

The Most Common School Choice:
Student Reenrollment and Its Associated Factors

by

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ABSTRACT

This dissertation is based on an empirical study that focused on student reenrollment, an essential but largely overlooked element of school choice policies. Based on the school choice literature, I extended the hypothesis of parental charter school choice to the subject of reenrollment. In doing so, I referred jointly to theories from the fields of public choice and business, in order to better understand student reenrollment in a maturing education market. By tracking student enrollment records over multiples years and linking them to school attributes (socio-economic status, racial/ethnic composition of the student body, school quality label), student demographics, and student academic performance, I established a complex student reenrollment database. I applied a rigorous statistical model to this data, allowing me to identify a number of important insights about student reenrollment in a maturing education market. I described the reenrollment patterns at the state level, as well as a predictive model of reenrollment outcome at the individual level. My analyses indicate that student reenrollment was the most common school choice outcome: most students reenrolled in their present schools, regardless of that school's quality label; however, the student reenrollment rates in charter schools were lower than those in traditional public schools. I observed patterns of segregation in student reenrollment within Arizona, as reenrollment appeared to be significantly polarized with respect to school attributes and students' characteristics. There were two distinct patterns that appeared to coexist in Arizona's student reenrollment data: quality-oriented reenrollment and similarity-oriented

reenrollment. The findings of this study extend the school choice literature to include student reenrollment. This study challenges the application of market metaphors in the context of school choice, which generally advocate the reform of public schools through encouraging students to switch, promoting school competition and thereby improving public education quality. Instead of using command and control policies to shame schools into improvement, however, policymakers and parents should employ school accountability policies and the practice of school labeling as a trigger to reinvest in struggling schools, rather than encouraging students to find a new one.

DEDICATION

This study is dedicated to my parents, Jitang and Xianghua, whose lifetime of support and encouragement has sustained me during this project, as well as to my wife Tianyu: I could not have done this without your patience, faith, and understanding.

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Chapter 1

REENROLLMENT – A NEW CONCERN IN THE CHANGING SCHOOL

CHOICE CONTEXT

Laws were passed around charter schools, considered the most popular school choice option, with the expectation that this would lead to an increase in school competition and thereby improve the quality of public education, by facilitating parental school choice. As a result, school choice policies and the associated academic literature have primarily focused on enabling students to switch from traditional public schools to charter schools. Policymakers and researchers generally take it for granted that parents will want to exit low quality schools when other school choice alternatives are available. Further, the act of switching schools is regarded as a deliberate and beneficial parental decision, intended to improve students' academic standing. Hence, many states and local governments are dedicated to building a favorable policy climate in order to facilitate parental choice. Accordingly, many charter school studies have largely focused on the conditions under which students exit traditional public schools to attend charter schools. This orientation is entirely predictable, as the act of switching schools is the primary expression of school choice and, importantly, students' entrance into their schools of choice is a necessary condition for maintaining and studying the phenomenon (Hoxby & Muraka, 2007).

However, analysts recently have been perplexed by the overwhelming percentage of parents who choose to remain in schools that fail to meet federal standards, despite the availability of the NCLB school choice option, which

should allow them to leave (Bell, 2005; Robelen, 2002; Schemo, 2002; Teske, Fitzpatrick, & Kaplan, 2007). The NCLB choice provisions are based on the assumption that parents will choose to exit low quality schools, given sufficient information about school quality and an opportunity to leave (Howell, 2006). However, the reality is that most parents still choose to stay in low quality schools. This reality should remind policymakers and researchers that there are other features that play a role within the topic of school choice.

In a sufficiently competitive education market, parents are actually faced with two options when it comes to school choice decisions – switch students to another school or reenroll them in their present schools. This study focuses on the latter choice.

There is an abundance of academic literature on school choice that has focused on students switching schools. The act of reenrolling in the present school, however, has received little attention, especially in the current school choice context. In actuality, the lack of attention paid to non-switching students has resulted in the omission of an important perspective from the discussion on school choice as an educational policy tool (Ogawa & Dutton, 1994). In this sense, the landscape of the school choice literature should shift from a “focus on those who move” to a more comprehensive consideration that “includes those

The Evolutionary School Choice Context

Before school choice reform emerged, public school parents had few options regarding students’ schooling. So, most parents had to reenroll their students in one of the few schools assigned by school district officials. The

centralized public school system was often criticized as a rigid and inefficient bureaucracy (Friedman, 1962), and many researchers advocated the empowerment of parents, suggesting that providing parents with control over their students' schooling and enhancing school competition would be effective approaches to improving education efficiency and quality (Chubb & Moe, 1987, 1990; Friedman, 1962; Gintis, 1995).

Proponents thought that the promotion of school competition and the improvement of school quality could be achieved through the following school choice rationale: parents who exercised school choice options should be viewed as consumers/choosers in an education market (Feinberg & Lubienski, 2008; Heid & Leak, 1995; Lubienski, 2001; Wells, Slayton & Scott, 2002; Weidner & Herrington, 2006). For choosers, their decision-making around school choice is usually significantly influenced by school quality (Burgess, Greaves, Vignoles, & Wilson, 2009; Hoxby, 1999; Schneider, Teske & Marschall, 2000; Teske & Schneider, 2001). A student is much less likely to remain in a low-quality school than a high-quality school, holding individual ability and achievement constant (Hanushek, Kain, Rivkin, & Branch, 2007; Hanushek, Lavy & Hitomi, 2008). Given school choice options, parents would seek a more satisfactory education for their students by exiting traditional public schools, if their education preferences and expectations could not be met (Chubb & Moe, 1990; Henig, 1995; 1970; Lubienski, 2003a; Manno, Finn, Bierlein, & Vanourek, 1998; Vanourek, Manno, Finn, & Bierlein, 1997a). Through students' switching of schools, low quality schools would be gradually weeded out because fewer parents will enroll

their students; that is, only good schools could survive under conditions of market competition (Chubb & Moe, 1987, 1990; Friedman, 1962). Ultimately, the rationale is that the entire public education system would improve if parents were able to “vote with their feet” as this would result in “survival of the fittest” in school competition.

The hypothesis that market-driven competition can improve school quality subsequently became a common theoretical underpinning of many school choice programs, including the charter school laws. As a means of reforming public education, charter schools gradually became the most popular school choice program in many states. In the early stages of the charter school movement, the education market was still underdeveloped and charter schools generally did not maintain a competitive advantage over traditional public schools. Hence, significant efforts on the part of policymakers, such as their establishing more charter schools or using school report cards to make parents aware of school quality, were dedicated to fostering an education market and facilitating parental choice. Correspondingly, past school choice studies have also focused on choosers because, in the past, school switching has been considered the primary expression of school choice (Hoxby & Muraka, 2007), and these choosers help to create an efficient education market via their attendance of school choice programs (Buckley & Schneider, 2003).

But the charter school experiment has now been operational for two decades and an entire generation of students and parents has been exposed to it. In many states, such as California, Michigan, and Arizona, charter schools are a

common feature in the K-12 education landscape (Lake, 2009). For today's students, charter schools have always been a school choice option. In some locations, the sheer number of charter schools indicates that they have evolved from an experimental status to a full-scale independent sector. A maturing education market in which charter schools and traditional public schools are competing for parents and students is now forming.

Within this maturing education market, a student reenrollment outcome can now be thought of as an indication of school quality, to some extent, given that parents are quality-motivated. This is because parents should logically choose to leave underperforming schools, to enroll their students in higher performing schools. Reenrollment itself is therefore an alternative manifestation of parental decision within the present school choice environment. Almost all parents have similar concerns about schools and their students, even if they may have a different understanding or preferences about school quality and their student's education. Student reenrollment should follow the same logic as the initial enrollment decision – in a maturing education market, parents' decisions about whether to reenroll their students in the same schools will be quality-motivated. Hence, the factors that motivate parents to make the decision to switch schools can be applied to infer possible reasons for parents' choice of reenrollment. In other words, theories and assumptions behind the initial school choice (school switching) should pertain to parent reenrollment decisions as well.

In addition, as parents demonstrate their preferences by “voting with their feet,” the outcomes of reenrollment can be viewed as a meaningful market signal

under the current school choice context. For the entire public school system, student reenrollment behaviors in the current maturing education market should not be seen as a random or scattered outcome. That is, there may be a meaningful, logical association between student reenrollment outcomes and various factors pertaining to the school and the student. A comprehensive and in-depth investigation into student reenrollment and its associated factors will provide policymakers and the whole of society with an alternative lens, to better understand parents' choice behavior, charter school policies, and the current, maturing education market.

Policy and Market Environment in Arizona

Arizona is an ideal location in which to conduct a student reenrollment study. Arizona has long been regarded as a leader in the growth and development of charter schools (Gresham, Hess, Maranto, & Milliman, 2000). The rapid growth of charter schools in Arizona, where school choice is well established and often presented as a legitimate marketplace, provides an appropriate context to expand the policy discourse to investigate student reenrollment issues.

Charter schools have emerged nationwide as an education reform strategy, especially in Arizona. Arizona has a large and diverse population, but the average level of education is relatively lower than the rest of the country. According to statistics reported in the National Assessment of Educational Progress (NAEP), in the past two decades, the academic achievement of Arizona's elementary and secondary students, in math and reading, has been lower than the national average. The disadvantages of Arizona's public education are also reflected in the large

percentage of students who hold low socioeconomic status (SES), who are not proficient in English and who receive inadequate educational funding (Miller, 1997; Willey, 1993). Policymakers and other proponents expect charter schools, as a means of education reform, to improve Arizona's public education. According to Arizona's charter school law, charter schools, as alternative academic choices, are established to provide parents and students with "a learning environment that will improve pupil achievement" (A.R.S. §15-181).

Charter schools have historically been supported by Arizona's legislators, the Department of Education, and parents (Palmer & Gau, 2003). Approved in 1994 and subsequently amended in 2003 and 2008, Arizona currently has one of the 'strongest' charter laws in the nation (National Alliance for Public Charter Schools, NAPCS, 2010; The Center for Education Reform, CER, 2010). The charter law in Arizona permits the State Board of Education, the State Board for Charter Schools, local school districts and qualified universities or community colleges to charter an unlimited number of schools. This large number of charter sponsors allows for a wide array of potential operators, which has facilitated the popularization of charter schools and parental choice in Arizona (Bulkley, 1999). Policymakers in Arizona also cooperate with charter schools in the application and approval process, accountability, and quality control. The charter-friendly Department of Education in Arizona also provides additional support to assist parents and students in choosing charter schools. In addition, the emphasis on parental choice has been a significant feature in charter school development in Arizona. According to Smith (1996), efficiency and choice, rather than quality or

equity, were the most important values as viewed by Arizona's policymakers, when it comes to education reform. Bulkley (1999) highlighted that market force and parental control were two distinctive features of Arizona's charter school law.

With the strong support of legislators, government and parents, charter schools in Arizona have become powerful competition for traditional public schools over almost 20 years of development. Currently, there are 506 charter schools, which make up 23.2% of all public schools in Arizona, serving 125,284 students, who represent 11.6% of all public school students (NAPCS, 2012). Amongst the 40 states that have charter laws, Arizona ranks highest in terms of the percentage of charter schools and charter students, thus the market share of charter schools in Arizona is extremely large.

Besides the increases in charter schools' market share, a historic decline in both student enrollment and tax revenue are now being experienced in Arizona, which has also intensified school competition. In 2009, student enrollment in traditional public schools declined to their lowest point since 2006 (Arizona Department of Education, 2009). Meanwhile, the intense competition for students has been heightened by Arizona's budget crisis. In fiscal year 2009, the state legislature proposed cutting \$567.2 million from the state budget, of which \$133.2 million was to come from education funding (Pitzl, 2009). The lack of student growth coupled by diminishing resources has incited intense battles for public school funding.

These events have encouraged both traditional public schools and charter schools to heighten the emphasis on student reenrollment. While Arizona's

booming enrollment has shielded the expansion of charter schools for many years, traditional public schools have also awakened to this aggressive and competitive environment. Charter schools, which have always been responsive to parental preferences, in order to attract students, are now established community institutions that are well positioned to compete for students in this new era of diminished education resources. The end result is the present scenario of hyper-competitive conditions where the “school-age” population growth is slow or declining, as any loss of students to charter schools or nearby districts is immediately seen on the bottom line.” (Arsen, Plank, & Sykes, 2001, p. 17). Now, more than any other time in the history of Arizona’s expansive school choice marketplace, all schools have tangible incentives to encourage student reenrollment. Student reenrollment in Arizona invites researchers and policymakers to recognize, analyze and decipher this emerging and significant educational phenomenon within its specific education policy context and market environment.

Policy Significance, Research Questions and Dissertation Overview

Policy significance This reenrollment study can contribute to the concerted efforts of the charter school research community. Charter schools, as publicly funded but privately operated organizations, are contingent on the great tradeoff between freedom and increased accountability. However, charter school authorizers have struggled to evaluate and hold charter schools accountable to the performance-based outcomes of their contracts (Bulkley, 2001). The vague language of many charter school statutes has left both authorizers and school

directors unclear as to the division of responsibilities within this deregulated environment (Bulkley, 2001; Hill, Lake, & Celio, 2002). The technical requirements for creating clear academic performance goals and the demands associated with measuring academic goals using credible assessments were beyond the expertise of many charter school directors and authorizers (Garn, Griffin & Wohstetter, 2001; SRI International, 2002; Vergari, 2000). In practice, charter authorizers have reverted back to traditional compliance-based accountability methods (Hill, Pierce, & Guthrie, 1997) or they have become overly reliant on standardized test scores with no distinguishable difference between how charter and traditional public schools are held accountable (2007).

Recently, the National Consensus Panel on Charter School Operational Quality (Charter School Quality Panel) encouraged the use of performance-based outcomes other than standardized test scores, in order to garner a more comprehensive understanding of school quality. The Charter School Quality Panel recommended the usage of a reenrollment ratio, which measures a school's rate of student reenrollment from year to year, as an indicator of school quality. Further, they recommended that these reenrollment rates be compared to other benchmarks such as the local district mean or the school's prior year reenrollment rate (National Consensus Panel, 2009).

This rationale can also be applied to evaluate the quality of traditional public schools in the competitive market. For traditional public schools, the competition from charter contenders may manifest itself in a variety of aspects,

from school life to extracurricular activities. However, the main embodiment of competition is the scramble to acquire students. This is because there is a high correlation between student enrollment and the allocation of school funds, across both charter and traditional public schools. According to Hoxby (1998), school competition only produces effects when it has a large financial implication – “the fiscal rewards and penalties attached to gaining or losing students” (Hoxby, 1998, p.55), which is why charter students are often framed as “losses” to the traditional public school system, given the competitive relationship between the two sectors (Arsen, Plank, & Sykes, 2001; Rofes, 1998, 1999; Williams, 2007). As competitors to traditional public schools, charter schools are thought to introduce performance accountability into the public school system, in order to improve the entire public education system (Bulkley, 1999; Henig, 2008). Thus, the reenrollment rate may be an appropriate indicator of school quality. Student reenrollment rates may send positive market signals that encourage all school educators to shift their focus away from improving the external perception of their schools (as they seek to attract future students), and to instead place their attention on improving the educational practices and climate of the school, in order to maintain their current student population.

This reenrollment study can encourage a renewed perspective of charter schools as established entities with existing student clientele. Charter schools have entered their third decade of existence and they are no longer new entrants to the educational marketplace. In Arizona, the time period in which the most rapid charter school expansion took place (1997-2004) is now over and a relatively

mature and stable education market has formed. An entire generation of students has been educated in school districts where charter schools been continuously available as one of many public school offerings. Charter schools have a prominent place in the public school landscape and are expected to remain viable options for parents long into the future (Obama, 2009).

Now it is time to challenge the perception of charter schools as new, and to re-conceptualize them as known commodities within a maturing education marketplace. Within this new phase of the education market, the mainstream is no longer limited to the introduction and recruitment of charter schools. For many charter schools and traditional public schools in Arizona's education market, the current competitive issues to be considered should include the maintenance of students – reenrollment. Many charter schools have relatively stable student enrollment due to the popularization of charter schooling. Like any other established business, charter schools understand the advantages of maintaining their existing clientele (i.e. students). To a certain extent, maintaining stable enrollment becomes a motivating device to spur schools forward, especially charter schools, to hold their place in a competitive education market. As a result, both traditional public schools and charter schools will mature as organizations, to survive in the competition to attract students.

Research questions The purpose of this study is to conduct an in-depth investigation of the general student reenrollment patterns in Arizona's public education market, and to explore the logical correlation between student individual reenrollment outcomes and associated factors. To achieve these

objectives, I have applied an empirical approach to conduct large-scale data analyses in order to model student reenrollment and its associated factors. This research contributes to the body of knowledge on school choice by modeling actual school choice outcomes, instead of parental perceptions or intentions (see Burgess, Greaves, Vignoles, & Wilson, 2009; Glazerman, 1998; Hastings, Kane, & Staiger, 2006; Schneider, Teske, & Marschall, 2000 for examples of studies conducted using parental intentions).

In this study, I have addressed the following research questions: 1) what is the general student reenrollment patterns in Arizona's charter schools and traditional public schools? Specifically, what is differences of student reenrollment by various school-level attributes (location, SES, the percentage of minority students, and quality labels), student characteristics (race/ethnicity, SES, program participation), and student academic performance? 2) How does the relationship between individual student reenrollment outcomes and the above-mentioned variables differ between the charter and traditional public school sectors?

Dissertation overview In Chapter 2, I review a series of, classical school choice studies and synthesize the academic views presented about parents' choice of a charter school – the general process of parental choice and the important factors that parents consider during their school choice decision- I then present a theoretical analysis, which can be used to understand student reenrollment. Given the limited treatment of student reenrollment in the current academic literature, I have grounded my theoretical perspectives using school

choice theories and by drawing on the business literature. Based on the substantial evidence and classical inference in school choice studies, combined with some concepts from the business literature, I have constructed a comprehensive theoretical framework, which can be used in order to better understand the possible reasons why reenrollment occurs in traditional public schools and charter schools, separately.

Chapter 3 documents the methods I have applied to conduct this empirical analysis. The chapter covers two empirical approaches I have used to pursue the research design – descriptive analyses and logistical regression. I also report details of the data sources, data preparation, dependent and independent variables, and statistical methods I have applied to analyze student reenrollment.

Chapter 4 presents the findings of my study. I have reported the general student reenrollment patterns with respect to two aspects: 1) the student reenrollment across charter schools and traditional public schools, by school attributes (location, SES, the percentage of minority students, and quality labels), student characteristics (race/ethnicity, SES, program participation), and student academic performance; and 2) patterns of segregation in student reenrollment within charter schools and traditional public schools. Then, I have reported the probability that a student will choose to reenroll, as predicted by various associated factors.

In Chapter 5, I have discussed the implications of the major findings, extending the school choice literature to include school reenrollment. Specifically, I provide an understanding of current student reenrollment at both the state level

and the individual level. I have interpreted the student reenrollment observed in Arizona's charter schools and traditional public schools. Finally, I have discussed the application of school reenrollment as a school quality indicator, and the effectiveness of school accountability policies in informing school choice decisions.

Chapter 2

HOW PARENTS CHOOSE A CHARTER SCHOOL AND A THEORETICAL FRAMEWORK OF REENROLLMENT

How Do Parents Choose A Charter School?

Researchers have conducted a number of studies in order to investigate school choice. Once parents enroll their students into a charter school, they are generally referred to as “choosers” and the prevailing viewpoint is that charter parents share a number of similar advantageous characteristics in terms of motivation and behavior – choosers usually are better informed and more involved in their students education than “non-choosers” (Becker, Nakagawa, & Corwin, 1997; Schneider, Teske, & Marschall, 2000; Van Dunk & Dickman, 2002; Lubienski, 2003a; Buckley & Schneider, 2007). Below, based on a critical review of the school choice literature, emphasizing charter school choice, I have synthesized the general process, motivations and strategies that parents apply to enroll their student in a charter school, as well as the associated factors that may impact their decision-making, in order to briefly introduce the academic views of parental choice.

The process of school choice In the academic literature, school choice is treated as a dynamic process. According to Teske and Schneider (2001), parents first determine the school features they want. Subsequently, they collect information from available schools and then make a final decision. If the selected school does not work well for their students, parents may repeat the process to choose again. Over this whole rational process, parents consider various

associated factors, such as the student's characteristics and the school environment.

Rational motives: the starting point of parental choice The prevailing perspective in the school choice literature is that parents make school choice decisions based on rational motives (Teske & Schneider, 2001; Silvennoinen, Simola, Seppanen, & Rinne, 2010). According to public choice theory, the notion of a "rational individual" is used to refer to those who are self-interested and who usually adjust their behaviors by performing a cost-benefit analysis, in order to maximize their personal utility. In their study, Ostrom and Ostrom (1971) reported that an individual acted purposefully to achieve "the highest net benefit as weighed by his own preferences" (p.205). For instance, dissatisfied parents exercise their option to leave a traditional public school, enrolling their student into an alternate school, as a mechanism to obtain satisfaction in this student's schooling (Hirschman, 1970; see also Henig, 1995). Hence, parents' enrollment their students at a charter school is based on various rational considerations, with the goal of satisfying families.

Information collection: the prerequisite of effective parental choice

The sufficiency and accuracy of information acquired about education quality and the target schools are essential for rational school choice (Lee & Fitzgerald, 1996). In practice, parents collect information before enrolling their students into a school (Chubb & Moe, 1990). Parents naturally have special, intimate knowledge of their students' interests and needs in terms of education (Coons & Sugarman, 1978; Lubienski, 2008). So, the quality of school

information available to families is a critical prerequisite for effective school-choice plans (Archbald, 1996; Lubienski, 2007). Even so, the collection, interpretation, and utilization of information by charter school parents still seems ambiguous to some extent.

Schneider, Teske and Marschall (2000) concluded that parents collected school information using two approaches: exchanging school information within their personal networks and relying on reliable school-based sources. Moreover, the development of information technology brings some new approaches for parents when it comes to gathering information. For instance, the electronic information from a school website is conducive to the probability of parental choice (Schneider & Buckley, 2002).

However, the complicated school choice environment has aroused researchers' fears about whether parents can collect sufficient information to make an effective school choice. Silvennoinen, Simola, Seppanen, and Rinne (2010) indicated that parental choice was a complex, social, local and individual process and also that parents need to take into account all conditions, which include national and local policies, socio-cultural and educational contexts, as well as the family's educational experiences, values, preferences, strategies and available resources. Goldring and Shapira (1993) have also argued that "information [in school choice] is not always readily available or completely reliable" (p.403). Hence, parents may not be able to get enough information to make proper judgment about school quality because schools are complex organizations, particularly for those inexperienced parents (Coons & Sugarman,

1978; Etzioni, 1992; Hill, Pierce, & Guthrie, 1997; Saltman, 2000; Schneider, Teske, & Marschall, 2000). The disparity of capability and approach among parents' information processes, however, does not seem to significantly weaken the positive outcomes of school choice. Due to a low information environment in the current education market, parents, even those from lower-income families, can still make decent school choices for their students, despite the lack of accurate information about schools (Teske & Schneider, 2001). Some empirical studies have also demonstrated that parents can make quality distinctions between schools and choose the best school for their students (Bast & Walberg, 2004; Goldhaber, 1996; Solmon, 2003).

There are two possible explanations that have been suggested in the literature, which are helpful in explaining this paradox. The first is that parents can take advantage of “heuristics” and “shortcut” strategies when considering the pivotal dimensions of schools – academic performance and school safety – and, as such, can then make a good choice (Schneider, Marschall, Roch, & Teske, 1999). The second is that many parents can observe and consider the positive outcomes from the choices of other well-informed parents, known as “marginal consumers” (Schneider, Teske, Marschall, & Roch, 1998). The marginal consumers or “market mavens” of education, according to Buckley and Schneider (2003), are those parents who demonstrate active choosing behaviors either by actually enrolling or by applying for a schooling alternative. Buckley and Schneider argued that marginal consumers indeed had a preference to collect information and use more effective strategies to make decisions, compared to average

consumers. It is this rational choice behavior on the part of marginal consumers that helps to create an efficient education market.

Decision-making: the implementation of parental choice Parents make their choices after they finish collecting information (Goldring & Shapira, 1993). The decision-making, just as parents' utilization of information, is also a crucial step in school choice (Archbald, 1996). The contents and processes of parents' decision-making, however, have been less critically examined in the academic literature (Coldron & Boulton, 1996; Gewirtz, Ball, & Bowe, 1995).

Bussell (1998) investigated the process of parental decision-making through the use of the Q-methodology, which is a psychological method combining both quantitative and qualitative approaches. According to Bussell, for parents from different socio-economic backgrounds, differences in the selection process arose during the earlier stages – middle-class parents were better informed and more likely to choose a school earlier than working-class parents. Most parents from either middle-class or working-class backgrounds, however, have the consensus in the strata of determining criteria and parents usually make their school choice decisions step by step. Parents primarily have overriding concerns with one or more important key factors, which often determine whether the parents exercise a school choice option, as well as which schools they prefer. Next, parents seek other essential factors associated with a target school, in order to evaluate that school more comprehensively. Finally, parents consider some more specific, tangible criteria about that school and then make their school choice decisions.

Factors: parents' rational considerations in school choice Various influential factors that parents consider in the school choice process are documented in school choice literature. The effect of those factors on school choice, however, will differ depending on parents' demands and preferences on their student education.

The most frequently mentioned factors found in the school choice literature are academic factors, such as student test scores, curriculum and instruction, class size, and teacher quality, etc. Many non-academic factors, however, also have a crucial influence on parental choice. In the school choice literature, these crucial non-academic factors include: parents and students characteristics (race/ethnicity, socioeconomic status, and cultural/moral value) or the student's happiness with the school, etc. According to the literature, all these primary factors (both academic and non-academic) may significantly influence parents' school choice decisions – they often determine whether parents exercise a school choice options and the effect of school choices. Some secondary factors may not be an immediate concern for parents choosing a charter school; however, parents still consider these factors, in order to support their school choice decisions. Typical secondary factors discussed in the school choice literature include parental involvement and a variety of school features.

Academic factors Parents usually have strong aspirations and expectations for their students (Boocock, 1972). In prior school choice studies, various academic considerations have generally been recognized by researchers as primary reasons for parents' decisions to exercise school choice (Teske &

Schneider, 2001). According to Coulson (1999), the 1993 National Household Survey revealed that “a better academic environment” was the most frequent reason given by parents for choosing a school. Using sophisticated econometric analysis to test parents’ academic expectations in school choice, Hoxby (1999) concluded that, in school choice, parents give greater priority to high academic standards, discipline, and school atmosphere, over athletic and extracurricular programs.

These findings from general school choice studies are echoed and extended by an abundance of charter school studies. According to Kleitz, Weiher, Tedin, and Matland (2000), academic consideration was cited by Texan parents as the top reason for enrolling their students in charter schools, across all racial/ethnic and income groups. In Arizona, the parental survey also indicated academic consideration as the main reason for parents’ choice of a charter school (Solomon, 2003). Ohio charter parents reported that concerns for both “quality of education” and “academics and/or curriculum” were top motivators for withdrawing their students from traditional public schools (May, 2006).

Test scores Among various academic factors, student test scores play a very crucial role in school choice. Burgess, Greaves, Vignoles, and Wilson applied multinomial logistic regression to analyze large-scale datasets. These authors concluded that parents greatly weight upon student test scores in choosing schools. Vanourek, Manno, Finn, and Bierlein (1997b) used multi-state survey data to investigate parents’ and teachers’ attitudes towards charter schools and found that parents’ choice of a charter school was primarily based on educational

reasons, such as high test scores. Local surveys also show that parents from all over the country have reached a consensus about the importance of student achievement when it comes to choosing a charter school. In Minnesota, where the first U.S. charter school was founded in 1992, two parent surveys conducted in different periods showed that student test scores were the most frequent reasons given by parents for choosing a charter school (Urahn & Stewart, 1994; Lange & Lehr, 2000). Schneider, Teske and Marschall (2000) found that parents in New York and New Jersey valued high test scores most important when considering school choice.

Student test scores have considerable influence on latent choosers. VanderHoff (2008) estimated that a 10% increase in a charter school's test scores, on average, would increase the number of students on its wait list by at least 63%. Student test scores also have considerable influence on the choice behavior of students currently enrolled in charter schools. Vanourek, Manno, and Finn (1998) reported that the expectation of charter school parents for student's academic achievement played a key role in evaluating school quality and guiding their subsequent charter school choice. When the student test scores in charter schools were lower than parents' expectations, this had a significant impact on parental choice to exit charter schools. In particular, when this took place, parents typically chose to send their students back to traditional public schools rather than switch to other charter schools (Hanushek, Kain, Rivkin, & Branch, 2007; Bifulco & Ladd, 2006a).

Curriculum and instruction, class size, and teacher quality Many other academic factors that are considered by parents may not be directly reflected by student test scores. However, they may still be highly correlated with the academic standards of a school. Curriculum and instruction, class size, and teacher quality are representative factors associated with parents' academic considerations, according to the school choice literature.

The diversified curriculum and instruction that tends to be offered in charter schools is highly attractive to parents. Hanushek, Kain, Rivkin and Branch (2007) argued that charter schools could promote innovation in terms of curriculum and pedagogy. Fiore, Harwell, Blackorby and Finnigan (2000) summarized that pedagogy and instruction in charter schools may include, but is not limited to, core knowledge, direct instruction, the Montessori approach, back-to-basics, college preparation, life skills and so on. Although there are arguments that the innovation in curriculum and instruction in charter schools is not so significant (Lubienski, 2003a, 2003b), many charter schools indeed provide a customized curricular focus for their target populations, who have preferred education needs (Manno, Finn, Bierlein, & Vanourek, 1998; Finn, Manno & Vanourek, 2000). Some researchers have reported that curriculum, teaching methods, and the relevant academic philosophy were important factors that impacted parental choice (Urahn & Stewart, 1994; Lange & Lehr, 2000).

Similar to their consideration of curriculum and instruction, class size also matters to parents in choosing a charter school. The argument that a small class environment is more instructive, improving student performance, has been

broadly accepted in educational research (Akerhielm, 1995; Angrist & Lavy, Finn & Achilles, 1990; Glass & Smith, 1979; Glass, Cahen, Smith, & Filby, 1982). Interestingly, according to public choice theory, smaller organizations are also considered to be both more efficient and more responsible to their members. People within a small community are generally better informed and have a higher rate of satisfaction (Lowery & Lyons, 1989). Combining public choice theory with school choice, Lee and Fitzgerald (1996) argued that student performance tends to be lower in proportion to oversized classes and that a small size class is one of the bases of parental choice in public education. In view of this rationale, it should not be surprising that a small class size is cited by parents as the top reason for enrolling their students in a charter school (Vanourek, Manno, Finn & 1997b; Kleitz, Weiher, Tedin & Matland, 2000).

The significantly positive correlation between teacher quality and student achievement has already been constructed in related theoretical analyses and empirical studies (Darling-Hammond, 2000, 2002; Rockoff, 2004; Wenglinsky, 2000). According to the charter school literature, a “better teacher” is another high-ranking factor that encourages parents to choose a charter school (Vanourek, Manno, Finn & Bierlein, 1997b; Schneider, Teske & Marschall, 2000; Solomon, 2003).

To bring all of this substantial evidence together, the school choice literature provides solid support for the idea that charter parents are more sensitive to their student’s academic performance and, further, that parents’ choice of a

charter school is guided by an overriding academic consideration and other, highly correlated factors.

Non-academic factors Academic factors, however, are not the full story when it comes to parents' rational decision-making in school choice. Coldron and Boulton (1991) argued that assumptions related to parental consideration in school choice should not be exclusively preoccupied with the single criterion of academic standards and that parental choice behavior also may be driven by other, non-academic factors. The self-identity of the family and the student's happiness are often discussed as non-academic factors in the academic literature.

Family identification In this study, family self-identity is a generic term used to describe the general family demographics and background. Specifically, family self-identity includes race/ethnicity, socioeconomic status, and cultural/moral values. According to Bourdieu (1984), social, economic and cultural capital combines and codetermines class stratification. This class stratification is reproduced in a school because social class is the most important factor in educational attainment and is more influential than either gender or age (Bourdieu & Passeron, 1979, 1990). Education studies have found that family background is one of major factors influencing student educational success and, further, that education is a way to maintain SES across generations (Bowles & Gintis, 2002; Hirsch, 1996; Raftery & Hout, 1993). Similarly, the family's race/ethnicity, SES, and cultural/moral values generally intertwine and interact

with the composition of a school's demographics, impacting parental decision in school choice.

School racial/ethnic composition Henig (1996) analyzed the impact of ethnicity on parental decision-making in school choice and argued that parental choosers usually avoided selecting those schools in which their own racial or class groups were not in the majority. Glazerman (1998) also found similar parental behavior in the school choice process in Minneapolis, where parents tended to avoid sending their students to schools in which their racial group represented less than 20 percent of all students. A school choice study in Chile provided international, comparative results that low-income parents' actual school choice decisions were more significantly affected by demographics than academic characters (Elacqua, Schneider & Buckley, 2005). The charter school studies have also revealed that parents evaluate a school's racial composition when exercising parental choice. Weiher and Tedin (2002) argued that race was a powerful predictor of parental choice of charter schools. Many empirical studies related to charter school student composition have found that when leaving the traditional public schools, students prefer to move into a charter school in which a higher percentage of others have a similar racial and family SES background (Bifulco & Ladd, 2006b; Burgess, Greaves, Vignoles, & Wilson, 2009; Garcia, 2008a, 2008b).

Socioeconomic Status Interestingly, social stratification results in two distinct activities in parental choice. Some parents try to address the existing inequity. According to Schneider, Teske, and Marschall (2000), minority and low

SES parents are more concerned with school safety and test scores than are white and high-SES parents. Further, minority and low SES parents prefer more loaded, traditional academic programs. In contrast, higher SES parents tend to seek a progressive type of curriculum. Schneider and his colleagues further attribute this to minority and low-SES parents' assumptions that the basic math and reading skills reflected by test scores are a gateway for a student to achieve greater economic success and a higher social class (Schneider, Marschall, Teske, & Roch, 1998; Schneider, Teske, & Marschall, 2000).

Some parents, however, seem to acquiesce to the existing inequity. Hastings, Kane & Staiger (2005) found that when exercising the option of school choice, low-income students placed substantially lower value on a school's mean test scores, while high-income parents and high-scoring students were much more concerned with high test scores. Another pattern in parental choice, associated with different family backgrounds, was observed in Kleitz, Weiher, Tedin, and Matland's research (2000). Kleitz and colleagues argued that minority and low SES households had different priorities when choosing schools (e.g. less than half of such parents thought that a student's friends were an important factor in school choice), compared to Anglo and high-SES households. However, the difference between racial/ethnic and income groups does not extend to parents' common academic concern (education quality, small class size and so on), when choosing schools.

Cultural/moral values The family's cultural/moral values are also an important factor in parental school choice. Some relevant studies have revealed

that minority and low SES families usually consider moral value and racial integration, the individual responses to dominant white culture in school, as important motives in choosing a charter school (Wells, 1996; Weiher & Tedin, 2002). Specifically, Weiher and Tedin (2002) reported that among the factors considered by parents when choosing charter schools, the teaching of moral values was the most important concern for African American parents, and was the second most important concern for Hispanic parents.

However, sometimes a family's self-identity might not only be correlated with either the racial/ethnic group or social class; it may also be more directly connected with parents' ideologies or ethical principle orientations. Wells, Slayton & Scott (2002) argued that the charter school movement was mixed with many tenets of neoliberal ideology, hence some parents might "have rejected the traditional public education system for cultural and moral – or 'neoconservative' – reasons, the free-market and highly individualized philosophy of neoliberalism accommodates their demands for more autonomy from state mandates and thus more local control over their student's education." (p.350) The strong sense of identification with the neoliberal ideology conveyed by some charter schools also significantly affects some parents' decision making when it comes to choosing a charter school.

Student happiness Researchers have also examined the role that student happiness plays in parental decision-making in school choice. Coldron and Boulton (1991) argued that academic criteria should actually be significantly minimized in parental decision-making. They determined that the happiness of the

student was the crucial consideration for parents choosing a school. Bussell confirmed Coldron and Boulton's conclusion in her empirical study and argued that parents primarily had an overriding concern for student happiness in school choice.

In practice, with regard to parental choice, a low level of student happiness typically arises as a sufficient but unnecessary factor, rather than a necessary but insufficient factor. In other words, sometimes student happiness is not a direct motivator for parents' choice of a charter school, but it is indeed a reason for parents choose to leave a traditional public school. In light of public choice theory, student happiness generally contributes to parental consideration of the option to "exit" from a traditional public school, in order to seek greater satisfaction (or at least to avoid dissatisfaction) in a charter school. A national survey conducted to examine how charter schools serve students with disabilities revealed that "dislike previous school" was one of the reasons why students chose to enroll at a charter school and, further, happiness was a significant consideration for parents choosing a charter school for their students, even though the transportation to that charter school was inconvenient (Fiore, Harwell, Blackorby, & Finnigan, 2000). Urahn and Stewart (1994) noted that approximately 10% of Minnesota charter parents reported "unhappy with prior school" as the reason for choosing a charter school. In Arizona, unhappiness is also reported as a considerable factor for parents leaving a traditional public school for a charter school (Solentohi, 2013).

Parental choice and school features Choosing the right school is not easy for rational parents, because they may take into account various aspects

associated with their students, families and potential schools. Many factors, such as parent involvement and school features, generally speaking, may not significantly impact parental evaluation of school quality and, as such, they may not change parents' final decisions, which are primarily determined based on primary factors, such as academic and non-academic considerations (Buckley & Schneider, 2007); however, these secondary factors still help to facilitate parents choice of a charter school.

Parental involvement Parental involvement is not only a distinct characteristic of a parent who chooses a charter school, it is also a beneficial stimulus, encouraging parents who want to be more involved in their students' education to choose a charter school. Parental involvement becomes a criterion in parental choice when it is determined both by parents' demands and charter schools' encouragement.

Parents generally have a strong desire to be involved in their students' schooling and they generally believe that they can help their students succeed in school (Hoover-Dempsey & Sandler, 1997). Parental involvement has been demonstrated to have positive and significant effects on students' academic and behavioral outcomes (Rumberger, 1995; Fan & Chen, 2001; Jeynes, 2003). Compared with traditional public school parents, parents who choose a charter school are reported to be more actively involved in the daily life of the school and their involvement has been reported to produce positive effects on students' education and on school's communication with parents (Becker, Nakagawa, & Corwin, 1997; Finn, Manno & Vanourek, 2000; Bifulco & Ladd, 2006b;

2006). This is reasonable, because a parent's active choice to reject a traditional public school and to enroll a student in a charter school speaks for itself.

Another common finding in the school choice literature is that charter schools provide more opportunities to improve parents' participation and interaction with schools, in contrast to traditional public schools. Many researchers argue that the autonomy and innovation in the organization structure and administration of charter schools is the main reason that these schools adopting more positive and effective policies (e.g. parent contract with school) to encourage parent involvement (Corwin & Becker, 1995; Finn, Manno & Vanourek, 2000; Bulkeley & Wohlstetter, 2004). On the other hand, the school choice theory suggests that charter school parents are active choosers so, inherently, they are more involved than non-choosers – traditional public school parents (Goldring & Shapira, 1993; Teske & Schneider, 2001). Bifulco and Ladd (2006b) argued that institutional and organizational characteristics of charter schools were only “part of the explanation for the greater parental involvement in charter schools” because “charter schools tend[ed] to be established in areas with above-average proportions of involved parents” (p.554).

Hence, parents may choose a charter school when they are more inclined to be involved in their students' education. Because a charter school can, in general, provide more opportunities to facilitate higher levels of parental involvement. According to the school choice literature, opportunities for parental involvement are a common motivation reported by parents who choose a charter school (Vanourek, Manno, Finn, & Bierlein, 1997b; Urahn & Stewart, 1994) or

who choose to withdraw their students from traditional public schools (May, 2006).

School features Some distinct features of charter schools are noticeable factors that appeal to parents. School features may not play a direct role in parents' choice of where to enroll their students, but those school features sometimes creates a favorable impression for parents and support their decision to choose a charter school.

Charter schools are voluntary alternatives for parents and students, hence they must be both more accountable and appealing than traditional public schools, in order to recruit and retain students for survival in the competitive education marketplace. Hanushek and colleagues (2007) concluded that charter schools intended to not only “do better” than traditional public schools but also to promote innovation in curriculum, pedagogy, discipline, and moral values – these school features are important in the appeal to parents. Additionally, many charter schools are also designed to improve the relationship between administrators, teachers, parents, and students (Schneider & Buckley, 2003; Buckley & Schneider, 2006). In many instances, charter schools are catering directly to parents' interests, which is evident in the distinct differences in their operations, administration, organization and mission. In the Minnesota charter parent surveys, “school feature” was the second-most popular reason given by parents for choosing charter schools, second only to “curriculum” (Urahn & Stewart, 1994).

Many specific school features are taken into account by parents during their decision-making process when it comes to school choice. Parents pay

attention to school safety (Armor & Peiser, 1998; Schneider, Marschall, Roch, & Teske, 1999; Schneider, Teske, and Marschall, 2000; Lange & Lehr, 2000; May, 2006). Parents also are concerned with the school location and the convenience of transport (Buckley & Schneider, 2007; Bussell, 1998; Coldron & Boulton, 1991; Goldring & Shapira, 1993; Holme, 2002; Hoxby, 1999), though the convenience of transport to school is often more of an impediment rather than an incentive for parents when they are choosing their favorite charter schools (Buckley & Schneider, 2007; Fiore, Harwell, Blackorby, & Finnigan, 2000). Certainly, parents also consider discipline, school appearance, facilities, supervision, school uniform, extracurricular activities, and even the principle and staff's attitudes, in their school choice decision making (Archbold, 1996; Bussell, 1998; Coldron & Boulton, 1991).

The discordance between parental preference and school choice

outcomes There is a common thread in many school choice studies – the discordance between parents reported attitudes and their actual choice behaviors (Elacqua, Schneider & Buckley, 2005; Weiher & Tedin, 2002). Weiher and Tedin (2002) indicated that race was a powerful predictor of the outcome of parental choice, even though more than half of interviewed parents reported high test scores as one of the three most important reasons for choosing a charter school. According to Weiher and Tedin (2002), in practice, the vast majority of parents enrolled their students into charter schools with demonstrably lower academic performance than their previous traditional public schools, but in a program with a greater proportion of their racial group. The school choice study in Chile also

demonstrated a similar conclusion – low-income parents’ school choices were affected mostly by demographics rather than academic characteristics. This was found to be true, even though in a previous survey the parents had indicated that academic performance was the most important factor influencing their choice (Elacqua, Schneider & Buckley, 2005).

Many researchers argue that this discordance occurs because of a bias or defect in the study design (Hoxby, 1999; Hoxby & Murarka, 2007; Hastings, Kane, & Staiger, 2006). For example, Hoxby (1999) argued that survey evidence used for testing parental assumptions in school choice was problematic in terms of sample selection and the reliability of outcomes. Hastings, Kane, and Staiger (2006) pointed out that survey methods might result in research biases in terms of methodology design, because “parents might implicitly be limiting their choice sets in a manner not apparent to the researcher (such as considering only nearby schools or schools with a given racial composition)” (p. 6). Besides, the school choice literature often focuses on measuring parents’ intentions before choosing a school, rather than their actual behaviors (Burgess, Greaves, Vignoles, & Wilson, 2009; Glazerman, 1998; Hastings, Kane, & Staiger, 2006; Schneider, Teske, & Marschall, 2000). Taking the point in time when parents make their final school choice decisions as a reference, studies that apply survey methods or predictive models to evaluate parents “intentions” toward those schools they consider favorable will serve as a kind of prior-study. Hence, some reported intentions may not align with parents’ finally actual choosing behaviors. However, parents’ preferences reported on questionnaires can be misleading because stated

preferences may not reflect actual choice behaviors (Hamilton & Guin, 2005; Hastings, Kane, & Staiger, 2006). Alternatively, parents may change their minds before making their final school choice decision.

The discordance between parents' reported attitudes and their actual choice behaviors might not only result from methodological obstacles. Some researchers argue that during the survey process, parents may conceal their true intentions if they perceive the topic to be a sensitive issue (e.g., the racial composition of schools), tailoring their responses to fit social and cultural norms (Hamilton & Guin, 2005; Hastings, Kane, & Staiger, 2006). These uncontrolled parental preferences have aroused strong concern among researchers. Hastings, Kane and Staiger (2005) argued that the differences in preferences for school quality among parents might result in 'vertical separation' between schools, which means the competition between high-quality schools actually intensifies to attract students with greater demand for school quality, while neighborhood schools left to serve the remaining students may find themselves experience weakened demand for school quality, as there may be little motivation to improve. Schneider and Buckley (2002) pointed out that unfettered choice might lead to undesirable outcomes in the distribution of students, and it might also lead to reduced pressure on schools to improve academic performance.

Brief Summary The common findings in the current school choice literature provide substantial points of reference for understanding how parents choose a charter school. Motivated by rational considerations, parents choose to exit a traditional public school and to enroll their students in a charter school.

Charter school parents are generally recognized to be more informed and involved in students' education, compared to traditional public school parents. During the school choice process, parents consider various rational factors, from student test scores, curriculum and instruction, class size, and teacher quality, to their family's self-identity and their students' happiness, to still other factors, such as opportunities for parental involvement and favorable school features. Even so, discordance between parents' reported preference and the actual school choice outcome still exists. Thus, uncontrolled parental preferences may result in undesirable outcomes in terms of segregation – racial/ethnic, social class or academic.

The Theoretical Framework of Reenrollment

A theoretical understanding is fundamental to contextualizing a study of reenrollment and its implications. In order to conceptualize student reenrollment, I have referred to a number of theories and hypotheses related to parental choice behavior and I have then synthesized them to construct a theoretical framework, in order to better understand student reenrollment.

Reenrollment, as the most common parental choice, occurs in both traditional public schools and charter schools. The school choice context contains two intertwined components: the education market, in which traditional public schools and charter schools compete for parents, and parents' personal reactions to the education market. Within a maturing education market, parents are aware of their specific choice scenario and they consider their personal situations and the target school's environment before making a reenrollment decision. However, the

motivations that prompt parents to choose to reenroll, rather than switch schools, differ between traditional public schools and charter schools.

Reenrollment in traditional public schools Student reenrollment in traditional public schools occurs frequently. The most common reasons for this, according to the school choice literature, include parents' active, conscious actions (i.e., they make rational decisions, based on: satisfaction/informed comparison, inertia – such as when they have a lack of incentive to choose, or viewing a school as a public good), and the limitations of the current education market.

Rational decision based on satisfaction or informed comparison For many traditional public schools parents, the reenrollment decision may result from their satisfaction with the present school (especially in high quality schools) or from an informed comparison between the present school and the latent alternative options. The school choice literature emphasizes that parents' choices to enroll their students in a charter school are mainly based on various rational assumptions, particularly the demand for a high quality school. In fact, almost all parents have similar concerns about schools and their students, even if they may have a different understanding or preferences about school quality. If choosing a school can be regarded as a reflection of parents' wish to obtain satisfaction, which they were not able to obtain from the previous traditional public school (Hirschman, 1970; see also Henig, 1995), the converse inference may also hold – parents choose to reenroll in the present traditional public school because they are satisfied with the quality, or other school features they desire.

Hence, parents of students enrolled in high-performing traditional public schools will be more likely to choose to reenroll their students in the present schools, based on the common assumption in the literature that parents demand school quality. Considering the positive correlations between school quality and parental involvement, education, and families' SES, there remains the possibility that many parents of students enrolled in high-performing traditional public schools are also well-informed and positively involved in their students' education, similar to the charter school parents described in the literature (Becker, Nakagawa, & Corwin, 1997; Schneider, Teske, & Marschall, 2000; Van Dunk & Dickman, 2002; Lubienski, 2003a; Buckley & Schneider, 2007). In a maturing education market that provides multiple options for schooling, parents can either choose to reenroll or to move elsewhere. If there are no extra incentives, it may be the case that parents of students enrolled in high quality traditional public schools who choose to reenroll, rather than move, may be motivated by a high level of satisfaction with their present schools.

Even when parents are dissatisfied with their students' present traditional public schools, they may still choose to reenroll based on a rational comparison. When facing school choice options, rational parents will certainly make the most suitable decision for their families depending on their students' personal situation. In other words, rational parents may adjust their choice behavior and final decisions based on various possible costs and benefits, in order to achieve "the highest net benefit as weighed by [their] own preferences" (Ostrom & Ostrom, 1971, p.205). If the cost of switching schools is higher than the expected benefits

for the students/families, then parents may rationally choose to ignore the available school choice options and simply reenroll.

Rational parents will also consider the latent risks of switching schools. Many empirical studies argue that students in charter schools do not necessarily attain higher academic achievement or make faster progress (sometimes they perform more poorly and/or progress slower) as compared to students in traditional public schools (Bifulco & Ladd, 2006a; Lubienski & Lubienski, 2007). Critics have also argued that charter schools actually exhibit no significant differences from traditional public schools in terms of classroom innovation (Lubienski, 2003b) and school quality (Hanushek, Kain, Rivkin, & Branch, 2007). Moreover, some researchers have further reported that switching schools actually can have a remarkably negative effect on students' achievements, especially for low-SES and minority students (Hanushek, Kain, & Rivkin, 2003; Garcia, McIlory, & Barber, 2008).

Hence, when traditional public school parents feel satisfied with the present school, or when they carefully weigh the pros and cons and determine that the target school(s) may not benefit their students as much as they would hope, they will be less motivated to make the decision to switch. For those parents, choosing to rationally ignore the school choice options and thus to reenroll their students in the present traditional public school is still a "better" option.

Inertia – lack of incentives to choose Between satisfaction and dissatisfaction, parents may be in an intermediate position – with no obvious opinion of approval or disapproval for their present schools. According to

Herzberg's Two-Factor (motivation-hygiene) theory (Herzberg, Mausner, & Snyderman, 1959), the opposite of dissatisfaction is "no dissatisfaction," rather than satisfaction, while the opposite of satisfaction is "no satisfaction," rather than dissatisfaction. That is, dissatisfaction and satisfaction are independent constructs, influenced separately by different factors, known as hygiene factors and motivation factors. Hygiene factors generally are related to the level of personal comfort. If hygiene factors are inadequate, people may feel dissatisfied; however, they will not necessarily experience strong satisfaction when these factors are adequate. For instance, school safety may be a necessary but insufficient condition for high parental satisfaction. Parents will feel dissatisfied if school safety cannot be guaranteed, but school safety in itself may not generate high levels of parental satisfaction. On the contrary, motivation factors can inspire a high level of personal involvement and generate deeper satisfaction. People generally will not necessarily be dissatisfied, but they will be less motivated if their needs for motivation factors are not quite met. For many traditional public schools parents, a good connection with the school or a greater number of opportunities for parental involvement may be a sufficient condition to generate deeper satisfaction. The lack of these factors, however, may not be the cause of parents' obvious dissatisfaction.

Using Herzberg's Two-Factor theory as a point of reference, it is understandable that, when motivational factors work, parents feel satisfied with their students' present school and will choose to reenroll. When their needs associated with hygiene factors cannot be met, parents will feel dissatisfied and

then may choose to exit the present school and enroll in a new school, to address their dissatisfactions. However, what happens if only hygiene factors have presented themselves, while motivation factors are inadequate? Under these circumstances, parents may not be highly satisfied with the school, but they will not necessarily be dissatisfied either. Hence, parents may still choose to reenroll their students in the present school, to maintain the status quo. For these parents, they lack the motivation to collect information and to then make a school choice decision, thus, they effectively accepting the assigned traditional public school for their students, “passively.” After all, choosing the right charter school is not an easy task and it requires parents to invest numerous resources (money, time, etc.). According to Ascher, Fruchter and Berne (1996), parents are not “natural ‘consumers’ of education” and “few parents of any social class appear willing to acquire the information necessary to make active and informed educational choices” (Ascher, Fruchter , & Berne 1996, p. 40–41). In contrast to parents who choose reenrollment based on an informed comparison, parents who are subject to inertia may be more passive because they have no clear intention in mind and expend no effort to collect the necessary information to decide upon a move.

This school choice behavior is similar to the consumer behavior referred to as “choice inertia” in the marketing literature – consumers who may not be inclined to go through the effort of choosing another alternative will remain with their existing choice (Jeuland, 1979). Over time, this behavior reinforces the inertial effect and can create brand loyalty among consumers (Papatla & Krishnamurthi, 1992). In addition, inertia in school choice can become

institutionalized within the school environment and, as such, it can discourage more active parental choice decisions in communities with more passive consumers (Lubienski, 2006). For instance, the inertial effect of traditional public schools prevents parents from enrolling their students in charter schools. This inertial effect is then increasingly reinforced as a student remains in the traditional public school system (Hoxby & Muraka, 2007). As a result, lower quality schools may be less likely to improve in response to competitive market pressures.

A view of schools as a type of public good A school is a kind of public good. For most people, they have to consume public goods and there is no way to avoid consuming them unless one leaves the community entirely. According to Lowery and Lyons (1989), people “may potentially create a quasi-market of local public goods via ‘voting with their feet’” (p.73). Olson (1971 [1965]) also argues that when all members of a given community pursue their private self-interests in consuming one product or service, collectively, it becomes a public good for that group. Hence, in the communities where parents and a local school are closely connected, that school becomes a kind of half-mandatory-half-voluntary public good for parents, who treat themselves as an integrated part of that school.

Hirschman (1970) discusses a special case for member behavior when the product is a public good, such as education. For influential members, a full exit is not possible because customers remain influenced by the quality of the organization, even after they leave. The consumer of a public good is not only a quality taker but is also a quality maker and is involved on both sides of the production/consumption equation. Influential quality makers, in particular, may

choose to stay in an organization because they anticipate that the organization would go from bad to worse if they were to leave.

For those parents who choose to reenroll their students in a low quality, local community school, even when they have other options, they may view their schools as a kind of public goods. This perspective may help us to understand their reenrollment behavior. Consider, for example, parents in a poor community. These parents may treat themselves and the schools as inseparable parts of their community –their own parents, themselves, and their children, all live there and all of them may have received their education at this same school. For these parents, making the decision to exit may be much more difficult than choosing to stay. If their students leave that school, the school may have to shut down, the community security may become poor, and the house price may drop quickly. As such, these parents will choose to reenroll their students in the local traditional public schools, in an attempt to prevent their community and home school from becoming worse.

Limitations of the current education market In addition, many traditional public school parents must choose to reenroll because of the limitations of the current education market. Only under conditions of high competition do customers have enough alternative options to satisfy their needs and wants (Jaworski & Kohli, 1993). This economic rationale also applies within a school choice context. According to Schneider, Teske, and Marschall (2000), an adequate variety of educational options is critically important for parents making school choice decisions. The exit options for many traditional public school

parents, however, are still inadequate, due to limitations of the current education market.

In an incomplete education market, charter school self-selection is one of the possible barriers to parents' choosing to reenroll their students in the same traditional public school. Under public control, charter schools are generally required to consider all students who apply. In many cases, however, charter schools are highly selective. It is estimated that around 420,000 students are on charter school waiting lists, nationwide (NAPCS, 2011). Hence, charter schools have to use a "first come, first served" rule, a lottery, or some other random mechanisms, to determine who to admit when there are more applicants than spaces. For those parents who have applied to a charter school, yet who were not lucky enough to win the charter lottery, charter schools may be "free to choose," but are definitely not "free to enroll," even though the mechanisms in place seem to grant each applicant an equal opportunity. In addition, the complex application process for charter schools may also exclude many students from disadvantaged families because their parents may be unable to navigate it (Boyer 1992; Bridge & Blackman 1978; Buckley & Schneider, 2006; Caterall 1992; Coons & Sugarman, 1978; Etzioni, 1992; Hill, Pierce, & Guthrie, 1997; Saltman, 2000; Wells & Crain, 1992).

Student reenrollment in traditional public schools may be due to the aggressive and competitive environment in the education market. Charter school recruitment generally is based on voluntary parental choice. Hence, charter schools need to establish public credibility in order to convince a sufficient

number of parents to leave the familiar confines of their neighborhood schools (Lubienski, 2003a). For traditional public schools, the most obvious competition from charter contenders is the scramble for students. This is because enrollment is highly associated with the allocation of school funds, for both charter and traditional public schools, and school competition produces significant effects only when there are “fiscal rewards and penalties attached to gaining or losing students” (Hoxby, 1998 p.55).

As a result, maintaining stable enrollment becomes a strong motivation for schools to be competitive in the education market, especially those in the charter sector. Traditional public schools have also established measures to combat charter schools, in order to reduce student drain (Hoxby, 2003; Teske, Schneider, Buckley, & Clark, 2000). Some latent “moving” students may remain in their traditional public school as a result of these established countermeasures. Hess and Finn (2007) argued that low school-transfer rates were due to either botched implementation or deliberate efforts by local traditional public school officials to sabotage school choice provisions, in order to protect the status quo. Taken in this sense, student reenrollment in traditional public schools is partially related to the barricades put up by local districts.

Reenrollment occurs in charter schools Similar to the initial school choice decision (whether to enter a traditional public school or enroll in a charter school), the reenrollment decision that charter school parents make on behalf of their students is also conscious and active. This argument is consistent with the classical assumptions of the school choice literature, that charter school parents

are rational choosers and their active school choice behaviors are based on deliberate considerations (Lubienski, 2003a). Common reasons that compel charter school parents to make the reenrollment decision include a high level of satisfaction with the present school, and the typically overlooked aspect of blind following.

High level of satisfaction Charter school parents enroll their students in charter schools in order to seek satisfaction with their education (Chubb & Moe, 1990; Manno, Finn, Bierlein, & Vanourek, 1998; Vanourek, Manno, Finn, & Bierlein, 1997a; Hirschman, 1970; Henig, 1995; Lubienski, 2003a). Further, these parents choose to reenroll their students based on a high level of satisfaction with the selected schools. Charter school parents generally are more satisfied with the schools they choose (Buckley & Schneider, 2006). School choice studies have shown that parents who invest time and energy in the choice process may justify their choice and express their increased satisfaction by viewing the chosen schools through “rose colored glasses” (Erickson, 1982; Goldring & Shapira, 1993).

Charter schools are known to create strong communities based on the unification of parents, students and educators, within a strong commitment to a shared academic mission (Hill, Pierce, & Guthrie, 1997) and also based on the high involvement levels of parents in the daily life of the school (Becker, Nakagawa, & Corwin, 1997). The conceptualization of highly satisfied charter school parents as a collective consumer village is consistent with the business literature on consumer behaviors, which offers “ultimate loyalty” as an analogy

for understanding student reenrollment in charter schools. The motivation for ultimate loyalty is driven by both the quality of the goods or services and a sense of identity and community support surrounding those goods or services (Oliver, 1999). Ultimate loyalty is only possible for certain types of products and services that consumers come to adore and to which they can unfailingly commit themselves. Ultimately loyal consumers not only view the specific product as superior, but they intentionally surround themselves with a community of others who hold the same beliefs. As a group, this consumer village is willing to defend the product ardently.

In these cases, charter schools are predisposed to build a vibrant social network of dedicated clients that collectively act as a consumer village to support and defend the school. Parents can easily come to adore a school that embodies the educational preferences and expectations they hold for their students and they could become attached to their schools unfailingly in cases where their preferred educational offerings are unavailable in the traditional public school system (Hausman & Goldring, 2000; Wong & Shen, 2000). In fact, it is this village mentality that makes it difficult for authorities to close charter schools that fail to meet the performance obligations of their charter contracts (Hess, 2001). It is certainly understandable that charter school parents may be inclined to develop a strong connection with a charter school, even one which has low quality. Parents will treat their families as a member of that charter school and they are likely to affirm their commitment to their school by reenrolling their students.

Blind following – “free riding” action in school choice Charter school parents’ choice to reenroll their students may also result from “blind following.” School choice studies usually claim that parents choose a charter school based on an informed decision. However, blind following in the choice behavior of charter school parents has generally been ignored in the literature. In fact, blind following is a very special case of parental choice, even if it is still informed, conscious and active.

Choosing a charter school is often described in the school choice literature as a rational behavior by parents in an education market (Teske & Schneider, 2001; Silvennoinen, Simola, Seppanen, & Rinne, 2010). Moreover, charter school parents are usually better informed and more involved in their students’ education, compared to non-choosers (Becker, Nakagawa, & Corwin, 1997; Schneider, Teske, & Marschall, 2000; Van Dunk & Dickman, 2002; Lubienski, 2003a; Buckley & Schneider, 2007). Those well-informed parents who do engage in the act of choosing, either by actually enrolling or by applying for a choice school, are termed “marginal consumers” (Schneider, Teske, Marschall, & Roch, 1998) or “market mavens” of education (Buckley & Schneider, 2003). According to Buckley and Schneider (2003), market mavens prefer to collect information, as a strategy in making school choice decisions. It is the rational choice behaviors of market mavens that help to create an efficient education market.

However, some parents can also choose charter schools for their students as a result of following the actions of market mavens, without investing their own effort to collect information and make a decision. Charter schools are highly

desired in many locations and many parents may be attracted by this new phenomenon within the education market, even if they know little about it. These “blindly following” parents, however, may be aware of market mavens’ choice behaviors, so they may decide to follow the market mavens, as a form of “free riding.” This sort of “free riding” in school choice happens in some instances, but obviously this “blind following” approach to school choice will not always result in parents’ objectives – improved education for their students. When the academic performance of a charter school is lower than parents’ expectations, more parents choose to send their students back to a traditional public school, rather than to another charter school (Hanushek, Kain, Rivkin, & Branch, 2007; Bifulco & 2006a). Student turnover in charter schools (i.e., when charter school students choose to return to traditional public schools) implies that parents might blindly follow market mavens to conduct their initial school choices, however, subsequently, after they had found that charter schools were not a good choice for their students, they might decide to return to traditional public schools. Thus, in a sense, these parents were still informed and particularly active in school choice: they were informed enough to be aware of and followed market mavens; and parents also actively engaged in subsequent choices, to remedy the deficiencies of their initial decisions. For those parents who continued to reenroll their students in a current, low-performing charter school, the reenrollment decision may reflect their initial, “blind following”: if the market mavens they followed choose to stay, these blind followers might also decide to stay. These types of parents may trust market mavens and believe that the selected school is good, or they may have

other reasons for preferring that school other than academic performance. Such theoretical hypotheses are workable because if parents are conscious and active when they first enter a charter school, then one can assume that their subsequent decisions (either to go back to traditional public schools or to reenroll in charter schools) are equally motivated.

Brief summary Student reenrollment in traditional public schools may result from parents' active involvement: the parent's choice to reenroll in high-performing traditional public schools may be based on their satisfaction or informed comparison; many traditional public school parents who choose to reenroll may do so because of inertia (i.e., a lack of incentives to choose), or, for some parents, they may choose to do so because they view the traditional public school as a public good. In addition, due to some deficiencies in the current maturing education market, many traditional public school parents may have limited exit options, driving their choice to reenroll. When parents remain in low quality traditional public schools, despite the availability of school choice options, researchers commonly turn to failings in the structure or implementation of choice programs for answers, rather than focusing on parental motivations for remaining in their home schools. Scholars typically focus on improving market conditions for parents, while maintaining faith in the notion that parents will choose to exit low quality traditional public schools if they are better informed about their options. However, the possibility that reenrollment in a traditional public school is a result of parents' satisfaction and informed comparison, or that it is a result of

inertia or a view of the local community school as a type of public good, should not be ignored.

According to the school choice literature, charter school parents are conscious and active when they undertake their initial school choices – enrolling their students in charter schools. Hence, one can assume that charter school parents’ subsequent decision – reenrollment – is equally motivated. The student reenrollment that occurs in charter schools may be due to parents’ high level of satisfaction with their present schools. Further, some student reenrollment in charter schools, especially in low-performing schools, may result from parents blindly following market mavens.

Chapter 3

METHODOLOGY – ANALYZING STUDENT REENROLLMENT

The purpose of this study is to address the following research questions: 1) what is the general student reenrollment patterns in Arizona’s charter schools and traditional public schools? Specifically, what are the differences of student reenrollment by various school-level attributes (location, SES, percentage of minority students, and quality level), student characteristics (race/ethnicity, SES, program participations), and student academic performance? 2) How does the relationship between individual student reenrollment outcomes and the above-mentioned variables differ between the charter and traditional public school sectors?

The outcome in this study, student reenrollment, is the actual result (reenrolled or moved) of parental choice, after a parent was offered a set of alternatives, limited by real situations in a maturing education market. To put it another way, with respect to the outcome in my data, parents have already engaged in practical action, rather than their intention or answer to such questions as “should I change my student’s school?” or “which school should I choose for my student?” In this sense, the parental choice outcomes reflect parents’ actual school choice behaviors more accurately.

Modeling actual parental choice outcomes can resolve a common dilemma in parental choice studies – the results of survey methods or predictive models are often inconsistent with parents’ final choice outcomes. In this study, the strategy

of using actual outcomes as the criteria for investigating student reenrollment is an effective approach, as it reflects parents' real school choice behavior.

The application of multi-resources, large-scale databases can provide rich information about students and schools, which are necessary for optimizing the estimation of the relationship between student reenrollment and its associated factors. Parental choice in a practical situation is a complex process, thus researchers "need data that richly characterize[s] the decisions of individual schools and precisely describe[s] the student and community environments in which each school operates" (Hoxby, 1999, p.287).

In addition, application of multi-sources, large-scale databases can overcome the deficiencies of many survey methods used in the existing parental choice literature, which rely heavily on parents' subjective statements related to some specific attitudes, opinions, and behaviors (Hoxby, 1999; Hoxby & Murarka, 2007). In general, the dependence on parents' subjective statements may result in more problems, in terms of both research reliability and validity. However, in this study, "objective" data, such as student demographics, student academic achievement, and school administrative characteristics, are provided in the well-maintained, large-scale databases. This data constitutes a more valid and reliable source for the study of parents' school choices.

Databases

With the purpose of providing sufficient information to describe the reenrolled students and the schools, I draw on three large-scale databases. Specifically, the databases I consider include 1) student transaction records for all

Arizona's elementary public schools; 2) student academic achievement, demographics, and educational program participation; and 3) administrative data on school characteristics. All of the aforementioned large-scale databases were linked using students' unique identifiers, so as to create one single large-scale student reenrollment database, in order to conduct the following empirical analyses.

Student transaction records for all Arizona public schools The database of student transaction records for all Arizona elementary public schools provided an indication of whether a student chose to reenroll in the same school or whether a student moved to a new school at the beginning of the new school year. Concretely, students that reenrolled in an Arizona traditional public school or a charter school could be identified from specific combinations of a student Year-End Activity, coded at the end of the first school year (SY1), and an Enrollment Activity, coded at the beginning of the second school year (SY2). This was calculated in order to capture only those students who reenrolled at the same school at the beginning of following school year.

During the 2008 - 2009 school years, there are 941,704 records in total archived in student transaction database for all Arizona k-8 elementary (traditional public and charter) schools. Those records include all mid-year and year-end transaction history records between schools for each student. In order to clearly track each student's enrollment records in the beginning of the new school year, I firstly aggregated those "transaction-level" student records by student's unique identifier – student ID. The aggregated, "student-level" enrollment

database includes 741,628 students' enrollment records during the 2008 - 2009 school years. Excluding those missing value¹ or obviously conflict records, in total 730,996 students have valid enrollment status and were archived in a student-level transaction database, representing the 98.6% of all K-8 students in Arizona.

Student academic achievement, demographics, and educational programs participation The student-level result recorded in Arizona's Instrument to Measure Standards (AIMS) database provided the specific academic performance of a student on the AIMS test. In the 2007-2008 school year student-level AIMS database, there are 487,466 grades 3-8 students have Reading test scores, and 487,353 grades 3-8 students have Mathematics test scores.

The AIMS test is a Criterion Referenced Test (CRT) designed to measure each student's progress in learning, relative to the Arizona Academic Standards. The Arizona Academic Standards are clear and concise statements of what all students are expected to know and be able to do in terms of Reading, Writing, Mathematics and Science. All elementary students in Arizona (Grades 3 through 5) are required to take the AIMS test. AIMS scores are reported in three forms: a raw score, scale score, and one of four performance levels based on the student's test score, according to the AEDW. The four performance levels are as follow: *Falls Far Below the Standard*, *Approaches the Standard*, *Meets the Standard*, and *Exceeds the Standard*. In general, AIMS serves many audiences, such as parents

¹ For example, some students' year-end enrollment records are missing because of their drop-out, or transfer to some private schools, or moved to other states.

and students, teachers, and school and district administrators, each of which will use the information from the assessment for different purposes.

The student-level AIMS score database also includes student characteristics data, such as students' race/ethnicity, socioeconomic status (based on whether the student enrolled in the Federal Free or Reduced Price Lunch Program, FRL), and participation in different academic programs, which included Special Education (SPED) and the English Language Learners (ELLs) program. According to the ADE, students enrolled in ELL programs were coded as having one of two membership types: ELL (special language program) or FEP (Fluent English Proficient). Students in FEP are those who have met some language criteria stipulated by state policy and who will soon be ready to exit language instruction. In a broad sense, both groups of students were classified as English language learners.

Administrative data on school characteristics The school-level administrative database for each public school provided the basic information for all Arizona elementary traditional public schools and charter schools. This information includes the SES and racial/ethnic composition of the student population, school achievement profiles (the average pass rates on the Reading and Mathematics sections of the AIMS test), an adequate yearly progress determination for the school, indicators of improvement, etc. Totally, 1,388 traditional public schools and charter schools were included in school administrative database during the 2008-2009 school years.

Creating comprehensive student reenrollment database All three aforementioned databases were linked together using students' unique ID, in order to create a single database containing comprehensive student reenrollment information for the following modeling and analyses.

I used student transaction records between schools as the empirical evidence for student reenrollment. If the student transaction records database showed that an eligible student did not change his or her school at the beginning of a new school year, then that student was coded as a "reenrolled" student. Otherwise, that student was coded as a "moved" student. Using this coding method, the student reenrollment outcomes were converted into a binary variable, which can be appropriately modeled using logistic regression.

In order to exclude those students who graded out and had to change their schools to continue their education in the beginning of the next school year, I defined eligible students as those enrolled in a school at the end of the academic year, where the next grade was available at the school. Students, who graded-out of a school – meaning the next grade was not available at the school, were not considered eligible. Reenrolled students, as a subset of eligible students, were defined as those eligible students that returned to their schools to begin the next academic year. Hence, reenrolled students must meet two conditions: (a) the next grade level must be offered at their home schools so they can potentially continue their education uninterrupted; and (b) they must decide to return to their home schools between adjacent academic years.

For example, a seventh grade student who was enrolled in a K-8 elementary school at the end of the academic year would be considered an eligible student. If that seventh grade student were to enroll in the same K-8 school the following year, they would be coded as reenrolled. If the seventh grade student attended a different school the following academic year, they would not be considered reenrolled. An eighth grade student in a K-8 elementary school, however, would not be considered eligible because that student would have graded-out, since the next highest grade is not offered at that school.

Hence, if the grade which a student enrolled at the end of the 2008-2009 school year was smaller than the highest grade provided by the school – which means the next grade was available for that student at her/his school in the beginning of the 2009-2010 school year, I labeled that student as an “eligible” student – who does not need to switch schools but still can continue her/his education. Otherwise, the student was labeled as a “non-eligible” student. During the 2008-2009 school year, there are 610,002 “eligible” K-8 students in the student-level transaction records database in total. This eligible students’ transaction records database is the master database in this study and all other databases were merged in this one by using student’s unique identifier as key variable.

Then I compared the school’s identifier (school unique ID labeled by which a student enrolled at the end of the 2008-2009 school year and in the beginning of the 2009-2010 school year. All eligible students whose transaction

record showed she/he enrolled in the same school were labeled as a “reenrolled” student. Reenrolled students, as a group, are a subset of all “eligible” students.

By applying student’s unique ID as the key variable to link that student AIMS score database with student-level transaction database, an updated student enrollment database with valid AIMS test scores was created. However, only 332,992 students in this updated student enrollment database have AIMS scores, SES, and program participation (SPED, ELL, and FEP) data.

There are two possible reasons for explaining the missing of data; and it is not relevant to the quality of the merging process but mainly due to the limitation of the original database. Some students recorded in the student-level AIMS database during the 2007-2008 school year, anyhow, were not accounted as “eligible” in the 2008-2009 school year. For example, most of students enrolled in Grade 7 in 2007-2008 school year enrolled in Grade 8, which means they had to switch schools to continue their education so they were not account as “eligible” in this reenrollment study. The second reason is the students in Grade 1 and Grade 2 in the student transaction database during the 2008-2009 school year has no AIMS data because they had not been required to take the test at that time. In order to provide a complete general pattern of student reenrollment as much as possible, however, I did not simply delete those students without AIMS scores in the following descriptive statistics. The regression analysis which includes student academic performance as one of independent variable, however, only included those students who have valid AIMS scores.

After such a step-by-step data preparation and database combination work, 512,465 “eligible” Grade 1-7 students, representing the 84% of all elementary public school students in Arizona, had valid demographics, the administrative data of their enrolled schools, and/or academic performance data. All of those students were included in a comprehensive, large-scale student reenrollment database. And there are 332,992 students, representing 65% of all eligible Grade 1-7 students in Arizona during the 2008-2009 school year, have AIMS scores, SES, and program participation (SPED, ELL, and FEP) data, due to the limitation of the original data quality.

Variables

The dependent variable in this study was the binary value indicating reenrollment. This value signifies whether an eligible student reenrolled in the same school at the beginning of the next school year, thus reenrollment is the final outcome of the parents’ school-choice decision, whether to leave or stay.

Independent variables in this database fell into one of two types – school administrative attributes and individual student characteristics. School administrative attributes were then subdivided into school demographic variables, school performance variables and the average student mobility, at the school level. Students’ personal characteristics included demographics and academic performance. All independent variables are listed in Table 1.

School-level demographic variables included school type or sector (i.e. charter or traditional public school), location (urban and rural), SES, as indicated by the percentage of students who qualified for the federal free and reduced

priced lunch (FRL) program, the percentage of minority students (Hispanics, African American, Native American, and Asian), and the school-level student mobility – the percentage of student who moved in or out the school during the whole school year. Urban schools were defined as those located in Maricopa and Pima counties, Arizona’s most populous counties. Schools in all other counties were coded as rural. For the school-level SES variable, and the school-level minority student variable, all schools were divided into four groups using the lower quartiles, median, and upper quartiles of the percentage of students who qualified for FRL programs or the percentage of minority students as the divider.

I employed two school-level student mobility variables: mobility-in is the percentage of students who entered into the school during a specific academic year. The mobility-in students were included in the reenrollment calculations for the school they entered, if they met the requirements of an eligible student at the end of the same specific academic year. Mobility-out is the percentage of students who left the school at any point during a specific academic year. The mobility-out students were not included in the reenrollment calculation for the schools they exited. Thus, mobility-out students that left during the school year did not overlap with the group of students eligible to reenroll at the end of the school year.

School performance variables included *School Quality* dummy variables (school achievement profiles), which are used to indicate the state-generated school performance labels. These values are ordered from least to most favorable (*Failing/Underperforming, Performing, Performing Plus, Highly Performing*, and

Excelling), based on the average school academic performance (indicated by the average pass rates on the Reading and Mathematics sections of the AIMS test).

Student personal characteristic variables included *Race/Ethnicity* (*White, Hispanic, African American, Native American, and Asian*), individual SES status (indicated by an individual student's qualification for the federal free and reduced priced lunch (*FRL*) program), various program participation statuses – participation in a special education program (*SPED*), the English Language Learners (*ELL*) program, and the Fluent English Proficient (*FEP*) program – and student academic performance, indicated by student scale scores on the AIMS Reading and Math test.

Student personal academic performance variables are student's AIMS test scores. The student-level AIMS test scores were reported in three formats – raw score, scale score, and performance level, for both reading and mathematics. This study used both performance level and scale scores as the student academic performance in empirical analyses. Specifically, the performance level was mainly used in descriptive analyses; while scale scores were mainly used in logistical regression.

Analyses

The purpose of this empirical study was to provide a detailed description of student reenrollment patterns in Arizona and to explore the relationship between individual student reenrollment outcome and its associated factors. The study includes two types of analyses. First, descriptive statistics were used to study general student reenrollment patterns at the state level. Second, logistic

regression was applied to estimate the probabilistic outcomes at the student level, with respect to choosing whether to reenroll in his or her home school.

The descriptive statistics provided an understanding of student reenrollment patterns at the state level, while logistic regression allowed for deep insights into the reenrollment at the individual level. The contrast between charter schools and traditional public schools was incorporated throughout both analyses, in order to compare the similarities and differences of student reenrollment in the two school sectors.

Descriptive statistics Descriptive statistics were based upon all eligible elementary school students in Arizona during the 2008-2009 school year. The student reenrollment patterns were examined from two perspectives: 1) the student reenrollment in charter schools and traditional public schools, by different school attributes, student characteristics, and academic performance; 2) the distribution of reenrolled students in charter schools and traditional public schools, by different school attributes, student characteristics, and academic performance.

Logistic regression Individual reenrollment patterns were modeled using logistic regression. Logistic regression is the most appropriate estimation approach when outcome variables are discrete or categorical in nature. In terms of practical application, logistic regression is generally used to predict the probability of an event occurring, under certain conditions.

If variable z represents the predicted event, and x_1, x_2, \dots, x_n represent a series of conditions or prior events that impact the occurrence of z , then z is defined as follows:

$$z = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n, \quad (1)$$

where β_0 is the intercept, $\beta_1, \beta_2, \dots, \beta_n$ are the regression coefficients associated with variables x_1, x_2, \dots, x_n . Then, the probability of z (P_z) follows a logistic distribution, where

$$P_z = \frac{e^z}{e^z + 1} = \frac{1}{1 + e^{-z}} \quad (2)$$

Depending on the number of possible values for the outcome variable z , a logistic regression can generally be classified as binary (the dependent variable z is a binary response variable where values are conventionally assigned values of 0 or 1) or multinomial (the dependent variable z is allowed to have more than two discrete values).

In this specific study, student reenrollment was entered as the dependent variable in a binary logistic regression model, with school-level and student-level independent variables. So, the student reenrollment function was described as follows:

$$Y_{is} = X_{is} + W_i + \varepsilon_{is} \quad i, s = 1, \dots, n, \quad (3)$$

where Y_{is} is the outcome of student reenrollment (reenrolled or moved out); X_{is} represents a vector of school administrative attributes, W_i represents the invariant personal characteristics of students, and ε_{is} is a random, student specific error term – idiosyncratic tastes of the parents/students and unobserved characteristics of their choices.

The vector of school attributes includes school *Sector* (charter or traditional public school); school *Location* (urban or rural); *SES* (the percentage of students participating in the FRL program); *Minority* (the percentage of

minority students); *Mobility-in* (the percentage of eligible students that moved in the school), *Mobility-out* (the percentage of eligible student that exited the school, *School Quality* labels (*Failing/Underperforming*, *Performing*, *Performing Plus*, *Highly Performing*, *Excelling*) and the school-level *Academic Performance* (the pass rate for the Reading and Mathematics sections on the AIMS test). The vector of student personal characteristics contains their *Race/Ethnicity* (White, Hispanic, African American, Native American, and Asian), SES status (indicated by the federal free and reduced priced lunch (FRL) program participation), *SPED* status, *ELL* and *FEP* status, and the individual student *Academic Performance*; their student-level test scores on the AIMS tests.

RESEARCH FINDINGS – GENERAL PATTERNS AND PREDICTION OF STUDENT REENROLLMENT

The General Student Reenrollment Patterns

In general, 438,856 students, representing 85.6% of all eligible elementary students in Arizona, reenrolled into their home schools at the beginning of the 2009 school year, while 73,609 eligible students switched schools. The student reenrollment patterns, however, revealed trends by different school attributes, student characteristics, and student academic performance across different school sectors.

In order to better understand student reenrollment, I described its general patterns in terms of two aspects: 1) the student reenrollment in charter schools and traditional public schools, by school attributes, student characteristics, and student academic performance; 2) the segregation of student reenrollment in charter schools and traditional public schools, by school attributes, student characteristics, and academic performance.

Student reenrollment by school attributes The statewide mean of student reenrollment is 85.6%. This mean masked many important differences in student reenrollment that occurred between different school sectors. For example, compared with traditional public schools, charter schools consistently exhibited a moderately lower student reenrollment (81.0% vs. 86.5%) and higher student mobility (19.0% vs. 13.5%). Moreover, the relatively lower level of student

reenrollment in the charter school sector was consistent across various school attributes.

At the state level, the student reenrollment rates in rural and urban areas were similar (87.5% vs. 85.6%), without considering school sectors. Moreover, in rural areas, the difference of student reenrollment between charter schools and traditional public schools were similar. For rural charter schools, the average state level of student reenrollment was 86.2%, which was only slightly lower than the rate (87.6%) at rural traditional public schools. In urban areas, however, only 79.8% of eligible charter school students chose to reenroll, which was considerably lower than the overall level (86.1%) of student reenrollment at urban traditional public schools (see Table 3).

There were greater differences in student reenrollment between schools of varying socioeconomic status. Higher SES schools, defined as schools where the majority of the student population was not qualified for FRL program, generally had higher student reenrollment than lower SES schools. For example, the student reenrollment in the *Highest SES (Q1)* schools was 90.7%; while the average student reenrollment in *Lowest SES (Q4)* schools was 84.2%. Such a difference was consistent across different school sectors, but the discrepancy in charter school sector was not so obvious. In the *Highest SES (Q1)* charter schools, the student reenrollment rate was similar to the average student reenrollment in *Lowest SES (Q4)* charter schools (85.5% vs. 82.3%).

Student reenrollment rates in the same school sector but across schools with different compositions of minority students were mixed. In the charter school

sector, student reenrollments in the first (*Q1*) and last quartiles (*Q4*) *Minority* schools were similar (82.1% & 81.4%); and both were higher than the second and third quartiles *Minority* schools (76.2% & 78.2%). While student reenrollment occurred in all traditional public schools with different composition of minority students had no significant difference – from the *Q1* to the *Q4* *Minority* traditional public schools, the average reenrollment rates were 86.5%, 86.2%, 83.7%, and 85.3%, separately. When considering difference by the school sectors, student reenrollment rates at charter schools were lower than those at traditional public schools. For instance, the student reenrollment rate at the second quartiles of *Minority* charter schools was 76.2%, which was considerably lower than that at the second quartiles of *Minority* traditional public schools (85.6%).

With regard to school quality, the percentages of student reenrollment generally increased with the rank of the school quality label. Overall, the reenrollment rates for schools with more favorable labels were higher. For example, the average reenrollment rate for all *Performing* schools was 83.5% and the rate increased steadily to the highest reenrollment rate of 91.0%, among Arizona's *Excelling* schools. The variation in student reenrollment rates for different school quality labels in the charter and traditional public school sectors followed a similar pattern, though this pattern was more obvious in the charter sector. For example, student reenrollment rate in charter schools labeled as *Failing/Underperforming* was only 71.9%, while in *Excelling* charter schools, the average student reenrollment rates was 87.9%. By contrast, the lowest student

reenrollment rate in traditional public schools was 83.5% (for those *Performing* schools), and the highest rate is 91.0% in the *Excelling* traditional public schools.

Schools labeled as *Failing/Underperforming* in the traditional public school sector were an exception, as the reenrollment rate was slightly higher than that of *Performing* and *Performing Plus* traditional public schools. Traditional public schools accounted for most of Arizona's public schools, so this exception also resulted in a similar pattern amongst state level reenrollment rates for all schools, considering the same quality labels (*Failing/Underperforming*, *Performing* and *Performing Plus*). In addition, lower percentages of eligible students consistently reenrolled in charter schools than traditional public schools, across all school labels; and the disparities were especially obvious for low-quality schools. For instance, the student reenrollment rate at charter schools that were labeled as *Failing/Underperforming* was only 71.9%, significantly lower than that at traditional public schools with the same school quality label (84.6%). Student reenrollment in those *Performing* schools between the two sectors also exhibited a similar pattern (75.2% in the charter sector vs. 84.3% in the traditional public school sector).

Student reenrollment by student characteristics A lower percentage of eligible students reenrolled in charter schools than traditional public schools, across all individual characteristics. According to Table 4, the percentages of student reenrollment in charter schools by different student characteristic indicators were all lower than those in traditional public schools. The largest gaps existed between the rates of reenrollment amongst Native American students in

charter schools and traditional public schools (79.1% vs. 86.8%), and between *FEP* students in the two different school sectors (81.7% vs. 89.5%). These largest gaps were close to 8%, while the smallest divergence; 3%, was between African American students in charter schools and traditional public schools (75.0% vs. 78.0%).

Across all racial/ethnic groups (White, Hispanic, African American, Native American, and Asian), 87% of students reenrolled in their home schools during 2008-2009 school year. The reenrollment rates for individual groups were fairly consistent. For example, the 87.1% of White students chose to reenroll and the student reenrollment rate in Hispanic group was 85.8%, which was very similar to White students. African American students, however, were an exception. As only 77.7% of eligible elementary African American students in Arizona chose to reenroll in their home schools; approximately 10% less than the average reenrollment rate of their peers in other racial/ethnic groups.

Student reenrollment rates by socioeconomic status were also noticeable. For students who were qualified for the *FRL* program, the average percentage of reenrollment was 85.1%, which was relatively lower than the reenrollment rates (89.9%) of their high SES peers, who were not in the *FRL* programs.

Interestingly, the differences of student reenrollment rates between students participated in SPED, ELL or FEP programs were not noticeable. Thus far, the descriptive statistics have not indicated any major differences in the overall student reenrollment rates for programs of differing participation levels. The difference in reenrollment rates among students enrolled in various programs

(SPED, ELL or FEP) was never greater than 3% (see Table 4), though this basic evaluation does not consider the reenrollment differences by school sectors.

Student reenrollment by academic performance The school choice literature has demonstrated that parents consider academic factors when making school choices (Lange & Lehr, 2000; Schneider, Teske, & Marschall, 2000; Solomon, 2003; Urahn & Stewart, 1994; VanderHoff, 2008; Vanourek, Manno, & Finn, 1998; Vanourek, Manno, Finn, & Bierlein, 1997b). This study provides substantial evidence further supporting this viewpoint in both descriptive analyses and logistic regression.

Statewide, student-level Reading and Mathematics test scores from Arizona's Instrument to Measure Standards (AIMS) were used to measure student academic performance in this study. The differences of student reenrollment by school-level student academic performance were found to be similar to the difference by school quality labels – the percentages of student reenrollment trended upward according to the rank of the student performance level. Overall, the reenrollment rates were higher for students with better academic performance. The state level reenrollment rate for all students at *FFB* level on the *Reading* test was 83% and the rate increased steadily to the highest reenrollment rate of 90.6%, found among those students who performing at the *Exceeds* level. The distribution of student reenrollment over different performance levels in *Math* also followed this pattern – better performance, higher reenrollment rates. In addition, the student reenrollment rates in charter schools were consistently lower than traditional public schools. At each level of academic performance on both

Reading and *Math* tests, charter schools consistently reenrolled a lower percentage of eligible students than traditional public schools, with an average difference of around 7 percentage points (see Table 5).

Student reenrollment by school attributes, student characteristics, and student academic performance The student reenrollment patterns became complex and mixed when reenrollment was examined jointly by school attributes, student individual characteristics, and student academic performance.

There were greater differences in student reenrollment between school locations, by school sectors, student characteristics and student academic performance (Table 6). The percentages of charter students that reenrolled in rural schools were generally higher than those in urban areas. This trend was consistent across all students, regardless of student characteristics and academic performance, and the average reenrollment rate for all students in rural charter schools was 8% higher than that of students in urban charter schools. By contrast, the impact of school location on student reenrollment rates in the traditional public school sector was relatively limited, accounting for various characteristics – student reenrollment rates varied with student characteristics and performance but the average discrepancy between rural and urban traditional public schools was only 2%.

Student reenrollment rates by the school-level SES and student characteristics were mixed across school sectors. In the traditional public school sector, higher SES schools generally had more students reenrolled, regardless of student characteristics and academic performance. However, the rate of charter

student reenrollment, jointly by schools' SES and students' characteristics, exhibited a different pattern. The student reenrollment rates in the first quartiles SES charter schools were considerably higher than that at the second and third quartiles SES charter schools; however, the differences were not so noticeable when compared with the student reenrollment at those last quartiles SES charter schools, except for those White, or Asian, or SPED students. In other words, for most socioeconomically disadvantaged charter school students (minority students or ELL students), their reenrollment rates were similar to their peers who are in better socio-economical situations.

Student reenrollment rates also differed by school level of racial/ethnic composition, across both the traditional and charter sectors. Those traditional public schools that had a smaller concentration of minority students generally had higher reenrollment rates. In those charter schools that had a larger concentration of minority students, however, there were higher percentage disadvantaged students (students in FRL programs; ELL and FEP students) that chose to reenroll in their home schools, compared with their peers with better SES or without specific programs (SPED, ELL or FEP) needs.

Student reenrollment rates in both charter schools and traditional public schools also differed by school quality and student characteristics. And several primary patterns and regularities can be discerned from the crosstab showed in Table 6. First, a lower proportion of charter school students chose to reenroll in their home schools, compared with traditional public school students who had the same characteristics. Second, student reenrollment rates trended upward

according to the school quality label, regardless of student characteristics, in both charter schools and traditional public schools. The exception to this was charter schools labeled as *Highly Performing*, in which the student reenrollment percentages were lower than *Performing Plus* charter schools, across a variety of student characteristics. Third, considerably larger percentages of disadvantaged charter school students (FRL, SPED, ELL and FEP) chose to reenroll in their current, low-quality schools; the reenrollment rate of ELL and FEP students in the traditional public school sector also exhibited a similar pattern. Finally, the reenrollment rates of African American students generally were significantly lower than their peers, both in low quality charter and traditional public schools.

Due to the importance of student academic performance in parental choice, the student reenrollment rates jointly by the school attributes and student academic performance was given special consideration in this study. On the whole, the rationale that “better performance drives higher reenrollment” still appeared to apply for most charter or traditional public school students, having a variety of characteristics. The group of students labeled as excellent performers (*Exceeds*), however, was a special case; because a considerably lower percentage of excellent students chose to reenroll in those lower *SES* or higher *Minority* schools, in both the charter and traditional public school sectors. Moreover, the reenrollment rates of excellent students by school quality, exhibited an obvious difference in the charter sector, rather than traditional public school sector. Significantly lower proportions of students held an *Exceeds* performance label and chose to reenroll in low quality charter schools. For example, only 52% of the

“Exceeds” students in Reading test (or 63% of the “Exceeds” students in Math test) chose to reenroll in their *Failing/Underperforming* charter schools. Those rates were significantly lower than their peers who hold the same academic performance level in *Excelling* charter schools – 89% of “Exceeds” students in *Excelling* charter schools chose to reenroll in their home schools. By contrast, the reenrollment rates of excellent students in lower quality traditional public schools were almost constant. For instance, the reenrollment rates for “Exceeds” traditional public school students in Reading test were 87%, 88%, 87%, 92%, and 94%, following the school quality level from *Failing/Underperforming*, to *Performing*, *Performing Plus*, *Highly Performing*, and *Excelling*, separately.

The segregation of student reenrollment (distribution of reenrolled students) Charter schools is highly touted by policymakers as an effective approach to improving Arizona’s public education system. The system lacks adequate educational funding but serves the vast majority of students with low socioeconomic status, low English proficiency, and low academic performance (Miller, 1997; Willey, 1993). As a result of the last 20 years of development, Arizona is now the state in which charter schools are most prevalent nationwide. However, there were still considerable segregations in Arizona’s public school system, based on an analysis of student reenrollment; especially in terms of school-level SES, racial/ethnic composition and school quality label. Moreover, access to charter schools for most students still varied with their characteristics and academic performance (see Table 7).

The reenrolled charter school students were more segregated than traditional public school students, especially in terms of racial/ethnic composition. During the 2008-2009 school year, the proportion of eligible students who reenrolled in higher *SES* (Q1 and Q2) charter schools was noticeably higher than the proportion who reenrolled in lower *SES* (Q3 and Q4) charter schools. In contrast, the proportion of students enrolled or reenrolled in lower *SES* (Q2, Q3, and Q4) traditional public schools were slightly lower than the higher *SES* (Q1) traditional public schools.

Due to the high correlation between schools' *SES* levels and student racial/ethnic compositions², the racial/ethnic segregation of student reenrollment in Arizona's charter schools by *SES* was also noticeable. And the racial/ethnic segregation was more significant in those Q1 *SES* schools: 14.6% of reenrolled students in this group were from charter schools. Such a proportion was much higher than the average distribution (around 5%) of reenrolled students in those charter schools in which more minority students comprised the majority of the student population.

The segregation of student reenrollment by school quality labels in charter schools was even more extensive. During the 2008-2009 school year, in all students reenrolled in those *Failing/Underperforming* schools, only 2.5% were from charter schools; while the corresponding proportion of students who reenrolled in high quality (*Highly Performing* and *Excelling*) charter schools, however, were around 10%.

² During the 2008-2009 school year, the correlation coefficient between the percentages of FRL students and minority students at the school level were 0.88 ($p < 0.01$).

Extremely lower proportions of economically disadvantaged students and students who had specific educational needs (such as special education, ELL programs) reenrolled in their present charter schools, based on the distribution of reenrolled students with different characteristics, as shown in Table 7.

Segregation by student racial/ethnic groups was also apparent in the reenrollment rates across school sectors. Based on a comparison of students' individual race/ethnicity, it was evident that Hispanic students and Native American students were highly underrepresented in charter schools, compared with traditional public schools.

In order to explore the racial/ethnic segregation in charter schools more deeply, the reenrollment of different racial/ethnic groups by different school attributes was analyzed. According to Table 8, the proportion of reenrolled White students in charter schools was strikingly larger than that in traditional public schools, both in urban (58% vs. 43%) and rural (61% vs. 42%) areas. Moreover, most of the reenrolled students in those higher SES (Q1 and Q2) and less Minority (Q1 and Q2) schools were White students. And such a significant segregation by race/ethnicity sustained in charter schools and traditional public schools; and it was more obvious in charter schools, compared to traditional public schools, as shown in Table 8.

For *Hispanic* students, where charter schools provided them with an opportunity to choose a higher quality school, more than half reenrolled in lower-SES and high-minority concentrated charter schools, although Hispanic students continued to be underrepresented in charter schools. In Table 8, it can be seen that

the proportion of reenrolled Hispanic students in lower-performing charter schools (29%) was much less than the proportion of their peers who reenrolled in lower-performing traditional public schools (69%). Further, and providing more substantial evidence, of all reenrolled Hispanic charter students (shown by Table 9), only 4% reenrolled in *Failing/Underperforming* charter schools. In contrast, 19% of all reenrolled students in those *Failing/Underperforming* traditional public schools were Hispanic students.

However, the proportions of reenrolled Native American charter students by school quality labels reflected a different pattern, as can be seen in Table 8: they were more highly concentrated in *Failing/Underperforming* schools, compared to their peers who reenrolled in traditional public schools (27% vs. 13%). Table 9 reveals a similar pattern – in all reenrolled Native American charter school students, 28% of them reenrolled in those *Failing/Underperforming* charter schools. This was extremely larger than the proportion of all other racial/ethnic groups, in which less than 5% of students reenrolled in those lower-performing charter schools.

As to the question of which students reenrolled in these most disadvantaged schools, it was obvious that the most students in the worst economic position overwhelmingly gravitated toward *Low SES, High Minority* concentrated schools that had been labeled as *Failing/Underperforming* (see Table 10). These students might be the subjects of great concern because they were the primary or latent “choosers” in the eyes of policymakers and charter school proponents. Focusing on the *Low SES, High Minority* concentrated schools

that were labeled as *Failing/Underperforming*, the results were straightforward. In urban areas, Hispanic students comprised the largest racial/ethnic group in the most disadvantaged schools, representing 80% of all students in urban traditional public schools, and 70% in urban charter schools. Further, in rural areas, an overwhelmingly high proportion of Hispanic students reenrolled in the most disadvantaged charter schools. Additionally, Native American students also represented a significantly large proportion of the student composition in rural traditional public schools.

The student reenrollment patterns provided substantial evidence that Arizona still had a largely segregated educational system by SES, race/ethnicity and/or student academic performance, despite the high promotion of school choice. Charter schools in Arizona exhibited an overrepresentation of White and high SES students, who also displayed better academic performance. Traditional public schools in Arizona, however, still served most of its socioeconomically disadvantaged students, students with specific educational needs, and students with lower achievement levels.

Predicting Individual Student Reenrollment Outcome

According to the methodology presented in Chapter 3, a logistic regression was applied, in order to predict individual student reenrollment outcomes, based on associated factors. All eligible students shown in Table 2 were included in logistic regression analysis.

329,641 students were finally included in the final empirical model, based on the statistical report. The distribution of those students among various

categorical variables was shown as Table 11. In order to control the error, all continuous variables (the average pass rates of AIMS reading/math test in a school, the percentage of lower SES/minority students in a school, the student mobility in a school, and student's scale scores in AIMS test) were firstly converted to Z scores and then entered the regression equation in the final phase.

It was predicted that 267,526 eligible students would reenroll in their present schools during the 2008-2009 academic year, according to the base model, which only included a constant. The overall percentage of correct predictions (hit rate) for the individual student outcome was 81.2%. This percentage was used as the benchmark for a comparison between the base model and the **The probability of individual student reenrollment**. The final model that was used to predict student reenrollment converged after 10 iterations.

The coefficients of the final model were estimated as follows:

$$\ln\left(\frac{p}{1-p}\right) = 1.873 - 0.286*Charter\ School - 0.172*Urban\ School + 0.016*SES + 0.022*Minority - 0.208*Failing/Underperforming - 0.237*Performing - 0.307*Performing\ Plus - 0.140*Highly\ Performing - 0.105*Reading\ Pass\ Rate + 0.061*Math\ Pass\ Rate - 0.091*Mobility-In - 0.481*Mobility-Out + 0.035*Hispanic - 0.346*African\ American + 0.047*Native\ American - 0.045*Asian + 0.164*SPED + 0.353*ELL + 0.375*FEP + 0.108*Reading\ Scale\ Score + 0.151*Math\ Scale\ Score$$

School-level predictors Charter school students were less likely to reenroll than traditional public school students. According to the final prediction model, the odds that a charter student would choose to reenroll in her/his present

school decrease by 25% than that of their peers in traditional public schools, holding all other variables constant.

School location also was found to have significant power to predict the outcome of individual student reenrollment. The odds that a student in an urban school would choose to reenroll in their home schools decrease by 16% than the odds of a student in rural area, holding all else equal.

The impacts of school-level SES and student racial/ethnic composition on the probability of student reenrollment were both positive, but only the impact of school-level student racial/ethnic composition is statistically significant at the $p < .05$ level. The odds that a student will choose to reenroll increases by 2% when the percentage of lower SES or minority students in that school increases by 1%.

Compared with *Excelling* schools (the omitted group in the logistic regression), all students in lower-performing schools appear less likely to reenroll in their home schools. Specifically, the odds that a student in a *Failing/Underperforming*, a *Performing*, a *Performing Plus* or a *Highly Performing* school will choose to reenroll decrease by 19%, 21%, 26%, and 13%, separately; after controlling for all other variables. And all these results have significantly statistical meanings at the $p < .01$ level. The odds of a student choose to reenroll in a *Performing Plus*, *Highly Performing* and *Excelling* school follows the similar rationale presented in descriptive analyses: the reenrollment rates for schools with more favorable labels were higher. However, for a *Failing/Underperforming*, or a *Performing* school, such the rationale did not work

at the individual level – the odds that a student reenroll in these two types of schools is a little higher than a *Performing Plus* school.

The average school-level academic performance also had significant power to predict the outcome of individual student reenrollment. There are contradicting patterns for reading and mathematics. The influence of the average AIMS Math test pass rate at a school, on the individual student reenrollment outcome, was significantly positive: for every 1% increase in the pass rate on the Math test, the odds that a student will choose to reenroll increase by 6%.

However, the odds that one student will choose to reenroll in her/his home school surprisingly decrease by 10% when the average AIMS Reading test pass rate in that school increases by 1%.

The probability that a student will choose to reenroll in her/his present school was also found to be significantly affected by the mobility of that student's peers. The "moving-out" peers will have significantly negative influence on student's individual reenrollment outcome – the odds that a student will reenroll reduce by 38% when the percentage of students "moving-out" of that school increases by 1%. The odds that a student will choose to reenroll, however, surprisingly reduce by 9% when the percentage of students "moving-in" of that school increases by 1%.

I conducted the correlation analysis of the student "Mobility-In" and "Mobility-out" at the school level in order to explain such a conflict. According to statistical report, both trends of student mobility were significantly correlated and the correlation coefficient was 0.58 ($p < 0.01$). According to Cohen (1988), it

means students' "Mobility-In" and "Mobility-Out" is highly correlated. In other words, the schools with high percentage of "moving-in" students are often the schools from which many students also exit. Such a school actually is a kind of "unstable" school because its students mobility-in generally is usually accompanied by mobility-out, an exit of many students. Mutually considering the student mobility from both sides, the influence from student mobility on the odds of individual student reenrollment outcome is significantly negative – which means parents generally are less likely to reenroll their students in those schools, especially for those with high percentage of students moving out.

Student-level predictors The probability that a student will choose to reenroll in her/his present school varied among different racial/ethnic groups. In comparison to White students (the omitted group in the logistic regression), Hispanic students are significantly more likely to reenroll in their present schools, after controlling for all other variables. The odds that a Hispanic student will choose to reenroll in her/his present school increase by 4% than a White student, given that all other variables remain constant. African American students, however, are significantly less likely to reenroll in their home schools. Compared to a White student, the odds that an African American student will choose to reenroll in her/his present school would decrease by 29%, controlling for all other variables. The odds that a Native American or Asian student will choose to reenroll, however, are not significantly different from a White student.

Students who participate in FRL program are significantly less likely to choose to reenroll in their present schools. The odds that a student in FRL

program would choose to reenroll in their home schools decrease by 18% than the odds of a student without in FRL program, after controlling for all other variables.

Students with various specific education demands are more likely to choose to reenroll in their present schools. For students in any special education programs, the odds that they will choose to reenroll in a home school are around 20% higher than those for typical students. For English language learners, either in *ELL* or *FEP* programs, their probability of reenrolling in the present school is also significantly larger than those of students who are proficient in English; the odds that *ELL* and *FEP* students will reenroll are, respectively, around 40% and 50% higher than those of students who are proficient in English. All these results have significantly statistical meanings at the $p < .01$ level. When mutually considering student race/ethnicity and their participation in *ELL* or *FEP* programs, the odds that an Hispanic student in *ELL* or *FEP* program will be 44% or 54% higher than a White student without in any *ELL* or *FEP* program.

The probability that a student will choose to reenroll is also significantly impacted by their individual academic performance. For all students, the odds of reenrolling in the same school increase with student's scale scores. When one student's scale scores on the AIMS Reading or Math test are 1 point higher than her/his peers, the odds that this student will choose to reenroll in her/his same school increase by approximately 10% and 20% than her/his peers with lower test scores, separately, after controlling for all other variables. Both results have significantly statistical meanings at the $p < .01$ level.

According to statistical reports, the Hosmer-Lemeshow Chi-square test for the final student reenrollment probability model yielded a Chi-square value of 179.136 and a corresponding p -value of $.000 < .05$, which implies that the goodness-of-fit for the final reduced model was not high. Compared to the base model, the final reduced model, which predicts the probability of student individual reenrollment, improved the overall percentage of correct predictions (hit rate) from 81.2% to 81.4%. For those students who actually chose to reenroll in their present school, this final reduced model predicted the student reenrollment outcome with 99.3% accuracy. For those students choosing to move, however, the percentage of correct predictions was 4%. In general, the final model has good power to predict the individual student reenrollment outcome, by applying the current variables in student reenrollment database.

**DISCUSSION AND CONCLUSIONS – CHOICE AS AN APPROACH
RATHER THAN A PURPOSE**

In this chapter, I discuss the implications of my major findings, extending the school choice literature to include school reenrollment, the interpretation of student reenrollment, the use of school reenrollment as a school quality indicator at the state level, and the effectiveness of school accountability policies, to inform school choice decisions at the individual level. In general, there were three major findings implied by the student reenrollment results in Arizona:

1. Student reenrollment was the most common school choice outcome: most students reenrolled in their present schools, regardless of the school quality label; however, the student reenrollment rates in charter schools were usually lower than those of traditional public schools.
2. The segregation of student reenrollment in Arizona was significantly polarized, across school attributes, student characteristics and student academic performance. The segregation of student reenrollment was not the result of a choice between charter schools and traditional public schools. Rather, it was the end result of a conflict between advantaged schools and disadvantaged schools.
3. There were two kinds of patterns mixed within Arizona's student reenrollment: quality-oriented reenrollment and similarity-oriented reenrollment.

Understanding Student Reenrollment

At the state level, the general patterns of student reenrollment mainly manifested in two respects: reenrollment was the most common school choice outcome in the current school choice environment, and the current school choice policies in Arizona do not ameliorate student segregation. At the individual level, the odds that a student will choose to reenroll in her/his present school are codetermined by various factors that include school attributes and student characteristics.

Reenrollment as the most common school choice A maturing education market has formed in Arizona, where many parents and students are fully covered by school choice policies. According to policymakers' assumptions, charter schools could strengthen school competition, promote student movement between schools, and ultimately improve the efficiency and quality of the entire public education system. However, even in this policy environment of highly promoted choice, reenrollment was still the most common decision outcome. Most elementary students in Arizona still reenrolled in their home schools, regardless of the school's attributes, the student's characteristics and the student's academic performance.

Student reenrollment in charter schools was generally lower than traditional public schools at the state level, and this pattern was prevalent among schools with different attributes, across all student groups having different characteristics and academic performance. In contrast, a significantly larger percentage of traditional public school students reenrolled in their present schools,

including many low-performing schools. At the individual level, a charter school student will be less likely to choose to reenroll, in comparison with their traditional public school peers, based on the logistical regression which models individual student reenrollment outcome by various factors that include school attributes and student characteristics.

These results are consistent with the classical conclusions supported by the school choice literature – charter school choosers are usually better informed and more involved than non-choosers in the education market (Becker, Nakagawa, & Corwin, 1997; Buckley & Schneider, 2007; Lubienski, 2003a; Schneider, Teske, & Marschall, 2000; Van Dunk & Dickman, 2002).

Moreover, these “positive” findings seem to add credence to the efforts of policymakers and market advocates, as they suggest that enhancing school choice policies and giving parents more opportunities to choose are the best avenues to achieving overall improvement of the public education system. This is because well-informed charter school parents, or so-called “market mavens,” are more sensitive to school choice information than other parents (e.g. traditional public school parents). As such, parents can make rational school choice decisions according to the external signals of school quality and other information related to school choice options (Buckley & Schneider, 2003). However, is it the real situation? Is it all too optimistic and straightforward?

Polarized segregation in charter schools One of the main findings of this student reenrollment study is that the segregation of student reenrollment in Arizona’s charter schools was significantly polarized by school attributes and

student individual characteristics. Charter schools have been criticized for exacerbating racial, socioeconomic status, and academic segregation (Bifulco & Ladd, 2006b; Bifulco, Ladd & Ross, 2009; Wells et al., 1998; Wong & Shen, 2000). The findings of this study demonstrate that the current school choice policies in Arizona do not ameliorate student segregation – all racial/ethnic groups in charter schools had higher percentages of students that reenrolled in higher SES/lower Minority concentrated schools, in comparison to their peers in the traditional public school sector.

Those students who were more socio-economically advantaged tended to reenroll in high performing charter schools. As the most advantaged racial/ethnic group, White students occupied the dominant position in that regard. The segregation of White students in high-performing schools is a common occurrence in the traditional public school sector. Charter schools were expected to relieve this segregation, yet the segregation of White students in advantaged charter schools continues. Compared to other racial/ethnic groups, White students were highly overrepresented in higher SES, lower minority and high quality charter schools. In this sense, charter schools in Arizona appear to intensify rather than relieve the issue of segregation in public education. This observed pattern confirms the conclusions of recent empirical studies of charter school segregation in Arizona (Garcia, 2008a; 2008b).

The polarization of student reenrollment in charter schools was even more clearly exhibited: socio-economically disadvantaged students were more likely to reenroll in disadvantaged charter schools. The research findings reported in

Charter 4 demonstrated that charter students were more sensitive to school attributes and school quality labels. Even so, many minority students (with the exception of African Americans), lower SES students, and students with specific education demands (*SPED*, *ELL*, or *FEP*) were more likely to reenroll in lower SES, higher minority concentrated, and low-performing charter schools, rather than the more advantaged charter schools. This polarized reenrollment pattern demonstrated that the segregation existed not only between charter schools and traditional public schools, but also in the interior of the charter sector.

Disadvantaged students may exercise school choice options to switch from a traditional public school to a charter school, but many of them still choose to reenroll in disadvantaged charter schools, which have a higher concentration of lower SES and minority students, and which are labeled as low-performing.

Factors associated with individual student reenrollment In a maturing education market with moderate options for parents' school choice, parents may also give rational consideration to a variety of factors when making a reenrollment decision for their students, just as when making the initial choice between a charter and traditional public school. Many empirical studies have simulated parents' initial school choice using a series of school attributes (school location, school SES, school racial/ethnic composition, school-level academic performance, etc.) and student demographic and academic information (SES, race/ethnicity, program participation, academic performance, etc.) (Burgess, Greaves, Vignoles, & Wilson, 2009; Glazerman, 1998; Hastings, Kane, & Staiger, 2006). Employing logistic regression, I examined the factors associated with the

outcome of individual student reenrollment and concluded that parents make reenrollment decisions for their students based on similar considerations.

In my analysis, I found that the school sector had a remarkable influence on the probability of a student choosing to reenroll. This means that a charter student's individual reenrollment outcome was significantly different from that of her/his peers in a traditional public school. Compared to a traditional public school student, a charter school student was less likely to choose to reenroll, given that all other influential factors remain the same. This individual reenrollment outcome was consistent with the classical findings in the school choice literature – choosers always like to choose.

Many charter school parents feel unsatisfied with their students' previous school then they seek a satisfactory education by choosing to move from a traditional public school into a charter school (Chubb & Moe, 1990; Manno, Finn, Bierlein, & Vanourek, 1998; Fiore, Harwell, Blackorby, & Finnigan, 2000; Hirschman, 1970; Henig, 1995; Lubienski, 2003a; Solomon, 2003; Urahn & Stewart, 1994; Vanourek, Manno, Finn, & Bierlein, 1997a). The school choice theory suggests that charter school parents are active choosers. Compared with traditional public school parents, parents who choose a charter school are reported to be better informed and more involved in their students' education (Becker, Nakagawa, & Corwin, 1997; Schneider, Teske, & Marschall, 2000; Finn, Manno & Vanourek, 2000; Teske & Schneider, 2001; Van Dunk & Dickman, 2002; Lubienski, 2003a; Bifulco & Ladd, 2006b; Marshall, 2006; Buckley & Schneider, 2007). Hence, charter school parents will be more sensitive to school attributes

and their students' schooling – they are more likely to choose to switch their students' schools rather than reenroll, when they are motivated by any possible school choice factors.

School location had a significant impact on the outcome of individual student reenrollment in both charter schools and traditional public schools. This is understandable because the education market in rural areas was not as developed as in urban areas. In Arizona, only 1/4 of all charter schools and 1/3 of all traditional public schools are located in rural areas. Hence, students in rural areas actually have limited options they can exercise when it comes to school choice. This relatively underdeveloped education market might be the primary reason for the higher reenrollment probability in rural areas for both charter school and traditional public school students.

The probability of a student choosing to reenroll in her/his school was also significantly impacted by the percentage of students at that school who qualified for the *FRL* program. At the state level, the student reenrollment rates for different values of school-level SES differed in both the charter school and traditional public school sectors. Moreover, such an impact would be more significant when one considers the joint influence of school-level SES, other school attributes and student race/ethnicity. At the individual level, a student's qualification for the *FRL* program also had significant power to predict the individual student reenrollment outcome – the odds that a student in *FRL* program would choose to reenroll in their home schools decrease by 18% than the odds of a student with higher SES.

There are two possible explanations for why the student qualification in *FRL* program has negative influence on the probability of their individual reenrollment outcome. The first explanation is that the most of students who are qualified for FRL programs are from those lower SES families. For those students, the complex application process for charter schools may exclude them because their parents may be unable to navigate it (Boyer 1992; Bridge & Blackman 1978; Buckley & Schneider, 2006; Caterall 1992; Coons & Sugarman, 1978; Etzioni, 1992; Hill, Pierce, & Guthrie, 1997; Saltman, 2000; Wells & Crain, 1992). Hence, those students are more likely to choose to reenroll rather than switch schools. Another possible explanation for why the *FRL* indicator was negatively impact the probability of the individual student reenrollment outcome is that switching schools may have a remarkably negative effect on the academic performance of students, especially for those lower SES students. Such a hypothesis has already been tested in similar empirical studies (Hanushek, Kain, & Rivkin, 2003; Garcia, McIlory, & Barber, 2008).

One of the important findings in this study was that the probability of a student's choice to reenroll in her/his present school grew in parallel with the proportion of minority students in a school. Considering that White students were the omitted group in the logistic regression, this actually means that minority students were more likely to reenroll in a school in which their racial/ethnic minority was more highly concentrated. This finding is consistent with a series of school choice studies that have focused on the decision-makers. According to the school choice literature, race/ethnicity has been demonstrated to be a good

predictor of parental school choice behavior (Weiher & Tedin, 2002). When leaving a traditional public school, parents generally tend to send students to the schools in which their own racial groups are the majority (Bifulco & Ladd, 2006b; Burgess, Greaves, Vignoles, & Wilson, 2009; Garcia, 2008a, 2008b; Glazerman, 1998; Henig, 1996). Now, it appears that the same parental choice behavior can be extended beyond school selection, to include decisions about student reenrollment.

Academic factors, such as school quality label and test scores, have been shown to have a pivotal influence on parental choice of charter schools. Academic consideration usually is the most important factor for parents exercising school choice (Burgess, Greaves, Vignoles, & Wilson, 2009; Coulson, 1999; Hoxby, 1999; Lange & Lehr, 2000; May, 2006; Schneider, Teske & Marschall, 2000; Solomon, 2003; Teske & Schneider, 2001; Urahn & Stewart, 1994; Vanourek, Manno, Finn, & Bierlein, 1997b). Empirical studies have also argued that a student is much less likely to remain in a low-quality school compared to a high-quality school, after controlling for individual ability and achievement (Hanushek, Lavy & Hitomi, 2008). It now appears that such claims can be extended to include student reenrollment, based on the similar findings reported in this study.

In the charter school sector, at the state level, the overall student reenrollment rates were increasing in school quality labels. At the individual school quality labels also significantly impacted the probability of student reenrollment. The odds that a student chose to reenroll in a lower-performing school (*Failing/Underperforming, Performing, Performing Plus, and Highly*

Performing) were significantly lower than the odds of him or her reenrolling in higher-performing schools (*Excelling*). In addition, the better the academic performance, the greater the odds that a student would choose to reenroll, assuming all other influential factors remain constant.

The individual student reenrollment outcome was significantly impacted by other students' mobility (especially the students' exit from schools) in both school sectors. The school choice literature has established that charter school choosers are more informed and involved in their students' education than non-choosers (Becker, Nakagawa, & Corwin, 1997; Schneider, Teske, & Marschall, 2000; Van Dunk & Dickman, 2002; Lubienski, 2003; Buckley & Schneider, 2007). Many charter school parents, so-called "market mavens," prefer to collect additional information when making these school choice decisions (Buckley & Schneider, 2003). According to Buckley and Schneider (2003), market mavens are good at collecting school information within their personal networks. In Arizona, market mavens might be prevalent in both charter schools and traditional public schools, due to the widespread school choice programs. Hence, when parents become aware that numerous students have exited from their child's present school, many of them may also choose to move out response to the influence of peers' mobility, rather than reenroll. From this perspective, it is understandable that significant peer influence existed in Arizona's public education system with respect to student reenrollment.

A student would be more likely to choose to reenroll in the present school if he or she had some specific education demands, such as special education or

English language learner programs. According to the theoretical framework of reenrollment, informed parents would consider the costs and benefits and then make a rational decision based on the specific school choice context and their family's situation. For those students who have specific education demands, on the one hand, the school choice options might not be sufficient because not every charter school will have the programming they need. On the other hand, switching schools may have a remarkably negative effect on the academic performance of such students, a hypothesis that has already been tested in similar empirical studies (Hanushek, Kain, & Rivkin, 2003; Garcia, McIlory, & Barber, 2008). Hence, students with specific education demands would be more likely to choose to reenroll rather than switch schools.

Interpreting Student Reenrollment

I have already described the general patterns of student reenrollment at the state level, estimated the probability of student reenrollment at the individual level, and provided an expression of student reenrollment and its associated factors. However, what actually caused the observed patterns of student reenrollment? In other words, how should we interpret student reenrollment under the current school choice environment? In fact, there are two opposed, yet unified aspects of the current student reenrollment outcomes in Arizona: quality-oriented reenrollment and similarity-oriented reenrollment.

Quality-oriented reenrollment The school choice literature suggests that parents' choice of a charter school is rational, being based on various factors, especially school quality (Buckley & Schneider, 2007; Hanushek, Kain, Rivkin,

& Branch, 2007; Kleitz, Weiher, Tedin, & Matland, 2000; Schneider & Buckley, 2002; VanderHoff, 2008). The findings of this student reenrollment study confirm that claim. According to the descriptive statistics of student reenrollment across school sectors, it was obvious that the trends of the overall student reenrollment in charter schools were highly associated with the variance in school quality labels – higher reenrollment rates were observed in the presence of a favorable school quality label. In contrast, parents in traditional public schools generally were less sensitive to school quality labels. Moreover, the estimation of individual student reenrollment also demonstrated that the probability of a student choosing to reenroll in her/his present school increased with the school quality label and the student’s academic performance.

Market advocates will be encouraged to learn that some charter school parents remain attuned to external signals of school quality. These parents were more likely to terminate their support for lower quality schools by choosing not to reenroll their students. Advocates may point to these findings as solid evidence that parents, once given the opportunity to choose, can discern good schools from bad and can thus make sound educational decisions. Policymakers and district administrators will also welcome such “positive” conclusions and will take it as evidence that the current school quality labeling system is an effective enough indicator to guide parental choice in the education market. With such seemingly inspiring evidence, market advocates are likely to be firmly convinced that school choice is a powerful education reform tool and they are therefore likely to

reinforce efforts to provide parents with either more or better information, to promote more school competition and to eventually improve public education.

Similarity-oriented reenrollment Although the quality-oriented reenrollment suggest that many charter school parents are more like to choose a better school for their students in current school choice environment , however, student reenrollment in Arizona also includes an alternative patterns – similarity-oriented reenrollment. We know that student reenrollment in Arizona’s charter schools was significantly polarized with respect to different school attributes, students’ individual characteristics and students’ academic performance. For White, higher SES students with better academic performance, reenrollment in advantaged charter schools can to some extent be regarded as quality-oriented reenrollment. However, it should not be overlooked that lower SES, minority students with lower academic performance, who continue to be overrepresented, also chose to reenroll in low-performing charter schools. Quality-oriented school selection might not be a good explanation for this group’s reenrollment outcome.

Similar polarization was found in student reenrollment actually between advantaged and disadvantaged traditional public schools. As a result, the segregation in student reenrollment in Arizona cannot be characterized as a simple conflict between charter schools and traditional public schools. Rather, it is better described as a strong opposition between advantaged schools and disadvantaged schools, as well as between advantaged and disadvantaged During the development of the school choice movement in Arizona, efficiency and choice, rather than quality or equity, were considered the most important

values in the minds of Arizona's policymakers (Marshall, Mitchell, & Wirt, 1989 & Smith, 1996). Market force and parental control are two highlighted features of Arizona's charter school law (Bulkley, 1999). More evidence needs to be provided to confirm the causal relationship between this policy orientation and the current polarized patterns of student reenrollment. However, the disquieting findings should serve as a warning that the charter school movement in Arizona did not relieve the issue of segregation between advantaged and disadvantaged students; indeed, it appears to have increased it. For students from disadvantaged families, it was hard to gain access to an advantaged charter school. Even after gaining access to such a school, it was also hard to remain within the program. The reenrollment for disadvantaged students within advantaged charter schools was more likely an example of similarity-oriented reenrollment, rather than quality-oriented.

Similarity-oriented reenrollment may result from the limitations of the current education market, such as the self-selection of charter schools. Many less-advantaged parents may be unable to handle the process of applying for a charter school (Boyer 1992; Bridge & Blackman 1978; Buckley & Schneider, 2006; Caterall 1992; Coons & Sugarman, 1978; Etzioni, 1992; Hill, Pierce, & Guthrie, 1997; Saltman, 2000; Wells & Crain, 1992). As such, they may be forced to choose to reenroll their students in her/his present school. This argument can partially explain student reenrollment in low-performing, traditional public schools, because those schools indeed have an overrepresentation of lower SES and minority students. Charter school parents, however, are always regarded as

both informed and rational. Therefore, under the choice-highly-promoted school choice environment, some parents who choose to reenroll their students in low-performing charter schools might only do so because they are blindly following the choices of market mavens or they have more preferences in school choice other than school quality label announced by government. This argument was discussed in the theoretical framework of reenrollment. However, more detailed investigation and interpretation is required with respect to the observation that an overwhelmingly large percentage of students (more than 70% in the charter sector and more than 80% in the traditional public school sector) chose to reenroll in low-performing schools.

Similarity-oriented reenrollment may emerge due to parents' having a common perception of a school. Levin's (2009) notion of education as a mixed good is an even more salient framework for understanding student reenrollment in low-performing community schools. The conceptualization of education as a private good, wherein parents make decisions in their individual best interest, may give way to the concept of education as a public good once students enter a local, community school. Thus, ideas such as Hirschman's (1970) theory of consumer behavior with respect to public goods could be a more accurate framework via which to understand the decisions of school parents' reenrollment decisions. If parents become highly committed to their local, community schools, they may be inclined to reenroll, even in low performing schools, in order to keep the school from further deteriorating. The seemingly irrational behaviors of these parents run counter to many school choice theories, which predict that parents' school choices

should be most attuned to market signals and thus sensitive to low performing schools, resulting in their exit.

Similarity-driven reenrollment may be due to parents' consumer-oriented behavior – highly driven by satisfaction and ultimate loyalty. In the business world, ultimately loyal consumers not only view the selected product as superior, but they intentionally surround themselves with a community of others who hold the same beliefs. As a group, this consumer village is willing to defend their product ardently. The school choice literature has demonstrated that parents may justify their school choice decision and indicate their increased satisfaction by viewing the chosen school through “rose colored glasses” (Erickson, 1982; Goldring & Shapira, 1993). Parents can easily become highly satisfied with their choice and then come to adore a school that embodies the educational preferences and expectations they hold for their students; they could become unfailingly attached to their school in cases where their preferred educational offerings are unavailable in the traditional public school system (Hausman & Goldring, 2000; Wong & Shen, 2000).

Similarity-driven reenrollment may also be driven by parents' desire to identify with the same SES and/or racial/ethnic group. Race/ethnicity has been argued to be a good predictor of parental school choice behavior in prior school choice empirical studies, and minority parents often focus on elements of self-identity, such as moral values, as their most important concern in school choice (Weiher & Tedin, 2002). Empirical studies have also documented that parents were more likely to enroll their student in schools where their own racial groups

comprised the majority of the student population (Bifulco & Ladd, 2006b; Burgess, Greaves, Vignoles, & Wilson, 2009; Garcia, 2008a, 2008b; Glazerman, 1998; Henig, 1996).

Policy Analysis and Suggestions

Quality-oriented reenrollment is always welcomed by policymakers and market advocates, because it is the original intention and purpose for promoting a charter school movement and implementing school choice policies. Government and district administrators formulate school accountability policies and design school quality labels in order to provide effective interventions to influence parental school choice decisions. These administrators expect that student reenrollment could be interpreted as an accurate signal of school quality in education market, just as higher volumes of repeat customers can serve as a positive signal of the quality of a product or service in a business setting.

However, we must remember that SES and racial/ethnic de facto segregation is a common pattern of student reenrollment within the education market, especially in the charter school sector. In my analysis, I concluded that the polarization of student reenrollment hints that charter schools and traditional public schools in Arizona are actually tending towards assimilation – socio-economically advantaged students were more like to reenroll in advantaged schools and disadvantaged students were more likely to reenroll in disadvantaged schools. Again, this segregation in Arizona’s public school system is not so much a conflict between charter schools and traditional public schools, but one between advantaged schools and disadvantaged schools.

The inconsistent relationship between student reenrollment and school performance labels may only be explained based on the categorization of advantaged and disadvantaged schools. Within both groups of schools, student reenrollment manifested as more of an extension of similarity-oriented school choice, rather than quality-oriented school choice. For instance, the collective student reenrollment behavior represented a distorted signal of school quality labels within the traditional public school sector. As well, for all students, the odds of a student reenrolling in a *Failing/Underperforming* or *Performing* school were actually very close. Hence, the inability to discern patterns between student reenrollment and school quality labels calls into questions the application of competition as an effective school reform tool. This is because even low-performing schools would keep a high percentage of their students through reenrollment and their reenrollment rate could be close to that of other better schools. Such low-performing schools may treat students who do not reenroll as isolated incidents, unrelated to school quality.

In addition, the undue emphasis on school quality labels is not advisable. School quality labels have become corrupted and highly politicized over time, for a number of reasons. This may lead parents to regard school quality labels as dissociated from actual school quality. At the classroom level, there is evidence that teachers engage in educational triage to maximize test scores for only those students who are most likely to influence these school labels (Booher-Jennings, 2005). In some cases, teachers may respond to pressure by corrupting test scores outright (Nichols & Berliner, 2007). At the state level, policymakers reduce the

cutoff point for test scores and ease the requirements for these same school labels (Garcia, 2008). In Arizona, for example, the number of *Failing/Underperforming* schools has declined from 136 in 2003 to 64 in 2009 (Arizona Department of Education, 2009). As tests and cutoff scores are manipulated over time, parents may attribute these apparent gains in school performance to political

The contradictory relationship between reenrollment and these school quality labels may be further explained by the proposition that parents, even those with students in charter schools, may not regard school quality labels as a true measure of school quality. This may explain why parents often rely on more informal sources of information, such as word-of-mouth from their social networks, rather than formal communiqués, such as quality labels or school report card, when making their school choice decisions (Schneider, Teske, & Marschall, 2000; Teske, Fitzpatrick, & Kaplan, 2007). It is reasonable to assert that these same dynamics apply to parental reenrollment decisions. Even after making a school choice decision, parents trust more localized and familiar information sources when making the decision about whether to reenroll their students.

Conversely, policymakers often support state-level command and control policies, such as tests, school labels and parent notifications, on the grounds that once the state makes parents aware of school quality, the information is a sufficient intervention-based factor to then prompt parents to exercise school choice options. The recent failure of the NCLB school choice provisions to prompt large numbers of public school parents to leave low quality schools is further evidence that parental school choice decisions are more nuanced than

policymakers have assumed. The Arizona reenrollment results contradict those who assert that parental disregard of the NCLB choice provisions is the result of botched implementation or deliberate sabotage by public school administrators (Hess & Finn, 2007). Even in Arizona's market environment, where school choice is ubiquitous, the consistent reenrollment at disadvantaged schools, regardless of quality labels, indicates that state accountability information is an inadequate innovation-based factor to prompt large-scale parent exits. Rather, when confronted with negative information about their schools, most parents are more inclined to stay in their present schools, in an effort to make it work.

Conclusion

This empirical study examined a largely unexplored and neglected side of school choice: the general patterns of student reenrollment and the relation between individual student reenrollment and associated school-level and student-level factors.

Based on literature pertaining to school choice and business, I extended the parental charter school choice hypothesis to reenrollment. I referred to some business and public choice theories in order to better understand student reenrollment in a maturing education market. By turning our attention to those students who reenrolled, I expanded the scope of school choice research to include the bulk of public school students: those who choose to remain in the same school from year to year. After applying an empirical approach and rigorous quantitative methods, I described the general reenrollment patterns at the state level and estimated student reenrollment outcome at the individual level.

For charter school students, reenrollment decisions are best understood as an active choice, similar to the initial decision to exit a traditional public school. Charter school parents were sufficiently active in the education marketplace to choose charter schools. After making a school choice decision, many parents exhibited the characteristics of blindly following consumers (herding), validating low quality charter schools through their decision to reenroll their students. If choice parents are inclined to become highly satisfied consumers and to develop a strong connection with their charter schools, regardless of the school's quality label, then the findings have far reaching implications.

This empirical study confirmed the reality that charter school movement in Arizona does not relieve the segregation of students, across schools with different attributes and across different student subgroups. Further, this study confirmed that this segregation in Arizona's public school system should not be characterized as a clash between charter schools and traditional public schools; rather, it is best characterized as a conflict between advantaged schools and disadvantaged schools. In terms of segregation, charter schools and traditional public schools exhibited a trend towards assimilation – more advantaged students reenrolled in advantaged schools and more disadvantaged students reenrolled in disadvantaged schools. The result of this shift in parent behavior following a school choice is the formation of a weak relationship between reenrollment and school quality indicators. Policymakers must confront the reality that, despite concerted efforts to reform public schools through competition, the application of market metaphors to education is fraught with severe limitations. Such limitations

will thwart the effectiveness of school choice as a reform tool. Parents, even those most active in the education marketplace, are generally pleased with the public schools their students attend. When faced with a pejorative school quality label, parents are more inclined to stay, rather than move, ostensibly to improve their school. Instead of using command and control policies to shame schools into improvement, policymakers and parents should employ school accountability policies and the practice of school labeling as a trigger to reinvest in struggling schools, rather than encouraging students to find a new one.

The charter school movement is expected to increase school competition and eventually improve public education quality by facilitating parental choice in schools. As a result, students' switching of schools has always been emphasized in current academic literature. Student reenrollment, however, never gets the attention it deserves. Policymakers and researchers take it for granted that parents want to exit low quality schools when alternatives are available. The reality, that most of these parents still choose to reenroll their students in low quality schools, reminds policymakers and researchers that they should pay more attention to reenrollment. Policymakers and researchers should pay attention to the polarized segregation of student reenrollment in charter schools. They should also rethink the factors that impact parents' reenrollment decisions, particularly in low-quality schools. This attention could then help latent choosers to gain knowledge and become more informed about school quality. By doing so, the completed school choice policies can include both students who move to new program and those

who reenroll. Ultimately, a better public education can be provided for the whole community.

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Table 1

Variables in Analyzing and Modeling Student Reenrollment

Categories	Variables	Description
School attributes	<i>Sector</i>	Traditional public school or charter school
	<i>Location</i>	Urban school or rural school
	<i>SES</i>	Percentage of students in the FRL program
	<i>Minority</i>	Percentage of minority students
	<i>Quality label</i>	School achievement profiles labeled by ADE
	<i>Performance</i>	Average pass rates of AIMS Reading and Math test
	<i>Mobility-In</i>	Percentage of students that entered into the school during academic year
	<i>Mobility-Out</i>	Percentage of students that left the school during academic year
Student characteristics	<i>Race/Ethnicity</i>	Student race/ethnicity group
	<i>SES</i>	Participation status of FRL
	<i>SPED</i>	Participation status of special education program
	<i>ELL</i>	Participation status of English Language Learners
	<i>FEP</i>	Participation status of Fluent English Proficient
	<i>Academic performance</i>	Student test scores on AIMS Reading and Math tests

Data resource: AEDW, managed by the ADE

Table 2

Demographics of Eligible Students in Arizona, The 2008-2009 School Year

Variables	Charter Schools		Traditional Public Schools		All Schools	
	Count	Percent	Count	Percent	Count	Percent
School Location						
Urban	34926	80.2	362352	77.8	397278	78.0
Rural	8593	19.8	103268	22.2	111861	22.0
Total	43519	100	465620	100	509139	100
Falling /Underperforming	1754	4.0	57417	12.3	59171	11.6
Performing	12098	27.8	134510	28.9	146608	28.9
Performing Plus	10588	24.3	104314	22.4	114902	22.6
Highly Performing	8733	20.0	71785	15.4	80518	15.7
Excelling	10392	23.9	97619	21.0	108011	21.1
Total	43565	100	465645	100	509210	100
White	25333	58.1	196022	42.1	221355	43.4
Hispanic	12104	27.8	206167	44.3	218271	42.9
Black	2964	6.8	26311	5.7	29275	5.8
American Native	1514	3.5	23950	5.1	25464	5.0
Asian	1656	3.8	13214	2.8	14870	2.9
Total	43571	100	465664	100	509235	100
Yes	9987	35.9	159174	52.2	169161	50.9
No	17800	64.1	146031	47.8	163831	49.1
Total	27787	100	305205	100	332992	100

Student SPED	Yes	2897	10.4	37956	12.4	40853	12.3
	No	24890	89.6	267249	87.6	292139	87.7
	Total	27787	100	305205	100	332992	100
Student ELL	Yes	1679	6.0	43120	14.1	44799	13.5
	No	26108	94.0	262085	85.9	288193	86.5
	Total	27787	100	305205	100	332992	100
Student FEP	Yes	803	2.9	28953	9.5	29756	8.9
	No	26984	97.1	276252	90.5	303236	91.1
	Total	27787	100	305205	100	332992	100

Data resource: AEDW, managed by the ADE

Note*: The total count of students with all valid SES and program participation (SPED, ELL, and FEP) were 332,992. The data were extracted from the student-level AIMS database, in which only the demographics of those students who participated in AIMS test were included. In the finally linked student-level reenrollment database, students in Grade 1 and 2 has no SES, program participation (SPED, ELL, and FEP), and AIMS scores data.

Table 3

Student Reenrollment across Sectors by School Attributes, Arizona, The 2008-

2009 School Year

School Attributes		Charter Schools		Traditional Public Schools		Total	
		Count	Percent	Count	Percent	Count	Percent
Location	Rural	7407	86.2	90483	87.6	97890	87.5
	Urban	27862	79.8	312163	86.1	340025	85.6
SES	Q1 (0<FRL% <0.22)	9241	85.5	97266	91.3	106507	90.7
	Q2 (0.22<FRL% <0.45)	5827	79.8	102125	85.8	107952	85.4
	Q3 (0.45<FRL% <0.71)	5101	75.8	102583	85.1	107684	84.6
	Q4 (0.71<FRL% <1)	6050	82.3	100193	84.3	106243	84.2
Race/ Ethnicity	Q1 (0<Minority%<0.26)	32787	82.1	402507	86.5	435294	86.1
	Q2 (0.26<Minority%<0.51)	5722	76.2	102496	86.2	108218	85.6
	Q3 (0.51<Minority%<0.85)	5548	78.2	99912	83.7	105460	83.4
	Q4 (0.85<Minority%<1)	4847	81.4	102330	85.3	107177	85.1
Quality	Failing/ Underperforming	1262	71.9	48582	84.6	49844	84.2
	Performing	9093	75.2	113373	84.3	122466	83.5
	Performing Plus	8580	81.0	89975	84.2	96375	83.9
	Highly Performing	7196	82.4	63789	88.9	70985	88.2
	Excelling	9138	87.9	89107	91.3	98245	91.0

Data resource: AEDW, managed by the ADE

Table 4

Student Reenrollment (Percent) Across Sectors, by Student Characteristics,

Arizona, The 2008-2009 School Year

Student Characteristics		Student Reenrollment		
		Charter Schools	Traditional Public Schools	Total
Race/Ethnicity	White	81.5	87.9	87.1
	African American	75.0	78.0	77.7
	Hispanics	81.1	86.1	85.8
	Native American	79.1	86.8	86.4
	Asian	84.2	88.3	87.9
Free/Reduced Price Lunch Program	Yes	78.6	85.5	85.1
	No	82.1	89.0	89.9
Program Participation	SPED	Yes	81.9	86.4
		No	80.7	87.2
	ELL	Yes	83.7	87.1
		No	80.7	87.7
	FEP	Yes	81.7	89.5
		No	80.8	87.4

Data resource: AEDW, managed by the ADE

Table 5

Student Reenrollment (Percent) Across Sectors, by Student Academic

Performance, Arizona, The 2008-2009 School Year

Academic Performance		Student Reenrollment		
		Charter Schools	Traditional Public Schools	Total
Reading	FFB	76.2	83.4	83.0
	Approaches	78.1	85.3	84.8
	Meets	81.6	88.5	87.9
	Exceeds	83.6	91.4	90.6
Math	FFB	75.7	83.0	82.4
	Approaches	77.5	85.3	84.7
	Meets	81.3	88.1	87.5
	Exceeds	85.0	91.2	90.6

Data resource: AEDW, managed by the ADE

Table 6

Student Reenrollment (Percent), by School Attributes, Student Characteristics, and Performance, Arizona, The 2008-2009 School Year

School Attributes	Student Characteristics															
	Race/Ethnicity							Programs Participation								
	W	B	H	I	A	Y	N	FRL	Y	N	Y	N	Y	N	FEP	
Location	86	85	87	85	86	86	87	86	87	88	86	86	93	86	89	87
	80	74	80	74	84	77	81	80	80	80	81	79	80	80	80	80
	86	80	85	85	87	84	85	87	84	87	84	88	84	84	83	84
SES	80	75	80	86	82	81	81	84	80	78	81	78	81	78	81	81
	76	68	78	63	82	75	78	79	76	88	75	77	76	77	76	76
	79	78	84	86	75	83	79	79	82	85	81	85	82	85	81	82
	86	83	86	85	88	83	86	87	86	86	86	86	86	86	86	86
	76	72	78	78	78	75	77	80	75	80	76	82	76	82	76	76
	76	74	81	74	81	79	77	82	77	86	77	82	78	82	78	78
	72	73	83	83	86	82	77	81	77	85	80	82	81	82	81	81
Falling/Underperforming	71	66	67	83	75	72	68	75	69	78	70	63	71	75	63	71
Performing	73	70	79	70	73	77	74	76	75	84	74	79	75	84	79	75
Performing Plus	80	75	84	86	82	82	81	85	81	86	81	87	81	86	81	81
Highly Performing	83	78	81	81	82	77	83	83	82	82	70	82	82	82	83	82
Excelling	88	88	87	89	89	88	87	89	87	85	87	87	87	85	87	87

Data resource: AEDW, managed by the ADE

Table 6 (continued)

Student Reenrollment (Percent), by School Attributes, Student Characteristics, and Performance, Arizona, The 2008-2009 School Year

School Attributes	Student Characteristics														
	Race/Ethnicity							Programs Participation							
	W	B	H	I	A	Y	N	FRL	Y	N	Y	N	Y	N	FEP
Location	Rural	87	78	89	90	84	89	89	89	88	89	91	89	92	89
	Urban	88	78	85	83	89	84	90	90	86	87	86	87	89	87
SES	Q1	92	86	89	92	92	87	93	93	91	92	90	92	91	92
	Q2	87	79	86	82	86	85	88	88	86	87	85	87	89	87
	Q3	84	76	86	86	86	86	88	88	85	86	87	86	89	86
	Q4	80	74	85	87	84	86	83	83	84	85	87	85	89	84
Traditional Public Schools	Q1	92	86	89	88	92	87	93	93	90	92	88	92	91	92
	Q2	87	80	86	84	88	85	89	89	86	88	86	88	89	88
	Q3	83	76	85	84	84	84	86	86	84	85	86	85	87	85
	Q4	75	74	86	89	86	87	84	84	86	85	86	85	88	90
Quality	Falling/Underperforming	81	72	86	89	83	86	85	85	85	86	88	85	89	85
	Performing	83	74	86	86	84	86	86	86	86	86	87	86	90	85
	Performing Plus	84	78	85	86	86	85	86	86	84	85	86	85	89	85
	Highly Performing	90	83	89	85	90	87	92	92	89	90	87	90	92	90
	Excelling	92	86	89	88	91	87	93	93	90	92	89	92	91	92

Data resource: AEDW, managed by the ADE

Table 6 (continued)

Student Reenrollment (Percent), by School Attributes, Student Characteristics, and Performance, Arizona, The 2008-2009 School Year

School Attributes	Student Academic Performance								
	Reading				Math				
	FFB	Approaches	Meets	Exceeds	FFB	Approaches	Meets	Exceeds	
Location	Rural	85	87	86	89	85	84	87	89
	Urban	74	76	81	83	74	76	80	84
SES	Q1	79	82	85	86	80	81	84	87
	Q2	80	80	80	84	81	78	80	85
	Q3	73	74	78	73	73	73	79	78
	Q4	78	82	83	84	78	82	83	86
Race/ Ethnicity	Q1	84	82	86	87	81	82	86	88
	Q2	71	77	76	78	76	72	76	81
	Q3	76	77	79	78	74	79	79	80
	Q4	78	80	83	76	78	80	83	85
Quality	Falling/ Underperforming	68	72	71	52	70	70	72	63
	Performing	74	76	76	72	74	76	76	76
	Performing Plus	82	81	82	79	82	80	82	82
	Highly Performing	76	78	83	82	74	76	83	84
	Excelling	85	85	87	89	84	84	86	89

Data resource: AEDW, managed by the ADE

Table 6 (continued)

Student Reenrollment (Percent), by School Attributes, Student Characteristics, and Performance, Arizona, The 2008-2009 School Year

School Attributes	Student Academic Performance									
	Reading					Math				
	FFB	Approaches	Meets	Exceeds	Exceeds	FFB	Approaches	Meets	Exceeds	Exceeds
Location	Rural	87	88	89	91	87	88	89	88	91
	Urban	82	84	88	92	82	84	88	84	91
SES	Q1	87	90	92	94	87	89	92	89	94
	Q2	82	84	88	90	82	84	87	84	91
	Q3	83	85	88	89	83	85	87	85	89
	Q4	83	85	86	87	83	85	86	85	88
Traditional Public Schools	Q1	86	89	92	94	86	88	92	88	94
	Q2	83	85	88	91	83	85	88	85	91
	Q3	81	83	86	87	81	83	86	83	88
	Q4	84	86	87	87	84	86	87	86	88
Quality	Falling/Performing	83	85	87	87	83	86	87	86	86
	Performing Plus	84	85	87	88	83	85	87	85	88
	Highly	82	84	86	87	81	84	86	84	88
	Excelling	87	88	90	92	85	87	90	87	92
		84	89	92	94	85	88	92	88	94

Data resource: ADEW, managed by the ADE

Table 7

Distribution of Reenrolled Students (Percent) in Charter schools and Traditional Public Schools, Arizona, The 2008-2009 School Year

Variables		Charter	Traditional Public		
School Attributes	Location	Rural	7.6	92.4	
		Urban	8.2	91.8	
	SES	Q1	8.7	91.3	
		Q2	5.4	94.6	
		Q3	4.7	95.3	
		Q4	5.7	94.3	
	Race/ Ethnicity	Q1	14.6	85.4	
		Q2	5.3	94.7	
		Q3	5.3	94.7	
		Q4	4.5	95.5	
	Quality	Falling/ Underperforming	2.5	97.5	
		Performing	7.4	92.6	
		Performing Plus	8.9	91.1	
		Highly Performing	10.1	89.9	
		Excelling	9.3	90.7	
	Student Characteristics	Race/ Ethnicity	White	10.7	89.3
			African American	9.8	90.2
Hispanics			5.2	94.8	
Native			5.4	94.6	
Asian			10.7	89.3	
FRL		Yes	5.5	94.5	
		No	10.0	90.0	
Program Participation		SPED	Yes	6.7	93.3
			No	7.9	92.1
		ELL	Yes	3.6	96.4
	No		8.4	91.6	
	FEP	Yes	2.5	97.5	
		No	8.3	91.7	
Student Performance	Reading	FFB	5.5	94.5	
		Approaches	6.6	93.4	
		Meets	8.2	91.8	
		Exceeds	9.7	90.3	
	Math	FFB	7.2	92.8	
		Approaches	7.3	92.7	
		Meets	7.8	92.2	
		Exceeds	8.2	91.8	

Data resource: AEDW, managed by the ADE

Table 8

Distribution of Reenrolled Students (Percent) by School Characteristics, Across Racial/Ethnic Groups, Arizona, The 2008-2009 School Year

School Attributes	Student												ELL		FEP		
	Race/Ethnicity						FRL			SPED			ELL		FEP		
	W	B	H	I	A		Y	N	Y	N	Y	N	Y	N	Y	N	
Location	58	7	28	2	4	33	67	10	90	6	94	3	97				
	61	2	26	9	2	41	59	12	88	7	93	3	97				
SES	71	5	14	5	5	13	87	11	89	1	99	1	99				
	60	8	26	3	3	40	60	12	88	5	95	2	98				
	46	10	38	3	2	58	42	12	88	9	91	4	96				
	20	7	68	5	1	84	16	10	90	24	76	10	90				
Charter Schools	79	4	11	1	5	12	88	10	90	1	99	1	99				
Minority	59	8	25	3	5	35	65	12	88	3	97	2	98				
	33	13	47	4	3	59	41	12	88	11	89	5	95				
	5	7	76	12	1	86	14	8	92	29	71	11	89				
Failing/Underperforming	39	4	29	27	2	55	45	19	81	8	92	6	94				
Performing	40	8	45	4	1	61	39	12	88	14	86	4	96				
Performing Plus	49	8	37	3	3	46	54	12	88	8	92	4	96				
Highly Performing	73	6	15	2	4	18	82	9	91	1	99	1	99				
Excelling	76	4	11	1	8	10	90	8	92	1	99	1	99				

Data resource: AEDW, managed by the ADE

Table 8 (continued)
Distribution of Reenrolled Students (Percent) by School Characteristics, Across Racial/Ethnic Groups, Arizona, The 2008-2009 School Year

School Attributes	Student Race/Ethnicity												FRL		SPED		ELL		FEP	
	W	B	H	I	A	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N			
Location	Urban	43	6	45	3	3	48	52	12	88	14	86	10	90						
	Rural	42	3	40	14	1	60	40	12	88	15	85	9	91						
SES	Q1	72	4	15	3	5	16	84	11	89	3	97	3	97						
	Q2	56	6	33	2	3	40	60	12	88	7	93	6	94						
	Q3	34	6	52	6	2	65	35	13	87	15	85	10	90						
	Q4	9	5	76	9	1	87	13	12	88	33	67	20	80						
Traditional Public Schools	Q1	79	3	12	1	5	18	82	12	88	2	98	2	98						
	Q2	60	6	28	2	4	36	64	13	87	5	95	4	96						
	Q3	29	7	56	6	2	64	36	13	87	15	85	11	89						
	Q4	4	4	80	11	1	87	13	12	88	34	66	22	78						
Quality	Failing/Underperforming	13	5	69	13	1	81	19	13	87	29	71	17	83						
	Performing	26	6	59	7	2	69	31	13	87	20	80	15	85						
	Performing Plus	36	6	52	4	2	61	39	13	87	16	84	11	89						
	Highly Performing	61	5	28	2	3	32	68	12	88	5	95	5	95						
	Excelling	74	4	15	1	6	15	85	11	89	2	98	2	98						

Data resource: AEDW, managed by the ADE

Table 9

Distribution of Reenrolled Students (Percent), by Racial/Ethnic Groups, Across School Characteristics, Arizona, The 2008-2009 School Year

Student Race/Ethnicity	Charter Schools														
	Location		SES				Minority				School Quality				
	Urban	Rural	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Failing/ Underperf orming	Performing	Performing Plus	Highly Performing	Excelling
White	78	22	48	26	18	8	71	18	10	1	2	18	20	26	34
African American	92	8	27	24	26	23	28	22	34	16	2	35	30	18	15
Hispanics	80	20	14	17	22	47	19	15	27	39	4	42	32	11	11
Native	47	53	42	17	15	26	16	12	21	51	28	32	23	9	8
Asian	89	11	57	22	14	7	68	20	11	1	2	9	9	22	50

Data resource: AEDW, managed by the ADE

Table 9 (continued)

Distribution of Reenrolled Students (Percent), by Racial/Ethnic Groups, Across School Characteristics, Arizona, The 2008-2009 School Year

Location		SES								Minority					School Quality			
		Rural	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Failing/ Underperforming	Performing	Performing Plus	Highly Performing	Excelling			
Student Race/Ethnicity	Urban	22	41	33	21	6	45	36	17	2	4	17	18	23	38			
	White	78	41	33	21	6	45	36	17	2	4	17	18	23	38			
	African American	12	18	29	29	24	14	28	36	22	11	31	25	16	17			
	Hispanics	21	8	19	30	43	7	16	31	46	19	38	26	10	7			
	Native	38	62	14	12	32	42	5	13	28	54	29	41	18	5			
Asian	10	45	28	18	9	39	33	21	7	4	17	17	18	43				

Data resource: AEDW, managed by the ADE

Table 10

Distribution of Reenrolled Students (Percent), by Race/Ethnicity, in Most-disadvantaged Schools, Arizona, The 2008-2009 School Year

School Sector	Student Race/Ethnicity					
	White	African American	Hispanic	Native American	Asian	
Charter Schools	Urban	10	4	70	15	1
	Rural	-	-	94	6	-
Traditional Public Schools	Urban	10	5	80	4	1
	Rural	11	1	50	38	-

Data resource: AEDW, managed by the ADE

Table 11

*The Distribution of Students by School Attributes and Student Characteristics,
Across School Sectors, Arizona, The 2008-2009 School Year*

Variables		Frequency		
School Attributes	School Type	Charter	24993	
		Traditional Public	304648	
	School Location	Rural	72377	
		Urban	257264	
	School Quality	Falling/Underperforming	39072	
		Performing	94341	
		Performing Plus	72888	
		Highly Performing	52624	
		Excelling	70716	
	Student Characteristics	Race/ Ethnicity	White	145021
Hispanic			139943	
Black			18939	
American Native			16052	
Asian			9686	
FRL		Yes	167783	
		No	161858	
Program		SPE D	Yes	40405
			No	289236
		ELL	Yes	44728
	No		284913	
	FEP	Yes	29717	
		No	299924	

Data resource: AEDW, managed by the ADE

Table 12

Parameters in The Equation of The Final Model

Variables	Parameters					
	B	S.E.	Wald	df	Sig.	Odds
School attributes						
<i>Sector</i> (Charter)	-.286	.017	282.537	1	.000**	.751
<i>Location</i> (Urban)	-.172	.013	182.382	1	.000**	.842
<i>SES</i>	.016	.009	3.215	1	.073	1.106
<i>Minority</i>	.022	.011	3.934	1	.000**	1.063
<i>Quality</i> (Excelling)			261.654	4	.000	
Failing/Underperforming	-.208	.031	44.373	1	.000**	.812
Performing	-.237	.025	90.111	1	.000**	.789
Performing Plus	-.307	.021	207.744	1	.000**	.736
Highly Performing	-.140	.018	59.264	1	.000**	.870
<i>Performance</i> Reading	-.105	.019	29.799	1	.000**	.900
Math	.061	.016	14.744	1	.000**	1.063
<i>Mobility</i> Mobility-In	-.091	.006	213.208	1	.000**	.913
Mobility-Out	-.481	.007	4601.229	1	.000**	.618
Student characteristics						
<i>Race/Ethnicity</i> (White)			445.037	4	.000	
Hispanic	.035	.013	7.105	1	.008*	1.036
Black	-.346	.019	332.845	1	.000**	.708
Native	-.047	.024	3.656	1	.056	1.048
Asian	-.045	.030	2.302	1	.129	.956
<i>FRL</i>	-.198	.012	294.790	1	.000**	.820
<i>SPED</i>	.164	.015	124.680	1	.000**	1.178
<i>ELL</i>	.353	.016	512.822	1	.000**	1.423
<i>FEP</i>	.375	.019	408.280	1	.000**	1.455
<i>Performance</i> Reading	.108	.009	147.964	1	.000**	1.114
Math	.151	.008	320.303	1	.000**	1.163
Constant	1.873	.023	6374.975	1	.000	6.507
				Cox & Snell $R^2 = .055$	Nagelkerke $R^2 = .089$	

Note. Unweighted $n = 329,641$ elementary school students.

* $p < .05$. ** $p < .01$.