger & Lavrakas, 1981, p. 56). Echoes of these child-centric roles are still evident in how residents understand their communities today:

> "Dellande lives in historically black, middle-class New Orleans East. She at first assumed Chloe and Ashton Jr. would go to Lake Forest Charter Elementary, a well-regarded local school, alongside the neighbors she calls 'my kids:" 'They play ball outside and I keep freeze pops for them,' she says. 'When I go to the grocery, they all run and help me bring everything in.' It's what nearly every family looks for: a quality neighborhood school..." (Kamenetz, 2014).

Delland's children were instead placed at schools 13 miles away from their neighbourhood in

the charter school lottery. Similarly, New Orleans families cited neighbourhood proximity as a key factor in school choice focus groups in manners that went beyond the concept of distance: “That sense of community – if I know the parents in my kid’s class, or they are walking home, there’s time to play – that doesn’t happen if everybody is bussing across the city” (Initiatives, 2013, p. 17). In these parent scenarios, it is evident that parents’ commitment to the geographic place includes interpersonal networks: communities are seen as meaningful places that are defined by family members, neighbours, and positive associations to their shared identity. Choosing the closest school, even when getting lower quality, wasn't viewed as “settling” by parents, it instead provided them with peace of mind and pride in their identity (C. A. Bell, 2007).

If an individual's community is both created and defined by their social relationships (Arum, 2000), how do these communities fare with the expansion of charter schools? In a city like New Orleans, where only 14% of children go to their local school and a single neighbourhood could see its children spread out among dozens of different schools, will these interpersonal and community-individual relationships be sustainable? At this point in time, the recency of the shift corresponds with a lack of research. Additionally, with New Orleans' schools only turning full charter after 2005, the social networks of communities with such variable education destinations may have been formed prior to the geographic shift.

The geographic shifts in educational organisation also call into question a school's ability to act in the community resource capacity, as introduced earlier. If a charter school provides community services, are parents able to engage with them if they live 13 miles or an hour away? Geography would potentially act as a significant barrier to a variety of engagement opportunities, from health services and adult education to student-connected activities like parent-teacher conferences and extracurricular activities (Melaville, 1998). If charter schools aim instead to serve the area around it, are they able to establish communications with all of the community's families, who may only have a small percentage of children enrolled in the school? In her analysis of what makes community-school programs successful, Atelia Melaville cites the importance of social networks in engaging new people with services (Melaville, 1998). The inability to utilise social networks may limit the ability of charter schools to connect locals with these services.

Urie Bronfenbrenner specifically mentions parents as playing a critical role in negotiating the student/school divide in his ecological approach to social organization (in (Comer & Haynes, 1991). Parents, the author argues, “are a natural link to the communities in which schools are located, which is particularly important when teachers and other school

staff do not live in the neighbourhoods in which they teach" (1991, p. 273). As we will see with the trends in school location patterns, charter schools are increasingly likely to not be located in the communities that need them the most. Compacting this cultural divide is the lapse in teacher regulations in charter schools, where teachers are often not required to have formal certifications, and programs like Teach for America recruit teachers from across the country to teach in unfamiliar inner-city charter schools (Kamenetz, 2014).

The presence of a charter school in a neighbourhood also improves its chances of being known by local parents (Jacobs, 2011). The Cowen Institute for Education argues that, in practical terms, charter school location can "determine how a parent comes to hear about the school... Family social networks also play a key role when parents choose their child's school. Parents rely on the recommendations of trusted sources like friends, family members, and neighbors who have children in school when it comes to judging school quality" (Initiatives, 2013).

Social networks thus play a crucial role in a parent's ability to exercise choice. While some charter systems like New Orleans employ a centralised or "bias-free" lottery system, other cities like Washington D.C. work on first-come-first-served bases with schools in charge of choosing their own students (Williams, 2014). In "shopping around" for his own children's charter school options, a D.C. father quickly acknowledged the struggles faced by parents with less social capital. "Some charter schools rank their waitlist in terms of the order in which they receive lottery applications. Guess what? Parents line up outside these schools as early as 3:00 a.m. to be first in line on the day they begin accepting applications" (Williams, 2014). In systems like these, lotteries can reward families who can afford to live close to high-performing charter schools, and have the ability to take time off work to get their applications in early around the city. In order to beat the "application rush" of kindergarten at age five or six, this also results in parents seeking enrollment for their children as early as three years old so they are later guaranteed continued admission. Therefore, parents new to the area or starting school at kindergarten apply to schools with zero open kindergarten spaces even before the opening of a lottery (2014).

These geographic and social network relationships present a stark difference from the patterns of typical public school systems, where the registration process entails visiting your neighbourhood school or district office, providing evidence of your residency, and being guaranteed a space at your local school (P. P. Schools, 2015; S. P. Schools, 2015).

## Community development and governance

Community development is a broad term given to the practices of civic leaders, activists, involved citizens and professionals who aim to improve various aspects of their community. In our analysis, the processes associated with current community development strategies are compared to the changing social geography of education delivery, and the underlying principles with education networks (Perkins, Crim, Silberman, & Brown, 2004; Riger & Lavrakas, 1981).

In an effort to sustain a sense of identity, some charter schools are created by community activists or local education advocates. Others are founded with a specific ethnic group, mother or second tongue, or socio-economic status in mind. In cities where these populations are condensed, maintain community or identity ties may be more successful. However, as testified by parents struggling to maintaining a close proximity to their neighbourhood, strengthening the community while current social ties are reorganising is a challenge for families and communities (Melaville, 1998).

This fracturing and diffusion of social ties is also interesting considering that one of the most enduring social policy themes of the US government is community development. Recognising that "strengthening communities" could aid the rehabilitation of neighbourhoods experiencing violence, poverty, and other "social unrest," the United States formed a new federal initiative in the 1960s to "strengthen the natural helping networks," and identified neighbourhoods as the centre of that support. "In addition to providing opportunities for social interaction, neighbourhoods can provide a sense of belonging for people and this may foster the 'psychological sense of community' that is critical to mental well-being" (Riger & Lavrakas, 1981, p. 56).

Regardless of this established initiative, governments are now simultaneously attempting to strengthen communities with education delivery and organisational strategies that in many senses fuel the disintegration of community unity, resources, and social networks through the loss of neighbourhood schools. With the loss of these neighbourhood schools as community centres and organising agents, are governments creating alternative delivery systems for community services? In the wake of neoliberal social policies in the 1980s, the funding commitments made by governments have shrunk considerably in educational, social, and welfare services (Thiem, 2009). This also leaves communities more reliant on private donations and individual support.

Community cohesion also has a positive relationship with the ability of communities

to take political action. Without a means of communication and organisation, communities are less able to mobilise and affect political change (Perkins et al., 2004). Again, this is especially important when considering the neighbourhoods and communities most at risk of lessened cohesion and political capacity are those with minority and low-income status. These relationships and social networks, argues Cooper, constitute the social capital from which these communities are able to derive institutional support and political power (Cooper & Denner, 1998).

## 3.1 Analytical framework

### Torsten Hägerstrand's *time geography*

This study will use Torsten Hägerstrand's *time geography* framework to adequately account for geographic, interpersonal, and resource-related research questions. Shaping Hägerstrand's theory is the idea that, around all of us, the world and how we live in it is becoming increasingly complicated. These complications, in turn, affect how humans live their lives and the quality of those lives. At the centre of Hägerstrand's theory is the location of a person's home within one's day-to-day life: "Human beings as well as many animals have a nest, a base where they sleep and to which they return after shorter or longer excursions" says Hägerstrand (Ellegård & Svedin, 2012). The need to return to one's home base by a certain time influences the limit of what a person can achieve in a day, and in addition to the constraining force of time are the external forces that further shape what one is capable of. Hägerstrand uses the theory of *time geography* to examine human experience within its greater ecological contexts, so that both individual actions and larger social mechanisms can be analysed. In accounting for all of these factors, Hägerstrand identifies several core concepts: stations, distance, time, constraints, and domains (Pred, 1977)

*Stations*, at their simplest, are the places we visit in our daily lives, including the essential "nest" of home, the likely destinations of school and work, and the less consequential stops such as grocery stores, medical appointments, and extracurricular activities that can add complications and chaos to everyday life. *Distance* takes into account that these destinations are not always located in the same area, and that one must be able to travel various distances in order to visit multiple *stations*. As mentioned earlier, the distances humans are able to travel in a day has drastically evolved with social development and technology. Whereas, before the modern age, one could once only measure one's possible

destinations away from home by how far one could walk in a day and still return home, humanity's capability of movement now includes anything from biking and driving to public transit. *Time* is an essential concept, in that it cannot be divided and cannot be altered or cheated. The passing of time also has an order – no matter how desperately one needs to be in two places at once, or to pause and save time for later, or to have 6:00 PM precede 4:00 PM, time is a controlling factor in our lives (Pred, 1977).

Hägerstrand expands the concept of constraints into three separate typologies: capability, coupling, and authority constraints. *Capability constraints* centre on biological factors that affect one's ability to act – whether it be a physical disability that limits mobility, or the number of hours of sleep one's body needs to function throughout the day. *Coupling constraints* refer to the amount of time needed at each destination to fulfill one's responsibilities – from how many hours each day one must work in order to maintain employment to how long one must wait for their child to finish football practice before heading home for the night (Hägerstrand, 1970). Thirdly, *authority constraints* account for the role played by larger social forces such as laws, economic barriers, or power relationships that determine whether one can access something. These constraints can take the shape of not being able to use a road to get to work because it requires paying a toll that is cost-prohibitive, or trying to access a members-only establishment (Pred, 1977).

The final key concept in time geography theory is that of *domains*. In Hägerstrand's words, not all processes, routines, and plans are determined on a daily, monthly, or even yearly basis:

> "A society is not made up of a group of people which decides in common what to do a week ahead of time. It consists primarily of highly institutionalised power and activity systems. A majority of domains and bundles within them have a location in space, a duration over time, and a composition according to consciously or habitually pre-established programs of organisation which are made up with no particular regard to the individuals who happen to enter these systems and play the needed roles for portions of their life-paths" (Hägerstrand, 1970, p. 18).

Institutions like city, state, and national governments guide projects that decide where a new public transit station might be placed, which schools should be upgraded, and where low-income public housing should be established. As Hägerstrand concludes, when observed by the individual, society can be "an enormous maze about which [one] personally can do very little" (Hägerstrand, 1970, p. 18).

All of these concepts will be used together to get a comprehensive understanding of

where students and families choose to attend school in a more complex school system without geographic boundaries for school attendance. Following such a profound structural change in the education system, where many families have adjusted to new school locations, new home locations, and a choice-based educational system, the question of whether students are able to take advantage of the distinct qualities of the charter system has the potential to provide city planners, transportation system designers, housing developers, and educational planners with valuable information.

Hägerstrand's theory has been applied to other school systems that have gone through broad systemic changes that pertain to school choice and its relationship to geographic space, distance, parental education level, levels of poverty, and neighbourhood characteristics. In his native Sweden, the 1990s brought with it profound changes to the education system. Like the United States, the supporters of school choice in Sweden pushed for greater freedom of movement within the system, and posited that schools would improve on the basis that they were now in competition for students with other schools. According to the typologies introduced by Henig and McDonald, the country-wide education ethos would most closely match with the biased market model (Henig & MacDonald, 2002).

When researching what types of Swedish families took advantage of going to schools beyond their local school, Andersson, Malmberg and Östh determined that poorer students and students with parents with lower levels of education were more likely to stay at their local school and not journey farther away. Particularly with visible minority and foreign-born students, families more often selected schools nearby where their social status and ethnicity would not render them "outsiders." Distance also acted as a barrier to those on low incomes (2012).

Differences emerged when the educational attainment level of parents increased, regardless of the family's level of poverty or ethnicity. Those parents with higher education levels (specifically, post-upper-secondary) had children that travelled longer distances to school, and attended schools with a higher percentage of native Swedish students. Additionally, the prestige of a school strongly correlated to how far students were willing to travel to school. The higher the school ranking or profile, the longer the distance travelled by students (Andersson et al., 2012).

In summation, the authors felt that disadvantaged schools in non-desirable areas of the city were "depleted" of students from less disadvantageous backgrounds. The changes to the educational geography resulted in a system that was more segregated than in the past, and the change increased inequity among students instead of spurring a decrease (Andersson et al.,

2012). With the variables available for analysis in the *New Orleans Equity Index*, a number of these relationships can also be studied at a systemic level of implementation in New Orleans.

# 4 Data and methods

**Methodology**

Education systems are not simple structures, and they are often thought of as sprawling behemoths of bureaucracy set within the greater bureaucracy of government – a maze within a maze, if taking Hägerstrand's view. The information provided by the *New Orleans Equity Index*, when combined with historical and contextual elements, may be able to tell us the degree to which a decentralized education system made up of private actors strays from common bureaucratic issues, or how it creates its own complications. It remains to be seen if the loss of centralized systems, the loss of geographic boundaries, and the introduction of school choice in a system-wide manner has been a gain for parents and students.

As introduced in the *time geography* analytical framework, Hägerstrand centers his analysis around five main concepts: stations, distance, time, constraints, and domains. Within constraining elements, one also finds the sub concepts of capability constraints, coupling constraints, and authority constraints. In this study, *stations* can be analyzed through the lens of school locations in the city, with the distance between home and school and the duration of those journeys providing the most specific *distance* data available. *Constraints* will play a major role in examining the relationships between different student and school characteristics, as well as student body populations. For example, students with physical or learning disabilities or students with parents with disabilities are affected by a school not meeting Americans with Disabilities Act (ADA) requirements. If a school does not offer transportation for students, distance can act as a constraining element to those families without cars. Larger social forces such as race, income, and the use of additional enrollment fees will also provide valuable insight on how low-income families or people of color end up in certain types of schools.

**Data sources**

The data for this project was compiled from the 2017 *New Orleans Equity Index*. The *Index* is the product of a partnership between the Louisiana Center for Children's Rights (LCCR) and the Orleans Public Education Network (OPEN). Conceived in 2015, the organizations sought to measure and report the "component parts of educational equity in New Orleans," and along with a steering committee of members from 11 other organizations, began data collection. (LCCR & OPEN, 2017).

The data included in the *Index* has been sourced from multiple stakeholders, including the Louisiana Department of Education (LDOE), The Data Center (a local database primarily derived from US Census information), and EnrollNOLA (the organisation in charge of the enrollment system used by schools and families, and the publisher of the annual school guides). Certain data provided in the *Index* was procured through public records requests (EnrollNOLA application data), or further anonymized data (Orleans Parish School Board Geocoded Enrollment data) and can therefore not be accessed by members of the public (LCCR & OPEN, 2017).

The *Index* is a unique source in that a digital, interactive dataset has not previously been made available that consolidates school-level data from both public sources like the US Census, and sensitive non-public data such as student home location and school income. While general transportation data has been gathered previously at the city level to determine average home-to-school distances and localized poverty levels, never before has a public-facing dataset provided information on the average poverty level of students' home zip codes or their neighbourhood's average levels of education (Transportation, 2008).

As explained further in this chapter, the *Index* centers on six themes relating to equity in education: student characteristics, teacher characteristics, financial characteristics, access, the opportunity to learn, and school climate (LCCR & OPEN, 2017). Of these six themes, elements within "student characteristics" such as race and family income levels, elements within "financial characteristics" such as external private donation levels and transportation expenditures, elements within "access" such as special enrollment requirements, and elements within "the opportunity to learn" such as school quality data and special education support contain data that directly relate to Hägerstrand's theoretical concepts of distance, time, constraints, and domains. By focusing on these elements through the lens of *time geography*, the impact of each concept will be made clear.

## Case selection

*Included cases*

Case selection began with all schools included in the *New Orleans Equity Index* – a total of 87 schools. These schools are all open to students in Orleans Parish (the county of New Orleans), though some schools have additional requirements, such as non-traditional applications, or selective admissions based on factors such as academic success, or artistic talent (LCCR & OPEN, 2017).

Ten schools were eventually dropped from the study, as detailed here. The total case number following these exclusions, as listed in Table 1 below, is 77 schools. Fifty-five elementary/middle schools are included in the study, four combined schools (schools which overlap between elementary grades and high school grades), and eighteen high schools.

**Table 1: Overview of included cases**

| **Total number of Schools:** | **77** |
|---|---|
| **By type:** | 55 Elementary/Middle<br>4 Combination<br>18 High Schools |

*Dropped cases*

New Orleans provides various educational options for students particularly far behind in their studies, students requiring a flexible schedule, or students returning to school at an older age (EnrollNOLA, 2015). "Non-traditional" high schools were dropped from the study due to their unique characteristics: schools such as JFCA-Algiers and ReNEW Accelerated High School accept students up to the age of 21, and accept students that would not take part in the school selection process in the same way as the general student population. The Net Charter High School and The Net 2 provide an ungraded curriculum, preventing a School Performance Score to be assessed for the school in the same manner as other charter schools.

Schools with a catchment area beyond the New Orleans area were also dropped. The New Orleans Military/Maritime Academy (NOMMA) listed an average home-to-school distance of 325 miles, approximately thirty-six times the average for New Orleans students. This suggests that the student body is made up of students across the state of Louisiana, and not just the New Orleans catchment area. The school is also governed by an independent school board (EnrollNOLA, 2015).

## Data collection

Final data for this study was retrieved via www.neworleansequityindex.org on October 9th, 2017 and compiled into a database for future analysis. The *Index* retrieves data on a rolling basis, as requested sources publish on different deadlines, and some data points were not fulfilled by the time the *Index* was first published online. Some data points include the following disclaimer: "Data Disclaimer: A data sharing request, agreement and/or public records request is required to access this data. Those processes were executed but more recent data was not received at time of publication. Data will be updated immediately upon receipt."

Due to a rolling updating of data on the live *Index*, data points in this study and live *Index* data may vary for certain variables based on the date of access.

Each individual charter school has a profile page within the *Index*, listing the data points for all variables. From the page source code (HTML), a .JSON file containing each school's data could be found and downloaded. Following the download of all school profiles, .csv files were created and then amalgamated to create a dataset compatible with Stata SE for analysis. Variables were renamed to represent different operationalized concepts, and irrelevant data points were removed from the dataset.

## Data analysis

Initial findings were explored through the use of bar charts and box plots. Scatter plots with confidence intervals were then used for secondary analysis to confirm bivariate relationships outside of geographic contents.

Certain factors limit the validity of the data. Particularly, though much data is collected and published by the Louisiana Department of Education, much of the data is self-reported by schools. While data such as "accountability measures" are based on state-administered tests and other markers, data such as funding used per pupil and what transportation options are provided are reported by school officials. For example, there have been instances reported in the media where, while a school may have claimed to offer transportation to students, the reality was very different. In the case of four elementary charter schools, the provision of transportation services was a condition of its charter license renewal in 2013. The school dropped the service two years later, and families were given public transportation passes instead. The school continued to list itself as "providing transportation services" (Jewson, 2017a).

Found in Table 2, the variable accounting for the duration of the journey to school, *duration*, may vary widely from student experience. As noted by the *Index*, the data describes the time it takes to travel directly from the center of the zip code in which a student lives, to school, based on normal traffic levels. While this may accurately describe the time taken by parents to journey to their child's school via car, many children take public school buses or public transit to school. In 2017, the Orleans Parish School Board pledged to hire a consultant regarding transportation issues, as some students were reporting travel times of over two hours to get to school (Jewson, 2017b). Due to the possibility for misrepresentation for this

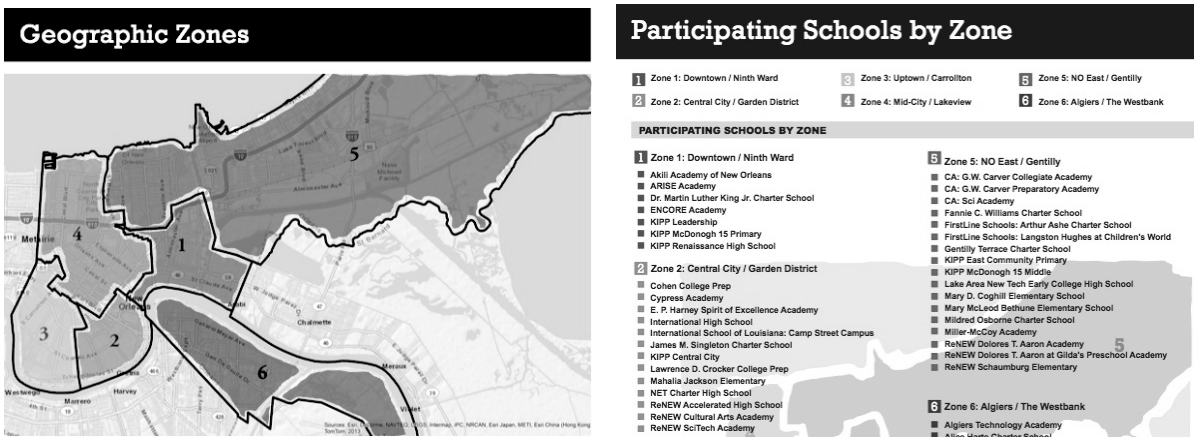
variable, *distance* will be primarily used to assess the journey between home and school for parents.

**Generated variables**

Certain concepts used to describe geography, school location, and student neighborhoods were not included in the data compiled by the *New Orleans Equity Index*. For example, EnrollNOLA and OneApp group schools into six geographical zones in their publications, helping parents place them in the city. School zip code data (*schoolzip*) and EnrollNOLA classification data from 2014 The New Orleans Parents' School Guide were used to create the variable *zone*. Finally, US Census data was also used to create the variable *zipmeanincome*. This variable uses average income data for the zone containing a school, so that the income area surrounding the school itself can be taken into consideration. As some schools offer geographic priority to those in the same zone as the school, different economic factors in each zone may affect student body populations.

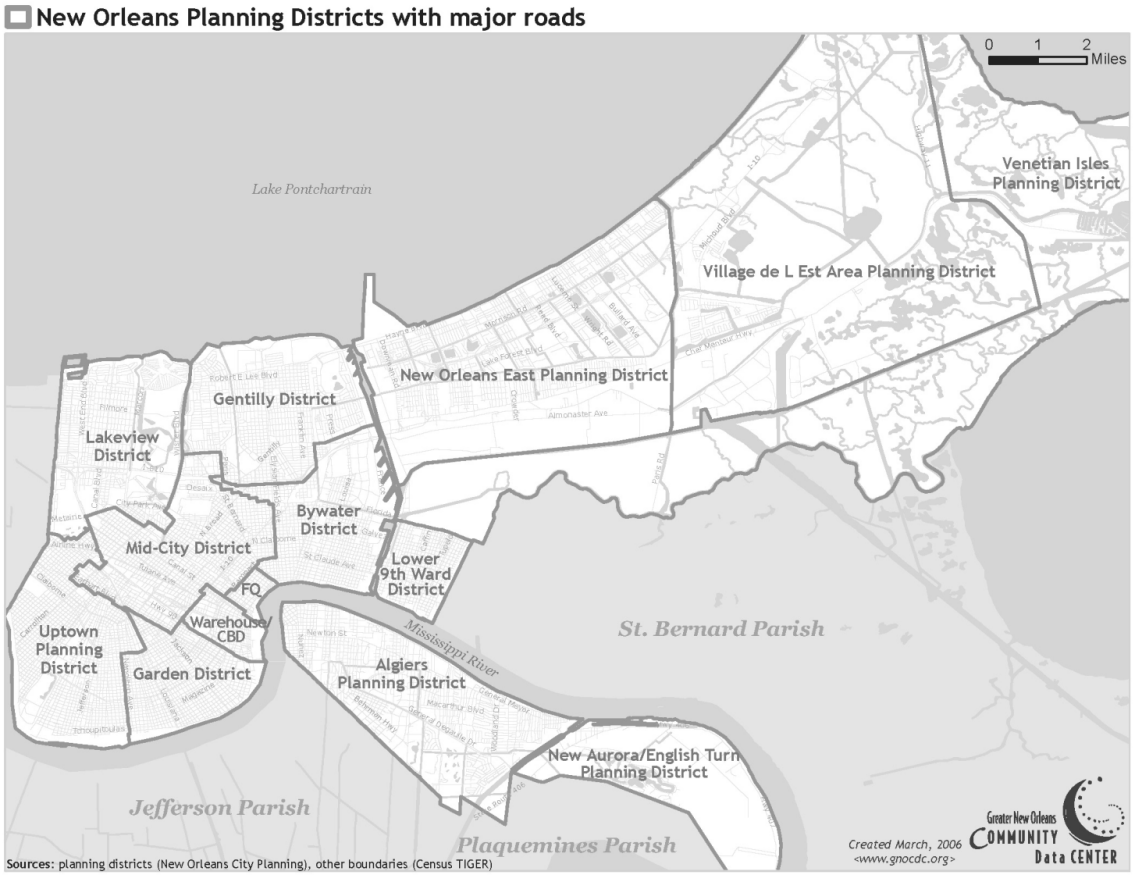
The zones of Downtown/Ninth Ward, Central City/Garden District, Uptown/Carrollton, Mid-City/Lakeview, New Orleans East/Gentilly, and Algiers/The Westbank were generated and allow us to connect school locations to city zones that generally overlap with the city's official "planning districts," as seen below in Figure 5 and Figure 6. The school zone boundaries in this study are based on those designed by state and local school administrators for the 2014-2015 academic year, and will be introduced in more detail in the following section (EnrollNOLA, 2014).

**Figure 5: Geographic school zones and listings, as presented in the 2015 EnrollNOLA Enrollment Guide**




Note: Zone 1 on the map is Downtown/Ninth Ward, Zone 2 is Central City/Garden District, Zone 3 is Uptown/Carrollton, Zone 4 is Mid-City/Lakeview, Zone 5 is New Orleans East/Gentilly, and Zone 6 is Algiers/The Westbank (EnrollNOLA, 2015).

**Figure 6: New Orleans Planning Districts as of 2006**




Note: The boundaries drawn above closely relate to the variable *zone* – which was created by the Louisiana State Department of Education by combining two to three different planning areas into larger zones or catchment areas ("New Orleans Planning Districts with major roads," 2006).

## Variables related to geography

*Index* variables associated with Hägerstrand's concept of geography, as listed in Table 2 below, include *distance* and *duration*, in addition to the generated variables of *schoolzip*, *zone*, and *zoneincome*. The variable *zone* provides insight to where schools are located in the city and allows us to frame those geographic areas in their unique historical contexts. *Distance* allows us to measure how far students live from their school, and *duration* incorporates the concept of time into the relationship between *distance* and geographic location. The variable *zoneincome* will provide further contextual information on the current levels of wealth found in each school's *zone*.

**Table 2: Variables relating to the concept of geography within the city of New Orleans**

| Variable name | Sources | Meaning | Measures | City average |
|---|---|---|---|---|
| *distance* | LDOE 2016-2017 | The distance travelled by a student to school. Central point is assigned to the zip code of their home address, and distance is calculated from this point. | Distance, in miles. | 4 miles |
| *duration* | LDOE 2016-2017 | The duration of time used to travel from home to school. | Duration, in minutes. | 13 minutes |
| *schoolzip* | EnrollNOLA School Guide 2016-2017 | The zip code of the school | Zip code determined by the US Census. | N/A |
| *zone* | EnrollNOLA School Guide 2014-2015 | A school's zone, based on the boundaries outlined by EnrollNOLA | N/A | N/A |
| *zoneincome* | US Census | The mean income level of the zip code of a school. | Mean household income, in dollars, as detailed by the US Census. | $55,944 |

### Variables related to student characteristics

*Index* variables associated with student characteristics, as listed in Table 3 below, include factors such as the percentage of students in a school that are eligible for free or reduced-priced lunches (*foodhelp*) – a proxy indicator for whether a student's family income lies below the poverty line. Additionally, the variable *poverty* details the poverty level of a student's neighborhood based on their zip code, and *localedu* describes the percentage of adults in a student's neighbourhood that did not complete high school. Breakdowns of student race (*black, white*) allow us to study the relationship between racial diversity and school location. Across the city, 8% of students are considered homeless or "at risk for homelessness," and the variable *homeless* will allow for the examination of where in the city those students are more likely to attend school.

Finally, two different types of students requiring Individualised Education Plans will be analysed. These plans (also known as IEPs) are given to children requiring additional instructional support. There are two designations – one for students with disabilities (*specialed)*, and one for academically gifted students (*gifted)*.

**Table 3: Variables relating to student characteristics**

| Variable name | Sources | Meaning | Measures | City average |
|---|---|---|---|---|
| *foodhelp* | LDOE Enrollment Counts 2016-2017 | The percentage of students at each school who qualify for free or reduced-price lunches. | Percentage | 85% |
| *poverty* | LDOE, American Fact Finder, American Community Survey | The percentage of adults in a student's neighbourhood (zip code as per the data) that live in poverty. | Percentage | 30% |
| *localedu* | LDOE, American Fact Finder, American Community Survey | The percentage of adults in a student's neighbourhood (zip code as per the data) that have not completed high school. | Percentage | 17% |
| *black* | LDOE Enrollment Counts 2016-2017 | The percentage of students at each school who identify themselves as Black. | Percentage | 84% |
| *white* | LDOE Enrollment Counts 2016-2017 | The percentage of students at each school who identify themselves as Black. | Percentage | 9% |
| *homeless* | LDOE Enrollment Counts 2016-2017 | The percentage of students at each school who lacks a fixed residential address | Percentage | 8% |
| *specialed* | LDOE Information System 2016-2017 | The percentage of students at each school with an Individualized Education Plan (IEP) for students with disabilities. | Percentage | 12% |
| *gifted* | LDOE Enrollment Counts 2016-2017 | The percentage of students at each school with an Individualized Education Plan (IEP) for high academic aptitude. | Percentage | 10% |

### Variables related to access

Access indicator variables provide valuable information on Hägerstrand's concepts of constraints. As detailed in Table 4 below, information is provided on whether a school provides transportation (*transport*), and whether a school is accessible for students with disabilities, as defined by the Americans with Disabilities Act (ADA), is indicated through the *ada* variable. These criteria can include whether ramps and elevators are available for

students or teachers/administrators in wheelchairs. Additional variables include whether the school participates in the near-universal application system OneApp (*oneapp*) and what additional application requirements (*reqs*), selection criteria (*selective*), or enrollment fees (*fees*) are required for prospective students. Many of these access indicators can act as barriers to enrollment for different types of students.

**Table 4: Variables relating to the theme of access and constraints**

| Variable name | Sources | Meaning | Measures | City average |
|---|---|---|---|---|
| *ada* | EnrollNOLA School Guide 2016-2017 | Whether schools comply with the Americans with Disabilities Act. | 1=Yes, 0=No | 71% |
| *fees* | EnrollNOLA School Guide 2016-2017 | The cost of applying to a school. | 3 fee groups: Less than $50, $50-$99, and $100 or more. | Less than $50 |
| *oneapp* | EnrollNOLA School Guide 2016-2017 | Whether a school participates in the OneApp application system. | 1=Yes, 0=No | 91% |
| *reqs* | EnrollNOLA School Guide 2016-2017 | Whether schools have additional enrollment requirements. | 1=Yes, 0=No | 8% |
| *selective* | EnrollNOLA School Guide 2016-2017 | Whether schools have selective admissions. | 1=Yes, 0=No | 12% Yes |
| *transport* | EnrollNOLA School Guide 2016-2017 | Whether the school offers transportation services to students. | 1=Yes, 0=No | 72% |

### Variables relating to financial characteristics

*Index* variables related to financial characteristics, as listed in Table 5 below, provide additional information regarding school finances – such as how much money is donated to individual schools from non-public sources (*donations*). The range of donations provided through private grants, fundraisers, and individual donations can range from zero to nearly one million US dollars, with a city-wide average of $109,873.

**Table 5: Variables relating to school financial characteristics and resources**

| Variable name | Sources | Meaning | Measures | Average |
|---|---|---|---|---|
| *donations* | LDOE Finance Report (2014-2015) | The amount of non-public money received by a school. | US dollars | $109,873 |
| *spendingpp* | LDOE Finance Report (2014-2015) | The amount of money spent by a school, per student. | US dollars | $13,084 |
| *spendingtranspp* | LDOE Finance Report (2014-2015) | The amount of money spent by a school, per pupil, on transportation. | US dollars | $842 |

The variables *spendingpp* and *spendingtranspp* also provide information on how much is spent by the school annually on each student, and how much is spent annually on transportation services for each student.

**Variables related to the opportunity to learn**

As listed in Table 6 below, variables related to the opportunity to learn contain multiple indicators for school quality, including the School Performance Score (*sps*), a score between 0 and 150 that is issued to schools by the Louisiana Department of Education based on the state school accountability system. The School Performance Grade (*spg*) is a letter grade from A to F given to schools that is based on their *sps*. This grade is how a school's *sps* is most commonly presented to parents and the public via the EnrollNOLA Parents Guide. Finally, the number of seats offered to new students (*openseats*) and the number of applicants to the school (*seatrequests*) provides insight into how popular or competitive a school may be for applicants. Student stability (*stability*) tracks the percentage of students choosing to stay at their current school, as opposed to moving to a different school. General descriptive variables provided for each school include the school type (*type*), indicating whether the school serves elementary/middle school students, high school students, or a combination of the two.

**Table 6: Variables related to school quality and desirability**

| Variable name | Sources | Meaning | Measures | Average |
|---|---|---|---|---|
| *sps* | LDOE (2015-2016) | School performance score. | Score between 0 and 150 | 78 |
| *spg* | LDOE (2015-2016) | School performance grade. | Letter grade, with A being the highest, followed by B, C, D, and F. | C |
| *openseats* | EnrollNOLA School Guide 2016-2017 | How many open seats there are in a given year. | Seats, in numbers. | 210 |
| *seatrequests* | EnrollNOLA School Guide 2016-2017 | How many prospective students apply for those seats. | Requests, in numbers. | 874 |
| *stability* | EnrollNOLA School Guide 2016-2017 | The percentage of students at a school who choose to re-enroll the next year. | Percentage | 80% |
| *type* | EnrollNOLA School Guide 2016-2017 | The type of school, by grade level. | 1=Elementary/middle school, 2=Combined school, 3=High school | N/A |

**The six zones of New Orleans**

Patterns of racial settlement, waves of immigration, and discriminatory treatment of non-white residents by both government and private forces have led to a 2017 New Orleans whose ethnic geography is inherently political. These varying influences perfectly embody Hägerstrand's concept of domains, and will play an important role in understanding data from the *Index* in local contexts. Together, the six zones drawn by EnrollNOLA as introduced in Figure 5, will form the six domains of the changing geography of education in New Orleans. In addition to introducing the variable names given to each domain in Table 7 below, the following generated variable descriptions will reintroduce key aspects of the domain's past and present ethnic geography.

**Table 7: An overview of school types found in each zone**

| | Zone profiles | | | |
|---|---|---|---|---|
| **Zone name** | Elementary schools | Combination schools | High schools | Total |
| ***dtlower*** | 5 | 1 | 2 | 8 |
| ***centralcity*** | 10 | 0 | 3 | 13 |
| ***uptowncar*** | 7 | 2 | 2 | 11 |
| ***midlake*** | 13 | 1 | 3 | 17 |
| ***noeastgen*** | 13 | 0 | 6 | 19 |
| ***algierswest*** | 7 | 0 | 2 | 9 |

**Zone *dtlower* – Downtown and the Ninth Ward**

Downtown includes areas such as the city's financial cluster of the Central Business District and the French Quarter – the city's most famous tourist area. Areas around the French Quarter suffered only minor damage following Hurricane Katrina, as the land is some of the city's highest at 1.5 meters.

The Ninth Ward is separated from New Orleans by an industrial canal. Following World War II, it was one of the few places in the city where African-Americans were able to purchase homes. The canals were overcome by storm waters from both Hurricane Betsy in 1965 and Katrina in 2005, causing mass devastation and home loss both times. The Ninth Ward was also the area where school integration first occurred, causing massive white flight following the Civil Rights Movement (Campanella, 2007). By 2014, only 34% of pre-Katrina residents were again receiving mail (a marker of return and resettlement). Bywater, located on the west side of the canal, was a historic ethnic melting pot of Creoles and Spanish and French immigrants. The area suffered significant white flight in the 1970s, and is now

experiencing a significant influx of out-of-state transplants and gentrification (Baccinelli, 2015).

**Zone *centralcity* – Central City and The Garden District**

Central City has historically been a stronghold of black families, particularly in times of the Jim Crow laws that segregated everyday life and blacks were not permitted to shop or attend school with whites. The Garden District was originally made up of plantation homes and mansions constructed by wealthy European immigrants. At four meters above sea level, the Garden District is one of the highest areas of the city, and the area only sustained wind damage from Hurricane Katrina. Close to 100% of residents returned post-storm. (Baccinelli, 2015)

**Zone *uptowncar* – Uptown and Carrollton**

Uptown New Orleans – "a neighbourhood of mansions" – is also made up of former plantation estates and includes Audubon Park and two private post-secondary universities, Tulane University and Loyola University. Uptown is home to the oldest streetcar lines, and was the destination for many wealthier families as they left the inner city for its earlier outskirts. Carrollton has long been one of New Orleans's wealthier and most educated neighbourhoods, and struggled with racial desegregation efforts. Parts of Carrollton were not, in practical terms, desegregated until the late 1970s (Baccinelli, 2015; Campanella, 2007).

**Zone *midlake* – Mid-City and Lakeview**

Mid-City overlaps with Campanella's "back of town" area of New Orleans, where many African-American families historically lived. The area suffered extensive flood damage following Hurricane Katrina, and is now seen as a trendy, diverse area of town dealing with growing gentrification. Lakeview also suffered a high degree of flooding in the storm, but most residents were high income and able to return to the city and rebuild their homes. According to Baccinelli, new "grandiose homes" have taken place of the previous ranch-style homes and it continues to be one of the most sought-after locations in the city (2015).

**Zone *noeastgen* – New Orleans East and Gentilly**

Following the construction of the industrial canal, jobs came to the former swampland area of New Orleans East. Protective levees were raised in the 1960s following Hurricane Betsy, and the area became a haven for suburb-seeking white residents. By the 1980s, the city had

become majority African-American, and a poorly timed oil crisis saw white families leave the area as the sector lost jobs. By the 1990s, the area was almost exclusively made up of middle-class African-Americans. New Orleans East was one of the first areas to flood during Hurricane Katrina, and suffered one of the lowest rates of return for residents (Campanella, 2007).

**Zone *algierswest* – Algiers and The Westbank**

In general terminology, "the Westbank" refers to anything on the west bank of the Mississippi River, both inside and beyond Orleans Parish. In this study, the Westbank is the section of Orleans Parish that lies on the west bank. Together with the area of Algiers, they comprise *algierswest*. Algiers is the second oldest area of New Orleans, and was the home to both early plantations and slave holding areas. West Algiers is predominantly African-American and suffers from high crime rates. To the east, neighbourhoods are wealthier and majority white (Campanella, 2007).

# 5 Analysis

As with many urban education systems in the United States, The New Orleans public school system is predominantly made up of low-income, minority students. Eighty-five percent of families are considered "economically disadvantaged," and over 30% live below the poverty line. Of the total system population, over 80% of students identify as Black, while 9% identify as White, and the remaining 11% identify as other races. Public school students live in areas where, on average, 83% of all adults have completed high school themselves, compared to the public system's graduation rate of 72%.

Charter schools in New Orleans have an average school performance score (*sps)* of 78 (an *spg* of C). Eight percent of schools have additional requirements that need to be met in order to enroll, and 12% have selective enrollment processes that deviate from the unified OneApp enrollment system. Seventy-one percent of schools are accessible to people with disabilities, and 72% provide a yellow school bus service to students living more than one mile from school. Students live, on average, four miles away from the school they attend. On top of the public funding received per student, charter schools in New Orleans raise an average of $109,873 in private funding annually that includes individual donations and grant funding. Schools spend an average of $13,084 on each student enrolled, and spend an additional average of $842 on transportation services per student.

Together, these factors offer many valuable paths of analysis for an inquiry into the role of geography in education and its greater relationship to equity of choice for students and accessibility to all students. Through the lens of Hägerstrand's *time geography* and its five central concepts, I plan to explain the roles played by different variables and relationships as constraints to accessibility within the educational system.

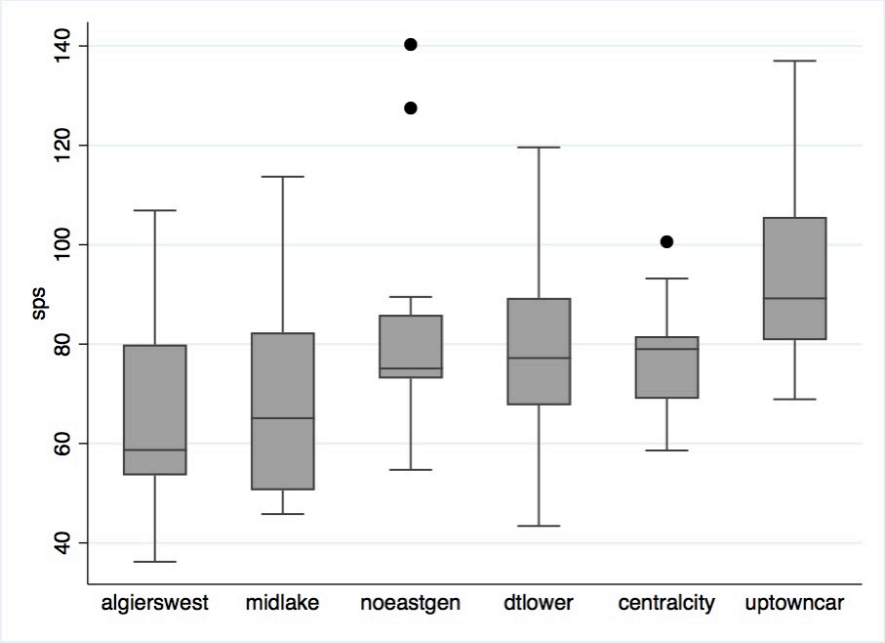
## Where are the good schools?

The first theme to be analysed in data from the *Index* are geography and the metrics surrounding school quality and desirability. The variable *sps* and its associated *spg* represent a school's performance on state test scores and the corresponding letter grade assigned to the score in the New Orleans Parents' Guide – an important tool for families in the school selection process. Consistently low school performance scores can result in a school losing its charter license, leading to the school closing down or transferring ownership to a new operator.

**School Performance Scores**

As detailed in Figure 7 below, the zone Uptown/Carrollton has the highest ranked schools in the city with *sps* averages between 105 and 80 points (*spg*'s of A and B). Next is Central City/The Garden District, with scores averaging between 70 and 80 points and a grade of C. As detailed earlier, both of these zones have a history of high levels of wealth, with fewer low-income residents than other zones in the city. As mentioned earlier, Uptown/Carrollton continued to struggle with integration issues as recently as the 1970's, and they are also home to the top schools with majority non-white students (only 5 charter schools in New Orleans are majority white); (Baccinelli, 2015).

**Figure 7: Average school performance score levels in each *zone*, ranked from lowest to highest**




Downtown/Ninth Ward surpasses Central City/The Garden District when the first quartile is taken into consideration, but the overall median brings them to just below the latter in school performance scores. This is also the first zone in the chart to represent a city domain whose general population is majority non-white and majority low-income. New Orleans East/Gentilly accounts for the last average performance score above 70 points (maintaining a grade of C), and also represents a majority non-white domain, though one with a higher percentage of middle class residents (Campanella, 2007).

Finally, the zones of Mid-City/Lakeview and Algiers/The Westbank have the lowest average *sps*. Mid-City/Lakeview also displays the widest range of scores in its first quartile, with a median close to 65, while ranging from 80 on the high end to 50 on the low end.

Algiers/The Westbank has the lowest median, at just 60 points. Both of these zones maintain an *spg* of D.

A few factors could play a role in these results. Particularly that, following the storm schools could only be reopened in areas that could serve students. While 80% of public schools were destroyed in Katrina, the high areas of the city (Central City, The Garden District, Uptown, Carrollton, and the French Quarter in Downtown New Orleans) were the only places that did not sustain devastating damage. Therefore, the earliest charter schools were established in these areas and may have had an early advantage when enrolling students, as they would have come from families that were able to return to the storm and/or afford to rebuild. Additionally, the School Facilities Master Plan (SFMP), in hopes of attracting new/entrepreneurial charter school operators, enabled administrators to offer the best locations possible. However, one could argue that after 10 years of recovery, the gains of preferential location would have eased as new schools were established around the city and increased competition arose from schools in other zones.

**School enrollment ratios**

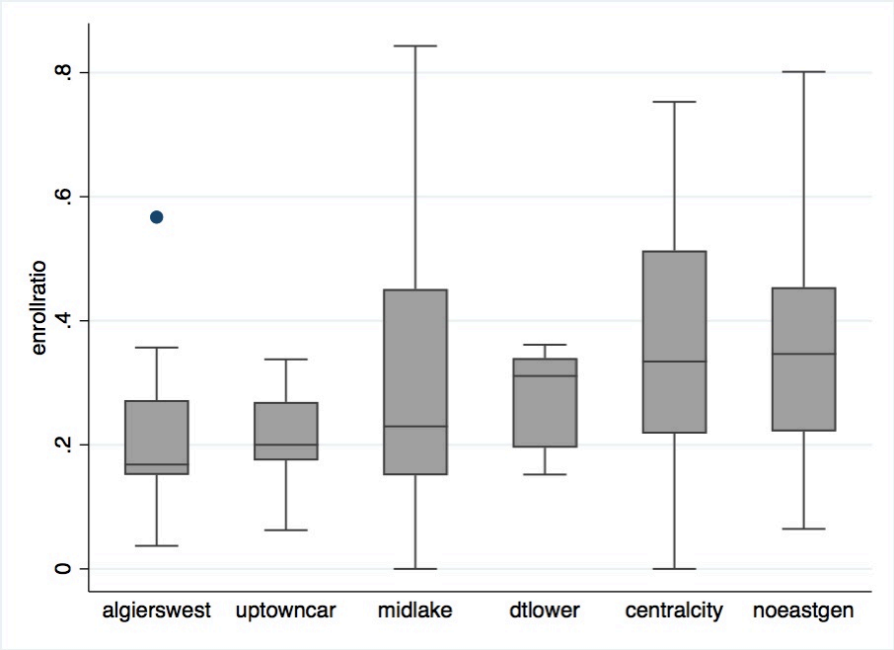
Next, the enrollment ratio (*enrollratio)* of a school represents the supply and demand dynamic surrounding the seats that are available to students each year. They are a helpful way to analyse the desirability of schools in each area of the city. The enrollment ratios have been calculated by comparing the number of seats available each year at a school (*openseats)* to the number of applications submitted by students hoping to enroll at the same school in a given year (*seatrequests)*. Thus, one could conclude that the lower the enrollment ratio, the higher level of desirability for the school.

As seen in Figure 8 below, mean enrollment ratios between different geographic zones double when comparing the lowest and highest ratios. Algiers/The Westbank has the lowest mean ratio in the city – and also the second smallest first quartile – with a ratio of just under .2. In real terms, this means that less than 20% of students applying to schools received a place. Closely following this zone is Uptown/Carrollton with an enrollment ratio right at .2. Mid-City/Lakeview follows at just above .2 and also presents the largest first quartile of all zones in the city – representing a variety of school ratios among its schools.

The similar levels of desirability of Algiers/The Westbank and Uptown/Carrollton may seem unlikely given the two areas' mean school performance scores – they were at complete opposite ends of the previous metric. While the high school performance scores for Uptown/Carrollton likely corresponds to its low enrollment ratio, I believe the intense

desirability for schools in Algiers/The Westbank is rooted more in its unique geographic situation. Given its separation from other zones by the Mississippi River (and a toll bridge), local families may have an outsized interest in sending their students to a school on the same side of the river. Data from the variable *distance*, to be discussed later, also contributes to this inference.

**Figure 8: Mean enrollment ratios for schools in each *zone*, ranked from lowest to highest**




Note: The lower the enrollment ratio, the more desirable the school.

Like their mean *sps* levels, Downtown/Ninth Ward, Central City/The Garden District and New Orleans Easy/Gentilly share similar mean enrollment ratios between .3 and .35, meaning that 30%-35% of students who apply to their schools gain entrance. Overall, Mid-City/Lakeview, Central City/The Garden District and New Orleans East/Gentilly show the broadest ranges in enrollment ratios when all schools are taken into account, while Uptown/Carrollton shows the narrowest.

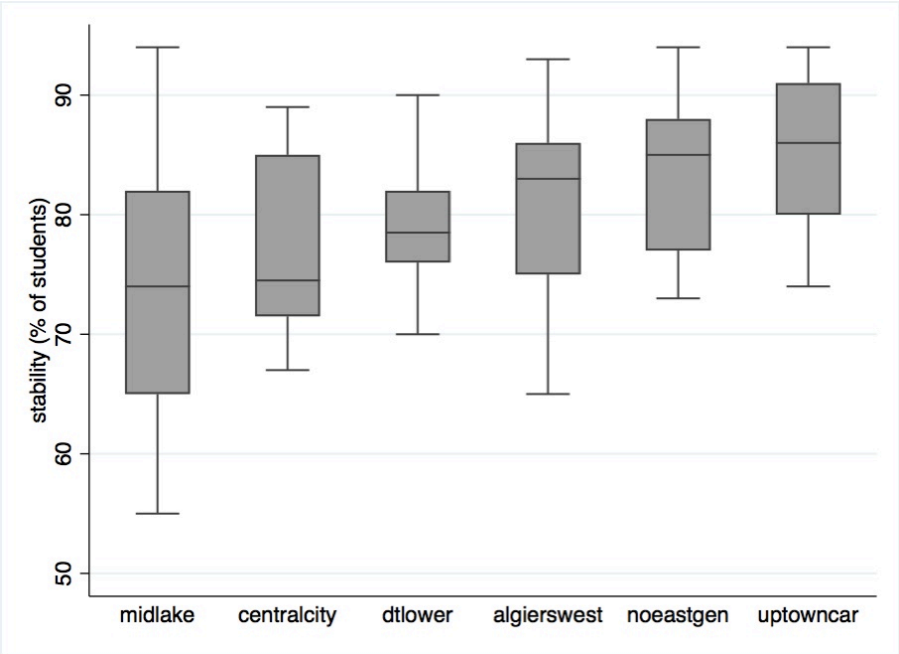
**Student stability**

Student stability data tracks the movement of students from school to school. *Stability* indicates that a student not in their final year of school chooses to re-enroll in their current school for the next year. A student choosing to not continue at their current school could be leaving due to a change in circumstances (such as a school no longer providing transportation services) or may try to enroll in a school with a higher *sps* if they are currently enrolled in a low-performing school. The success rate for a student transferring from one school to another

is also shaped by their current school's *sps*. Those students in already high-performing schools are more likely to successfully transfer into competing high-performing schools, while those in low-performing schools are more likely to transfer into equally- or worse-performing schools (Maroulis, Santillano, Harris, & Jabbar, 2016).

As seen in Figure 9 below, schools in Uptown/Carrollton are the most stable, meaning students least likely to change schools when they have the opportunity to continue. This outcome is supported by additional research determining that students in high-performing schools are least likely to change schools (Maroulis et al., 2016). As detailed earlier, Uptown/Carrollton has the highest-ranked schools in the city.

**Figure 9: Student stability, by *zone***

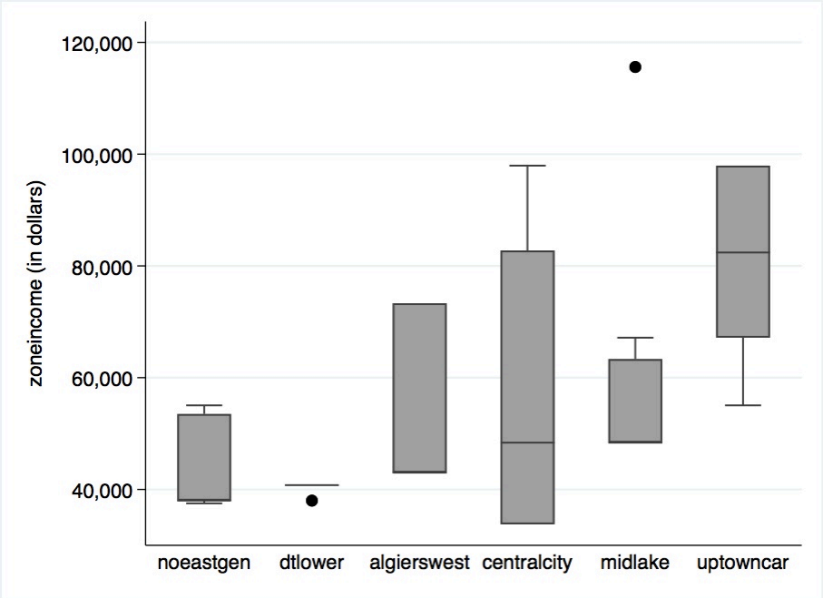



Mid-City/Lakeview follows the findings of Maroulis, et. al., as it has the lowest student stability levels in the city, and also scores second-lowest in *sps* rankings to Algiers/The Westbank. Mid-City/Lakeview also has additional demographic factors that can affect stability – the highest proportion of homeless students in the city. In their study of which students transfer schools, the authors also find that transfer rates were higher for black students, low-income students, and special education students (2016). Finally, while Algiers/The Westbank has the lowest *sps* scores in the city, it goes against the trend by having a *stability* rate above the city average of 80%. As with the strong enrollment ratios found earlier, this may be due its geographic location in the city, and due to the fact that the zone has the second lowest number of schools in the city – resulting in less alternative choices for students.

**School location contexts**

The area surrounding a school may also contribute to how students and families determine a school's desirability. Higher income levels can be interpreted by some as proxies for lower crime rates, walkability and overall safer areas. Campanella, Baccinelli, and the Data Research Center have all provided compelling information on the patterns of income levels and poverty throughout the six school zones used for enrollment in New Orleans. By using additional data from the 2015 American Community Survey, the mean income levels surrounding a school, as seen in Figure 10 below, follow EnrollNOLA zone boundaries. This figure allows us to better understand a school and its students in the greater context of an entire zone's population, and not just within the public school system.

**Figure 10: Mean income of *zone*, ranked from lowest to highest**




Note: The mean household income for the city of New Orleans is $56,000.

From the figure above, we can see that general explanations/descriptions by Baccinelli and others holds true according to the 2015 American Community Survey data. Uptown/Carrollton, known for its historic wealth and exclusivity, has the highest median income as an area. Its mean of just over $80,000 is more than double that of the lowest man average of below $40,000 for New Orleans East/The Westbank. Mid-City Lakeview remains a mixed zone – wealthy families in Lakeview, seen earlier in Horwitz's Geography of High-Income Workers in Figure 3, raise the median income levels of the historically African-American "Back of Town." Similarly, Central City/The Garden District features the widest range of incomes in the system, accounting for lower-income African-American families in Central City and the immense wealth of the Garden District. Algiers/The Westbank has a low

median income, whose first quartile is likely buoyed by the affluent eastern suburbs of Algiers.

**Domains of the past and present**

In comparing the organization of education in New Orleans in the past to how the system is organized now, a transformation has occurred in both the function and power possessed by the *domain*. As outlined earlier, the elements shaping Hägerstrand's domains are the roles of bureaucratic power in creating barriers – of regulating access and controlling the design and function of its world. A profound shift has happened in regard to power and the education system in New Orleans. The previous walls that surrounded schools and determined who was able to attend have been lifted, and a core promise in the removal of those boundaries was to enable a freedom of movement for students and families.

Hägerstrand warns that "those who have access to power in a superior domain frequently use this to restrict the set of possible actions which are permitted inside subordinate domains," and for many, the system transition – the breaking up of a poorly functioning school board, the opportunity for non-establishment actors to design and control their own schools – could be seen as the breaking down of historical power and removing the barriers preventing students from attending better schools.

From this initial analysis of geography in the city, its relationship to school quality and desirability complement the historical developments and population phases introduced earlier – the wealth of Uptown/Carrollton overlaps geographically with the geography of the city's highest performing schools, even ten years after the charter system's development and the breakdown of the boundary walls preventing students from other areas of the city from accessing them. Those who are able to access higher ranking schools in the wealthier areas of town are also more likely to remain in their locations from year to year and restrain the ability of students from lower-performing schools to transfer in. From this starting point, we can turn our focus from the larger structural forces of the domains to discover the ways in which students and families now access schools.

## The families of New Orleans charter schools

Having already introduced the geographic ethnography of New Orleans in Figure 1, what can now be analysed is the types of families and students that are connected to schools in different zones. Community, income information, and ethnicity breakdowns will all

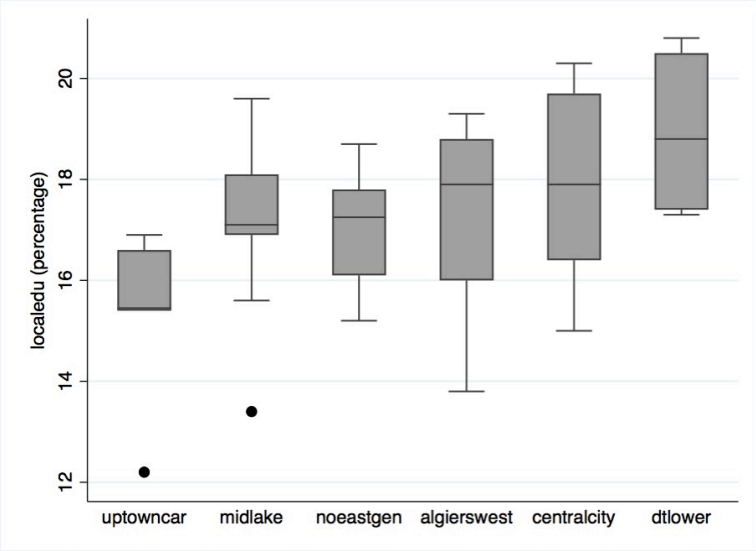
contribute different insights to students, their families and to what degree they are able to take advantage of financial resources.

**Community education levels**

The completion of high school is commonly used as a benchmark indicator for future income potential and higher-wage job opportunities. With most "white collar" jobs or management positions requiring the minimum of a high school diploma, understanding the high school completion rates of adults in students' homes and communities can provide insight into not only the income level of the family at home, but in their communities at large. High levels of school completion can also contribute to a more education-focused or pro-education environment for youth, and the higher proportion of high school graduates could also contribute to a community-wide expectation of high school completion.

In Figure 11 below, the data shows the percentage of adults in a student's home community lacking a high school diploma. Data not publicly available (a student's zip code) was used to determine a student's neighbourhood. Researchers then examined data from the American Community Survey to determine the level of high school completion in that zip code. It is important to note that this data reflects all residents – not just those enrolled in the public school system. Those who attended private schools are also included.

**Figure 11: Percentage of neighbourhood adults with no high school diploma.**




Note: "Neighbourhood" is defined in the data as a student's home zip code. As the variable measures the lack of a high school diploma, lower percentages relate to higher diploma levels.

Students attending schools in the zone of Uptown/Carrollton come from areas of the city with the lowest percentage of adults lacking high school diplomas. In contrast, this also

means that they come from areas of the city with the highest levels of high school completion. An outlier includes an area where just 12% of adults have not obtained a diploma. While its core mean sits closer to 15%, the next zones of Mid-City/Lakeview, New Orleans East/Gentilly, Algiers/The Westbank and Central City/The Garden District all average at between 17% and 18%. Downtown/Ninth Ward has the highest proportion of student. coming from areas with low high school completion, with close to 19% of adults lacking a diploma.

In practical terms, this means that students attending schools in Uptown/Carrollton are most likely to come from areas with higher secondary educational attainment, and are thus more likely to have parents or neighbours with the qualifications required for higher-wage jobs. Conversely, students who attend schools in Downtown/Ninth Ward are the least likely to have those advantages. Algiers/The Westbank and Central City/The Garden District show the widest ranges of local secondary education completion, From the zone introductions, we know that these two zones both have varied economic profiles. Therefore, if students are choosing to attend local schools, that may explain the variation. However, without the information detailing where students actually live in the city, it is not possible to make accurate, zone-specific assumptions on this topic.

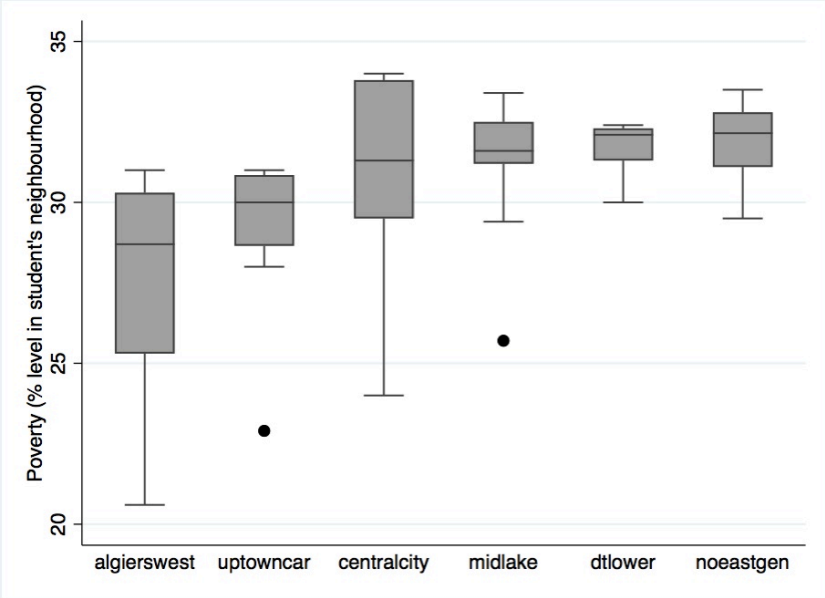
**Families and financial resources**

In addition to education levels, the income level of a student's family can have significant effects on myriad factors in public schooling. Income can determine if a family can afford school fees such as uniforms and schools supplies, or whether families are able to afford transporting one or multiple students to school every day. Transporting students could require the use of a car if the school does not provide transportation to students. At the community level, it may also speak to the safety level of a student's community, as high poverty areas can struggle with higher crime rates and violence (Perry, 2016).

Below, Figure 12 displays the average poverty level of students' neighbourhoods. With 60 of the 77 observed schools reporting information on their student populations, it is apparent that students attending schools in Algiers/The Westbank come from areas with the lowest levels of poverty, at approximately 28%. The zone also shows the largest first quartile in city, with lows of just over 25%. As with the *localedu* data before it, I posit that the school travel information found in later *distance* analysis points to students coming from local neighbourhoods. As we learned in the zone introduction, Algiers/The Westbank has both

wealthier and poorer neighbourhoods, which may result in particularly varied community-level results.

**Figure 12: Poverty levels of students' home neighbourhoods in each schoolzone.**




Note: "Neighbourhood" is defined in the data as a student's home zip code.

On the high side, students attending schools in New Orleans East/Gentilly reside in neighbourhoods with the highest mean poverty rates, at close to 32%. While it and the zones of Central City/The Garden District, Mid-City/Lakeview and Downtown/Ninth Ward all share similar means, the zone of New Orleans East/Gentilly does also stand out with its first quartile peaking at 34%, the highest poverty level of all six zones.

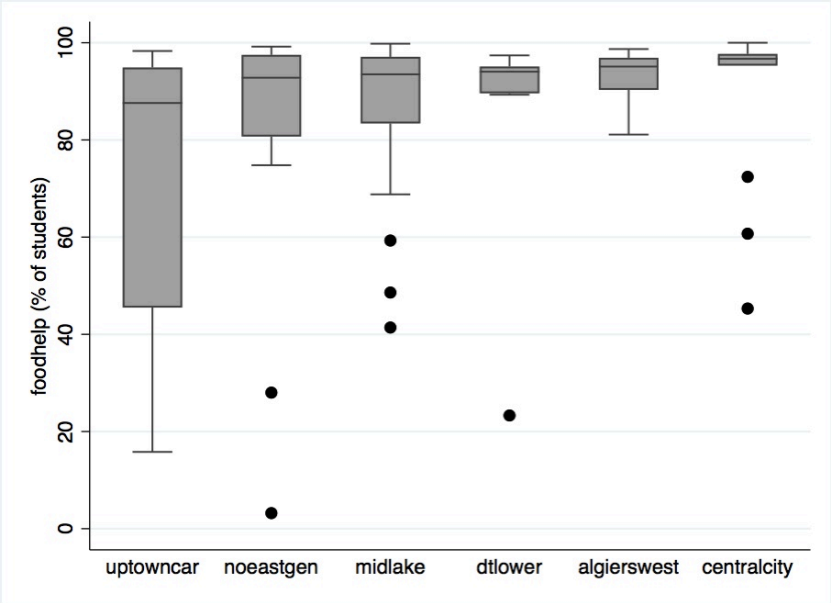
Finally, the variable *foodhelp* details the financial realities of actual student families (as opposed to their larger neighbourhoods and communities) by analysing the percentage of students at each school that are eligible to receive free or reduced-price lunches. If a student's family has a low enough income that food security is a danger, the student is eligible for partially or fully subsidised meals at school. As seen in

For Uptown/Carrollton, while the median sits just below 90% and is in line with the other zones, the first quartile hits a low of close to 45% of students. Conversely, while Central City/The Garden District ranked second to Uptown/Carrollton in terms of *sps*, it ranks the highest in terms of the percentage of students who receive assistance and attend their schools, with a median just shy of 100% of students, and the smallest quartile spread of all zones. Overall, it is clear that all zones outside of Uptown/Carrollton have markedly higher concentrations of economically-challenged students.

Figure 13 below, in the zone of Uptown/Carrollton, the results for students receiving food assistance varies drastically from the other zones. All other areas have medians between 90 and 100% of students receiving the benefit, with first quartiles reaching lows of 80%.

For Uptown/Carrollton, while the median sits just below 90% and is in line with the other zones, the first quartile hits a low of close to 45% of students. Conversely, while Central City/The Garden District ranked second to Uptown/Carrollton in terms of *sps*, it ranks the highest in terms of the percentage of students who receive assistance and attend their schools, with a median just shy of 100% of students, and the smallest quartile spread of all zones. Overall, it is clear that all zones outside of Uptown/Carrollton have markedly higher concentrations of economically-challenged students.

**Figure 13: Students in each schoolzone who are eligible for free or reduced-price lunches.**




## Where are students going to school?

Student body population differences can also be analysed through *Index* data. In this section, enrollment patterns for Black and White students, students in crisis, and students requiring extra instructional support will be investigated.

### Racial diversity in New Orleans schools

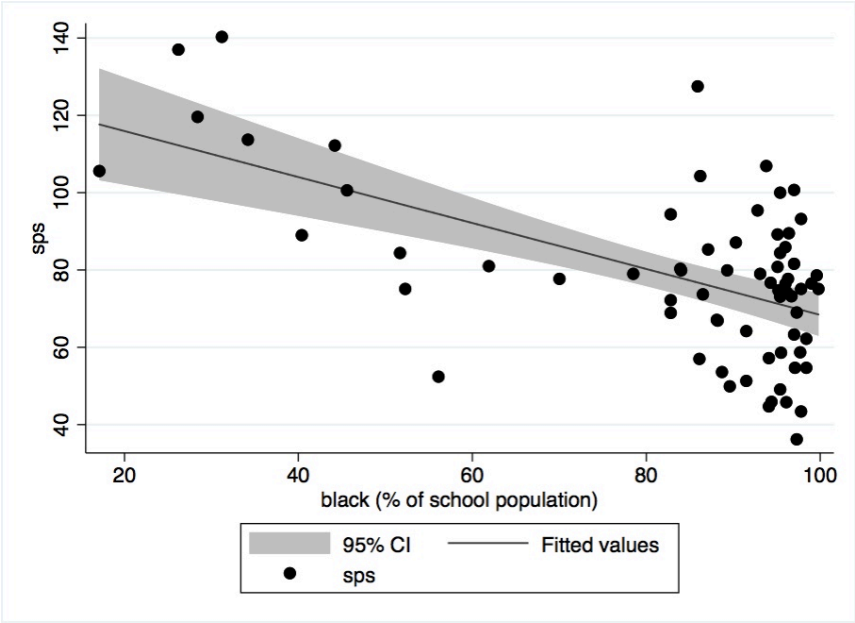
Variations in racial/ethnic enrollment percentages are also evident in the New Orleans charter system. From the breakdown of schools within each zone, as seen below in Table 8, it is clear that drastic differences in student population can also be seen between different school zones.

**Table 8: *black* and *white* student enrollment percentages, by *zone***

| | ***black* students** | | | ***white* students** | | |
|---|---|---|---|---|---|---|
| **Zone** | Lowest % | Highest % | Mean % | Lowest % | Highest % | Mean % |
| ***uptowncar*** | 17.1 | 95.4 | 74.1 | 1.5 | 59.7 | 24.5 |
| ***midlake*** | 34.2 | 99.0 | 78.6 | .1 | 51.5 | 23.4 |
| ***centralcity*** | 45.6 | 97.8 | 82.0 | 2 | 35 | 14.5 |
| ***noeastgen*** | 31.2 | 99.8 | 84.3 | 1.9 | 39.2 | 9.92 |
| ***dtlower*** | 28.4 | 99.6 | 85.1 | 1.6 | 54.2 | 21.8 |
| ***algierswest*** | 86.1 | 97.7 | 92.1 | 1.1 | 2.6 | 1.8 |

Uptown/Carrollton has the lowest mean enrollment rate of *black* students, at 74.1%, and the highest enrollment rate of *white* students at 24.5%. Meanwhile, Algiers/The Westbank enrolls a mean of 92.1% *black* students, and just 1.8% *white* students. Central City/The Garden District, Downtown/Ninth Ward, and New Orleans East/Gentilly display averages closest to the system as a whole, all hovering close to the city average of 84% enrollment for Black students, and 9% enrollment for White students. The relationship between student race and school quality can also be seen in Figure 14 below, where a strong relationship exists between lower school rankings and higher black student populations.

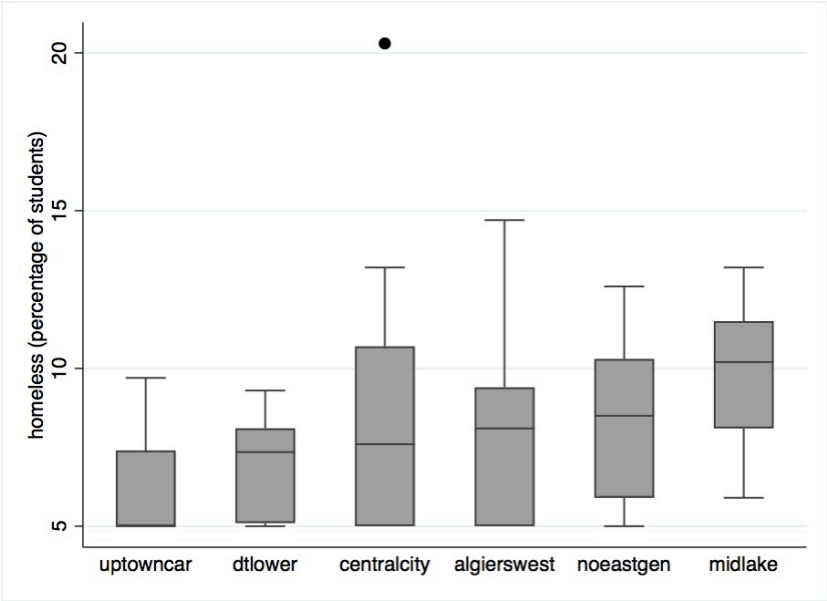
**Figure 14: *sps* and *black* student enrollment**



**Students in crisis**

Another important factor to consider in a system made up from high numbers of families living in poverty is the issue of homelessness. Each zone in New Orleans features schools with homeless students, or students deemed "at risk of homelessness." As seen below in Figure 15, Uptown/Carrollton shows the lowest enrollment percentages of homeless students, with a mean of just 5%. In contrast, Mid-City/Lakeview features a rate double that of Uptown/Carrollton, at just over 10% of students. Downtown/Ninth Ward, Central City/The Garden District, Algiers/The Westbank and New Orleans East/Gentilly share similar means, hovering between 6% and 7%. Central City/The Garden District also shows the widest variety within its schools, and includes an outlier in Mahalia Jackson Elementary School, where 20.3% of students are at risk of homelessness or currently homeless. City-wide, the average percentage of students experiencing homelessness or deemed "at risk" is 8.3%.

**Figure 15: Percentages of students in each zone who are homeless or "at risk of homelessness"**

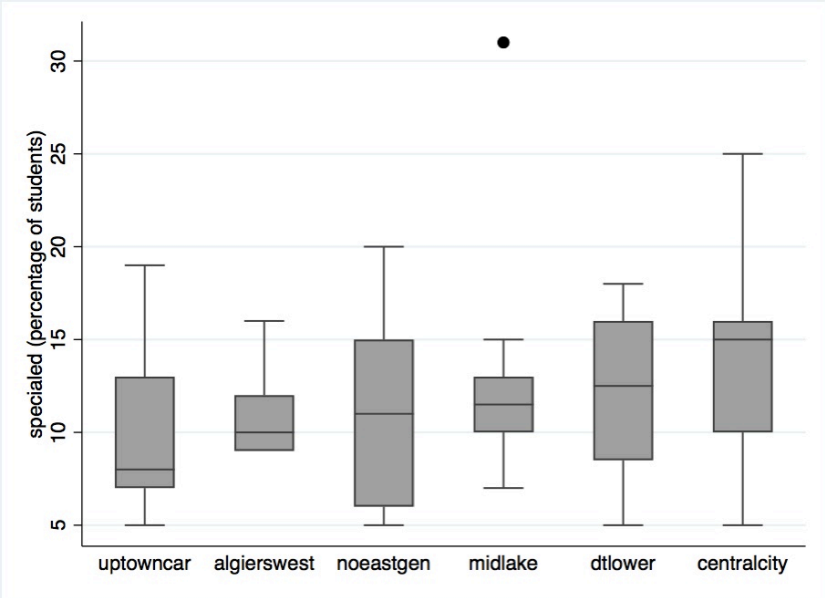



**Two realities for students needing support**

City-wide, approximately 11.8% of New Orleans students are categorised as requiring special education services due to a disability. Children with dyslexia, learning disabilities, speech issues, or those on the autism spectrum all fall into this category and have Individualized Education Plans (IEPs) that their school must follow in order to ensure equitable education opportunities. As seen below in Figure 16, the zone of Uptown/Carrollton features the lowest mean percentage of special education students, at approximately 8%. Algiers/The Westbank and New Orleans East/Gentilly both share percentages below the city average, at 10% and

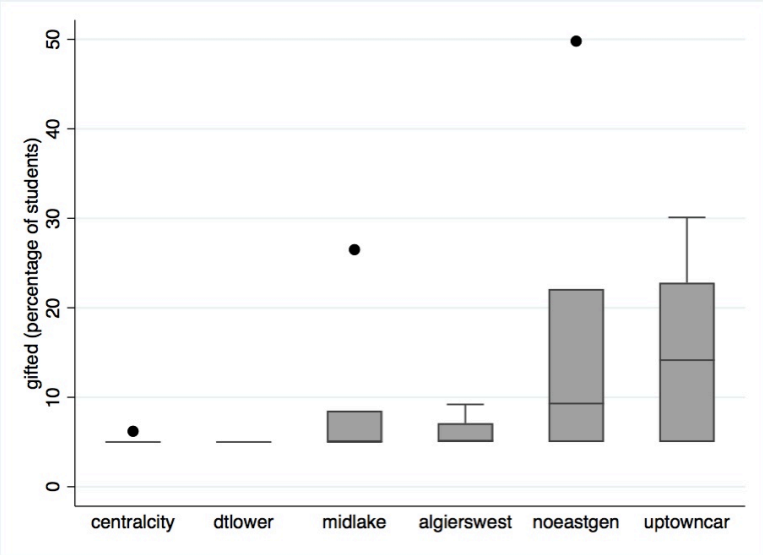
11%, while Mid-City/Lakeview features a mean just at the 11.8% city average. Downtown/9th Ward and Central City/The Garden District both have special education populations greater than the city average, with Central City/The Garden District featuring the largest mean percentage at 15%. However, the zone also has the largest 2nd quartile spread in the city, with averages ranging from just 5% to a city high of 25%. New Orleans East/Gentilly displays the largest 1st quartile spread, ranging from 6% to 15%.

**Figure 16: Mean percentages of students in each zone requiring special education services**




A separate type of special education designation is that of "gifted and talented" students. These students are deemed of high "academic aptitude or extraordinary talent" and are also entitled to individualized education supports to ensure equitable education options. As seen in Figure 17 below, one is able to clearly see an inversion of the previous figure's measurements. Uptown/Carrollton enrolls an average of 14.5% gifted and talented students, with a 2nd quartile reaching up to 30% of enrolled students. While New Orleans East/Gentilly features a 1st quartile spanning 5-22%, no zones outside of Uptown/Carrollton enroll a mean percentage of students above the city average of 10%. New Orleans East/Gentilly does however feature a mean just below the city average, and hosts a significant outlier with Benjamin Franklin Elementary School, at 50% enrollment of gifted and talented students.

**Figure 17: Mean percentage of students classified as gifted of talented**




**Segregation in multiple manifestations**

This analysis of variables relating to race, homelessness, and special education services makes it is clear that the most affluent areas of town enroll smaller proportions of low-income students, and are less likely to enroll African-American students or those with unstable housing. Questions can be raised over why schools are not more racially diverse, as a primary justification for the full charter system is the freedom of movement from one zone to another and allowing students to leave worse performing schools for better performing ones. Those designated as "gifted and talented" are also likely to be schooled in areas with higher proportions of white students, while those needing supports for learning disabilities are most likely to be educated in poorer areas of town and with predominantly low-income black students. This results in additional layers of student segregation, as in the previous system special education services would be provided by the local school, regardless of where one lived.

Some similarities emerge here with Andersson, Malmberg and Östh's application of *time geography* to the structural changes made across the Swedish education system (Andersson et al., 2012). In that study, family and student characteristics both played a role in the selection of schools in a system with no geographic boundaries. For families with minority backgrounds, a greater presence of native Swedish students in a school actually acted as an enrollment deterrent – families feared their children would be perceived as "outsiders" and feel excluded from their peers. Those families thus preferred to choose schools with more children coming from similar backgrounds. While we do not have the data

needed to make that conclusion in this study, the consideration of how a school's racial makeup would affect their children is a documented factor in school choice for parents from minority backgrounds in the United States (C. Bell, 2009).

Similarly, parents' education levels also influenced to the school selection process in Andersson et. al's study. Parents who had higher levels of education were more likely to send their children to schools with higher percentages of native Swedish students. From the data detailing the levels of successful high school completion in students' neighbourhoods, we can see similar outcomes in New Orleans. Students attending higher quality schools with higher percentages of non-minority students came from areas with more adults (and parents) with higher education levels.

Andersson, et. al. present both of these trends as the result of constraints. For families sharing the characteristics above, the presence or absence of higher income families and non-minority students may constrain the number of schools a family wants to consider. This may also contribute to unchanging racial enrollment percentages, if from year to year families interpret the qualities consistently and base their school choices on those factors. By analyzing these New Orleans results through the lens of Hägerstrand's three types of constraints, the role of distance, financial resources, and transportation will provide important further contexts for why the system functions in the way that it does.

## Geography and the journey to school

The elimination of boundary lines for school attendance means that students now travel to school from all areas of the city. Related to the new variations in distance travelled to schools is the variation in the length of time individuals need to travel those distances. Depending on how that journey is taken, travel times can vary widely for the same distance. Along with the structural changes to geography is a complete redesign of transportation networks needed to transport students to school. While the previous system meant coordinating the transport of students to the school closest to them, schools offering transportation services in the current system must organise bus systems that reach all areas of the city.

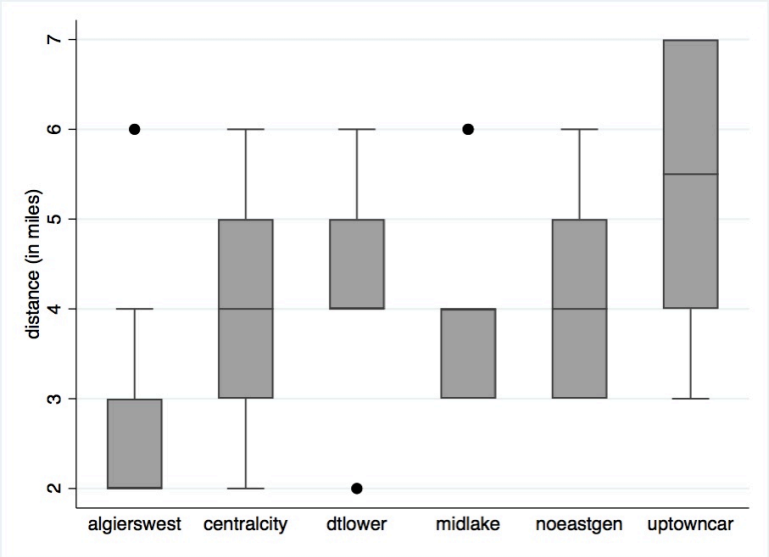
Data compiled by the *Index* provides information on how far students travel to their school. The non-public zip code data that allowed researchers to gather additional information on local high school completion and poverty levels also enabled the *Index* to calculate an approximate distance from school. While the publically-available version of the data allows us to see that a student lives a particular number of miles away from school, it

does not provide information on where exactly in the city the student lives. The data also enabled researchers to assign a time estimate to the distance travelled by using online mapping software. As mentioned in the variable introduction, *duration* does not actually provide an accurate measure for students, as school buses would not follow a direct route from home to school. However, parents travelling from home to school would be much more likely to use a direct path. The measurements for *duration* thus provides information on how long it would take parents to drive their children to school if transportation is not offered, or the time needed to get to school events and meetings such as parent-teacher conferences at off-peak hours.

**Geography and distance**

Figure 18 below provides an overview of the average distances travelled to school by students. The shortest distance travelled to school occurs in the zone of Algiers/The Westbank. A few assumptions can be made here: the zone itself is the only school zone physically separated from the others by a river, and the Mississippi River Bridge into the other school zones includes a toll charge for cars. This may play a role in which schools are considered by parents for logistical reasons alone.

**Figure 18: Distance travelled to school, by school zone.**




Uptown/Carrollton has both the highest average distance travelled every day, and the largest spread of distances travelled, ranging from the city average of 4 miles, up to 7 miles. The zone of Midtown/Lakeview has the shortest average distance spread, which may relate to its more suburban layout. The zone is less dense than most others, has the second highest

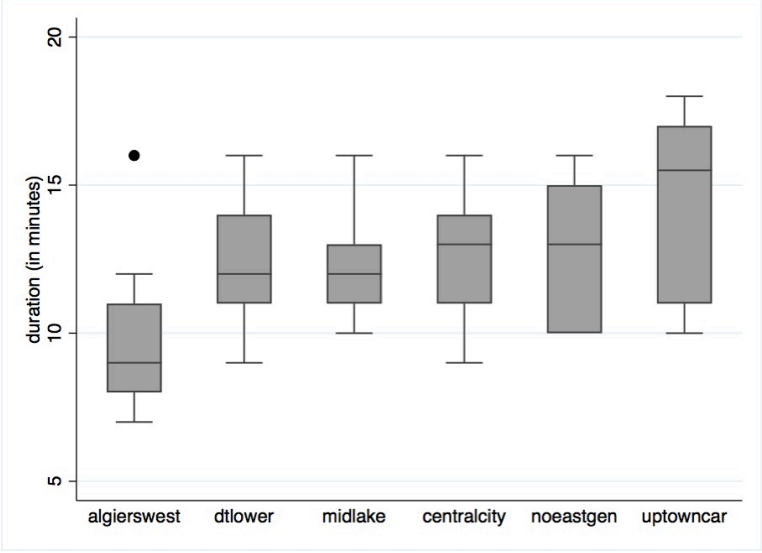
mean zone income, and has the widest range of enrollment ratios in the city, so families may be able to access more schools in their local zone.

An interesting comparison here is that between Uptown/Carrollton and New Orleans East/Gentilly, in that while the former has two high schools, the latter has six. Geographic preference for enrollment only applies to elementary schools, which means that high schools have the potential for broader enrollment distances from school. On average, the distance travelled to elementary schools in the city is 3.8 miles, whereas the distance for high schools is 5.1 miles. Therefore, even with the highest number of high schools in the city (double that of any other zone), the average distance travelled within the zone is below the city average. More students in New Orleans East/Gentilly thus may opt to go to schools in their local area at a higher rate than other locations, as students travelling longer distances from other zones would result in a higher median travel distance to school.

**Geography and duration**

The length patterns for duration follow a similar pattern to the *distance* patterns in the previous section. As detailed in Figure 19 below, the shortest travel durations are experienced by individuals with children in Algiers/The Westbank schools, with a core mean of just over 9 minutes. Like *distance* analysis indicated, this is likely due to the fact that students in Algiers/The Westbank travel the shortest distance to schools, and may also be more likely to attend schools within their home zone due to its isolation by the Mississippi River. Conversely, Uptown/Carrollton features a mean of close to double, at just below 16 minutes. It again also has the widest bredth in its first quartile.

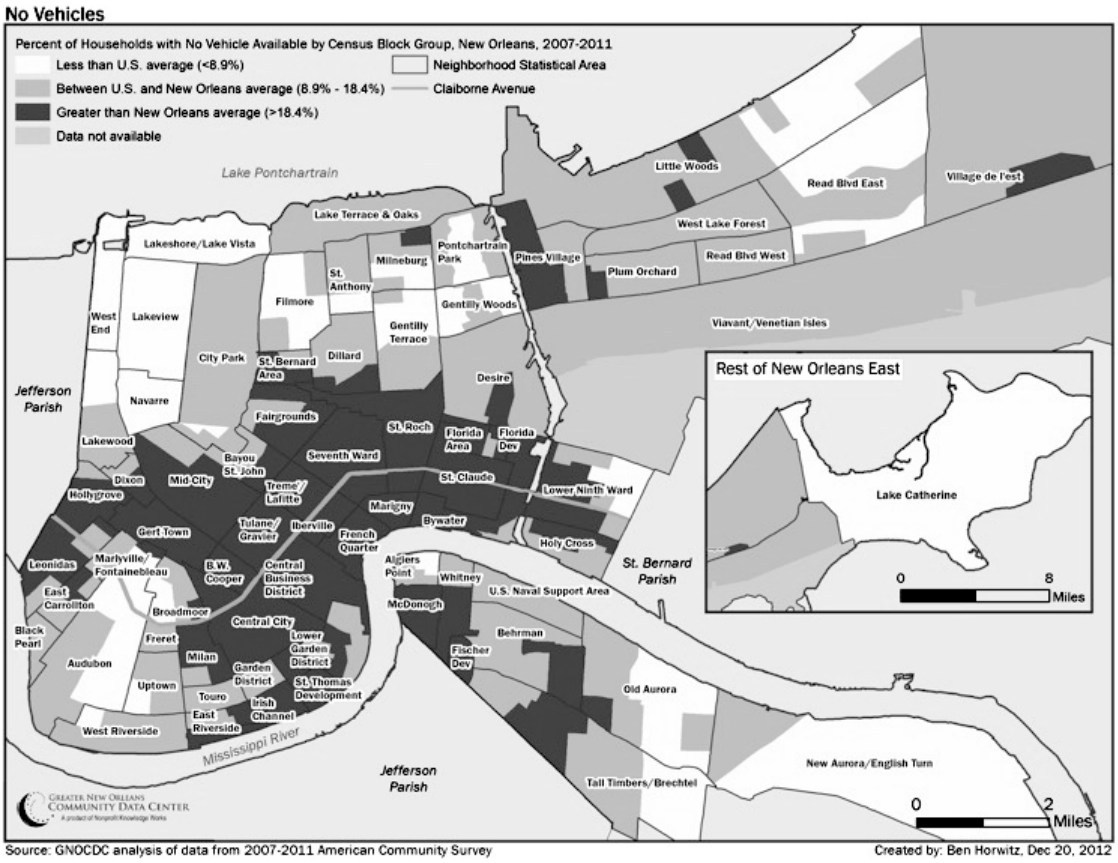
**Figure 19: Duration of the journey to school, by schoolzone.**



While the differences displayed here may not initially pose huge differences, the measurement was made in optimal conditions – by car and with no traffic delays. Real life experiences may paint a significantly different picture for families, particularly those with low incomes. As seen in the figures below, the access a family has to different types of transportation varies greatly between neighbourhoods, and matches many of the income and settlements themes introduced in the zone profiles.

Those areas lacking access to cars also overlap significantly with the areas of low-income earners identified earlier in Figure 3. As seen in Figure 20 below, it is clear that vehicle access trends differ in Algiers/The Westbank between the higher-income eastern area of English Turn, and that more people lack access to cars to the lower-income western area across from downtown New Orleans. Areas like Downtown/Ninth Ward, the section of Central City that doesn't include the high-income Garden District, and Mid-City, have lower rates of car availability, while suburban Lakeview, Uptown near Audubon, and Carrollton have higher than average rates of car availability.

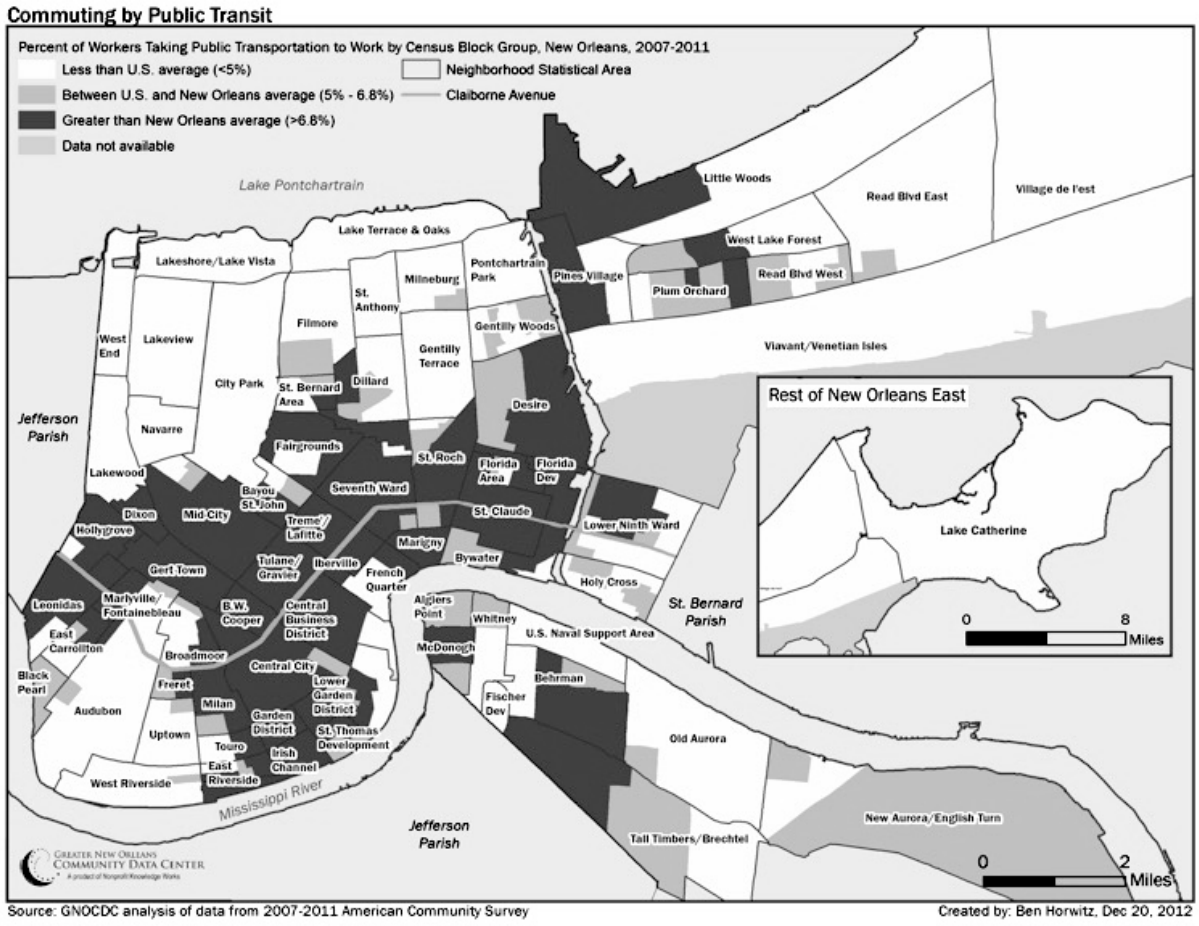
**Figure 20: Percentages of households in Orleans Parish with no vehicle available**




Note: Areas in dark grey represent residents lacking access to vehicles in numbers exceeding the New Orleans average. Lighter grey represents those areas between U.S. and New Orleans averages, while white areas have access to vehicles in numbers below the U.S. average. Data taken from the Greater New Orleans Community Data Center (Horwitz, 2012)

There is also a strong relationship between those who rely on public transportation and those who do not have access to a car, as seen below in Figure 21. The practical differences between travelling by car and by public transportation are my main reason for not using the measurements provided for *duration* as accurate for students or all parents. In fact, it may only represent a minority of parents.

**Figure 21: Percentages of New Orleans Parish workers who take public transportation to work**




Note: Areas in dark grey represent residents using public transit in numbers exceeding the New Orleans average. Lighter grey represents those areas between U.S. and New Orleans averages, while white areas use public transit in numbers below the U.S. average. Source: (Horwitz, 2012)

For example, if a student attends a school in Uptown/Carrollton and lives 6 miles away in Gentilly, the drive by car on a regular Wednesday afternoon would be 18 minutes, according to Google Maps. These two data points would be considered accurate for Figure 20 and Figure 21 above. By public transportation, Google Maps determines that the journey would take between one and 1.5 hours. Living four miles away in Lakeview would take 15 minutes to drive, or between 50 minutes and 1 hour and 10 minutes by public transportation. If a family lived 2 miles away from school in Algiers/The West Bank, the journey would still take 30 minutes by bus. In reality, the journey to school or duration of that journey is very

different among car riders and bus or streetcar riders. The lengths of distance and duration could thus play a large role in where parents try to enroll students, and may present additional challenges if siblings are not able to get a place at the same school, or at a school in the same area.

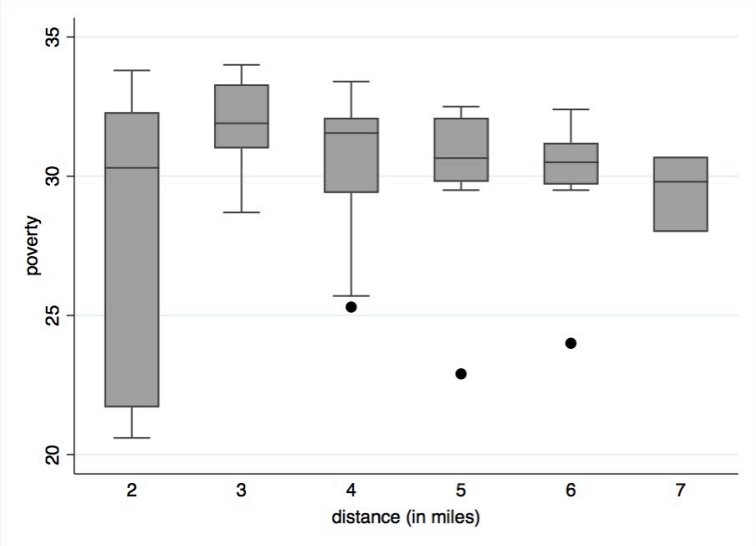
The reality for students is not much better. In a 2013 article detailing the transportation issues some students experience attending schools in different zones, a student in Algiers would have to wake up at 4:45 a.m. to catch a 5:27 a.m. bus to take her across the Mississippi Bridge into the city, where she would transfer to a streetcar and then walk to school. The student's total travel time to school was two hours. At this particular school, parents even banded together to pay for a private bus for students, but the upfront cost of $600-$700 was cost prohibitive to many families (Hasselle, 2013).

**Distance and poverty**

As demonstrated by the analysis on school location in the city and a student's local poverty level, students living in economically challenged areas tend to attend schools in lower-wealth areas of town. By assessing poverty specifically with distance, one can better understand if those neighbourhoods are close to home, or if they are in lower-income areas in other parts of the city.

In Figure 22 below, it is clear that the lower the rate of poverty in a student's neighbourhood, the longer distance they are likely to travel to school. There is a broad range of students travelling just two miles to school each day, which may be a result of schools offering preference to those within a close geographic radius. For high achieving schools in

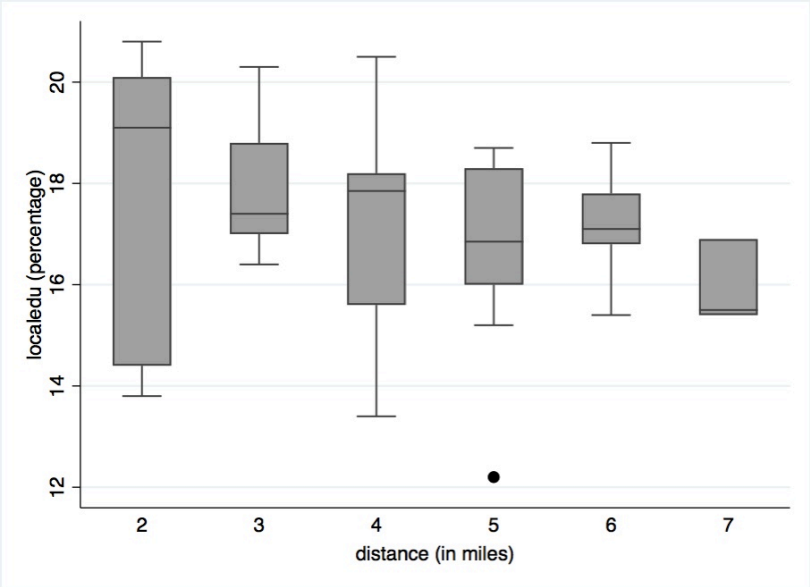
**Figure 22: Poverty levels and how far students travel to school**



wealthier areas of town, this would mean higher income children travelling shorter distances. Algiers/The Westbank is also the most likely to travel two miles to school, and has the broadest poverty range.

Furthermore, Figure 23 presents similar results to those found by Andersson et al. in their study of Swedish students travelling to school in a system with no geographic boundaries. In their study, parents with higher education levels were more likely to send their children to schools father away from home. As seen below, as the level of *localedu* decreases (representing a lower number of adults in the community lacking a high school diploma), the distance travelled by students increases. Therefore, the higher percentage of high school diploma holders in a student's neighbourhood, the more likely they are to attend a school in a different zone or father away from home.

**Figure 23: Local education levels and distance travelled to school**




**The importance of time and place**

A key element of Hägerstrand's *time geography* theory is, of course, time. The discussion here has so far concentrated heavily on the role of geography – of physical spaces and domains. But what Hägerstrand emphasizes in *time geography* is the experience of geography. Time, he notes, "has a critical importance when it comes to fitting people and things together for functioning in socio-economic systems" (1970, p. 10). In the description of time earlier, the rules of time were introduced – one can't be in two places at the same time, one can't rearrange time, and one definitely cannot speed up or retreat in time.

The amount of time needed to access a school is thus a serious variable to be considered when selecting a school, and can also have significant impacts on students and their well-being. Calculating the average amount of time "lost" to transit each day – 2 hours where a student could be sleeping, with a tutor to catch up on material, or participating in afterschool activities such as music or art could be its own study. Up to now, the concentration of analysis has been on static geography – the wealth of a neighbourhood in one *zone* or the poverty level of a second *zone* – but time, distance and duration can all be considered the experience or functioning of geography. Their effects on parent and student life can also be categorized under Hägerstrand's *coupling constraints* – those amounts of time needed at each destination (or journey in this case) to fulfill one's responsibilities as a student or parent.

An important contextual factor for parents in New Orleans is that 86% of the region's jobs can be accessed in 30 minutes or less, if one has access to a car. For parents using public transportation, only 11% of those jobs can be accessed in 30 minutes or less. Only 33% of jobs can be accessed in 60 minutes or less for those using public transit, as opposed to 98% of jobs for those with a car. Adding an extra *station* like a school father away from home, or not near one's workplace, could present significant time constraints on parents without access to a vehicle (Orleans, 2017, p. 2). Finally, the relationship between *poverty*, *localedu* and *distance* can shed more light onto which families are actually taking these journeys. From the above analysis, those with higher income levels and higher levels of educational attainment are more likely to have students in schools farther away from the *station* of home.

## Who can access schools?

In addition to the coupling constraints experienced by families in New Orleans, there are also a variety of obstacles that embody Hägerstrand's concept of *authority constraints*. Unlike coupling constraints, these factors are introduced as controlled by external actors in roles of authority. Whether schools offer transportation to students is controlled by a school's operator, and whether a school is accessible to students with disabilities can be decided at the school or operator level. Finally, the level of fees charged to families who enroll their students at their chosen school, the types of additional requirements added onto enrollment processes, and the use of selective admissions procedures are all determined at the school level. Each of these areas will be analysed below, as will their relationships to different zones of the city.

**Transportation support**

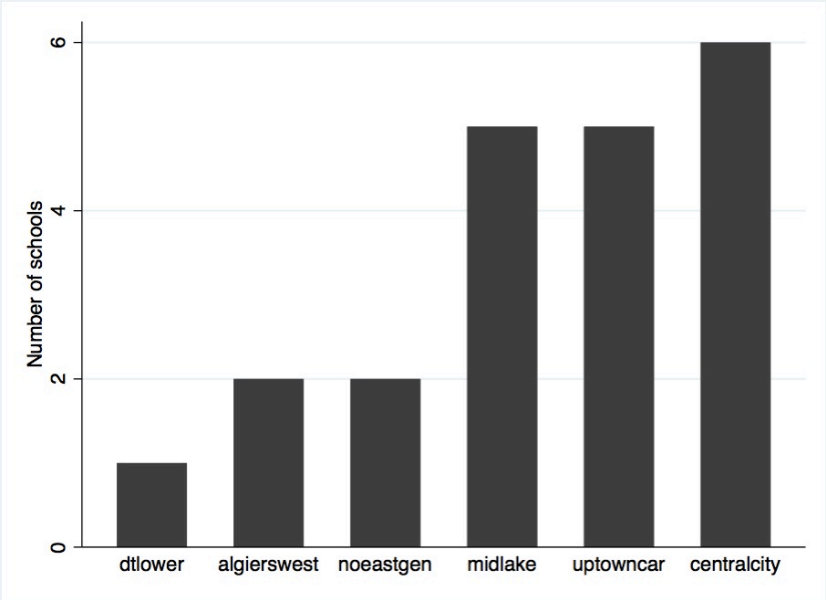
In typical public school systems in the United States, students attend the school that they are geographically zoned to, meaning that students attend the closest school to their home or neighbourhood by default. Students and families can generally decide how their student travels to school – be it by walking, cycling, taking public transit, or by driving students to school. Prior to Hurricane Katrina, the school board both provided and coordinated transportation for over 120 schools, and students living within a 1 mile radius of their school were expected to walk. Beyond that radius, yellow school buses were provided to transport students. For students attending magnet programs or high schools in other zones, yellow school buses were provided for elementary students, and transit tickets were provided for high school students.

In New Orleans, the provision and organization of transportation is, in response to a lack of geographic boundaries, much more complex and varied. Only 93% of charter schools in New Orleans provide transportation options for students. Others require students to take public transit (sometimes subsidized) or to have someone drive students to school. For parents with low incomes or weaker social support systems, ensuring a student gets to and from school on a daily basis may thus present challenges.

The role of transportation support can be considered as more important for elementary/middle school aged children, as many parents would not consider sending their children to school on public transportation unsupervised. It can also provide barriers to students living in other zones of the city, as parents would have to shoulder the costs of transportation and the time needed to drop off children far from home. Figure 24 below outlines the number of schools not providing transportation support throughout the city.

For example, one school that does not provide transportation is Audubon Charter School, which serves students from Kindergarten to Grade 4 and is also located in the Uptown/Carrollton zone – the most financially well-off in the city. For those students that did not live in walking distance, parents would likely need to transport their children to school. Altogether, just 24 of the 77 schools in this study do not provide transportation to students. That is, however, a shift from the system before Hurricane Katrina, when all students travelling over one mile were guaranteed transportation – even those attending magnet schools.

**Figure 24: Schools not providing transportation, by zone**



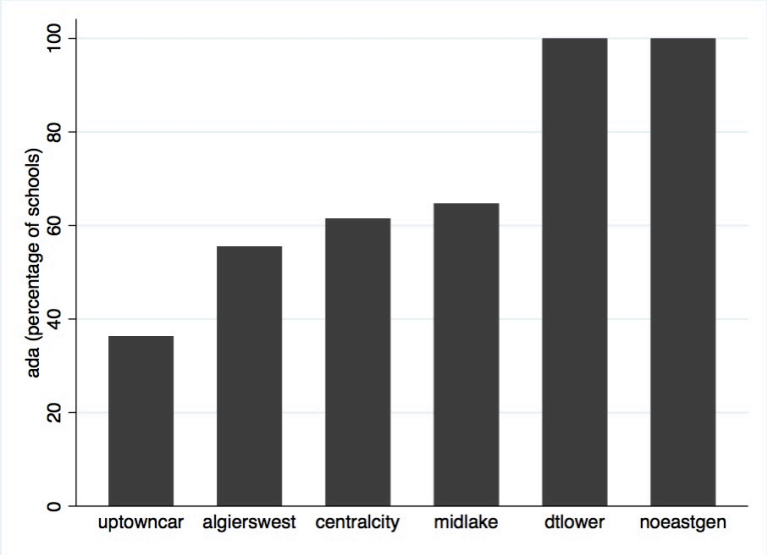

**Schools and the Americans with Disabilities Act (ADA)**

Where schools are located in the city also has a strong relationship to the likelihood of whether a school is ADA accessible. This can have important ramification for both students and family members living with disabilities or mobility limitations. Non-ADA accessible schools may lack elevators between floors that could prevent students in wheelchairs from accessing classrooms and could play an outsized role in whether a student with mobility issues could realistically attend the school. Additionally, doors too narrow for wheelchairs or a lack of access ramps to bypass stairs could make it hard for family members to attend parent-teacher conferences or even open houses to preview schools. Figure 25 below displays the percentages of schools in each zone that are ADA compliant.

The zone of Uptown/Carrollton has the lowest percentage of schools that meet ADA standards, at less than 40%. Algiers/The Westbank, Central City/The Garden District and Mid-City/Lakeview share similar percentages of accessible schools, all around 60%. Finally, Downtown/Ninth Ward and New Orleans East/Gentilly boast 100% ADA compliant schools. I believe that the roles of both history and Hurricane Katrina contribute to these percentage breakdowns. As mentioned earlier, 80% of the public schools in New Orleans were either destroyed or rendered unusable following the storm. This means that new facilities built following the storm, or converted buildings, would have likely needed to adhere to the most current ADA building codes. Downtown/Ninth Ward and New Orleans East/Gentilly

sustained some of the worst flooding and destruction during Hurricane Katrina, so most schools in those zones were likely constructed following the storm.

**Figure 25: Percentage of schools that are ADA accessible, by zone**




Conversely, Uptown/Carrollton and Central City/The Garden District would likely include a number of older school buildings (and possibly even protected/historic buildings) where creating ADA compliant environments would not be possible. Following decades of underfunding at the district levels, many older buildings may not have been able to upgrade older facilities, even before the storm. Finally, these two districts are on some of the highest ground in the city, and faced the least amount of damage during Hurricane Katrina, prompting less reconstruction or new schools.

**Enrollment fees**

The variable *fees* takes into account the various fees and general up-front expenses a student will be required to pay if they are accepted at their chosen school. Fees can include any registration fees a school may charge (which is at the discretion of the school) and supplementary fees such as uniforms, school supplies and extracurricular activity fees. The *New Orleans Equity Index* categorises the fee totals into three distinct levels – Less than $50, $50-$99 and $100 or more per student.

The impact of fees on families can take various forms – it may prevent families from applying to a school if the up-front costs are too high, or it may affect their likelihood to apply to schools that have additional costs outside of the enrollment fees (such as public transportation costs if there is no transportation offered by the school). Significantly, one must remember that many families have multiple children enrolled in schools and may prefer

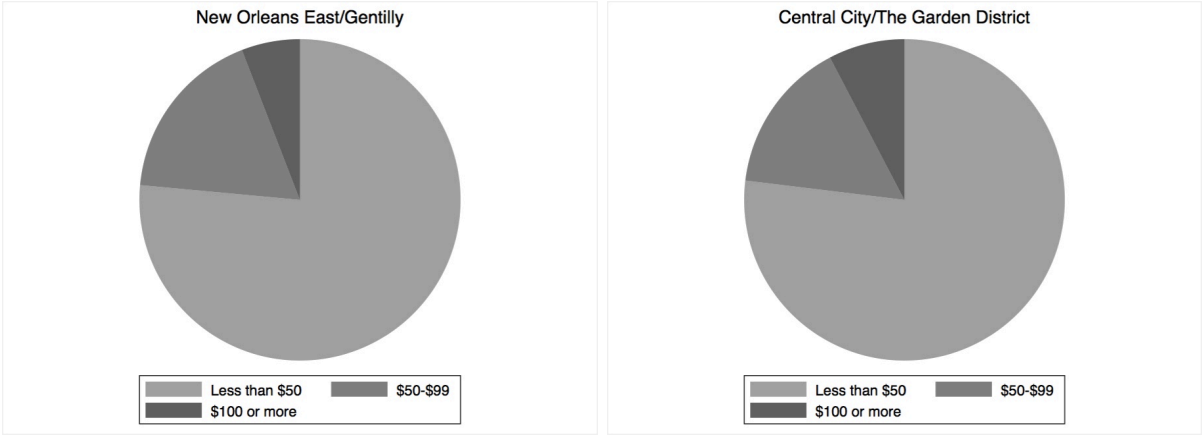
to have them attend the same school. Therefore, if a family has 4 children and must commit to paying high fees each year to enroll multiple children, even low fees can result in amounts that are cost-prohibitive in relation to a family's income.

As shown in the figures below, the levels of fees and the proportions of schools using the different levels vary greatly between zones. As seen in Figure 26, Algiers/The Westbank and Downtown/Ninth Ward are the only zones to have no schools charging over $99 in enrollment fees. In Algiers/The Westbank, 80% of schools charge students less than $50 to enroll, and Downtown/Ninth Ward uses the lowest fee level in almost 75% of schools.

**Figure 26: Enrollment fee levels in Algiers/The Westbank and Downtown/Ninth Ward**

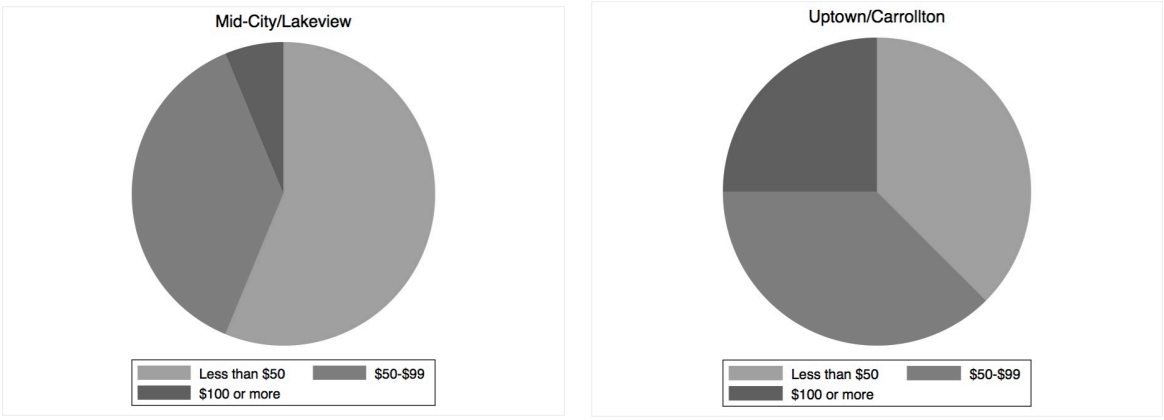

Figure 27 below shows that New Orleans East/Gentilly has a slightly larger proportion of schools using the lowest fee level, but the zone also features a small percentage of schools charging $100 or more in enrollment fees. Central City/The Garden District has a similar fee breakdown, with a slightly higher percentage of schools charging the highest fee levels.

**Figure 27: Enrollment fee levels in New Orleans East/Gentilly and Central City/The Garden District**



Finally, Figure 28 below shows that Mid-City/Lakeview and Uptown/Carrollton feature the lowest proportion of schools charging less than $50 to enroll students, with Uptown/Carrollton being the only zone to have less than 50% of schools at the lowest fee level, and the zone with the highest proportion of schools at the fee level of $100 or more.

**Figure 28: Enrollment fee levels in Mid-City/Lakeview and Uptown/Carrollton**




**Additional requirements and selective admissions**

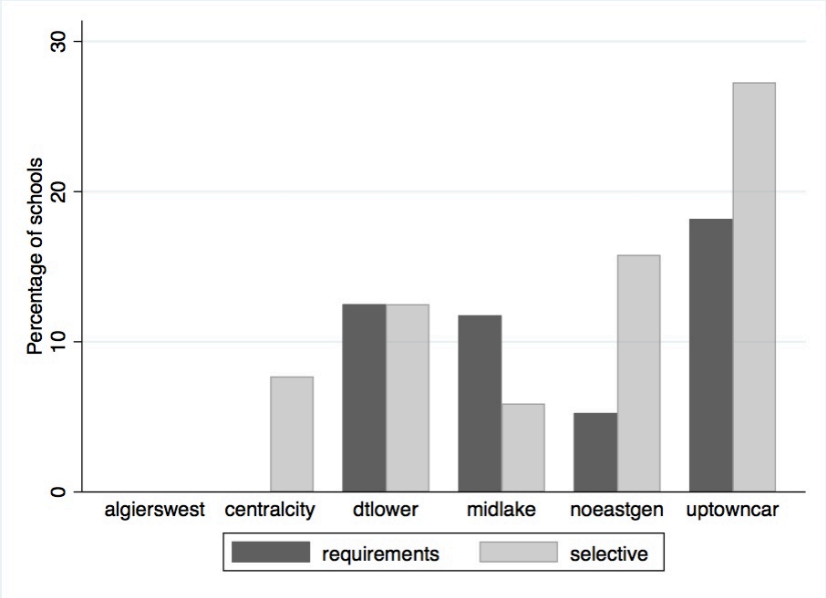
A number of charter schools in New Orleans have additional requirements for enrollment, or use a system of selective admissions. For schools using selective admissions, this also means that they may not participate in the OneApp lottery system. Examples of schools with selective admissions include Lycée Français de la Nouvelle Orléans, a French-language immersion school that requires grade-level proficiency in the French language for any students enrolling later than kindergarten. Similarly, the International School of New Orleans requires grade-level proficiency in a student's chosen second language when enrolling in grades 2 through 8. Parents are also required to attend an open house before applying to the school, and must commit to the language immersion goals of the curriculum. Other schools, such as McDonogh 35 College Prep in Mid-City/Lakeview have additional requirements such as providing prior test scores, GPA (grade point average) information, and a personal essay in order to be considered for its STEM magnet program (EnrollNOLA, 2017).

Like enrollment fees and ADA accessibility before it, additional tasks such as requiring in-person meetings and contracts can act as barriers to families that live or work longer distances away from the school. Childcare may need to be arranged or work schedules rearranged. As detailed in Figure 29 below, the zone with the highest proportions of schools with these additional requirements and/or selective admissions is Uptown/Carrollton, which

leads in both categories. Conversely, Algiers/The Westbank features no schools with additional requirements or selective admissions.

Several schools in different zones also opt-out of using the centralised enrollment system, OneApp. The largest number of schools using a separate application is in New Orleans East/Gentilly with three schools, followed by Uptown/Carrollton with two, and Downtown/Ninth Ward and Mid-City/Lakeview with one school each. The other two zones only have schools using OneApp.

**Figure 29: Schools with different enrollment requirements**




**More layers to the maze**

This web of differing requirements, fee levels, and transportation options can appear overwhelming to even the casual observer, much less the low-income families who make up the vast majority of the New Orleans charter school system. Worrying about whether one's two children can attend the same school, whether one can afford multiple children at a school with $100 or more in enrollment fees each year, and the prospect of students travelling across the city hours before school begins – one has to question to what degree the breakdown of zone boundaries has provided new school options to families and students.

Earlier, Hägerstrand spoke about society's transformation into an ever-more complex system, and that from the view of the individual, life can be seen as "an enormous maze about which he can do very little." Based on the variables explored in accessing different schools in different areas of the city, and already understanding the economic contexts of the

individuals trying to navigate the school system, the complexity of "the maze" of school choice and the repercussions of those choices is increasingly clear (Hägerstrand, 1970, p. 18).

A particular thought to take into consideration is how the problems surrounding the logistics of student transportation *weren't* a larger consideration when designing the system. The disarray of the city in the months following Hurricane Katrina may have set the example for dysfunction, as many areas were inhabitable and inaccessible, and bus services shrank almost completely. As of 2014, the local RTA bus system was still only back to 35% of its pre-Katrina service levels, while the tourist-friendly (and non-ADA compliant) streetcars canvassing Uptown/Carrollton, Central City/The Garden District, and the French Quarter in Downtown were already restored to full service levels. Public transportation levels have thus also experienced a very uneven recovery in the years after the storm (RIDE New Orleans, 2015, p. 4).

## Where does the money go?

Finances play an important role in the success of any school, be it large or small. Through the funding system in New Orleans, the public funds allocated to each school is dependent on formulas dictated by the state of Louisiana and the district controlling a charter school. These formulas adjust the per-pupil funding schools receive by accounting for students with disabilities or low-income students that may require additional resources such as special education support or subsidised lunches.

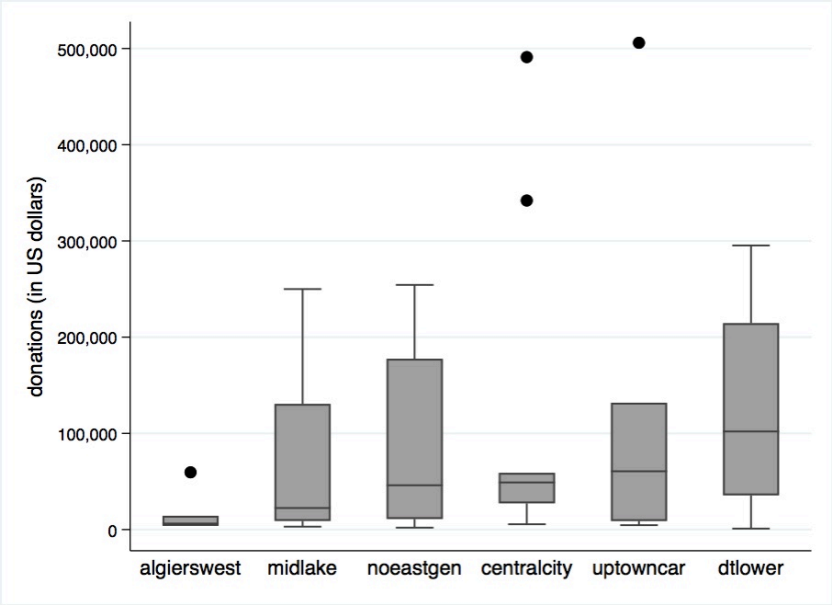
Non-public funding also plays a role in the resources schools have to educate or transport their students. These non-public funds come from myriad sources – school fundraisers such as talent shows or community events, but also monetary grants from charities, social groups, and private individuals. Enrollment fees can also be included in these amounts. The amount of private funding thus varies greatly between schools based on factors not necessarily related to student characteristics.

### Non-public funding

The average amount of private funds raised per school in the city of New Orleans for the 2013-2014 academic year was $102,128. However, for the schools reporting external donation amounts (only 48 observations of the sample), funding totals ranged from $996 at a school in Downtown/Ninth Ward to $994,379 at a school in Algiers/The Westbank. As the money from these funds can be tied to project or time-specific grants, the numbers should be

considered unstable, but significant, as it represents investments that can affect school quality and resource allocation. In Figure 30 below, a breakdown of private donations can be seen by zone. One significant observation excluded from the figure is the $994,378 outlier from Algiers/The Westbank, as the difference from the other values was so large. No information is provided by the *Index* on how the funds break down into individual contributions or foundation grants.

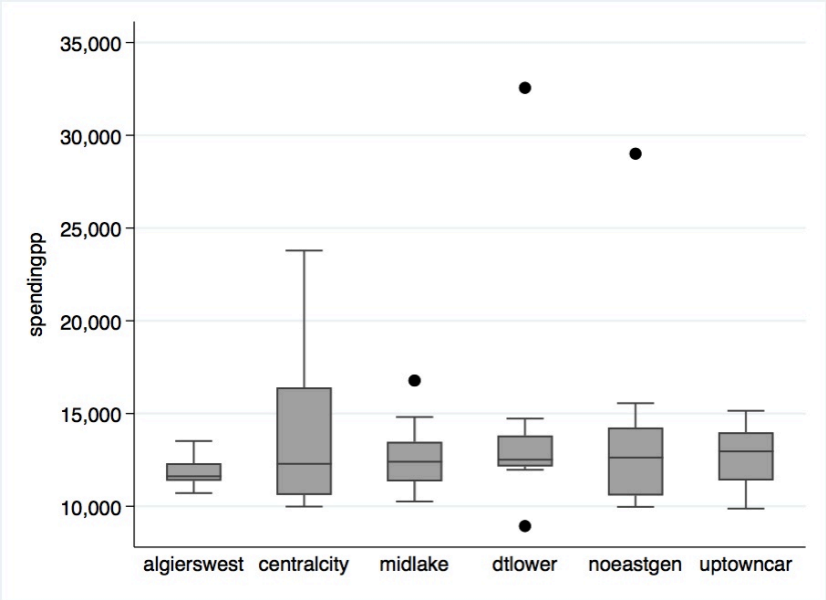
**Figure 30: External funding received by schools from private sources in each zone**




**Spending per pupil**

Financial spending numbers that can be viewed as more stable are those pertaining to per-pupil spending. Based on the funding algorithms of the state and district, these numbers would likely stay relatively stable from year to year, barring any drastic student population changes. From Figure 31 below, it is evident that the majority of schools fall within a range of $5,000 of public funds when it comes to per-pupil spending, with core means varying by close to $1,000. Central City/The Garden District stands out for its wide range of per-pupil spending, which is due to Cypress Academy's per-pupil spending rate of $23,786. In Downtown/Ninth Ward, The New Orleans Centre for Creative Arts (NOCCA) is a clear outlier, spending $32,558. In New Orleans East/Gentilly, the outlier of Foundation Preparatory spends $29,008 annually per student.

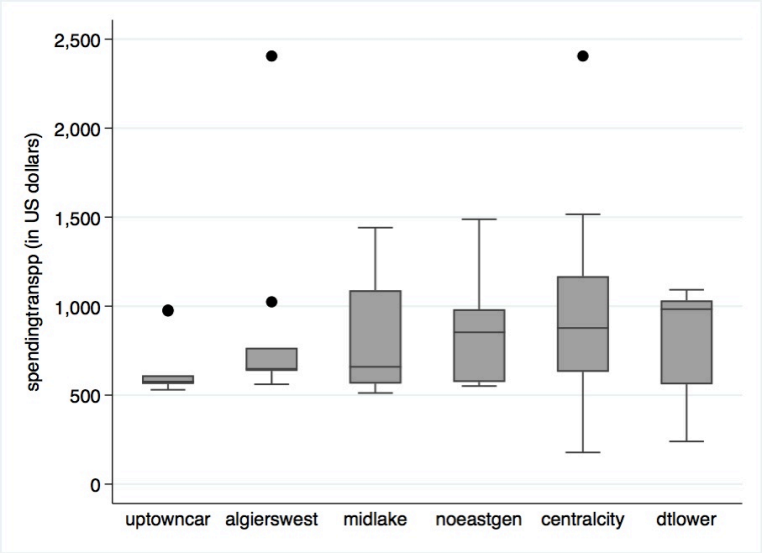
**Figure 31: The mean spending amounts used per pupil in each zone**




## Spending on transportation

Separate from the amount spent per pupil on general expenses is the amount spent annually per pupil on transportation services. While the breakdowns presented in Figure 32 below show a similar limited range between geographic zones (most between $500 and $1,000), this accounts for a near doubling in spending per pupil. Take, for example, the differences between Uptown/Carrollton and Downtown/Ninth Ward, where close to double is spent per year on transporting children to school. Mid-City/Lakeview, New Orleans East/Gentilly, and Central City/The Garden District share similar ranges of spending from zone to zone, but Mid-City/Lakeview displays a lower core spending level of $600 to the other zones' $800.

**Figure 32: The mean amount of spending used on transportation per pupil, in each zone**



Algiers/The Westbank has one of the lowest spending spreads, which may be due to the zone's isolation. The placement of the Mississippi River may restrict transportation planning to a more discrete geographic area. The low, narrow range of Uptown/Carrollton's spending levels is not particularly surprising when taking into account the previously discussed variables of *distance* and *transport*. The zone has students travelling the longest average distance to school, but it is also the least likely to provide transportation to students. It is likely that those factors result in a lower average in transportation spending, with the cost shared with families. *Distance* analysis also showed that Algiers/The Westbank had the lowest mean distance travelled by students to school in the city, which could translate into lower transportation expenses for student transport.

**A system of haves and have-nots**

As mentioned earlier, financial resources play an important role in running successful schools – from ensuring teachers and staff can be paid, to making sure classrooms have adequate supplies, and to determining whether a school can afford to provide transportation. In 2016, the costs of busing students to school accounted for 10-20% of entire school budgets – a massive increase from the previous system and the most prominent inefficiency in the charter school system. Schools also still do not necessarily join forces and pool resources with other schools to make their transportation dollars go farther. The presence or lack of external funding thus can be the deciding factor on whether a school has the financial resources available to provide transportation to students.

Unbalanced student populations across the city could also result in consistently unequal resource allocation among schools. Those schools with students from higher-income families may have consistently higher donation levels, and schools with more local parents or parents with cars may translate into stronger PTAs (Parent-Teacher Associations) and planned fundraising. There is also evidence of unbalanced racial student populations and funding – as top ranked schools like NOCCA and Cypress Academy have black enrollment rates of just 28.4% and 46.2%, respectively, while having the two highest per-pupil spending levels in the city.

Interestingly, there is a history of local-level pilot projects to "force" the racial integration of students in the United States. This was achieved in traditional public school systems by bussing students of different races to paired schools in order to create more diverse student bodies. In those cases, the guarantee of transportation mitigated economic barriers to attendance, and also took students from one area to another (as opposed to various

schools around the city), reducing the likelihood of extreme commutes. Those programs were actually successful, though often short-lived, and resulted in better academic outcomes for students (Arum, 2000). The author does caution, however, the threat to community relationships when children are removed from neighbourhood schools and their peers.

# 6 Conclusion

At the outset of this study, two central questions were raised: where do students attend school when all geographic boundaries are eliminated, and what factors influence or restrict where students attend school? Data from the 2017 *New Orleans Equity Index*, in addition to Torsten Hägerstrand's theory of *time geography* have allowed for the inquiry into these questions through the lenses of geography, school quality, access, distance, financial resources, and student and family characteristics. Results from this study answer the research questions thusly: schools in the wealthiest areas of New Orleans are less likely to enroll economically-disadvantaged students, Black students, students with disabilities, and are less likely to provide transportation support to students. Schools located in the wealthiest areas of the city also score the highest on school quality metrics, attract a higher number of students, charge higher annual enrollment fees to attend, and are more likely to require additional enrollment requirements for students. In line with high levels of desirability, schools in wealthier areas such as Uptown/Carrollton attract students living the farthest distances from their schools, and have parents using the longest amounts of time to make the journey to school. From other supporting research, it is clear that families outside of the wealthiest areas of town are also less likely to have access to private transportation, and are more likely to rely on public transportation that greatly extends the time needed to travel to school for both students and parents.

These conclusions are important when considering that the rationales of the charter school system introduced in the literature, whereby the "classical market" rationale would expand educational opportunities for the poor, and the "biased market" rationale would instead further exacerbate educational inequality. Is the classical rationale correct in assuming that minorities will be better served by schools that pay no mind to one's geographic location? Is the decentralized system more responsive to change, making schools more efficient and leading to greater equity? I believe the results are mixed, but that overall, the charter system in New Orleans more closely resembles the "biased market" rationale, where the inherent, systemically biased practices act in favour of those already better off, thereby exacerbating existing inequalities.

For all its intentions to open up the best schools to all students, those families with the time, funds and knowledge are ultimately more successful in taking advantage of the system. This is evident when the schools in the wealthiest zones of the city also have students coming

from families and zones where adults are more likely to have completed their own high school education. Those with car access and the time to travel across town on a semi-daily basis also have the capital to enroll their children in schools that do not provide transportation support. This is likely easier for those in higher paying jobs that come with flexible schedules, as opposed to lower-wage jobs tied to strict, shift-based schedules.

Personal testimony from New Orleans parents included in this study have lined up with those of the parents in Andersson et al.'s analysis of the Swedish experience of geographic boundary elimination. Both feature parents of minority and low-income children who prefer to stay closer to home and among students who are more likely to look like their own children. Conversely, parents with higher education levels in both studies tended to send their children to higher-ranked schools farther away from home, and with more white students.

In regard to the system's redistributive hopes of diversifying student body populations, the charter school system in New Orleans has failed. Schools are now actually more segregated than they were in the previous system, particularly for Black high school students, Hispanic elementary and high school students, low-income high school students, and for high school students who are English language learners (Bell Weixler, Barrett, & Harris, 2017). In a system made up of 83% Black students, Henig and McDonald's finding that even with existing geographic segregation, classical neighbourhood schools would be more racially diverse than a charter school network, does indeed ring true (2002).

The loss of a central governing body or traditional school district also provides additional insight into the complexities of the charter school system in New Orleans. In the past, where a simple address translated into a streamlined admissions process, the wide variety of enrollment requirements, fee levels, transportation offerings, and school operators create a system that is ever-changing. New rules are also being put into place on a yearly basis to counteract the struggles and confusions faced by families trying to navigate the system. Before the introduction of OneApp, there was no central application system, until the 2017 school year, there was no requirement that elementary schools provide transportation (this will be a requirement in the future). Before OneApp, students were also not given enrollment preferences when siblings went to a school, or for attending schools in their own zone. Both of those are now taken into consideration by most schools following pushback from parents.

Students who are lucky enough to win a place at a top school can still face challenges following through with enrollment and registration. For example, in 2017, International High

School received its second warning in three years from the state Department of Education for discouraging students who were granted spaces in the school from actually registering, after the school deemed the students "a bad fit" (Jewson, 2017c). The desire to attract the best students and dissuade the more challenged ones is the system's "Achilles heel," even in the eyes of Caroline Roemer Shirley, the head of the Louisiana Association of Public Charter Schools. She cites control as the central issue for schools:

> "There is some unease among the charters about ceding too much control to the district, she said. After all, one major impetus behind charters is to give school leaders the chance to run things without the meddling of a central office. A centralized system for placing students is seen by some as "the camel getting his nose in the tent," she said. "Today it's enrollment, tomorrow, they want to run our curriculum" (Vanacore, 2011).

While the power to control curriculum may seem like overreach into the privately-run system, the characterisation of using a single enrollment system to level the playing field for parents as "meddling" in a school's private affairs is alarming. As mentioned earlier by Williams, the decentralization of application systems and requirements is what made his introduction to the charter school system so difficult to navigate and can act as a barrier to families (2014).

The role of geography in education is multifaceted. To some, it carries with it a local community and identity, to others it represents ideas of containment and segregation. In the case of New Orleans charter school system, the role of geography in education has been fully reimagined by policymakers. However, while geography may have limited families in the previous system in terms of where students were destined to attend school, I believe that geography still plays a different, limiting role in where students attend school, even in a system without geographic boundaries. Whereas arbitrary lines divided the city in the past, more complex barriers of income, transportation access, and enrollment fees are what limit some families from moving beyond their prior geographic limitations. Without the comprehensive transportation support of a traditional school system, an enrollment system that treats all students equally, and the willingness by privately-run schools to enthusiastically enroll any student that is able to gain a seat at their schools, geography will still limit low-income families to more local schools, and schools that are lower-performing. Some students will be able to take advantage of new opportunities and travel to new neighbourhoods, but it will still equate to those who are already better off having the ability to move on to better schools.

The solution to systemic inequity in education is still not known, and whether the New Orleans charter school experiment will lead to sustained educational gains still remains to be seen. However, the complete reorganisation of the school system on both geographic and private ownership terms has provided a new opportunity to understand how students and families navigate a system never seen before in the United States. Thanks to Hägerstrand's concepts surrounding geography and the different types of barriers that exist within society, a comprehensive analysis of the charter system's geographic properties provides both families and policymakers with important positives and caveats to consider.

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