

**Getting from here to there:
The role of geography in community college students' transfer decisions**

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Pre-print for the article that appeared in *The Urban Review*, 49(5), pp. 746-776. The final version of record is available at Springer via [https://link.springer.com/article/10.1007/s11256-017-0420-](https://link.springer.com/article/10.1007/s11256-017-0420-2)

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Brief Bios:

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Abstract

Community colleges have received renewed attention from policymakers seeking to increase college attendance and completion rates because they provide open access to postsecondary education for historically marginalized students. Yet, transfer rates from community colleges to four-year institutions are low. Inequities in opportunity that are shaped by geography and compounded throughout childhood may restrict higher education opportunities for low-income, first-generation college students. Most studies examining how geography constrains college choice focus on high school students' initial decisions about higher education, not community college students. We analyze the spatial distribution of community college students' "choice sets," the 4-year institutions that they are considering transferring to. Using qualitative interviews and geospatial analysis, we examine how these spatial patterns compare between two community-college systems in Central Texas. We find that students' choice sets are geographically constrained, but that for many students, these zones are geographically large, suggesting that interventions and targeted outreach from universities could help students identify and select from greater range of options. Our findings have important implications for college access and completion among first-generation college students, and for policies that seek to interrupt patterns of inequity tied to location.

Key Words: community colleges, transfer, choice, equity, geography of opportunity

Students of color and those from economically disadvantaged backgrounds have traditionally experienced barriers to higher education (Núñez & Oliva, 2009) due to a variety of structural inequities, including the compounding of inequities in educational opportunity throughout early childhood and K–12. Many policies to expand college access have been proposed, including affirmative action (Yosso, Parker, Solorzano, & Lynn, 2004), increased access to and simplification of financial aid (Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2009; Dynarski & Scott-Clayton, 2006), provision of better and more targeted information about higher education options (Castleman, Schwartz, & Baum, 2015), and greater advising and mentoring supports (Gándara & Moreno, 2002; Grubb, Lara, & Valdez, 2002), among others. One key factor in expanding college enrollment is the set of schools to which students apply, with research finding that low-income students and students of color submit fewer applications (Black, Cortes, & Lincove, 2015; Hurtado et al., 1997; Russick & Olson, 1976), and are more likely to “under-match,” or choose universities that are less selective than ones they could have been admitted to given their academic records (Bastedo & Jaquette, 2011; Hoxby & Avery, 2012; Page & Scott-Clayton, 2016; Smith, Pender, & Howell, 2013). This research suggests that while there are many environmental and institutional factors influencing students’ success in higher education, one key lever may be to impact their decisions about where to apply.

Existing research exploring college choice sets and under-matching has focused primarily on the traditional path from high school to college. Yet, community colleges are increasingly common destinations, particularly for students of color. Community colleges have received renewed attention from policymakers seeking to increase college attendance and completion rates at four-year institutions (Atkinson & Geiser, 2009), given their important “democratizing” role (Gonzalez & Hilmer, 2006; Leigh & Gill, 2003) in providing open access to postsecondary

education for historically marginalized students (e.g., Sáenz, 2004; Schudde & Goldrick-Rab, 2014). For example, in 2014, 44% percent of all African-American undergraduates, and 56% of Latino/a undergraduates, attended community colleges (Ma & Baum, 2016). While students of color and low-income students are over-represented in community colleges, as compared to four-year institutions, community colleges often have low transfer rates, even for those students who seek to obtain a Bachelor’s degree. While 81% of students intend to transfer, only 33% do within six years (Horn & Skomsvold, 2011; Jenkins & Fink, 2016). These low transfer rates raise concerns about the potential for these schools to increase equity in higher education outcomes. Low community college transfer rates are due to a host of complicated institutional, policy, and decision-making factors, as previous researchers exploring the transfer experience have documented, including the institutional supports and climate at the sending institution—such as developmental education (Crisp & Delgado, 2014), campus demographics (Hagedorn, Chi, Cepeda, & McLain, 2007)—and the receiving institution, such as the existence of a transfer-receptive culture (Castro & Cortez, 2017). Research has also begun to unpack the ways in which community college students make decisions about transfer institutions (Backez & Velez, 2015; Crisp & Nuñez, 2014), including the “under-matching” of students of color to elite transfer destinations (Bensimon & Dowd, 2009).

Our study builds on this research by examining one key, but relatively underexplored, driver for transfer students’ under-matching: the role of geography in their decision-making process. We frame our study by drawing on research exploring the geography of opportunity, including the unequal geographic distribution of selective and accessible universities, and the college choice literature, particularly the ways in which students of color and first-generation students may be particularly sensitive to the distance from their homes to an institution of higher

education (Black et al., 2015; Hurtado & Carter, 1997; Turley, 2009). While the college choice literature has brought attention to the important role of student decision-making, other researchers have argued that, for some students, their decisions about college may be shaped less by information about options, and more by proximity and place (Hillman & Weichman, 2016). Rather than selecting from a full set of possible transfer destinations, when students decide where to go to college, geography may shape the first level of the decision-making process (Kohn et al., 1974), and is thus an important factor influencing students' ultimate transfer destination.

Most existing studies of choice and geography focus on high school students' initial decisions about higher education, not the decisions of community college students (Cooke & Boyle, 2011; Hillman & Weichman, 2016). Yet, community college students represent a different population than average high school students—more likely to come from historically marginalized groups, and potentially more financially and geographically constrained (Author, 2017; Backes & Velez, 2015). We examine the role of geography in transfer students' decisions. In particular, using geospatial analysis and qualitative methods, we shed light on *why* and the extent to which community college students, and first-generation students in particular, are more constrained geographically, as quantitative studies have found (Black et al., 2015; Hurtado & Carter, 1997; Turley, 2009). Furthermore, while other studies have focused on how institutions of higher education influence transfer student outcomes (Castro & Cortez, 2017; Crisp & Delgado, 2014; Hagedorn et al., 2007), we illuminate students' perspectives on the decision-making process, attending to the important role that geography plays in the choice of transfer destination.

In this study, we analyze the spatial distribution of community college students' "choice sets," the list of 4-year institutions to which they are considering transferring, the relationship between the institution's geographic location and the student's residence, and the role that

geography plays in the student's decision-making process. We also investigate how, if at all, these patterns differ for first-generation students and African American or Latino/a students in order to identify points of intervention to mitigate inequities in access to higher education.

Using mixed methods, we examined how these spatial patterns compared between two community-college systems in Central Texas. We used the geographic software program ArcGIS to examine distances between students' homes and the universities they were considering, and we drew on 100 in-depth qualitative interviews to unpack the ways geography plays a role in their decisions. Additionally, we collected demographic information from participants.

We find that students' choice sets are geographically constrained, but that for many students, these zones are geographically large, suggesting that interventions and targeted outreach from universities could help students identify and select from greater range of options to enhance higher educational opportunity. Our findings have important implications for college access and Bachelor's degree completion among undergraduates, including first-generation college students, and for policies that seek to interrupt patterns of inequity tied to location. Understanding the role that geography plays in students' complex decisions may help identify institutional and policy interventions to improve educational access and success in higher education, particularly for low-income, first generation students.

Background and Literature

To understand the role that geography plays in students' decisions about transfer institutions, we bring together literature from college choice (Beattie, 2002; Grodsky & Jones, 2007; Long, 2007; Manski, 1993; Tierney, 1983; Turley, 2009), and the geography of opportunity (Green, 2015; Jocson & Thorne-Wallington, 2013; Tate, 2008). A number of studies over the past two decades have examined transfers from two- to four- year institutions, focusing on either the

factors that predict student transfer to a four-year college (Castro & Cortez, 2017; Crisp & Nuñez, 2014; Cuseo, 1998; Doyle, 2009; Shaw & London, 2001; Wassmer, Moore, & Shulock, 2004), or the effects of attending community college on four-year college completion rates and outcomes (Gonzalez & Hilmer, 2006; Grubb, 1991; Hilmer, 1997; Leigh & Gill, 2003; Lockwood Reynolds, 2012; Long & Kurlaender, 2009; Surette, 2001). Economists have typically relied on theories of rational choice, human capital, and expected value to explain the decisions of these “adolescent econometricians,” who evaluate the complex probabilities, costs, and benefits of college attendance (Manski, 1993). Yet, sociological critiques of this decision-making model have shown how choice is non-rational. Race and class influence student decision-making and group dynamics account for differences in predictions of college costs and labor-market benefits (Beattie, 2002; Grodsky & Jones, 2006). More recently, scholars have begun to explore how interdisciplinary approaches to decision-making, drawing on a combination of social, psychological, and economic theories, can help to explain students’ decision making about higher education (Ball, Davies, David, & Reay, 2002; DesJardins & Toutkoushian, 2005; Jabbar, 2011). We extend this work by exploring the intersections between geography and choice.

Despite the large number of studies examining high school students’ initial choices of postsecondary institutions (Beattie, 2002; Bers & Galowich, 2002; Grodsky & Jones, 2007; Long, 2007; Manski, 1993; Somers et al., 2006; Tierney, 1983; Turley, 2009), there has been almost no research examining how community college students *choose* among four-year institutions (for a recent exception, see Backes & Velez, 2015), despite the growing emphasis in the college choice literature more generally on how differential decision-making and informational resources might result in “under-matching” or under-applying, particularly for historically marginalized groups. Instead of inferring students’ choice sets, as existing studies have done, it is necessary to explore

the *actual* sets of institutions from which transfer students select, *why* geography is important to students (i.e., proximity to family supports), and the particular ways in which they are geographically constrained to identify intervention opportunities and increase access to four-year institutions for low-income students.

The Geography of Higher Educational Opportunity

The college choice literature has highlighted the important role of student decision-making, but other researchers have argued that students' decisions about college may be shaped less by information about options, and more by geography, or proximity and place (Hillman & Weichman, 2016). "Education deserts," where there are zero colleges or universities nearby, or where one community college is the only public broad-access institution nearby, may restrict choices of students purely due to geography. Rather than selecting from all possible transfer destinations, students' decisions and access to universities are bounded by geography (Kohn et al., 1974), and it is thus an important factor influencing students' ultimate transfer destination. Even within a city, the particular spatial location of a university can exacerbate inequities in terms of race and class (De Oliver, 1998). Educational institutions are situated within "socially constructed boundaries that divide areas geographically along racial, ethnic, class, and religious lines" (Buendía, Ares, Juarez, & Peercy, 2004; p. 833). And depending on where a student falls within those boundaries may influence his/her perception of what institutions they have access to at which they are welcomed (Buendia & Ares, 2006; Lipman, 2007). Examining the context of San Antonio, De Oliver (1998) finds that the spatial location of the University of Texas at San Antonio on the urban periphery results in increased educational costs in terms of food, transportation, and supplies for students the institution was established to serve. Location thus matters, particularly for students of

color and low-income students, and school siting decisions have implications for who is able to attend.

Students' decisions about transfer destinations are not independent of location in light of unequal access to institutions of higher education, as research identifying the presence of "educational deserts" and the geography of opportunity has found (Hillman & Weichman, 2016; Tate, 2008). Educational opportunity in the U.S. has always been inextricably linked to geography (Briggs, 2005; Tate, 2008; Yoon & Lubienski, 2017). Disparities of opportunity across zip codes begin at birth via unequal access to high-quality Pre-K and early childhood programs (Buendía & Ares, 2006; Entwisle, Alexander, & Olson, 2010; Lipman, 2007). The impact of uneven geography of opportunity on communities, when left unaddressed, only grows, and shapes everyday life (Rusk, 2003; Soja, 1996). Factors such as race, median household income, and transportation routes influence proximity and accessibility to the environments rich with educational opportunity (Jocson & Thorne-Wallington, 2013), and families have differential access to "mobility capital," or the ability to move and access schools, both physically and emotionally (Ball et al., 1995; Gulson, 2007). Urban communities of color often exist in a "paradoxical space" (Green, 2015; Miller, 2012; Sutton & Kemp, 2011), given their high levels of inequality as well as significant number of institutional and community assets. These uneven educational opportunities often persist and even expand into K–12 schooling and beyond into college and career (Chetty, Hendren, Kline, & Saez, 2014; Logan, Minca, & Adar, 2012; Turley, 2009). Although various government policies, such as school choice (e.g., Phillipppo & Griffen, 2016), or financial support for college, aim to disrupt the tight coupling between place and educational opportunity, geography continues to shape choices about educational institutions across the P–16 pipeline.

Geography and College Choice

Indeed, geography may be the first in a series of decisions about where to attend college. Researchers have noted, for example, that the decision to commute to or live on campus is key, as it influences subsequent decisions (Schudde, 2011; Turley, 2006). A strong parental preference for students to stay at home is related to students being less likely to apply to college at all (Turley, 2006). While living at home may provide supports to students from their family or from proximity to networks, strong parental preferences for students to stay at home appear not only to constrain choice, but also to discourage applying at all in many cases (Turley, 2006). When paired with the constraints of educational deserts or places with limited options, these preferences may limit college attendance for low-income students and students of color.

Research has consistently shown the importance of geography in college choice. Clustering students into groups based on their choice sets, Tierney (1983) found that the largest cluster, with 86% of the students, included schools generally no more than 150 miles from home, measured using “as the crow flies” distance between the residence and the institutional alternative. Similarly, using data from a national sample, Turley (2009) found that having more colleges in proximity to students is associated with higher odds of students applying and enrolling in college. High school students who are economically disadvantaged or live in economically disadvantaged areas, in particular, often weight geography more strongly and enroll in nearby colleges (Flint, 1992). Older students (20+), which more closely represents the population of community college students, were more likely to consider an institution’s location as important, compared with younger students (Fishman, 2015; Jepsen & Montgomery, 2009). These findings suggest that the population of students that attends community college may be even more likely to be constrained or influenced by geography.

Geography also has implications for “under-matching,” when students apply to colleges that are less selective than ones to which they could have been admitted, based on their academic or other qualifications. In one study, researchers found that schools that were located in areas dense with postsecondary institutions, and with more adults with college degrees, had lower under-matching rates (e.g., Hurwitz, Smith, Howell, & Pender, 2012).

At the same time, studies have found that factors beyond geography, such as institutional quality and financial aid, may be playing a greater role in students’ decisions. Jepsen and Montgomery (2009) found that financial aid availability ranked more important than location for all but the wealthiest students, a finding which runs in contrast to previous research noting the importance of geography. Other research, too, has noted the declining importance of distance. Long (2004) examines how college decisions have changed over time, and finds, also contrary to some other research, that distance became a less important factor in choosing between colleges while college quality became more important during that time span. Others have argued that distance may become less important as online education increases (Bowen, 2013). It is unclear how these trends play out in the community college context.

Studies of the community college transfer decision have similarly found that geography matters. One study analyzed longitudinal data from Florida to understand 2-year to 4-year transfer decisions (Backes & Velez, 2015). They find that community college transfer students are more sensitive to distance than recent high school graduates; transfer students are less likely to choose a four-year institution located far away. Similarly, students who attended a two-year college that was located far away from any four-year institution were less likely to transfer at all. For prospective students who live in communities with few educational options, their educational destinations are bounded by whatever institution is nearby. Community colleges, in particular,

enroll over half of all students who live in education deserts (Hillman & Weichman, 2016). Furthermore, there may be deserts even within metropolitan areas due to neighborhood segregation or high transportation costs.

Examining transfer decisions, in light of potentially limited options, is needed to improve transfer rates for low-income and first-generation students. Indeed, Backes and Velez (2014) argue that more research is needed to understand *why* students prioritize distance. One reason could be to retain family or community support. In one qualitative study, Martinez (2013) found that high school students' postsecondary choices depended on the proximity of the institution from home due to their desire to maintain strong familial ties and support while in college. Overall, the research has consistently documented that distance and geography are key to students' decisions, but we know little about *why* this is the case. To develop adequate policy solutions, it is important to explore how geography plays a role in students' decision-making, such as why students decide to apply to an institution, or why they decide to rule one out. Our study, using geospatial analysis, paired with qualitative interview methods, uncovers the reasons for students' decisions and the ways in which geography shapes their choice sets. We also improve on measures used in previous studies by using driving distances, which are more accurate than "as the crow flies" distance measures.

Research Design and Methodology

This study uses multiple methods to illuminate patterns of inequality in access to higher education by examining the role of geography in community college students' decisions about which four-year universities to attend. By using both qualitative and geospatial methods, our work builds off of the work of critical geographers who explore narrative and spatial dimensions of urban geography (Kwan & Ding, 2008; Yoon & Lubienski, 2017).

Site Selection

To identify a site for this study, and given our interest in identifying strategies to expand higher educational opportunity for low-income students and students of color, we employed purposive sampling (Creswell, 2013) to find two metro areas in Texas with community college systems serving a diverse group of students, including first-generation Latino/as and African Americans. Through this technique, we deliberately and non-randomly selected a case through which “the most can be learned” (Merriam, 2009, p. 77). As such, we chose Austin, TX and San Antonio, TX, because geographically they are only 80 miles apart and both have an established community college system, making for an “information rich” case that can provide a wealth of data to answer our research questions (Creswell, 2012). In particular, because the two community college systems are in the same general area, Central Texas, we were able to examine how students from two different institutions consider the same general set of four-year institutions in the region.

In Texas, 55% of postsecondary students are enrolled in community colleges (Alvarado, 2015). And while 80% of Texas community college students intend to transfer, only 20% actually transfer after 6 years (Alvarado, 2015). These transfer rates are similar to those across the U.S. In Fall 2015, Community College A served over 43,000 students with a demographic breakdown of: 45.29% White, 30.36% Latino/a, 7.33% African American/Black, 4.79% Asian, 4.96% “unknown,” and 3.40% international. In Fall 2015, we focused on two campuses at Community College B: the first served 18,249 students whose demographic makeup was: 60% Latino/a, 26% White, 6% African American/Black, 3% Asian, and 5% were identified as “other.” The other campus served 10,514 students and was 51% Latino/a, 29% White, 12% African American, 4% “Other”, 3% Asian, and 1% international. Both community colleges were Hispanic-Serving Institutions, and one campus at Community College B was also a historically Black college.

Data Sources

We study how community college students in two large urban central cities in Texas construct “choice sets” through 100 in-depth, semi-structured interviews (lasting 45 to 60 minutes, on average) and short surveys conducted in Fall 2015. We worked with community college staff to identify lists of students who had indicated that they were “intending to transfer,” and sent email recruitment message to them for the interview. We also tabled at transfer-related events and passed out flyers for the study. Students received a \$10 gift card as a small incentive for participation in the hour-long interview (which included a short questionnaire).

During the interview, students completed a short, 10-15 minute electronic survey in which they were asked to rank the schools they were considering in order of preference. Students were given a list of 30 universities, constructed using data on where students from their campus transferred most frequently, and including nearby institutions. Using this list, they were asked to note whether they had heard of, were considering applying to, or had already applied to each of these. Those that they were considering or had already applied to were then presented again for them to rank.

Analysis

Following the method of “choice-set analysis” (Bell, 2009; 1992; Tierney, 1983), we use these “sets” to understand how student agency interacts with geography in the decision-making process. To examine the spatial distribution of a community college students’ “choice sets” of 4-year institutions, we used their responses to questions in the survey and during the interview regarding the transfer institutions they were considering and the importance of geography in their decision-making process.

Geographic Information Systems. In this study, we first used Geographic Information Systems (GIS) to map the student's home addresses. Next, we mapped the spatial distribution of students' choice sets for transfer institutions—the 4-year institutions the community college students indicated they were considering transferring to within Texas. GIS provides a way to “examine questions of physical space—the geography of schools, homes, neighborhoods, and districts—as primary consideration” (Lubienski et al., 2009, p. 612). We calculated the distance between the student's home address and the 4-year institution's geographic location. We use driving distances, which improve on previous measures that use crow-flies distances or other measures that may result in less accurate estimates (e.g., Cooke & Boyle, 2011; Tierney, 1983). We determined whether the institution was within a student's metro area, within the state of Texas, or out of state. We examine the geographic patterns of students' choices by subgroup, re-running analyses for first-generation Latino/a and African American students in particular.

Specifically, we examined the distance to the universities students ranked on the survey by community college. Thirty-four of the 100 students did not rank any universities. They were excluded from this part of the analysis. The number of universities ranked by a student went from as little as 1 to as many as 22. Students' rankings were imported into the ArcGIS model to be used with the Streetmap Premium service, a robust national street network dataset maintained by ESRI, and we calculated the driving distance between each student's home address and the university they ranked. We produced a polyline shapefile that contained one route for each of the students' rankings.

Qualitative Analysis. Next, we used the qualitative interviews to unpack this spatial information. We transcribed all interviews and coded them in Dedoose for broad categories, including “geography,” which included any mention of a spatial preference or requirement. We

then inductively generated sub-codes (e.g., “geography-family,” “geography-personal preference,” “geography-safety/climate,” etc.). We then recoded the data using the inductive sub-codes, and looked for themes that emerged. In particular, we identified two broader themes related to students’ *preferences* and *constraints* in the decision-making process. We used the qualitative data to help unpack *why* we see a particular spatial distribution of schools. We also drew on three questions in the survey that asked about the importance of geography to the student (e.g., how important is living close to family?) to provide general descriptive information about their preferences.

Limitations. While this study examines only a small sample of community college students in Texas, the in-depth interviews and surveys allowed us to capture the nature of students’ choices in greater detail than in prior studies. In particular, this allows us to unpack the various reasons for students’ choices and the role of geographic distance. However, there are several limitations. First, our survey provided a start list of up to 30 institutions that were common transfer destinations for students or were located nearby. While students were, of course, able to add choices to this list, we believe the start list likely influenced their choice sets. Second, because the survey was administered during the interview, which ensured a higher response rate among our participants, we were unable to ask specific follow-up questions about the contents of the survey, although we did ask general questions that asked students to reflect upon their responses.

The Geography of Transfer Students’ Choice Sets

Spatial Distribution of Colleges in Texas

In 2016, there were 50 public community college districts (Texas Association of Community Colleges [TACC], 2016), 47 four-year public institutions, and 38 private universities in the state (Texas Higher Education Coordinating Board, 2016). This study looks specifically at

two of these 50 public community colleges and the spatial distribution of the choice sets of 50 students from each community college who were considering transfer to a four-year institution. Figure 1 shows a compilation of the driving distances representing the choice sets of the 66 students who provided rankings in the survey.

Insert Figure 1 about here

The two sites in this study are located within 80 miles of one another. Community College A (CC A) is located in a metro area with two public four-year institutions and four private four-year institutions (see Figure 2). CC A has 11 campuses spread across the city. Community College B (CC B) is located in a metro area with three public four-year institutions and four private four-year institutions (see Figure 2) and has five campuses across the city. According to the Census' most recent American Community Survey (2014), CC A metro area's demographic makeup is 19% White, 55% Hispanic, 7% Black, and 2% Asian. The demographics for CC B's metro area are 47% White, 37% Hispanic, 7% Black, and 7% Asian. Both metros have a high Hispanic population, and similar Black populations. Figure 3 shows the distribution of Hispanics at the census tract level within CC A and CC B's respective metro area.

Insert Figures 2 & 3 about here

We examined the distance to ranked schools. There were some universities that were within 200 miles of the community college and/or common transfer destinations for students from the community college that were not ranked by any student. At CC A, these unranked colleges included two private universities, and two public universities that were outside the metro area. For CC B, there were three universities that were unranked, all private universities, including one

historically black college. The number of universities ranked by a student ranged from as little as 1 to as many as 22.¹

Of the students attending CC A, most students, 24 out of 26 (92%), ranked the University of Texas at Austin, and 11 out of 26 students (42%) ranked Texas State University, both large public universities that are located within their metro area. In CC B, 24 out of 40 students (60%) ranked UTSA and 17 out of 40 students (43%) ranked Texas A&M San Antonio, both of which are public universities located within their metro area.

Insert Table 1 about here

The average distance to the universities ranked by students at CC A was 83.2 miles, yet the average decreases to 78.7 miles when we isolate the rankings to only those within one standard deviation. In contrast, the average distance to the universities ranked by students at CC B was 72.8 miles overall, with the average decreasing to 45.9 miles when we analyzed only the distances within one standard deviation (see Table 1). Students in CC A were generally willing to travel further to attend schools of their choice. The data were then broken down by six categories: race, gender, age, first-generation, work hours, and enrollment status for CC A and CC B (see Table 2).

Insert Table 2 about here

Breaking down the survey data by categories allowed us to examine the choice sets of students from different angles. Disaggregating the data for Case Study A by race shows that the

¹ If a student ranked an online university (Capella, Midwestern or Western Governors University), that rank option could not be mapped. No students in CC A ranked an online university. In CC B, four rankings in total were not mapped due to them corresponding to an online institution.

average distance was greater than 50 miles for each category, the spatial distribution of their choice sets show interesting patterns (see Figure 4). White students seem to have more universities in their choice set in comparison to Hispanic, Black, or Asian students. In CC B, Hispanic students seem to have a wider set of schools in their choice set when compared to White, Black, or Asian students (see Figure 5). Similarly, first-generation students in CC A (see Figure 6) had similar choice set distributions as non-first-generation students. The opposite is true for first-generation students in CC B (see Figure 7), for they display a broader range of institutions in their choice-set compared to their non-first-generation counterparts. Overall, students are certainly willing to travel beyond their metro areas in all cases, but White students appear to travel both further and to a larger number of higher education options.

Insert Figures 4–7 about here

We also examine typical college commuting distance. For example, Turley’s (2009) estimate of a typical college commuting distance was based on the median distance (in miles) from home to the first-choice college of students who stated that living at home during college was important. For urban students in her study, the commutable distance was 12 miles and for rural students, that distance increased to 24 miles. We find that the urban commutable distance for CC A students, was 9 miles, while the commutable distance for CC B students was 17 miles. The central location of the UT-Austin campus, a top choice for CC A students, compared to the more decentralized location of universities in San Antonio, may account for the smaller commutable distance.

The Geography of Students’ Choice Sets

Across the sites, 28.57% of students noted that geographical location, in terms of living close to parents and relatives was “not important” in their decisions about where to transfer, while 42.86% said that this was “important” or “very important.” Similarly, 44.90% of students said that it was “not important” for them to “get away from this area of the country.” About 28% of students said that it *was* important or very important for them to get away from this area of the country. About 77% of students noted that geographical location was important or very important to them for other reasons (e.g., big city or job prospects).

Insert Table 3 about here

Geographic Preferences and Constraints: A Qualitative Perspective

In this section, we further unpack these preferences by drawing on the qualitative data. While the geospatial maps provided an overview of the geographic distribution of students’ choice sets, the qualitative findings help us to understand *why* and *how* distance matters to students. We describe students’ preferences for geography, and then discuss the constraints on those preferences.

Preferences for Geography

Preference for current location. Eighteen students reporting *preferring* their current geographic location. They did not view staying in Austin or San Antonio as a constraint, but rather liked where they lived and did not want to leave. Of these students, 15 were in their first or second year of community college. This desire was more common among students in Austin, TX: 14 of the 18 students who preferred to stay local lived in Austin. Students reported enjoying the familiarity and opportunities. Many students said they “loved Austin.” One student said, “I would love to stay close to Austin, because I love Austin,” and another said “Austin’s been my home; I

love Austin.” Others shared that they felt “pretty rooted here” and said “I like where I am” or that “Austin is awesome.” One Austin resident said he liked UT “because of where it is located,” specifically because there were “so many things going on around that school, just outside of the school, even.” A student from San Antonio was not opposed to moving, but liked living there:

I feel like San Antonio is pretty well equipped. There are a lot of options here in San Antonio as well as after school. Of course, I am not opposed to moving because been there, done that. It’s not new for me. But I’m comfortable here in this area.

One student described a sense of familiarity with the local educational options: “Every school I picked, I’ve been on their campus. I’ve met their staff. I know what they offer. I know their expectations for transfers. I have friends and family that went there. I’m very familiar with them.” This familiarity influenced his preference to stay local. All of the students in our sample came from large metro areas that offered a broad range of activities, and some students thus viewed these cities as desirable places to live or stay.

Other students preferred to stay local because they had already indicated their geographic preference by moving to that city. Two students had already relocated to Austin or San Antonio from elsewhere and did not want to move again. For example, one student said: “I’m already adapted to the Austin area so probably not going to move again after moving from Houston.” Two students were open to moving within Texas, but wanted to stay in state because they viewed it as a place of opportunity or felt “very comfortable in Texas.” Another student said that while he was open to “going to UCLA,” he would “give a bonus” to schools in Texas.

Some students explained their preference to attend a university that was physically within their metro area because of access to supports. One student said that while she was looking for distance learning programs, she wanted to attend a university where, “if you have questions or

counseling or advising, [there is] someone that you can reach, or at least weekend hours, so if I do need to see someone in person, I can.” Another student noted that while she was considering some online programs, particularly because of “work/life balance,” she was “still leaning towards something local” so that she would be “able to actually have more interaction or support staff-wise or if [she] needed help with something.” Even students considering distance learning or online programs, where distance would seem to matter less, preferred universities with a physical building that was within their metro area so that they could go in person to speak with someone regarding advising or for other assistance.

For some students, the preference to stay local was because they already happened to be living near the state flagship university, UT-Austin. Two students noted this. One said, “Well, I either stay in-state or go out-of-state. If I am going to stay in-state, it is going to be in Austin. Austin is awesome. UT is a great school.” Another student felt he should take advantage of the proximity to UT: “I really want to talk to a dean at the Engineering School. I am so close, I might as well take advantage of how close I am. There are other people that are doing community college in Dallas, that it is a lot harder for them to get to people around here.” These comments reinforce the importance of proximity to selective institutions—the geographic distribution of higher educational institutions in a state or region.

Preference to leave current location. For other students, college represented an opportunity to leave where they were from and explore other places. Eleven students described a strong desire to leave (push factor) or a strong attraction to another place (pull factor). For some students, this meant just moving to the next major city, 80 miles away. According to one student in San Antonio, UT was desirable because “it’s different.” The student said: “I want to get out of this city.” A second student did not rank any schools in San Antonio. The student said: “I don’t

want to be here. I love my family, but I love them a little bit more when I have some time to get away from them.” Other students also felt a desire to leave where they were from. One student said of San Antonio:

It’s not the most progressed city. There’s a lot of poverty downtown, and it’s not the safest place, especially right here.... I’ve been here 11 years, there was a period of 9 years where we didn’t go anywhere... We didn’t take a vacation or anything... It’s like a podunk-ville, “I’ve been here all my life, I’m ready to go to the big city.” It’s like that, kind of, except I’m in a big city and I want to go to another big city.

These students all describe a strong desire to leave their hometowns or current cities, either to escape family or to experience something different.

Other students desired to go further, even out of state. One student said: “I would like to get as far away from home... I feel like I am stuck in Texas... I want to be able to explore something else that isn’t Texas.” Some of these students felt constrained by family. According to one student who wanted to attend Ohio State: “I actually want to go out of the state, but my parents won’t let me. So, I am just going nearby, I guess.” A student who lived in San Antonio wanted to go to Texas A&M, in College Station, TX, about 180 miles away, but the student’s parents said: “You’re staying here, you’re going to UTSA.” The student responded defiantly: “I was like, ‘No, I’m going to A&M.’ Really, you can’t keep me here, so I’ll get a loan if I have to, but I am not staying here.” These students preferred to attend college further from home, but were not always able to do so due to family constraints.

Three students were driven more by a desire to broaden their networks and experiences by living elsewhere. One student wanted to attend school “somewhere I haven’t been.” Another student felt that said that he “would like the opportunity to get out and go somewhere else. I think

that would be cool. Plus networking as well, that gives me a whole new environment.” Another student said he would “love to go overseas, that’s really where I would want to go...I feel like being able to go abroad and stretch my legs would give me more of a well-rounded foundation.” These students wanted to have different experiences, even if they thought they might eventually be back in Texas.

Location flexibility. Other students were flexible on location: they were happy where they were, but were willing to move for the right educational opportunity, either across Texas or across the country. Four students expressed this view. One said, “If it is going to involve my education, it doesn’t really matter [where the university is],” although the student wanted to stay in Texas. Another, when asked whether geography mattered, said: “Not really. Not really at all. Right now I am pretty close to home. San Antonio is only an hour and a half away, but I am more than willing to move across the country.” One student noted this relationship between institutional quality and distance or geographic preference. She was considering a range of prestigious universities across the country: “If someone gets accepted to schools like that I’m sure they won’t even consider where they are ... for that opportunity.” She noted she would be willing to move for those schools. Another student said he was applying to a school that was very close to him (UT), but said that he would probably still apply if it had been further away:

I guess if it was 30 miles away or 30 minutes away and Texas [State] University at San Marcos was here, I would still consider UT, because to me, from everything I have heard, it is the most reputable around. So, I would still consider going a little bit of a further distance if I needed to go to the most reputable school. I guess I say geography, but it just happens to be next door.

This student again highlights the relationship between the geography of higher education institutions. Although this student was willing to travel further for a more selective university, he did not need to because of his close proximity to a selective university.

Ruling out institutions based on safety, location, and climate. Participants gave myriad reasons for choosing a transfer institution based on their perceptions of the city or town where schools were located. In two cases, students did not want to look at schools in two geographic areas because they perceived them as crime-ridden. These two students had some, perhaps limited, experiences with these two cities and decided not to attend due to concerns about crime. All students in our study were attending institutions in two large metro areas, and three of them described not choosing particular schools because of their rural location, describing them as being in the “middle of nowhere.” One student ruled out Texas A&M, a flagship university, because, as the student said, “I don’t like being in the middle of nowhere.” Similarly, another student said of Texas Tech: “It’s in the middle of nowhere.” A third student did not consider Angelo State University in Texas because “Angelo State is kind of country. I wasn’t really raised in a country atmosphere, I am from the city.” These students thus ruled out options because they were rural.

Three students were drawn to, or ruled out, institutions because of weather or geographical settings. One student mentioned an out-of-state institution, but commented that the cold and snowy weather caused her to exclude it from consideration. As she said: “It snows there, so no.” Two others cited outdoor living and the beach respectively as reasons to attend transfer schools in specific areas away from central Texas. One student said: “At the transfer fair there was a booth there for A&M Corpus [Texas A&M Corpus Christi], and the lady there was really sweet and really informative. I can’t remember what she talked about, but just the idea of living near the beach is pretty cool.” Another student considering the University of Colorado, Boulder said, “I

love the outdoors, I love the program, I love everything about it.” These students were drawn to particular geographic features of the cities where institutions were located.

Constraints on Geography: Family Finances, and Inertia

Geographic constraints and family. One-third of all participants in the sample (36 out of 100) mentioned family when talking about institutional location, making this the most frequently cited geographic determinant. This group was evenly split in terms of current community college, age, and gender, but had far more females (26 out of 36). For most of these students, families were anchors keeping students close and thus narrowing the list of potential four-year schools. One student, whose thoughts were reflected by others, stated:

I try to keep it local. I did look at John Paul II University in San Diego. And I looked there because my grandmother lives in San Diego, my dad’s family lives there. So, I thought of going there, but I really don’t want to leave home because I kind of want to see my two sisters grow up and I feel like if I leave the house, that bond that I have with them will kind of go away. So, that’s my greatest fear in leaving home. I’m also a great help to my parents...So, yeah, I have looked at universities but pretty close.

Students like this one defaulted to staying close because of strong relationships with their families.

Feelings about parental support were especially interesting as a geographic constraint in a few cases where students’ spoke of negotiating this relationship. For example, one young Latina said:

I talked to my mom because we are pretty close. She encouraged me to go. Her and my uncle really wanted me to get away and learn to be on my own. But I just felt that I wasn’t ready. I couldn’t leave. I didn’t feel comfortable leaving them behind yet.

On the far end of this spectrum, two students who were seeking freedom and independence stated that the further they could get away from their families the better; this was influencing them to look for four-year schools in other geographic areas.

About one-half of the students in this group spoke not of parents but of other family members. For example, 11 students cited the needs of their dependents as reasons to stay close to where they were currently living. For example, one noted:

I have a different mindset of other people my age, because they don't have children. All that I really think about is just finding a college that I could get to closest. That is pretty much it. I don't know. I don't really think about social-wise or any of that.

Two students were caretakers to their own parents and three mentioned spousal preference as their reason to *remain* in the current location. Extended family (or in one case a sister living out-of-state) were mentioned by seven participants as potential reasons to leave the immediate geographic area but to move into areas with built-in, family-based support systems. Having family in a strange place made the exploration of a new area less intimidating.

Geographic constraints tied to institutional cost. One key reason for students' geographic constraints related to the institutional and other costs of attending a particular college. Twenty-four of the 100 participants named financial considerations as impacting their geographic preference. This group was fairly evenly split between CC A and CC B, and equally split by gender, but 20 of the 24 participants were first-generation college students. The relatively low cost of in-state tuition was cited as the key motivator to remain in Texas. Two students noted additional state incentive programs forced them to choose in-state schools. In particular, one participant who identified as deaf explained that she could receive free tuition at any public university or college through the College for All Texans program. Another participant mentioned that her parents had

taken advantage of a previously available program (the Texas Tomorrow Fund) that would match contributions accumulated in an education savings account. The largest number of participants named in-state tuition as the most important financial consideration in shaping their transfer institution choice.

While all of the participants who mentioned financially driven geographical preferences were exclusively considering transfer institutions within the state of Texas, more than half (14 out of 23) of these participants had further narrowed their options to four-year institutions within their local area. Among this group, housing, work obligations, and family ties were entwined with financial considerations, though the age of the participant was related to a desire to stay local. Younger participants (ages 19-27) wanted to live with or very near their parents to save on room and board or to minimize costs incurred to travel to family events. One participant noted that he and his parents were very “different,” but that he still planned to move back in with his parents and choose a transfer school close to where they lived: “I’m willing to go back for the sake of not having to pay so much. My bills would go down by \$1200. If I move back home, I’m like, ‘I’ll take that.’” Another participant echoed the importance of not paying rent when she commented, “UT-Austin is in my backyard, my family has been there, it would save so much money just to go here. I know it is expensive to go to any school, but if I don’t have to pay for room and board and driving back to see family and all that other stuff, it all adds up.” For these students, their choices of schools are narrowed from the larger pool in the state of Texas to just those institutions near their families’ homes because of financial constraints.

Older participants described needing to remain in their jobs and avoiding moving expenses (in one case home ownership) as barriers to choosing a four-year school outside of their current residential area. This is captured by one student from CC B who explained:

Because I am a resident of Texas and I am not trying to pay out of state tuition... Now that I am in San Antonio, as a matter of fact I was talking to my mom, education-wise, I never thought in the past, “Hey, I could actually go to UT Austin if I wanted to.” That is a prestigious school and it is not very far from me. Being that I have little ones and I am already in San Antonio, most likely, I would probably just stay here ... I don’t want to make a move, a drastic, dramatic move again until I am stable in a job.

In this way, the proximity to prestigious university reduced the need to seek out high-quality institutions further away. The existing geography of higher education institutions is thus a key factor in access and successful enrollment in high-quality institutions. A student’s location relative to existing higher education institutions factors into their impression regarding their ability to access and successfully transfer to a high-quality institution. A participant a few years older who also had children made similar and straight-forward remarks about her choices to remain local: “For me it’s like very basic. I can either afford to go or not afford to, financially and distance-wise. So there are very strong limitations to what I can do or where I can go. I’m not a 20-year-old that can just take all these things [social life, program offerings] in consideration.” Other participants stated, “I would not. I could not. I could not be able to move because how am I going to pay my bills?” and “It has to be something that’s local.” These students have bounded their choice sets even narrower than the state of Texas because of geographical considerations tied to financial limitations.

Geographic constraints and inertia. A small group of participants (14) expressed a desire to remain in their current geographic location because they felt settled there; we coded this preference as “inertia.” More than three-quarters of these students came from the Austin area. This group of students skewed young, with 10 out of 14 under the age of 21, and all were in their first

or second year of community college. The overwhelming sentiment of this group of participants was that they felt settled in their current location. One commented:

Why did I like those schools? I guess the biggest reason would be proximity. I'm familiar with them. Every school I picked I've been on their campus. I've met their staff. I know what they offer. I know their expectations for transfers. I have friends and family that went there. I'm very familiar with them.

Others said they felt "rooted here" or commented that they "don't want to start a new program, a new system." While universities cannot move themselves to places where participants feel comfortable, the feelings of the students in this group demonstrate how difficult and intimidating it can be to approach the transfer process, which can become doubly intimidating when students must also adjust to a new metro area.

Geographic constraints and career concerns. A small (9 students) and heterogeneous group of participants framed their decision making about transfer institutions as a combination of geographical and career considerations. For four students, current jobs rooted them to their current geographic area. Three students noted that staying in Texas for school would lead to a job in Texas down the line. One put it succinctly, "Most Texas companies, they want to hire Texas people." The remaining two students commented that they would be willing to leave the area or the state for an opportunity that would increase their network or help them achieve their career goals. One said: "[Geography] plays a small role because I would like to be closer to my family, but also ...with my goals, I plan to make family by myself, so I'm going to have to move where I see fit for me as a researcher and the mother." This group was very diverse in terms of gender, race/ethnicity, age, and current geographic location, but was nearly 80% first-generation.

Geographic constraints and transportation. The participants who included transportation concerns in their consideration of four-year institutions highlight a distinction between themselves and the traditional campus-dwelling student who has just completed high school. Participants spoke of traffic issues, including a desire to move to state school on a suburban campus, and challenges of finding public transportation routes to campus locations. One student said, “The less I have to drive, better.” In two cases, students spoke of seeking out schools with online courses to avoid these transportation troubles. While transportation was not explicitly mentioned by a large number of students, these concerns were often tied up in other geographic constraints such as overall city preference, career concerns, and family. It is important to remember that many transfer students may not live on campus at a four-year school and therefore transportation options are very important.

Discussion and Conclusion

Researchers have consistently shown that distance to college matters, with significant implications for low-income and first-generation college students (e.g., Turley, 2009). However, our work extends this research by further unpacking the ways in which distance matters in students’ complex decisions, and the geography of college opportunities in two metro areas. We also focus on the under-examined subset of students who are in the process of transferring from a two-year to a four-year institution because these students may have different geographical preferences and constraints. In doing so, we build on the work of scholars who use critical geography to understand the physical and spatial aspects of place in relation to the social dimensions at play in communities. In particular, our work explores the interactions between community college students’ decisions and navigation of higher education opportunities within their geographic contexts.

Overall, students' geographical preferences and constraints were complex, and there was a broad range of reasons why students chose to stay in their metro areas. We find that the average distance to students' choice institutions keeps them close to or within their metro area, but both quality *and* geography mattered to students. For this reason, many expressed interest in applying to UT-Austin, a selective university, but they also had access to other higher education institutions nearby. This provided them with options and exposure to institutions within a close geographic range. Furthermore, first-generation students shared how their family ties placed geographical constraints on their decision-making, but when we analyzed the institutions in their choice sets, we saw a more complex distribution of institutions that extended beyond the metro area they called home. In some cases, the colleges they aspired to attend were different from what their families wanted for them. For others, staying close to home provided essential supports and access to social capital (Author, 2017; Martinez, 2013).

Our work aligns with studies that have examined how distance factors into college decisions. The average distance to the universities the students in this study considered was greater than found in the literature, perhaps because of our focus on the geographically large state of Texas. For Case Study A and B, the average distance to the university was 83.2 and 72.8 miles, respectively. Eagan et al. (2014) find that 57.4% of incoming freshmen attending public four-year colleges enroll within 50 miles from their permanent home. However, this means that programs that provide information to students might consider a broader distance, particularly for Texas. For example, Castleman, Schwartz, and Baum (2015) find that the preferred personalization technique of state and federal databases delivering information on higher education institutions is to provide information on institutions based on students' zip codes and academic profiles/history, thereby sharing information on colleges that are within a "comfortable distance" from their zip code. While

our sample is small and particular to Texas, we find that a “comfortable distance” ranged from 45 and 80 miles for students, which may help counselors and applications designed to provide better information to students to determine appropriate distance bands to consider in efforts to expand access to higher education for marginalized groups.

Our work also elaborates the geography of opportunity in higher education. The students attending the two community colleges in this study are living in metro areas not considered to be “education deserts” (Hillman & Weichman, 2016), since they have colleges or universities located nearby, and the community college is not the only public broad-access institution, admitting more than 75% of its applicants, in the region (Angrist, Autor, Hudson, and Pallais, 2014; Doyle, 2010; Fryar, 2014). However, Hillman and Weichman (2016) also argue that it is possible that a more granular assessment would reveal far more deserts than those found at their level of analysis, the county level. For example, case studies of local communities revealed the existence of deserts within metropolitan areas, where neighborhood segregation and transportation costs are large barriers to equal access—even in communities not broadly designated as education deserts (De Oliver 1998; Briscoe and De Oliver 2006). Incorporating updated transportation networks into future studies could help to identify whether deserts exist within a metro area. By using mixed methods, both GIS mapping and qualitative interviews, our work also tries to move beyond the use of geography or distance as plain cartography to incorporate students’ narratives and interpretations of the ways in which historical, cultural, and social aspects interact with geography to reproduce inequalities in access to higher education (Helfenbein & Taylor, 2009; Soja, 1996). Similar to the work of scholars studying K–12 contexts, we find that racially marginalized community college students often choose schools close to where they live, both due to economic constraints, but also because of the resources that are available to them (i.e., family support), and

a “comfort zone” around their neighborhoods where they “fit in” within a city (Yoon & Lubienski, 2017). Within a complex and unequal landscape, marginalized students in our study made difficult decisions when navigating the transfer process, often involving tradeoffs between affordability, school quality, and geospatial preferences and constraints.

While our study begins to unpack students’ preferences and constraints with regard to geography, future research could expand this analysis along three strands. First, information based interventions, such as those proposed by Castleman et al. (2015), could test the extent to which community college students are responsive to receiving information on colleges or universities that are further away or out of state, and whether they are more likely to apply or enroll. Also, while some students described needing to stay close due to family or preference for their current area, others were inhibited by perceived high costs of attending universities out of state or further away. Studies could examine the impact of information-based interventions that predict students’ out-of-pocket costs for various institutions, both nearby and further away, and whether these interventions improve access for first-generation or low-income students. Second, qualitative or ethnographic studies could shed light on the experiences of students’ decisions over time, such as how geography plays a role in the lives of students with different backgrounds and obligations, as well as the potential education deserts within metro areas. Finally, while our work begins to unpack the geographic dimensions of choice sets, these patterns could be tested on a larger scale, perhaps a representative sample of community college students in Texas, to see whether the differences (by race, first-generation status, etc.) that we find on a small scale are indeed systematic.

This study has implications for policies that could help community college students transfer to the four-year institutions that best suit them. First students may be missing opportunities to attend schools that could be a better fit for their aspirations. In a study based in Italy, Vergolini

and Zanini (2015) evaluated a merit and needs-based program that targets students already planning to matriculate to a four-year school and offers them financial incentive to explore universities outside of their province of residence. Similar need-based policies could be considered for community college transfer students that would provide funds to support travel home to visit family or for families to visit students. In addition, financial aid packages could also include money for travel or moving expenses. Grants or aid dollars like these could also address students whose choice sets were constrained by feelings of inertia or intimidation about new metropolitan areas or school systems.

A one-size-fits-all approach to college transfer advising should be reconsidered given that decision-making and the creation of choice sets vary by student across different levels (i.e., race, gender, first-generation, etc.). If a student needs to stay local, then providing accurate information about what a private versus a public university can provide (e.g., financial aid) would help students who are considering transferring make better-informed decisions. Similarly, if students are looking to move out of their metro, then providing them with opportunities to visit campuses and inquire about financial aid packages could help debunk any myths they or their families might have.

While 81% of community college students intend to transfer, only 33% do within six years (Horn & Skomsvold, 2011; Jenkins & Fink, 2016). In addition, we find that students of color and first-generation students are particularly sensitive to the distance from their homes to an institution of higher education (Black, Cortes, & Lincove, 2015; Hurtado & Carter, 1997; Turley, 2009). Therefore, programs between community colleges and neighboring four-year higher education institutions should be carefully examined to make sure they are truly addressing the concerns of the students they serve.

References

- Alvarado, C. (2015). GTF policy brief: Transfer for student success. Retrieved from <http://www.greatertexasfoundation.org/gtf-policy-brief-transfer-for-student-success/>
- Atkinson, R. C., & Geiser, S. (2009). Reflections on a century of college admissions tests. *Educational Researcher*, 38(9), 665–676.
- Angrist, J., Hudson, S., & Pallais, A. (2014). *Leveling Up: Early Results from a Randomized Evaluation of Post-Secondary Aid* (No. w20800). National Bureau of Economic Research.
- Backes, B., & Velez, E. D. (2015). Who transfers and where do they go? Community college students in Florida. Retrieved from http://www.aefpweb.org/sites/default/files/webform/39th/backes_velez_commcollege_aefp2014.pdf
- Ball, S. J., Davies, J., David, M., & Reay, D. (2002). “Classification” and “Judgement”: Social class and the “cognitive structures” of choice of Higher Education. *British Journal of Sociology of Education*, 23(1), 51–72. doi:10.1080/01425690120102854
- Bastedo, M. N., & Jaquette, O. (2011). Running in place: Low-income students and the dynamics of higher education stratification. *Educational Evaluation and Policy Analysis*, 33(3), 318–339.
- Beattie, I. R. (2002). Are all “adolescent econometricians” created equal? Racial, class, and gender differences in college enrollment. *Sociology of Education*, 19–43.
- Bell, C. A. (2009). All choices created equal? The role of choice sets in the selection of schools. *Peabody Journal of Education*, 84(2), 191–208. <https://doi.org/10.1080/01619560902810146>.

- Bensimon, E. M., & Dowd, A. (2009). Dimensions of the transfer choice gap: Experiences of Latina and Latino students who navigated transfer pathways. *Harvard Educational Review, 79*(4), 632–659.
- Bers, T. H., & Galowich, P. M. (2002). Using survey and focus group research to learn about parents' roles in the community college choice process. *Community College Review, 29*(4), 67–82.
- Bettinger, E. P., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2009). *The role of simplification and information in college decisions: Results from the H&R Block FAFSA experiment*. National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w15361>
- Black, S. E., Cortes, K. E., & Lincove, J. A. (2015). *Apply yourself: Racial and ethnic differences in college application*. National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w21368>
- Bowen, W. G., Chingos, M. M., Lack, K. A., & Nygren, T. I. (2013). Online learning in higher education: Randomized trial compares hybrid learning to traditional course. *Education next, 13*(2), 58-65.
- Castleman, B. L., Schwartz, S., & Baum, S. (2015). *Decision making for student success: Behavioral insights to improve college access and persistence*. Routledge.
- Castro, E. L., & Cortez, E. (2017). Exploring the lived experiences and intersectionalities of Mexican community college transfer students: Qualitative insights toward expanding a transfer receptive culture. *Community College Journal of Research and Practice, 41*(2), 77–92.

- Chetty, R., Hendren, N., Kline, P., Saez, E., & Turner, N. (2014). Is the United States still a land of opportunity? Recent trends in intergenerational mobility. *The American Economic Review*, *104*(5), 141-147.
- Cooke, T. J., & Boyle, P. (2011). The migration of high school graduates to college. *Educational Evaluation and Policy Analysis*, *33*(2), 202–213.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.
- Crisp, G., & Delgado, C. (2014). The impact of developmental education on community college persistence and vertical transfer. *Community College Review*, *42*(2), 99–117.
- Crisp, G., & Nuñez, A.-M. (2014). Understanding the racial transfer gap: Modeling underrepresented minority and nonminority students' pathways from two-to four-year institutions. *The Review of Higher Education*, *37*(3), 291–320.
- Cuseo, J. B. (1998). The transfer transition: A summary of key issues, target areas and tactics for reform. Retrieved from <http://eric.ed.gov/?id=ED425771>
- De Oliver, M. (1998). Geography, race, and class: A case study of the role of geography at an urban public university. *American Journal of Education*, 273–301.
- DesJardins, S.L., and Toutkoushian, R.K. (2005). Are students really rational? The development of rational thought and its application to student choice. In J.C. Smart (ed.), *Higher Education: Handbook of Theory and Research*, XX. (pp. 191–240). Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Doyle, W. R. (2009). The effect of community college enrollment on bachelor's degree completion. *Economics of Education Review*, *28*(2), 199–206.

- Doyle, W. R. (2010). Open-Access Colleges Responsible for Greatest Gains in Graduation Rates. Policy Alert. *National Center for Public Policy and Higher Education*.
- Dynarski, S. M., & Scott-Clayton, J. E. (2006). *The cost of complexity in federal student aid: Lessons from optimal tax theory and behavioral economics*. National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w12227>
- Entwisle, D. R., Alexander, K. L., & Olson, L. (2010). The nature of schooling. *The Structure of Schooling: Readings in the Sociology of Education*, 178.
- Fishman, R. (2015). College decisions survey: Part I, Deciding to go to college. Washington, DC: New America. [Www. Edcentral. Org/Wp-Content/Uploads/2015/05/FINAL-College-Decisions-Survey-528. Pdf](http://www.edcentral.org/Wp-Content/Uploads/2015/05/FINAL-College-Decisions-Survey-528.Pdf).
- Flint, T. A. (1992). Parental and planning influences on the formation of student college choice sets. *Research in Higher Education*, 33(6), 689–708.
- Fryar, A. H. (2014). The Comprehensive University. *The University Next Door: What Is a Comprehensive University, Who Does It Educate, and Can It Survive?*, 19.
- Gándara, P., & Moreno, J. F. (2002). Introduction: The Puente Project: Issues and perspectives on preparing Latino youth for higher education. *Educational Policy*, 16(4), 463–473.
- Gonzalez, A., & Hilmer, M. J. (2006). The role of 2-year colleges in the improving situation of Hispanic postsecondary education. *Economics of Education Review*, 25(3), 249–257. <https://doi.org/10.1016/j.econedurev.2004.12.002>.
- Green, T. L. (2015). Places of inequality, places of possibility: Mapping “opportunity in geography” across urban school-communities. *The Urban Review*, 47(4), 717-741.
- Grodsky, E., & Jones, M. T. (2007). Real and imagined barriers to college entry: Perceptions of cost. *Social Science Research*, 36(2), 745–766.

- Grubb, W. N., Lara, C. M., & Valdez, S. (2002). Counselor, coordinator, monitor, mom: The roles of counselors in the Puente program. *Educational Policy, 16*(4), 547–571.
- Hagedorn, L. S., Chi, W. Y., Cepeda, R. M., & McLain, M. (2007). An investigation of critical mass: The role of Latino representation in the success of urban community college students. *Research in Higher Education, 48*(1), 73–91.
- Hillman, N., & Weichman, T. (2016). *Education deserts: The continued significance of “ place ” in the twenty-first century*. Washington, DC: American Council on Education. Retrieved from <http://www.voced.edu.au/content/ngv:73607>
- Hilmer, M. J. (1997). Does community college attendance provide a strategic path to a higher quality education? *Economics of Education Review, 16*(1), 59–68.
- Horn, L., & Skomsvold, P. (2011). Community college student outcomes: 1994-2009. *Washington, DC: National Center for Education Statistics*.
- Hoxby, C. M., & Avery, C. (2012). *The missing “ one-offs ”: The hidden supply of high-achieving, low income students*. National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w18586>
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students’ sense of belonging. *Sociology of Education, 324–345*.
- Hurwitz, M., Smith, J., Howell, J., & Pender, M. (2012). The role of high schools in students’ postsecondary choices. *Advocacy & Policy Center Research Brief*. New York, NY: *The College Board*.

- Jenkins, D., & Fink, J. (2016). Tracking transfer: New measures of institutional and state effectiveness in helping community college students attain bachelor's degrees. *Community College Research Center, Teachers College, Columbia University*.
- Jepsen, C., & Montgomery, M. (2009). Miles to go before I learn: The effect of travel distance on the mature person's choice of a community college. *Journal of Urban Economics*, 65(1), 64-73.
- Jocson, K., & Thorne-Wallington, E. (2013). Mapping literacy-rich environments: Geospatial perspectives on literacy and education. *Teachers College Record*, 115(6), 1-24.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14–26.
- Kohn, M. G., Mansk, C. F., & Mundel, D. S. (1976). An empirical investigation of factors which influence college-going behavior. In *Annals of Economic and Social Measurement*, Volume 5, number 4 (pp. 391–419). NBER. Retrieved from <http://www.nber.org/chapters/c12702.pdf>
- Leigh, D. E., & Gill, A. M. (2003). Do community colleges really divert students from earning bachelor's degrees? *Economics of Education Review*, 22(1), 23–30.
[https://doi.org/10.1016/S0272-7757\(01\)00057-7](https://doi.org/10.1016/S0272-7757(01)00057-7)
- Lockwood-Reynolds, C. (2012). Where to attend? Estimating the effects of beginning college at a two-year institution. *Economics of Education Review*, 31(4), 345–362.
- Logan, J. R., Minca, E., & Adar, S. (2012). The Geography of Inequality Why Separate Means Unequal in American Public Schools. *Sociology of education*, 85(3), 287-301.
- Long, B. T., & Kurlaender, M. (2009). Do community colleges provide a viable pathway to a baccalaureate degree? *Educational Evaluation and Policy Analysis*, 31(1), 30–53.

- Lubienski, C., Gulosino, C., & Weitzel, P. (2009). School choice and competitive incentives: Mapping the distribution of educational opportunities across local education markets. *American Journal of Education*, 115(4), 601–647.
- Ma, J., & Baum, S. (2016). Trends in community colleges: Enrollment, prices, student debt, and completion. New York, NY: College Board.
- Manski, C. F. (1993). Adolescent econometricians: How do youth infer the returns to schooling? In *Studies of supply and demand in higher education* (pp. 43–60). University of Chicago Press. Retrieved from <http://www.nber.org/chapters/c6097.pdf>
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: John Wiley & Sons.
- Miller, P. (2012). Mapping educational opportunity zones: A geospatial analysis of neighborhood block groups. *Urban Review*, 44(2), 189–218.
- Núñez, A.-M., & Oliva, M. (2009). Organizational collaboration to promote college access: A P-20 framework. *Journal of Hispanic Higher Education*, 8(4), 322–339.
- Page, L. C., & Scott-Clayton, J. (2016). Improving college access in the United States: Barriers and policy responses. *Economics of Education Review*, 51, 4–22.
- Phillippo, K. L., & Griffin, B. (2016). The Social Geography of Choice: Neighborhoods' Role in Students' Navigation of School Choice Policy in Chicago. *The Urban Review*, 48(5), 668–695. <https://doi.org/10.1007/s11256-016-0373-x>
- Rusk, D. (2003). *Cities without suburbs* (3rd ed.). Washington, DC: Woodrow Wilson Center Press.

- Russick, B., & Olson, P. (1976). How high school seniors choose a college. In *Choice or chance. Planning for independent college marketing and retention* (pp. 65–76). Northwest Area Foundation. Retrieved from <http://eric.ed.gov/?id=ED135289>.
- Sáenz, V. (2004). Resources and information for serving minority populations. *New Directions for Community Colleges, 2004*(127), 97-106.
- Schudde, L. T. (2011). The causal effect of campus residency on college student retention. *The Review of Higher Education, 34*(4), 581-610.
- Schudde, L., & Goldrick-Rab, S. (2014). On second chances and stratification: How sociologists think about community colleges. *Community College Review, (43)*1, 27-45.
<https://doi.org/10.1177/0091552114553296>.
- Shaw, K. M., & London, H. B. (2001). Culture and ideology in keeping transfer commitment: Three community colleges. *The Review of Higher Education, 25*(1), 91–114.
- Smith, J., Pender, M., & Howell, J. (2013). The full extent of student-college academic undermatch. *Economics of Education Review, 32*, 247–261.
- Somers, P., Haines, K., Keene, B., Bauer, J., Pfeiffer, M., McCluskey, J., ... Sparks, B. (2006). Towards a theory of choice for community college students. *Community College Journal of Research and Practice, 30*(1), 53–67.
- Surette, B. J. (2001). Transfer from two-year to four-year college: An analysis of gender differences. *Economics of Education Review, 20*(2), 151–163.
- Sutton, S. E., & Kemp, S. P. (Eds.). (2011). *The paradox of urban space: inequality and transformation in marginalized communities*. New York, NY: Palgrave Macmillan.
- Tate, W. F. (2008). “Geography of opportunity”: Poverty, place, and educational outcomes. *Educational Researcher, 37*(7), 397-411.

- Tierney, M. L. (1983). Student college choice sets: Toward an empirical characterization. *Research in Higher Education*, 18(3), 271–284.
- Turley, R. N. L. (2006). When parents want children to stay home for college. *Research in Higher Education*, 47(7), 823-846.
- Turley, R. N. L. (2009). College proximity: Mapping access to opportunity. *Sociology of Education*, 82(2), 126–146.
- Wassmer, R., Moore, C., & Shulock, N. (2004). Effect of racial/ethnic composition on transfer rates in community colleges: Implications for policy and practice. *Research in Higher Education*, 45(6), 651–672.
- Yosso, T. J., Parker, L., Solorzano, D. G., & Lynn, M. (2004). From Jim Crow to affirmative action and back again: A critical race discussion of racialized rationales and access to higher education. *Review of Research in Education*, 28, 1–25.

Tables and Figures

Table 1. Side by side comparison of distance averages for CC A and CC B.

	Avg. Distance to University (mi.)	Avg. Distance to University within 1 STDEV (mi.)
Case Study A	83.2	78.7
Case Study B	72.8	45.9

Table 2. Side by side comparison of CC A's and CC B's distance averages broken down by six categories.

Case Study A		
	Avg. Distance to University (mi.)	Avg. Distance to University within 1 STDEV (mi.)
Gender		
male	100	100
female	73.9	66.2
Age		
17 - 25 years old	81.9	76.6
26 - 30 years old	83.6	83.6
31 - 40 years old		
40 - 55 years old	112.1	112.1
Generation		
First-Generation	78.9	69.9
Non-First Generation	88.2	88.2
Race		
White	86.1	69.14
Hispanic	71.24	71.24
Black	91.9	91.9
Asian	117.8	117.8
Enrollment		
Full-Time	87.8	82.5
Part-Time	62.1	62.1
Work		
Don't Work	84.9	74
Work 1 - 20 hours/wk	73.5	73.5
Work 21 - 40 hours/wk	72.9	72.9
Work 40+ hours/wk	119	119

Case Study B		
	Avg. Distance to University (mi.)	Avg. Distance to University within 1 STDEV (mi.)
Gender		
male	89.5	54.9
female	67.4	43.3
Age		
17 - 25 years old	87.5	66.2
26 - 30 years old	68.6	36.6
31 - 40 years old	25.1	25.1
40 - 55 years old	54.4	15.9
Generation		
First-Generation	70.9	46.3
Non-First Generation	75.4	45.2
Race		
White	115.2	55.8
Hispanic	67.9	47.2
Black	63	40.8
Asian	20.1	20.1
Enrollment		
Full-Time	77.3	50
Part-Time	61.9	37.2
Work		
Don't Work	49.3	35
Work 1 - 20 hours/wk	82.8	60.7
Work 21 - 40 hours/wk	79	45.6
Work 40+ hours/wk	63.4	27.9

Table 3: Importance of geographical location for various reasons

Living Close to Parents & Relatives Getting Away From This Area Other (e.g., Big City, Job Prospects)

Overall	<i>Not Important</i>	28.57%	44.90%	7.14%
	<i>Somewhat Important</i>	28.57%	27.55%	15.31%
	<i>Important</i>	19.39%	12.24%	35.71%
	<i>Very Important</i>	23.47%	15.31%	41.84%
Community College A	<i>Not Important</i>	34.04%	51.06%	10.64%
	<i>Somewhat Important</i>	25.53%	23.40%	17.02%
	<i>Important</i>	21.28%	8.51%	34.04%
	<i>Very Important</i>	19.15%	17.02%	38.30%
Community College B	<i>Not Important</i>	23.53%	39.22%	3.92%
	<i>Somewhat Important</i>	31.37%	31.37%	13.73%
	<i>Important</i>	17.65%	15.69%	37.25%
	<i>Very Important</i>	27.45%	13.73%	45.10%

Figure 1. Distances between a Student's Home and the Universities They are Considering Transferring To

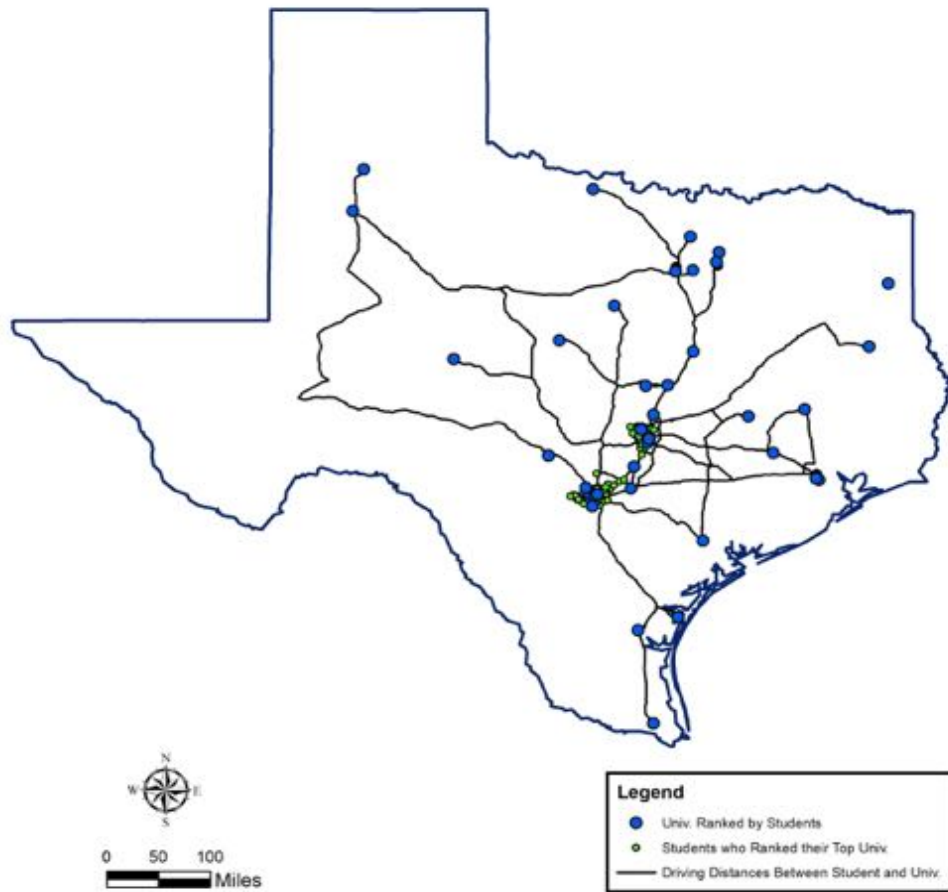


Figure 2. Community College A (left) and B's (right) Metro Areas.

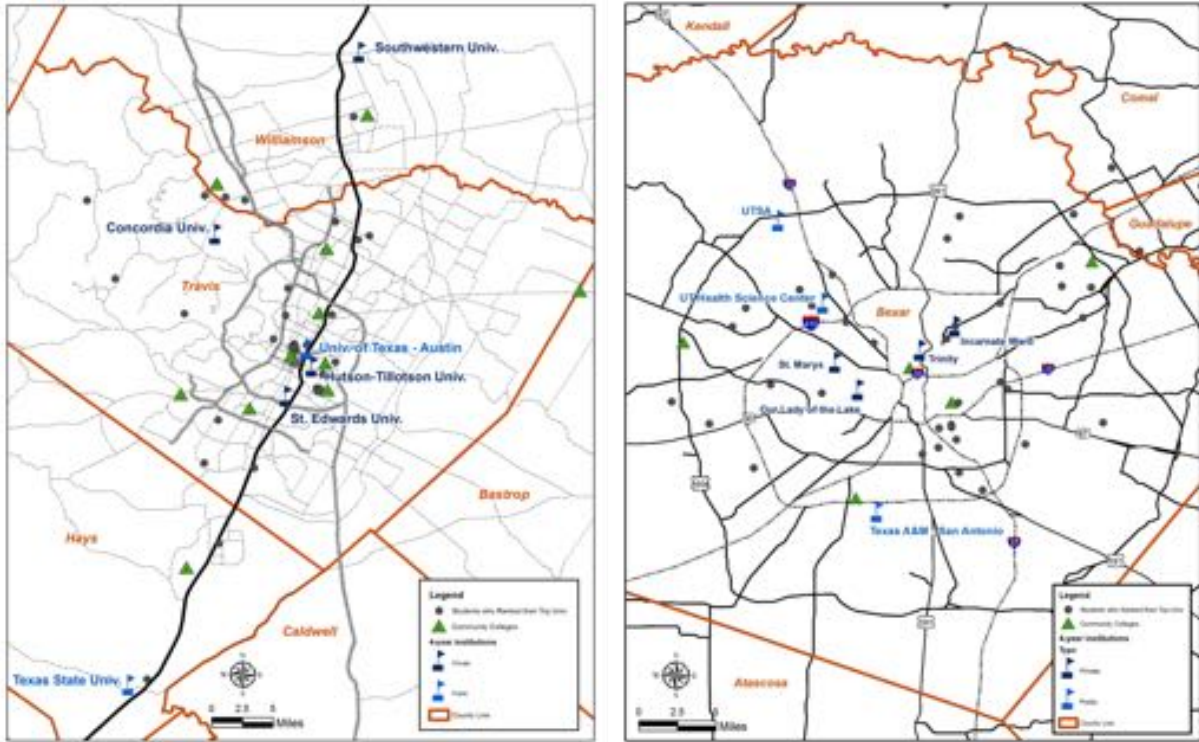


Figure 3. Hispanic population in Community College A (left) and B's (right) metro areas.

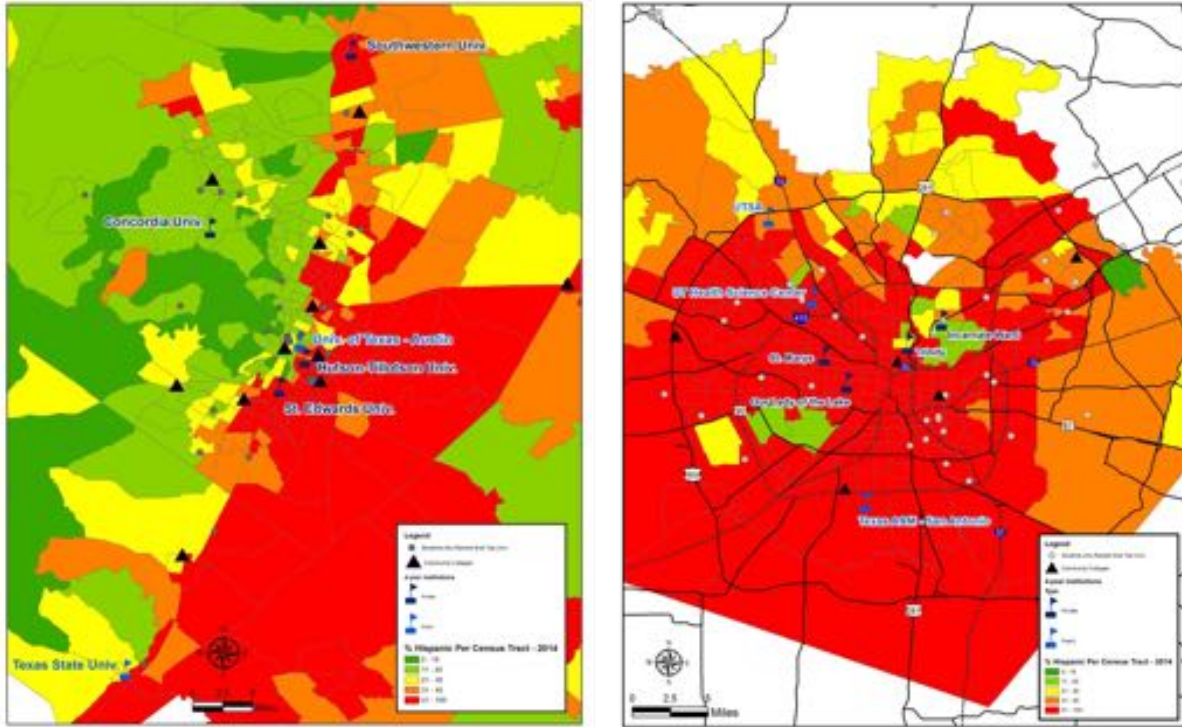


Figure 4. Community College A - Choice sets broken down by race. The line segments represent the driving distances from a student's home to the universities they ranked.

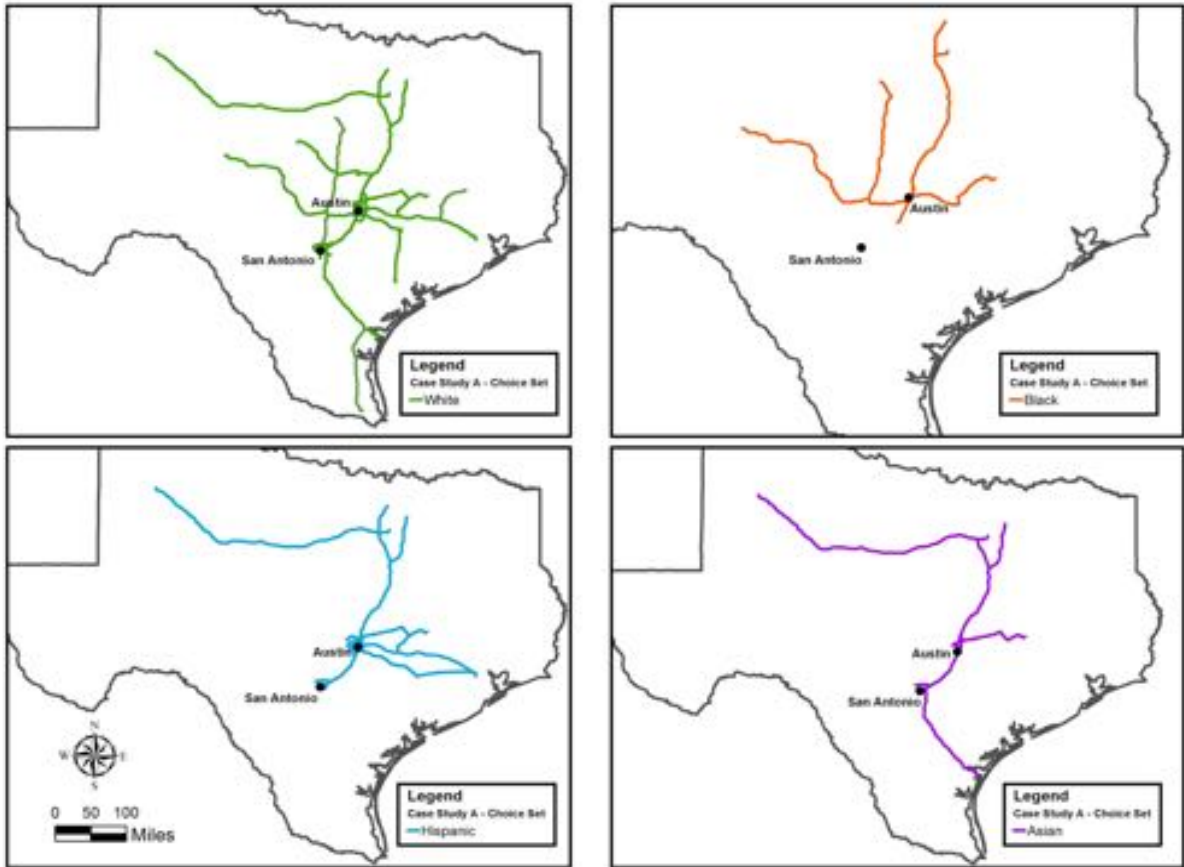


Figure 5. Community College B - Choice sets broken down by race. The line segments represent the driving distances from a student's home to the universities they ranked.

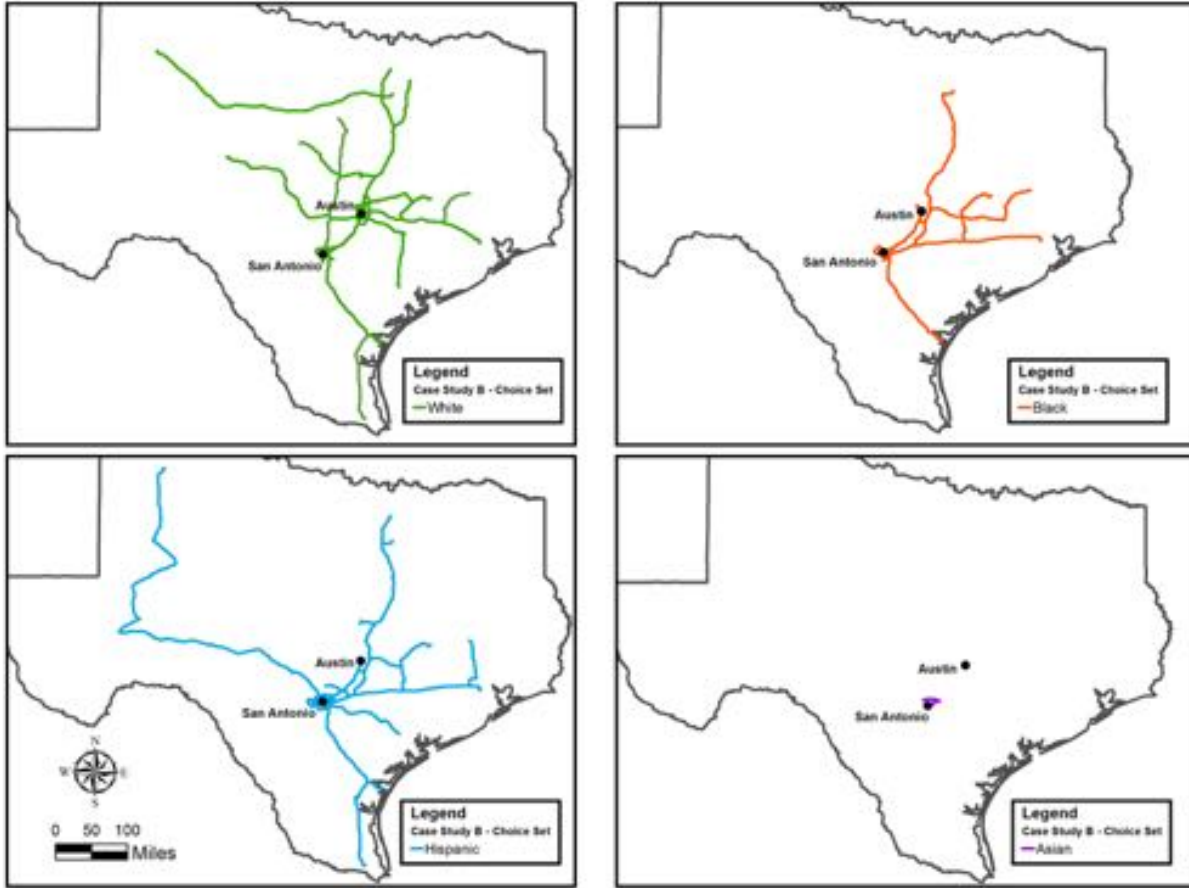


Figure 6. Community College A - Choice sets broken down by non-first and first generation. The line segments represent the driving distances from a student's home to the universities they ranked.

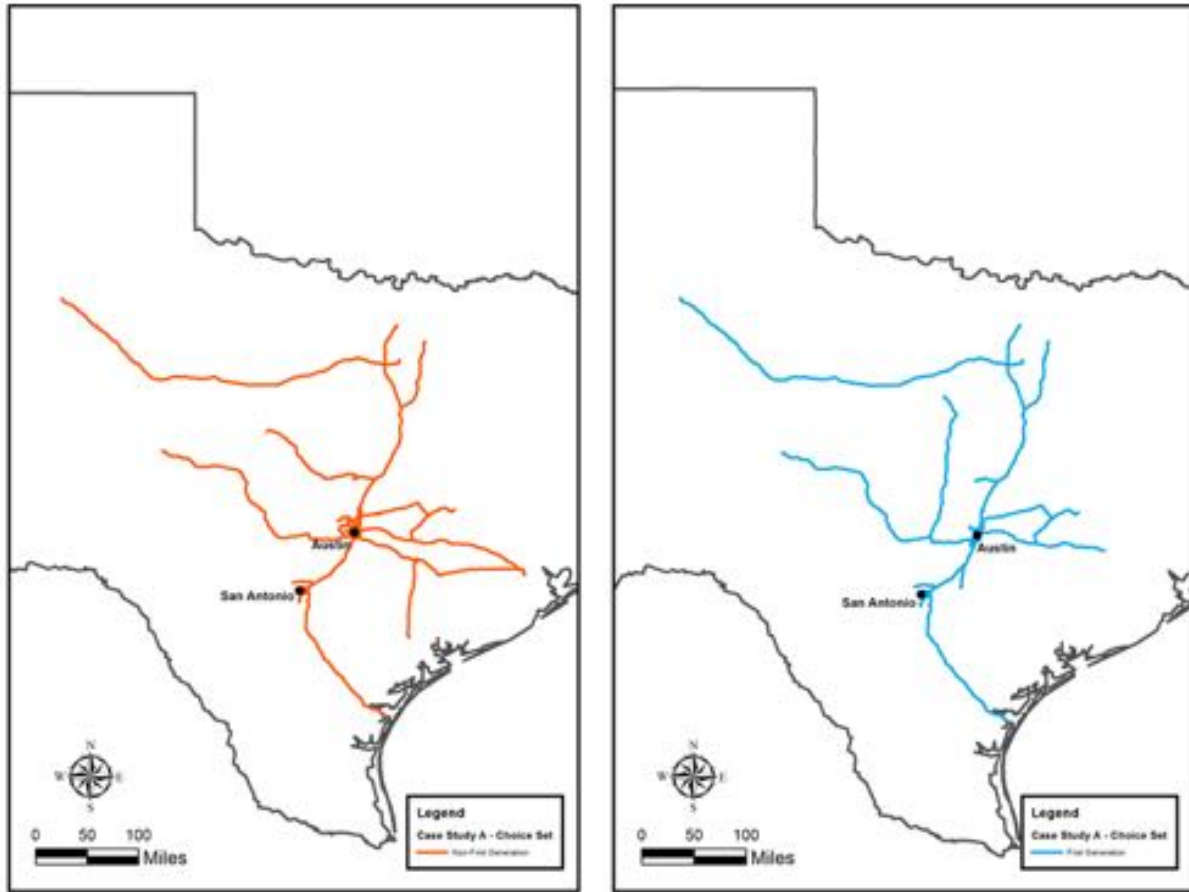


Figure 7. Community College B - Choice sets broken down by non-first and first generation. The line segments represent the driving distances from a student's home to the universities they ranked.

