WHEN DID PUBLIC BECOME THE NEW PRIVATE?
GRAPPLING WITH ACCESS TO POSTSECONDARY EDUCATION
FOR LOW-INCOME STUDENTS

by

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DEDICATION

To all aspiring college students and the people who support and encourage them
the best ways they know how.

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WHEN DID PUBLIC BECOME THE NEW PRIVATE?
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The shift to a knowledge economy has increased numbers of individuals pursuing postsecondary education. Low-income students do not access this process as high-income students do. Framed within a philosophy of justice, this three-study dissertation examines privatization and how one state increases postsecondary opportunity for low-income students. Fixed effects regression results from the first study (using public databases such as IPEDS, ICPSR, and Census) indicate that poverty rate is positively related to privatization, and per capita tax revenue and liberal ideologies are negatively associated with privatization.

Indiana's Twenty-first Century Scholars program guarantees financial aid and provides support services at regional centers if low-income students maintain a minimum high school GPA and satisfy other Scholar's pledge components. Using data from the

State Student Assistance Commission in Indiana and Student Information Systems on the 2004 high school cohort, two multinomial logits estimate academic preparation outcomes (honors or college preparatory versus a regular diploma) and college choice (four-year or research institutions versus two-year colleges), and a logit predicts college enrollment decisions. Compared to Pell recipients, Scholars whose parents participated in visits/events had higher odds of graduating with honors, and Scholars who visited regional centers increased their odds of completing the college preparation diploma. Logistic regression of all Scholars indicates that student counseling and parent participation in visits/events increase, and parent participation in academic preparation decreases, odds of enrolling. Compared to Pell recipients, the results of the college choice model demonstrate that Scholar participation in counseling decreases the odds of enrolling in four-year and research institutions. Parent participation in academic preparation increases the odds of enrolling in four-year and research institutions when adding academic preparation control variables; parent participation in visits/events and in career planning lose significance with those controls.

Thus interventions (typically tax-supported) designed to build social capital increase academic preparation and college participation by low-income students. The three studies reveal a clash among the public and private goals of postsecondary education and equality of opportunity. Consequences of privatization include: reduced access, breakdown of the implied social contract, and increased social stratification. The dissertation concludes with recommendations for policymakers and future research.

CHAPTER 1

INTRODUCTION

In the early 21st century, obtaining a college degree has become a crucial step in achieving economic, social, and civic success (e.g., Lewis, 2007; *Losing ground: National status report on the affordability of American higher education*, 2002). The shift to a knowledge economy from one based on manufacturing has altered the success landscape for large numbers of people. For most, a high school diploma no longer suffices for achieving a middle class lifestyle. Moreover, having only a high school diploma makes it harder to maintain one's status in the current economy, even when the accepted norm within a community or one's family does not include support for education (St. John, Hu, & Fisher, 2011).   John Rawls observed that "we assess our prospects in life according to our place in society and we form our ends and purposes in the light of the means and opportunities we can realistically expect" (2001, p. 56). More and more high school graduates are looking to postsecondary education as a way to improve, or at least to maintain, their status. In fact, the percentage of students aged 18-24 enrolling in some type of college has approximately doubled since 1980 (Snyder and Dillow, 2011, Table 7).

As the nation strives to recover from the Great Recession, expanding the number of college educated citizens is considered one solution. A connection between a nation's educational attainment and its economic development is commonly assumed (Becker, 1993; Bowen, Chingos, & McPherson, 2009; Paulsen, 1996; Zumeta, 2004). President

Obama has touted the virtues of higher education, particularly community colleges, as an achievable avenue for the citizenry (Obama, 2009). While two-year colleges work as one approach, one must consider four-year colleges, both selective and comprehensive, as options too. The goal is to shift the culture of the country to one of college-goers – and ideally, to one of college-completers (Bowen, Chingos, & McPherson, 2009).

However, low-income students do not experience this culture and process in the same way as students in higher socioeconomic strata; nor do they have the same type of access (e.g., Bennett & Xie, 2000; Bowen, Chingos, & McPherson, 2009; Choy, 2002; Deming & Dynarski, 2009; Hubbard, 1999; Immerwahr, 2002; *Losing ground*, 2002; Luna de la Rosa, 2006; Perna, 1998; Pitre, 2006; Smith, 2001). A college-going culture may be foreign to low-income students. Even with aspirations for college, many still need additional guidance on aspects of preparation, such as entrance exam preparation and understandings of financial aid. Students who are not the first in their families to attend college may hold deep-seated concerns about finances. And if they are the first in their families to participate in college-going, there is likely a lack of knowledge of what it takes to attain college access, going back to how early a potential college student needs to begin preparing for that goal.

College costs have risen substantially in the past three decades at both private and public institutions of higher education (Archibald & Feldman, 2011; Boehner & McKeon, 2003; Heller, 2001; 2006b). Given the myriad social programs state budgets must fund, public postsecondary institutions often end up losing public subsidies,

especially on a per student basis (Archibald & Feldman, 2011; Fethke, 2011; Heller, 2006b; Hossler, Lund, Ramin, Westfall, & Irish, 1997; St. John, 2006). Since these institutions seek to maintain revenue, they often shift that burden to the students and their families in the form of high tuition. The shift in the burden of paying for public colleges from taxpayers to students and their families has been referred to as "privatization" (Priest & St. John, 2006; St. John, 2006). Additionally, tension between need-based aid and merit-based aid tends to have a negative impact on low-income students who rely on student aid in order to attend college (Dynarski, 2002a; Heller & Marin, 2004; St. John, 2006; St. John, Chung, Musoba, Simmons, Wooden, & Mendez, 2004). The problem addressed by this three-study dissertation is to explore privatization and examine how one state responded to a shift to privatization of public higher education manifest in rising tuition and increased use of loans (Rizvi, 2006; St. John, 2006; St. John, Kim, & Yang, in press). After providing a history of access to postsecondary education, this introduction outlines a philosophical and theoretical framework for thinking about individual rights and the relationship between higher education and society, and choices associated with college-going. With that in mind, one can then consider notions of fairness and equity when examining ways to contend with privatization of postsecondary education.

Detailed in chapter 2, the first study, "State Valuation of Higher Education: An Examination of Possible Explanations for Privatization"[1] uses a fixed-effects regression

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[1] A version of this paper has previously been published as a book chapter in Readings on Equal Education, Vol. 22 (Fisher, 2007). Since that publication, the regression models have been refined with changes to some of the results.

model to examine how state characteristics, tax rate, and ideologies are associated with the extent of privatization of public colleges, using the declining percent of costs by the state as an outcome. This study employs a database of state indicators drawn from public sources such as the Integrated Postsecondary Education Database System and the U.S. Census. The results are interpreted within the philosophical frame of Rawls's Theory of Justice (1971, 2001). This paper then sets up the other two studies in this dissertation, which look at one state and how its behaviors did or did not adapt in this new context.

Chapter 3, "The Role of Social Capital in Academic Preparation: A Quantitative Analysis of the Twenty-first Century Scholars 2004 Cohort" addresses how a postsecondary-encouragement program enables parental engagement in college preparation, an indicator of family college knowledge. Privatization affects access for low-income students because it raises their burden of the cost. The Twenty First Century Scholars program in Indiana is intended to ease that burden early on by guaranteeing financial aid for college in the 7th grade, but also by providing important support services and programs to both the student and the parents. The investment in human capital by the state (financial aid guarantee) opens the door for student and parent behavior to change in relation to academic preparation, a pre-cursor to college-going. This study uses factor analysis to uncover constructs of social capital within those support services, and then, utilizing multinomial logistic regression, examines the relationship of these forms of capital to an outcome of high school diploma types, a measure of the type of curriculum (college preparatory or not) that a student selects.

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The third study, in Chapter 4, continues with the Twenty-first Century Scholars program and examines the impact of social capital formation resulting from the engagement activities offered by the program on college enrollment and college choice. This study logically follows one examining academic preparation because of the role academic preparation plays in both college enrollment and the type of college chosen. The use of logistic regression examines the relationship between social capital factors and college enrollment, while multinomial logistic regression is employed to predict the relationships between social capital factors and college type outcomes.

In combination, these papers provide a multi-layered analysis of one way public systems of higher education are responding to privatization in a period of globalization of labor and public resistance to taxation. In the final chapter, I return to John Rawls's Theory of Justice (1971, 2001), along with theories of human capabilities and basic rights proffered by Amartya Sen (2000, 2009) and Martha Nussbaum (2000, 2004a, 2004b, 2011) to ground the results from the three studies. Based on the results, I will re-examine these philosophies of justice in combination with theories of capital (human and social) to position the relationship between higher education and society in a fair and practical understanding. From there, I will develop recommendations for achieving higher education access for low-income students in this policy context.

A Brief History of Access to Higher Education in the U.S.

In order to gain a deeper understanding of what privatization of higher education means for access for low-income students, it is crucial to know the history of access to

higher education in the United States. Specifically, reviewing the path of postsecondary institutions from the colonial era to contemporary time will help one grasp how policy changes occurred.

In the Beginning

In the colonial era, colleges were small and accessible to a limited few. Colleges regularly received government support and funding through land allocation and tax revenue (Geiger, 2005; Heller, 2006b). However, even with this government assistance, colleges in this era were heavily dependent on tuition revenue and donations (Thelin, 2004), and their fiscal strength was shaky, requiring them to operate thriftily (p. 17). The end of the colonial era also saw more of a separation between the state and colleges. By the middle 18th century, colonial colleges connoted "prestige and high social status" (Thelin, 2004, p. 25), though they did not necessarily prepare students for the professions. Only as the American Revolution approached did colleges begin to prepare students to be more than gentlemen or ministers; in some cases, students followed a path toward law and public life (Geiger, 2005).

After the Revolutionary War

Between the American Revolution and the Civil War, postsecondary institutions exploded in their expansion – both in number and in curricular options (Thelin, 2004). Power to establish new institutions typically sat with the state, though that pertained primarily to the granting of a charter (Geiger, 2005; Heller, 2006b). While authorized to grant charters, state legislatures wanted little else to do with the oversight and financial

support of higher education, which Geiger recognizes left state-sponsored colleges weak, and by the end of the 1700s, there was no working model of a state college (p. 44).

Some new institutions were public – especially in the South and Midwest (Heller, 2006b) – while many others remained private, but the notion of private and public as used in the modern era simply did not apply in the same way prior to the Civil War. In the meantime, college cultures developed, with social class often serving as a dividing line between who was "in" and who was "out." The social divide rested primarily with the students, whereas "on the whole, most nineteenth-century colleges were not exclusionist or elite in matters of admission" (Thelin, 2004, p. 69). Nevertheless, a college education continued to be a "scarce commodity" (Thelin, 2004, p. 69).

The Civil War through the First World War

Dramatic changes occurred during the Civil War and Reconstruction, most notably with the Morrill Act of 1862, creating a federal presence in higher education associated with land-grant institutions. The Morrill Act established federal incentives for states to sell land with the express obligation for states to use the proceeds for higher education. Thelin (2004) notes that beyond the initial transaction, there was little federal oversight of land-grant institutions, and state support "was uneven at best and usually uncertain" (p. 105). Admissions standards at this time continued to be loose, with a strong emphasis on a student's ability to pay. Remedial courses were common. While the public institutions established as a result of the Morrill Acts received revenues from the sale of land and state appropriations, many also charged tuition (Heller 2006b), a

practice that was not universal, nor was the tuition as high as that charged by their private counterparts.

The second land grant act, in 1890, allowed not only for more land-grant colleges, but also the financial support for colleges to build a more substantial research base and for the development of black colleges. The Morrill Act specifically argued that states would not receive appropriations for higher education if they denied admission on the basis of race unless they established separate but equal facilities. Prior to the Civil War, few colleges – in the North or the South – would consider enrolling black students. By the middle of Reconstruction, however, over 50 historically black four-year colleges (some public, most private) were set up, often founded by churches or philanthropic foundations (Cohen, 1998). By the time the Morrill Act passed, a segregated system of higher education had taken hold, and the ruling in *Plessy v. Ferguson* legally supported segregated postsecondary education.

Around the turn of the 20th century, universities began to develop into the institutions identifiable to contemporary society. States like Michigan and California strove to align K-12 learning with higher education curricula. The University of California did not charge tuition, operating under the assumption that the state university was a good way to educate future generations of citizens and state leaders. More generally, America's flagship universities were created to meet the social and economic needs of the states that chartered them and to help preserve an open, upwardly mobile

society (Tobin, 2009). It is here that we begin to see the relationship between higher education and society leading to an implied social contract.

Nevertheless, in this time period college remained relatively expensive for the majority of the American public (Thelin, 2004). Some financial aid and campus jobs were available for a few lower-income students, but for the most part, access was limited to middle- and upper-middle class men. Geiger (2005) notes that women's colleges saw rapid expansion in this era. In the late 19th and early 20th centuries, few people completed high school, and many who did completed non-college preparatory curricula (Tobin, 2009). By the 1920s, compulsory attendance laws directly influenced the number of young people earning a high school diploma, thereby increasing the absolute number of people entering higher education. However, uneven high school educations proved to be another obstacle for college enrollment, a problem that persists into the twenty-first century.

Between the World Wars

Bigger changes began to take place in higher education between the two World Wars and during World War II, notably, the shift from an elite commodity to something more widely accessible. Mass higher education was fueled by the expansion of public secondary schools. Other types of colleges developed, such as the junior college, teachers' colleges, and women's colleges. In this era, the typical state university "remained underfunded and overextended" (Thelin, 2004, p. 249), however, by 1940, 53% of the nations' students attended public universities (Tobin, 2009).

Junior colleges developed into serious competition for four-year institutions. Public junior colleges were funded through local property taxes, whereas private ones were tuition dependent. Mass higher education differed from the elite of higher education in a manner associated with social origins and destinations and method of attendance (full-time, residential versus part-time, and/or commuting) (Geiger, 2005).

Tuition, which had been relatively stable between Reconstruction and World War I, began to rise, especially at private institutions, and limits on the number of accepted students became more common at private institutions as applications rose. Moreover, a college degree was not a guarantee for getting a job; even as some saw a connection between college education and employment, academic credentials did not necessarily align with available jobs. In some institutions, such as Harvard, the seeds of need-based aid were being planted. Still, in this era, college education continued to be considered a privilege and not a right.

The Post-War Era

By the end of World War II, the idea of mass higher education began to take hold. Public policy at the state and federal levels began to focus on higher education. This was due to the relationship between postsecondary institutions and the war effort. However, the answers to the major questions were not so obvious. There were serious concerns within the public sector about balancing elite and mass functions, removing racial and economic barriers, and determining the proper roles of federal and state government (Tobin, 2009).

A key piece of legislation designed to ease the transition to peacetime was the GI Bill, which offered education commensurate with service in the war. The number of veterans taking advantage of the GI Bill far exceeded expectations. One of the innovations of the GI Bill was that it turned higher education into an entitlement, and Tobin (2009) posits it helped lead to an increase in social mobility. For the first time, postsecondary education was not viewed as a privilege. Another innovation was that the benefit was portable, so long as the institution met government criteria. By the 1960s, enrollment in public institutions surpassed that of private colleges, a trend that continued into the 2000s (Heller, 2006b). Massification of higher education in the 1950s and 1960s expanded access to children of the growing middle class, and state higher education systems established low-tuition institutions, creating accessibility for this population of students. The creation of low-tuition institutions and expanded access continued to perpetuate the notion of social contract implied by the relationship between higher education and society.

The Truman Commission in 1946 looked to extend the GI Bill in a variety of ways, so that it was not a short-term fix, but rather to use it as a model to begin looking at expanding access to higher education opportunities for a wide variety of people, specifically suggesting the notion of "education for all" (Tobin, 2009). Notably, it was the first time a president exerted a federal presence in educational issues, with long-term implications for financial aid and other policies. While many states balked at the recommendations of the Truman Commission as federal legislation, several of the

recommendations were implemented within states, creating a national trend of affordability and greater access – at least within one's home state – but without it being national policy (Thelin, 2004, p. 270).

National security fears after the launch of Sputnik in 1957 led to the National Defense Education Act, which created loans for college students, graduate fellowships, and aid for supporting programs considered useful for the defense effort such as mathematics and foreign languages.

The Higher Education Act of 1965 until the Early 1980s

At this time, the notion of government support for research on college and university campuses intensely began to take hold, particularly at the more elite institutions that already had research capabilities. The National Science Foundation, the National Institutes of Health, and the Departments of Defense, Energy, Agriculture, and more all sought research proposals and offered large sums of money to fund the research.

Tuition and aid systems also began to take on more discernible approaches toward parity, particularly as physical space at public institutions became an issue. For example, in California state grants made it possible for students to go to private colleges when the public colleges neared capacity. Elsewhere, private colleges feeling a tuition gap between themselves and their public counterparts intensified fundraising efforts to provide institutional aid in order to compete in the market of expanding student choice.

The Higher Education Act of 1965 (HEA) created more widely available grant and loan programs for students demonstrating financial need regardless of membership in

a specific group, such as being a veteran as a criterion for using the GI Bill. President Johnson specifically mentioned wanting to make college accessible to those who were poor when he signed the HEA into law, and he talked about "opening the road" and "pulling the gates down" for future generations (as cited in Tobin, 2009, p. 245). Moreover, the HEA was intended to ensure that the benefits of economic growth, specifically education, be fairly and equitably distributed across society, a clear movement toward social justice. This is the beginning of the belief that access to higher education was more of a right than a privilege or reward (Tobin, 2009, p. 246).

In addition, HEA consolidated other generally available aid programs such as the National Defense Student Loans and College Work Study (St. John, 2003). One of the most important developments, however, was the Educational Opportunity Grant program. The majority of the financial aid programs included in HEA were campus-based and not portable, except for the Guaranteed Student Loan program, which was portable and, according to St. John (2003) functioned as a "quasi-entitlement" (p. 76). Title IV of HEA specified programs for disadvantaged students under the umbrella of TRIO – Upward Bound, Talent Search, and Special Services – that were campus-based, and because much of the federal money for aid at this time was distributed that way, institutions had an opportunity to develop comprehensive, thoughtful programs.

St. John (1993) notes a major shift in thinking in this time frame: rather than fund institutions to meet demand, fund the students. In addition to fueling debate between conservatives and liberals, this shift aligned with Becker's theory of human capital. The

presence or absence of government-funded financial aid conceivably could contribute to an individual's cost-benefit calculus in deciding whether or not to participate in postsecondary education, potentially increasing access as a result of helping students visualize the realization of their aspirations. Likewise, it also provided an opportunity for governments to consider costs and benefits for investing in higher education.

By the 1970s, the federal government became a major player in need-based student financial aid, and the idea of equalizing opportunity to attend even a private college with student aid took hold. Research dollars to institutions were not portable, whereas financial aid dollars were – an attractive trait to many students. The Basic Educational Opportunities Grants (BEOG, later renamed Pell Grants) enacted in 1972 as an amendment to the Higher Education Acts of 1965 created an entitlement grant, i.e., that anyone who complied with its terms was guaranteed the financial aid. This aid was awarded to the student, not to the institution, giving eligible students choices in college destination. The State Student Incentive Grant (SSIG) provided financial incentives to states to create need-based grant programs.

The grants established as a result of the 1972 amendments to HEA expanded the appeal of going to college to students at a time when colleges and universities were in need of students (Thelin, 2004) after their rapid expansion the previous decades. The student aid policies of the 1960s and 1970s were intended to expand access for low-income students. Overall in the 1970s, however, the proportion of federal aid distributed in the form of grants (compared to loans or work study) decreased to less than half the

total amount of federal aid awarded; and state grants increased by approximately 50 percent as a result of adapting to SSIG, but otherwise, states made relatively few changes to their financing strategies in the 1970s (St. John, 2003).

Eligibility for Pell and GSL (renamed after Senator Stafford in the 1980s) expanded to include middle-income students with the Middle Income Student Assistance Act (MISAA) in 1978. Many of the specially-directed programs gave way to generally available need-based programs by 1980 at the same time that the philosophy toward generally available programs changed from equalizing opportunity in 1965 to include providing opportunity for middle-income students to attend private colleges. Total federal grant dollars declined as a result of the difficulty of trying to combine the interests of low- and middle-income students into one set of programs.

1980s Onward, a Period of Globalization and the Departure Point for Privatization

Within just a few short years, the federal government shifted their emphasis from grants to loans. Reductions in grant aid would likely have a stronger influence on low-income students than on middle-income students. By the end of the 1980s and into the 1990s, affordability became a serious issue. Tuition revenue covered an increasing proportion of education and other expenditures; the burden of paying for public college shifted from the taxpayers to students and their families in the 1980s. State grants per student grew at about the same rate as tuition revenue in public colleges, but they could not fill the void created by the huge decline in federal grants, thus making it impossible to equalize opportunity for lower-income students in a time of rising tuition (St. John,

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2003). Increasing enrollments also meant that grant aid per student declined. In essence, the overall purchasing power of student aid declined (Gladieux, King, and Corrigan, 2005).

As colleges and universities struggled financially in the 1980s, many institutions turned toward merit scholarships as a primary source of aid to compete for the brightest students, regardless of income. However, students from higher-income backgrounds were more likely to be awarded these merit scholarships (Heller, 2006b). This type of tuition discounting, especially for out-of-state students, helped public four-year colleges maintain competition with private colleges, but that only contributed to the affordability problem for low-income students. By the end of the 1980s, a general pattern of unmet need emerged.

The 1990s were marked by an even greater expansion of loans, with new programs that included both direct and unsubsidized loans. The proportion of federal aid comprised of loans (subsidized and unsubsidized) was about 75 percent, whereas grants comprised approximately only 20 percent of federal aid by the end of the decade (St. John, 2003). State funding decreased in the first half of the 1990s, as higher education is the largest discretionary item in state budgets and tends to rise and fall with the economy (Zusman, 2005). Public colleges became increasingly reliant on tuition revenue, suggesting a steady, paced movement toward privatization. Without sufficient financial aid, low-income students will be excluded from public higher education as it becomes more privatized (Zusman, 2005).

In general college tuitions increased at a higher rate than the Consumer Price Index. Tuition increased much faster than personal income in the twenty years between 1980 and 2002 and income disparities have widened in this same period. Student aid did not keep pace. Poverty is the biggest barrier to higher education participation. Of the low-income students who do enter college, no more than one-third enroll in four-year colleges, and very few enroll in the elite institutions (Zusman, 2005).

By the early 2000s, tuition prices at public universities soared, primarily due to decreases in state appropriations (Heller, 2006b). Although state appropriations kept pace with enrollment rates (Heller 2006b), increases in expenditures rose faster. By 2005, the federal government provided less than 15% of all college and university revenues (Gladieux, King, and Corrigan, 2005).

The federal government created two types of tax credits, allowing middle-income families to deduct up to $1500 in college expenses from their income tax. But Pell awards were subtracted from the tax credit, so low-income students could not benefit from this program. States also created college-savings plan, but these benefit the middle- and upper-income students and families who can afford to invest money in these plans.

Although the intended goal of the Higher Education Act of 1965 was to increase college accessibility for low-income students, subsequent policy changes in financial aid and taxation have perverted that ideal. Low-income students continue to struggle with access to four-year colleges, especially elite schools.

History of Enrollment Growth

The history of access to higher education may be broken into somewhat defined eras, with the greatest changes occurring in the twentieth century. Prior to the middle 19th century, access was limited to the elite classes who could afford to attend. Higher education itself was viewed as a way to prepare gentlemen for society. As higher education expanded after the Civil War, that perspective began to change. Establishment of land grant institutions, the influence of the German research tradition, and the movement toward professional schools in law and medicine gave way to the belief that colleges and universities could prepare students for the professions and to be good citizens, and to meet the social and economic needs of the states. Enrollment typically depended on an individual's ability to pay.

By the turn of the 20th century, the image of contemporary colleges and universities began to take hold. College tuition remained out of reach for many, but the number of eligible students for enrollment increased by the end of World War I, after compulsory education laws were put into place. Mass higher education, with the establishment of junior colleges, began to develop. More people enrolled in higher education, and after World War II, with the Servicemen's Readjustment Act of 1944 (GI Bill), the idea of higher education as an entitlement took root. Prior to this time frame, higher education was a privilege available only to those who could afford it on their own. President Truman convened a commission that determined that social justice dictated a

need to equalize opportunity to access higher education, and proposed federal interventions in a way never before seen.

Toward the end of the 1960s, higher education as a right and not a privilege was firmly rooted in society. Student aid programs equalized access for a time in the 1970s, but as presidential administrations changed, the economy fluctuated, and the need to please the majority of constituents prevailed, lower-income students suffered as a result of policies designed to benefit the middle class were put into place. In order to provide aid to the middle class, funds were diverted from programs that benefitted low-income students most. Although the notion of higher education as a right and not a privilege is firmly established in the American psyche, the reality in the 21st century is that low-income students have diminished opportunities for access to higher education, especially for elite higher education. Even though access has expanded in the 20th century and the absolute number of students graduating from high school increased, there is a marked increase in inequality of access to four-year colleges. Especially since the 1990s, with reductions in state subsidies for public postsecondary education, privatization has altered the trajectory for many low-income students. Policy changes since the end of the 1970s have made it impossible to maintain the ideal of higher education for all; the simple fact is that many low-income students are priced out of participating, even though they may be prepared academically.

Although postsecondary education in the United States started out as an elite venture for wealthy members of society, the pattern in history suggests that expansion of

higher education – including access for lower income students through federal and state subsidies and/or lower tuition – has had a positive impact on economic development (Archibald & Feldman, 2011; Friedman, 2005). Moreover, policy changes in society - first making elementary, and then secondary, education compulsory for all social classes – reflected the value the state (nation) placed on an educated citizenry, and established the idea that education is an absolute right for individuals. Given changes in the economy, postsecondary education is fundamental for continued growth and personal satisfaction (Friedman, 2005; St. John, Kim, & Yang, in press). Privatization (shifting the cost from the state to the student) has been viewed as a way to increase access; as a policy, it has gained traction since the 1980s (Altbach, 2010; St. John, Kim, & Yang, in press). Unfortunately, the challenge to privatize in a socially just manner is great. Increasing access often leads to greater inequalities, resulting in a more stratified system that provides elite educations to a small, top group, and a lower quality education in less sophisticated, modern facilities to the masses both in the United States and abroad (Altbach, 2010).

A Brief Review of Access in Comparative Higher Education

The historical pattern of increasing access and inequality evident in the United States is replicated in an international comparison. Even more than in the United States, the long history of higher education in Europe and other parts of the world demonstrates that tertiary education was a privilege designated for the most elite in society until well into the twentieth century. In fact, until the middle 20th century, only a small fraction of

the eligible elite participated in higher education, making it possible to accommodate demand for this level of education with public funding through taxes (Psacharopoulos, 1993). Covering the costs with taxpayers' money established a major entitlement for the mostly middle- and upper-middle-income families who sent children to university. In most countries, tertiary education was designed to educate and train the highest echelons of society, qualifying them for society's most prestigious jobs and occupations or for a career in the civil service (Trow, 2001). It was a cycle that perpetuated class difference and maintained socioeconomic demarcations.

Immediately after WWII, European countries enrolled fewer than 5% of the eligible cohort (compared to the United States, which enrolled about 30% of the age cohort). By the 1960s, many countries had increased enrollment to 15% or more, while enrollment in the U.S. reached 50% of the age group. By the 1990s, most European nations enrolled more than 30%, and expansion continues (Altbach, 1998). In addition to increased access, higher education outside of the United States expanded its offering, including preparation for business and for other occupations within the category of "semiprofessions," careers somewhat lesser in stature than law or medicine, for example (Trow, 2001).

Expansion of higher education worldwide in the 20th century was due to several factors, including increasingly complex modern societies and economies requiring a more highly trained workforce and the growing portions of the populations who demanded it, especially the middle classes (Altbach, 1998; Psacharopoulos, 1993). This new demand

by the middle classes may be due in part to a rise in real incomes, making "luxury goods" such as a university education affordable (Psacharopoulos, 1993) and perhaps no longer luxuries.

Although a few countries have adjusted to provide higher education to virtually anyone in their populations who desire it, in the majority demand for this level of education remains unmet due to limited public funds and a need to distribute no longer adequate postsecondary resources efficiently (Altbach, 1998). Education ministries sit in relatively weak positions compared to other ministries advocating for budget allocations; choices between food and housing and education will generally fall on the side of food and housing (Psacharopoulos, 1993). Without increasing taxes, the per capita purchasing power of government funds for education greatly diminishes as demand increases; in combination with the prevailing resistance to paying tuition (especially by the middle and upper classes who previously were not required to pay tuition or fees), it is no surprise that demand for access to higher education remains unmet in many parts of the world (Trow, 2001). That said, access to higher education worldwide is no longer a "preserve of the elite" (Altbach, 1998, p. xxiii). Students come from more diverse social class backgrounds than ever before (Altbach, 2010).

Access is expanding everywhere. In the U.S., the idea that anything is possible for those with talent, energy, and motivation persists (Trow, 2001, p. 121). Nevertheless, in the United States and in other nations, increased access is fraught with inequalities within the individual nations, even as the nations as a whole experience growth. In many

countries, a more market-based approach (shifting from egalitarian state subsidy to individually-sourced funding – often through loans) is increasingly common (St. John, Kim, & Yang, in press). But is it socially just relative to different levels of income? Even if one has talent, energy, and motivation, being able to secure a loan to pay for college may be out of reach, or the long-term consequences of acquiring education debt (e.g., being unable to borrow in order to buy a home, or fear of inability to repay the loan) may halt a strong but low-income student from progressing further in his or her educational pursuits. Grappling with a historical and just idea of equality of opportunity in the current economic retrenchment requires a rethinking of the social contract between society and its citizens, the role higher education plays.

Conceptual and Theoretical Frames

The three papers are framed within an evolving reconstruction of John Rawls's theory of justice (1971, 2001) as a method of framing the larger problem of the decline of the public good in education policy in the U.S., a topic addressed in the first paper. From the enlightenment through the recent global period, the rights of citizens, education, and economic growth have intertwined in various ways to be paramount to the emergence of nations (Fogel, 2000; Friedman, 2005; Taylor, 2007). This causes us to rethink the role of human capital in economic development. In these papers I extend St. John's work (2003, 2006) using a social justice framework to reassess the role of public finance in higher education. In this section, I outline and compare three philosophies of justice developed by John Rawls (1971, 2001), Martha Nussbaum (2000, 2004a, 2004b, 2011),

and Amartya Sen (2000, 2009). Next, I examine theories of capital, including human capital (Becker, 1993) and social capital (Coleman, 1988). Inherent in the philosophies of justice and theories of capital are notions of opportunity and fairness (or lack thereof); I use these approaches to develop a framework for studying the effect on privatization of postsecondary access for low-income students.

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Philosophies of Justice

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Social justice as an area of study became more common in the mid-to-late 20th century with the landmark work by John Rawls, *A Theory of Justice* (1971). His thorough analysis of a society based on justice sparked similar work by other philosophers and economists, such as Martha Nussbaum (2000, 2004a, 2004b, 2011) and Amartya Sen (2000, 2009). While Rawls focuses primarily on an ideal political foundation, Nussbaum and Sen view social justice in a more global manner, analyzing its presence and suggesting formats for practice in existing societal contexts. For them, education plays a fundamental role.

John Rawls

While college financing may be understood through a variety of theoretical, conceptual, or philosophical strands, Rawls's theory of justice (1971, 2001) offers a philosophical starting point. Initially presented as a comprehensive moral doctrine (Rawls, 1971), in response to criticisms Rawls later re-examined and redefined justice as fairness as a political conception (2001) in which the principles of justice are agreed to in an initial position that is fair. Society functions better with social cooperation, and justice

is essential for social cooperation (Rawls, 1971). This justice-oriented approach to societal structure rests in contract theory, and is connected to rational choice from Kant's idea that moral principles are the object of rational choice. He relates justice as fairness to the high points of contract tradition in Kant and Rousseau (Rawls, 1971). Rawls builds his theory within the constraints of a closed, ideal society – what he calls "realistically utopian" (2001, p. 13) – such that the contract (i.e., the principles of justice) is established in an original position where individuals operate under a veil of ignorance, aware of different social conditions and distributions of talents but unaware of their own assignments within that original position. This original position is hypothetical and nonhistorical, but reasonable (2001). He argues that a common understanding of justice as fairness makes a constitutional democracy (1971).

Rawls rests his theory on three principles. The first, called the Distribution Principle, states that every individual may lay claim to basic rights (what he calls "primary goods" and includes concepts such as liberty) that should be applied equally. The second, known as the Difference Principle, argues that social and economic inequalities exist, but these inequalities must be accessible to everyone through the notion of equality of opportunity applied in a just manner. In other words, equality of opportunity affords everyone access to the benefits and disadvantages of society and the economy. However, a key component of the Difference Principle is that the least advantaged must benefit the most from overcoming those inequalities. Additionally, the first two principles are serially ordered – there is no exchange between basic rights and

social and economic gains. This ordering leads to a long-term equilibrium. In short, the

first two principles argue that those with similar talents, abilities, or skills should have

similar life chances, regardless of initial social position.

Known as the Just-Savings Principle, the third principle refers to cross-generation

effect, or "how far the present generation is bound to respect the claims of its successors"

(Rawls, 2001, p. 159). It is "demanded as a condition of bringing about the full

realization of just institutions and the fair value of liberty" (Rawls, 1971, p. 290). This

principle may be used to understand systems of taxation. One difference between the

Difference Principle and the Just-Savings Principle is that the former holds within a

generation, while the latter holds between generations (Rawls, 2001). Saving helps to

establish and preserve a just structure over time.

Rawls's Theory of Justice may be applied to democratic societies. Education

through high school has been considered a basic right in the United States as evidenced

by the Constitutional mandate for states to fund public education through grade 12.

Rawls would support the notion that education is a basic right: "Society must establish,

among other things, equal opportunities of education for all regardless of family income"

(2001, p. 44). Given shifts in the economy, it is not unreasonable to extend the notion of

education as a basic right to postsecondary education. Once that becomes the case, the

Difference Principle comes into play. Equality of opportunity becomes an issue – do

low-income students have equality of opportunity? Are they able to obtain adequate

preparation for higher education? And if so, can they afford to go? This naturally leads

to discussion of the Just-Savings Principle and how taxation contributes to the public funding of higher education. Of course, in a democratic society, government must use tax dollars responsibly while also trying to be equitable. If this does not happen, not only will socioeconomic stratification continue, the opportunities for social mobility decrease or disappear, an outcome that would be in violation of the Difference Principle.

In changing the basic structure of society we are not permitted to violate the principle of equal liberty or the requirement of open positions (Rawls, 1971). We may change distribution of wealth or income and how organizational powers regulate cooperative activities, so long as the ability to raise prospects of some does not lower prospects of others. This takes on significance when considering privatization of public higher education in concert with federal and state financial aid. Moreover, because Rawls's principles of justice are rooted in contract theory, ideas of reciprocity and give-back are built into his theory (2001). He specifically discusses how people should be encouraged to train and be supported in developing native endowments, such that they can use them to contribute to the less endowed, in other words, make returns to society.

Martha Nussbaum

Developing out of her work on women's rights and human development, Nussbaum's approach may be generalized to broader populations and issues. She advocates for the disadvantaged, who exist in every society. Nussbaum bases her analysis in the idea of "human capabilities" (2000, 2004a, 2011): "what people are actually able to do and to be – in a way informed by an intuitive idea of a life that is

worthy of the dignity of the human being" (2000, p. 5). Capabilities should be pursued

for each and every person, and Nussbaum argues that there is a minimum threshold of

each capability, beneath which human functioning is not available to all citizens. Her

primary goal is to demonstrate how capabilities combined with a threshold level of those

capabilities can provide a basis for central constitutional principles that citizens have a

right to demand from their governments (2000). She also provides general principles to

guide public action (2000, pp. 285-90) that include the importance of options, both in and

of themselves and for supporting other capabilities more generally – this promotes well-

being; the importance of perceived contributions; and the importance of a sense of one's

own worth, which argues that people are more likely to fight for their goals if they think

they are worthwhile. These guidelines certainly apply to low-income students, who may

experience more limited options for postsecondary education, and may not feel they are

entitled to more as a result of their cultural norms and habitus.

Unlike Rawls, Nussbaum does not require a lexical ordering of capabilities

(which are similar to the list of basic rights Rawls enumerates but are somewhat more

expansive), instead viewing them as fundamentally equal to each other. She does concur

with his notion that denying liberty prevents meeting economic needs. Her list of

capabilities includes, but is not limited to: senses, imagination, and thought (which

includes thinking and reasoning in a human way informed by adequate education,

freedom of expression, and other related notions); practical reason (including planning

one's own life); affiliation (including self-worth, protection from discrimination, and

being treated in a dignified manner whose worth is equal to that of others); and political and material control over one's own environment (2000, 2004a, 2011). Nussbaum observes that the primary differences between her capabilities list and Rawls's list of primary goods are its length and conviction and its refusal to make objective items, like income and wealth, goals in their own right (2000, p. 88). She also adds the social basis of basic rights like health and self-worth to her list. A limitation of the capabilities approach is that the capabilities themselves are hard to measure. However, as Nussbaum declares, "anything worth measuring in terms of quality of life is difficult to measure" (2004a, p. 253).

Trade-offs between capabilities are not possible – more of one will not satisfy the need for a different one (2000, 2004a). The government can aim to deliver the social basis of these capabilities, which can make up for differences in starting points. Even then, not all factors can be controlled, thus interfering to keep some people from full capability. However, her approach is designed to offer the philosophical grounds for constitutional principles while leaving the implementation of such principles to the internal politics of the nation. Nussbaum situates her philosophy in an open, messy world, which is markedly different from Rawls's closed, ideal society. Although Rawls's principles make sense and provide an outline for enhancing justice, some may view them as limited due to the tight constraints under which they were developed. Nussbaum's less constrained development extends Rawls's principles in a more expansive, practical, applicable manner. Along these lines, probably the most fundamental difference between

the two relates to institution vs. individual. Rawls is most concerned with basic

institutions in society. His principles apply less to what goes on within the institutions

than to how institutions are viewed as a group. Nussbaum, on the other hand, applies her

capabilities approach to individuals, including individuals within an institution.

Nussbaum suggests looking at a group of basic resources and then examining

their distribution, advancing criteria for a fair social allocation (2000). Rawls uses a

similar approach, but he does not recognize that people vary greatly in their needs for

resources and in their abilities to convert resources into valuable functionings. Although

Nussbaum's viewpoint is somewhat less restrained, it generally aligns with Rawls's ideas

of truly fair equality of opportunity and the equal worth of liberty; she goes so far as to

say, "those who need more help to get above the threshold get more help" (2011, p. 24).

She specifically argues that the goal is capability, not functioning; a person should

have the choice whether or not to act on his or her capability, but that choice must be

possible and his or hers to make (2000, 2004a). However, functioning in childhood is

necessary for capability in adulthood, for example, elementary and secondary education

is required in childhood in order to make life choices as adults. While Nussbaum does

not extend this functioning to postsecondary education, one could argue that it, too,

should be required because of its contribution to analyzing and determining life choices

and participating in society as active citizens. Advanced education is also correlated to

other benefits such as improved health, and Nussbaum does state explicitly that "the more

crucial a function is to attaining and maintaining other capabilities, the more entitled we

may be to promote actual functioning, in some cases, within limits set by an appropriate respect for citizens' choices" (2000, p. 92).

Nussbaum also extensively examines the idea of social contract (2011). She notes Rawls's identification of areas of difficulty within his own theory of justice, including but not limited to justice for future generations (solved by the Just-Savings Principle) and justice across national boundaries (which he simply does not discuss). In Nussbaum's view using the Capabilities Approach, most of the weaknesses derive from the fact that Rawls draws from the notion of the social contract, even when Rawls's incorporation of elements suggesting that a person is an end and not a means is insufficient to overcome the problems. Why? It goes back to that original position that assumes a veil of ignorance; his theory development assumes approximate equal physical and mental power among the participants in the original position. What brings people together and to agree to political and legal constraints under these conditions is mutual advantage, not altruism (2011, p. 86). Concern arises because assumptions of equality and mutual advantage cannot deal with cases of obvious lopsided power that are not easily corrected by redistributing income and wealth. Ultimately, though, she determines that "the social contract tradition in its classical form has been rejected, but its core idea of a fair agreement survives" (2011, p. 89). Moreover, mutual advantage provides stability to the social contract. Relating this back to public higher education, it is reasonable to expect an implicit social contract, or more broadly, a fair agreement, between citizens and their

states. States certainly benefit from having highly-educated residents, and citizens experience positive effects too.

Amartya Sen

Like Nussbaum, Sen bases his social justice work in human development, but from the perspective of economics. Unlike Rawls, he is not interested in developing a perfect theory of justice. Rather, he is motivated to enhance justice and remove injustice, an approach more attainable in his view (2009). Although he does not specify capabilities in a listed format the way that Nussbaum does (2000, 2004a, 2011), Sen, too, views capabilities as necessary for freedom. He emphasizes freedom in its various forms specifically as a primary driver of human and economic development. "Economic unfreedom can breed social unfreedom, just as social or political unfreedom can also foster economic unfreedom" (2000, p. 8). Multiple, substantive freedoms interconnect, and investigating development from the standpoint of freedoms offers a more inclusive analysis that incorporates economic, social, and political concerns. Sen enumerates five instrumental freedoms: economic, political, social, transparency guarantees, and protective security (2000). They link together and with the improvement of human freedom more generally. This freedom-centered approach to economics and development leads to an agent-oriented view. "With adequate social opportunities, individuals can effectively shape their own destiny and help each other. They need not be seen primarily as passive recipients of the benefits of cunning development programs" (p. 11).

The freedom-centered view also fits well within a market economy; denying opportunities for transaction may lead to "unfreedom," and marketplace transactions provide social interaction, providing an outcome beyond simply increasing wealth or income. This connects to postsecondary education if one views education as a marketplace, and people who are denied opportunities to participate in the full marketplace of education may experience "unfreedom." For low-income students, that may mean limited major choice if they must attend community colleges instead of more expensive four-year institutions, or perhaps the networking that occurs at more elite (including public) four-year institutions that could lead to preferred employment will be denied to them because they cannot afford to attend. Although Sen argues for emphasizing education and healthcare in poor economies without having to wait to "get rich first"(2000, p. 49), that can be brought down to a more micro-level; rather than look at poor economies and education, look at poor people and education. Lower-income people should not have to "get rich first" to be able to fully participate in education. Moreover, "*relative* deprivation in terms of *incomes* can yield *absolute* deprivation in terms of *capabilities*" (2000, p. 89, emphasis Sen).

Continuing with the marketplace-orientation, Sen notes that markets in general aim toward private goods or benefits, but there may be a strong case for providing public goods beyond what the private markets would promote:

> Given the shared communal benefits of basic education, which may transcend the gains of the person being educated, basic education may have a public-good component as well (and can be seen as a semipublic good). The persons receiving the education do, of course, benefit from it, but in addition a general expansion of

education and literacy in a region can facilitate social change…and also help to enhance economic progress from which others too benefit. The effective reach of these services may require cooperative activities and provisioning by the state or the local authorities. (Sen, 2000, pp. 128-9).

Though Sen refers to basic education, one could argue that this extends to postsecondary education in the United States, particularly with its knowledge-based economy. The argument is not necessarily to provide these resources publicly to everyone. However, Sen wonders to what extent people would pay for such services in the absence of public provisioning. One solution is means-testing, but that elicits its own concerns, not the least of which is that targeting may lead individuals to see themselves as passive recipients rather than agents. Nonetheless, if targeted individuals are able to see themselves as agents, then means-testing may be a successful method.

Different from Rawls: transcendental vs. comparative justice. Transcendental institutionalism emerged from the works of Hobbes and Rousseau, and may be defined broadly as identifying just institutional arrangements for society. Comparative approaches are more concerned with social realizations and originate from Adam Smith, Mary Wollstonecraft, and Karl Marx, among others (Sen, 2009). Transcendental institutionalism, which falls into "contractarian" thinking, contains two main features: it concentrates on perfect justice, and it concentrates on getting the institutions right, rather than being directly focused on the actual societies that will ultimately emerge. This second feature presents a problem due to the fact that any society depends not just on its institutions, but also people's behaviors and social interactions (Sen, 2009). There may

be a number of possibilities for a just society with transcendental institutionalism; Rawls glosses over how individuals in the original position under the veil of ignorance actually select the one they do over the alternatives. Moreover, even if a perfectly just society could be developed, how would the existing society make that transition? Sen argues that we must accept the realities of our existence and work within those constructs to enhance justice and prevent what is manifestly unjust.

Related to the differences between transcendental institutionalism and comparative approaches is the area of focus. Rawls emphasizes variations of personal interests and priorities. Drawing on Smith, Sen highlights the need to broaden the discussion to avoid insular thinking by referencing the notion of the impartial spectator (Sen 2009). When focused inward, it is possible to ignore relevant arguments that may be otherwise unfamiliar in a particular culture. As such, is there really one "ideal" justice that can be agreed upon by all, as Rawls would demand in his original position? Even with this problem, Sen acknowledges that Rawls's theory is important for understanding many aspects of the idea of justice. As noted above, Rawls's work on social justice in the mid-to-late twentieth century kick-started a wide array of thinking and research on the topic, bringing the issue to the forefront.

In a deeper analysis of the differences between transcendental and comparative approaches, Sen (2009) questions whether comparative assessments are a byproduct resulting from comparisons of distance from transcendence. Additionally, the question of whether one must define a just society before developing a theory of comparative justice

calls for further examination of necessity and sufficiency. Sen determines that the distance comparisons from transcendence are not sufficient, because there is no way to rank the comparisons. Even if one "best" policy could be determined, how would one compare two of the non-best alternatives, which may be the only options available to a society? Though transcendental approaches have been deemed insufficient, are they still necessary in order to rank two alternatives in terms of justice? No, because, one would not need to bring in a third option when trying to compare two alternatives.

But what about considering the reverse: Must comparative rankings of alternatives be able to identify the transcendentally just arrangement? If so, then transcendental identification belongs in a theory of justice, because if the transcendental question cannot be answered, then neither can the comparative question be answered fully (Sen, 2009, p. 102). However, incompleteness is a part of the process, with incomplete information and disparate needs even with full information. Thus, it may be difficult to identify a perfectly just society and develop transcendental conclusions.

This leads Sen to social choice theory, which contributes to a theory of justice in several ways. First, it focuses on the comparative and not just the transcendental – the practical reasons for choice, rather than perfection, a goal that may not be achieved. Second, it recognizes the inevitable plurality of competing principles. Third, social choice theory allows for reassessment and further scrutiny, allowing for reconsideration of choices when unforeseen negative outcomes arise, an option not possible in the exacting structure established by Rawls. Fourth, it permits partial resolutions – even a

complete theory of justice may yield incomplete rankings of justice. Fifth, social choice theory allows for a diversity of interpretations and inputs. This may refer to the idea of the impartial spectator. It also allows for people to weigh individual interests against individual judgments and aggregate them, instead of considering them separately. Sixth, social choice theory emphasizes precise articulation and reasoning. Rawls, on the other hand, does not offer definite reasoning for the unanimous development of his specific type of social contract in the original position. Finally, social choice theory provides a role for public reasoning and public discussion in addressing various problems, including questioning normative preferences and understanding the demands of liberty. When taken in combination, these contributions of social choice theory direct Sen (2009) into identifying a two-way relationship between rethinking behavior on grounds of social justice and the institutional need to advance the pursuit of social justice.

Different from Rawls: Impartiality and positionality. Within Rawls's transcendental approach to justice is the notion of closed impartiality. This is present in the original position, when the participants determining what makes a just society operate under the veil of ignorance. Sen considers the impartiality under the veil of ignorance in justice as fairness as "parochial" (2009, p. 126), primarily because the original positions of individuals operate in isolation and are not conducive to objective scrutiny of social conventions – perhaps there are biases and preconceptions within the group.

But what is the problem with confining concerns to the members of a specific sovereign state? Should justice go beyond practical politics? Part of justice rests

importance on the idea of obligation to each other. If we give concern to those near and far, then a theory of justice ought to cross national boundaries – after all, individuals have identities that cross national boundaries. Moreover, the actions of one group may affect another group elsewhere; their views should count in determining what is just in how a society is organized. Finally, viewpoints from elsewhere provide objectivity that may be lacking when remaining within a more limited construction.

Thus, there are three main differences between Rawlsian theory and approaching a theory of justice derived from extending Smith's idea of the impartial spectator. First, Smith insists on open impartiality. Second, Smith applies a comparative focus, not just a transcendental one. Third, Smith involves social realizations in a way that goes beyond the search for just institutions, which allows for a seeking justice within existing realities.

Where a person stands influences his perception of what is around him (Sen, 2009). "What we can see is not independent of where we stand in relation to what we are trying to see" (pp. 155-6). Positional dependence bears direct influence on our beliefs, understandings, and decisions, and can mislead. Positional perspectives retain a strong hold that is difficult to overcome. Relative to justice, positionality may obfuscate social understanding. This is one of the reasons that Sen and Smith both advocate for the impartial spectator and comparative perspectives.

When considering educational access for low-income students, many of us are limited in our positionality. Financial aid policies that benefit middle-income students, for example, the emphasis on loans or on merit aid, tend to obscure the needs of low-

income students because a large number of people benefit. Are more people being helped by the merit aid and loans than low-income students would be helped if some of that merit aid shifted toward need-based aid, or if some of that loan money were to be redesignated toward grants? What about the larger effects on the society, as the gap between wealthy and poor widens, expanding even further as a result of disparities of educational access? In this case, our socioeconomic positions in society may influence our beliefs about what is just.

Cooperation: contractual or voluntary? Social cooperation underlies Rawls's theory of justice as fairness. Cooperation may be brought about in two ways – enforced through a contract, or social norms that work voluntarily in that direction. Rawls derives his theory from Rousseau's social contract to develop institutions and norms, yet when examining his idea of the original position, it is clear that he relies on agreed upon behavior to maintain the social institutions, rather than strict enforcement. Sen (2009) proposes that reasonable behavior does not emerge only from advantage-seeking or obligation for mutually advantageous cooperation, but rather that at times reasonable behavior may result from a valuing of freedoms and capabilities where an asymmetry of power exists. Although Rawls uses contractarian language, even he notes a certain amount of flexibility within the contract to account for uneven distributions of liberties. In combining Rawls (1971, 2001) with Nussbaum (2011) and Sen (2009), one may appropriate the term "social contract" loosely to refer to the social cooperation and mutual obligation necessary for functioning when referring to how society is set up,

accounting for justice and fairness (i.e., considering some action based on values rather than obligation). When taking into account Rawls's liberties and primary goods along with Nussbaum's (2000, 2004a, 2011) and Sen's (2001, 2009) capabilities in today's economic context, one may consider postsecondary education to be a part of that social contract. Mutual advantages arise when governments (federal and state) assist low-income students with college attendance, with increased lifetime earnings for the students and allowing students to pursue what they value, and higher economic participation (including economic growth and tax payments) for the governments. In addition, there is a certain moral valuation associated with equality of opportunity.

Agency. Sen (2009) observes differences between agency and well-being. Agency encompasses all the goals that a person has reasons to adopt, including, but not limited to the advancement of his or her well-being. Ensuring that individuals can develop their capabilities – which in Nussbaum's list (2001, 2004a, 2011) includes well-being – ensures the individuals' agency. In his 2000 work, Sen explicitly states

> There is a deep complementarity between individual agency and social arrangements. It is important to give simultaneous recognition to the centrality of individual freedom *and* to the force of social influences on the extent and reach of individual freedom. To counter the problems that we face, we have to see individual freedom as a social commitment. (p. xii)

This ties back to obligation, and in a sense, to the notion of social contract because it evokes a sense of mutual advantage. Social arrangements can help to ensure individual agency, which is one way to view James Coleman's (1988) view of social capital, to be reviewed shortly.

Although there are limitations to Rawls's theory of justice, including the emphasis on institutions and societal structures in a perfect setting, his principles may be extrapolated and applied more generally and more individually, as even Nussbaum concedes when discussing the social contract (2011, p. 89). The two chief challenges in Rawls's theory that Nussbaum and Sen point out – individual versus societal structure, and transcendental versus comparative justice – do not negate the fact that Rawls's principles of justice neatly summarize a fair approach to mutual social obligations with hints to actions based on moral values. One additional difference is that Rawls would find equality of opportunity for education sufficient for education whereas the human capabilities approach argues for a minimum threshold of education. Without making light of that very important difference, the primary theory of justice used in subsequent chapters of this dissertation will be Rawls's, applying Nussbaum and Sen for explication and additional interpretation as appropriate.

With the policy shift toward privatization of public higher education, the next step is to examine how college-going behaviors change. Theory can help to understand behavior, and thus changes in behavior. To examine college-going behavior, it helps to pull from the fields of sociology and economics. Researchers of higher education often turn to theories of human capital, social capital, and cultural capital as means of viewing college-going.

Human Capital Theory

Theories and analysis by Rawls (1971, 2001), Nussbaum (2001, 2004a, 2004b, 2011), and Sen (2001, 2009) naturally extend to notions of human capital investment and the multiple ways human capital is valued by states and by individuals. Gary Becker (1993) viewed investment in education, training, and medical care, for example, as a way to produce human capital, as opposed to physical or financial capital. Paulsen (2001a) specifically defines human capital as "the productive capacities – knowledge, understandings, talents, and skills – possessed by an individual or society" (p. 56). The key is one cannot separate a person from his knowledge, skills, health, or values the way one can separate another from financial or physical resources. In a way, this calls to mind Rawls's first two principles of justice, of basic rights and equality of opportunity (1971, 2001). Becker, an economist, uses this idea and bases it in the economic concept of rational choice regarding costs and benefits. However, Paulsen (2001a) notes that the decision to invest in higher education as a form of human capital is not purely financial; a student's individual background, experiences, and environments factor into that decision.

The first aspect of Becker's theory is that "education and training are the more important investments in human capital" (Becker, 1993, p. 17). Specifically in the context of the United States, high school and college educations increase a person's earnings, even after accounting for direct and indirect costs and adjusting for background (family, abilities relative to those of more educated people, etc.). Furthermore, increased education accrues other benefits, such as better health, cultural appreciation, and civic

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responsibility. While human capital is often viewed as an individual investment with individual returns, one must keep in mind the state benefits, and thus assumes an expected investment in human capital. These dual perspectives provide a crucial lens into the participation of low-income students in postsecondary education and help to set the stage even more for understanding how to increase access for low-income students.

Human capital theory relates to college-going in that people have to prioritize how they are going to invest their financial capital. Should they enter the workforce immediately after high school? Is it worth the financial investment to increase one's own human capital by going to college after high school before entering the work force? The Twenty-first Century Scholars program in Indiana helps ease that decision process for low-income students because the financial aid guarantee that comes along with the program permits students and their families to explore other aspects of college-going decision-making instead of focusing on the anxiety of how to pay for college. Key elements of the program allow the students and their families to build social capital and cultural capital in such ways as to build information, trust, and networks and establish norms that promote a college-going culture (St. John, Hu, & Fisher, 2011). The second and third studies in this dissertation look at the effect engagement activities associated with accruing social capital has on high school curricular choices and college enrollment decisions.

Cultural Capital and Social Capital

Human capital is not the only form of capital requiring consideration. Particularly for low-income students, notions of status attainment, as outlined by Blau and Duncan (1967), as well as cultural capital, as put forth by Bourdieu (1973, 1986, 1990), begin to provide insight. Status attainment theory is more individually based, relating the child's (son's) future status to his father's status. Cultural capital as defined by Bourdieu is far more structural, restricting the degree of individual agency. Briefly, it is a collection of cultural knowledge, skills, and abilities that are possessed and inherited by particular groups in society. This collection of traits tends to rest in the upper socioeconomic classes. Furthermore, Bourdieu (1973) adds that the culture of the dominant class is transmitted and rewarded by the educational system. Winkle-Wagner (2010) analyzes Bourdieu's overarching framework in relation to educational research, describing how education and cultural capital may jive: "Education appears to offer a credential based on merit when in reality these credentials may simply be rewards for displaying a particular cultural capital" (p. 20).

Overall, Bourdieu's theory of cultural capital is about social reproduction, especially when coupled with his notion of habitus, a set of principles and guidelines that help determine belief and practice. In addition to existing within a context, habitus helps to create and/or perpetuate the context for an individual. People within the same social class may experience things slightly differently, but those experiences will all generally fall within the same habitus.

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The emphasis on social reproduction is one of the criticisms of Bourdieu. For example, Stanton-Salazar (1997, 2001) and Gandara (1995) observe that Bourdieu's notion of cultural capital applies to the dominant culture. In fact, students from non-dominant cultures (based on race or income) have their own cultures, and they must navigate through multiple cultures constantly. Their conceptions of cultural capital require individual agency and are not bound by strict social reproduction. Further, they may be influenced by the social networks in which they live and interact.

According to Bourdieu (1986), social capital involves participating in a network of connections, whereby each member of the network possesses various forms of capital, be they economic, cultural, social, human, or some other form. Social capital results from "investment strategies" designed to establish or reproduce social relationships that may be used later on (1986, p. 248). His approach ties in neatly with the idea of social reproduction; networks are closed, because new members may upset the balance. Portes (1998) expresses concern specifically about exclusion from closed networks for non-dominant groups.

Coleman (1988) understands social capital as social networks of trust that lead to advantageous outcomes and is found in the "*relations* among persons" (pp. S100-1, emphasis Coleman). He develops this idea from understanding the economic perspective of rational, purposive action to maximize utility applied in a social setting governed by social norms. The value of social capital is that it identifies aspects of social structures by their functions. "The function identified by the concept of 'social capital' is the value

of these aspects of social structure to actors as resources that they can use to achieve their interests" (Coleman, 1988, p. S101). Early on, Coleman hints at the need for individual agency in order to realize goals. Moreover, the concept of social capital may fit into any type of societal structure, as the formation of the society is less important than navigating through it. In thinking about social justice, the idea of social capital fits into a society as conceived by Rawls *and* aligns with Nussbaum's and Sen's view of comparative justice and working within the society in which one lives, provided individuals are furnished with a minimum of capabilities.

In order for social capital to function, two elements are necessary: trustworthiness of the social environment (because societal structure relies on mutual obligations, or in essence, a social contract) and the extent of the obligations present in the society – both structurally and for the actors within the structure. Information becomes a crucial third element in addition to the components of trust and networks formed by obligations, for it provides a basis for action. The three aspects intertwine to affect choices and behavior. Coleman's approach allows for individual agency, but is heavily structured and requires a high degree of individual action to enact change.

When examining successful functioning of networks within a social capital frame, notions of open and closed networks come into play. A closed network will have more trust, and more mutual obligations placed on the parties within the network. An open network will not function as successfully; the level of mutual obligation is reduced because the linkages between the members of the network are looser. In the United

States, one group of networks relates to socioeconomic status; there is a social aspect of economic class. The networks for each class grouping are relatively closed, and members of lower income groups especially must act as their own agents to break into the networks (and information they contain) associated with higher incomes. That process may be extremely difficult, and the level of trust in the information shared may be weak, at least at first.

In addition to networks that may result from societal structures, a majority of networks are formed by individuals who come together for a specific purpose. For example, students from the same high school form a network, as do people who belong to the same church or community center. Networks that come together for one purpose (such as religious practice) may be appropriated by the individuals for a different aim. In fact, in Coleman's view of social capital, networks that are developed by individuals are stronger than those resulting from structural components of society.

Because one value of social capital is that it provides resources (in the form of relationships) for individuals to pursue their own goals and interests, it naturally has an effect on the creation of human capital in the next generation, as Coleman (1988) notes the influence of this form of capital in the family and in the community. It is important not to confuse financial capital or human capital within the family for the social capital within the family. It is neither wealth nor income, nor is it the parents' education that provides a specific cognitive environment to aid child learning. Unfortunately, many datasets offer no better alternatives for attempting to measure social capital in the family.

What matters for social capital in the family is the relationship between the parent(s) and the child(ren), and how involved the parents are in the children's lives and learning. If the parent is not present much or at all and/or does not have a strong relationship with the child, then there is a lack of social capital in the family. Within the family, social capital plays its own role in the education of the children, next to financial and human capitals.

Outside the family, one can look to the community for social capital in pursuit of human capital – in the relationships between parents, in the tightness (or closed-ness) of the networks, and in the parents' relations with the institutions. Parents act within a community context. If the community offers resources parents may learn from and engage in, that allows the parents to act as social agents in their own homes, tightening the family-community network. Moreover, the students may engage with the community networks directly to develop a support system that may help them to overcome doubt about the trustworthiness of college information.

From the perspective of college-going for lower-income students, building social capital is crucial, and these processes may take flight through concerted engagement efforts (St. John, Hu, and Fisher, 2011). Introducing new people with college knowledge to establish trusting relationships in order to connect to the resources necessary for achieving college access helps not only to gain the information necessary, but also provides a support network for greater success in meeting the goal. Such networks in schools and communities can help students and their parents overcome fears about pursuing and paying for a college education (a concern shared, and perhaps even

perpetuated, by many in their traditional networks) and help to provide accurate, time-sensitive information (St. John, Hu, and Fisher, 2011).

Because Coleman's theory of social capital emphasizes how individual agency may help students obtain the information and locate or create the networks they need in order to navigate the college-going process, research analyses in this dissertation apply social capital theory as an interpretive framework, over Bourdieu's theories of cultural capital and habitus. While both theories offer challenges in quantitative analysis, cultural capital in particular is hard to operationalize and often becomes reduced to whether or not a student has a certain set of traits as opposed to acknowledging that everyone has valued characteristics but to different degrees, or that certain traits are valued in some settings and not others. Conceptually, social relationships are inherently different from cultural knowledge, skills, and competencies (Winkle-Wagner, 2010). Though they too provide challenges in measurement, factor analysis in data sets containing relevant data offers tools for examining the effect of these social relationships on academic preparation and college-going for students who act as their own agents in this college-going process (see Chapters 3 and 4 of this dissertation).

Finally, Winkle-Wagner lists five specific limitations of cultural capital in educational research, especially in the United States: 1, the economic imagery restricts its application; 2, how moral boundaries are created and maintained tends to be overlooked; 3, in a pluralistic society like the U.S., a theory based on homogeneous class-based privileges does not fit; 4, race and gender, which interact with income, are not

well-theorized within the cultural capital framework; and 5, if misused, cultural capital may become a deficiency model, blaming students for something that results from a stratified social structure (p. 69). Because of these challenges, particularly the problems of measurement and risk of misuse, Bourdieu's cultural capital framework will not be discussed further in this dissertation. Instead, data analyses will apply Coleman's theory of social capital in interpretation.

For low-income students, social capital and human capital interact with each other in ways that differ from how they interact for middle- and upper-income students in relation to college-going. Even if students have the social capital needed to prepare for college (including knowing which courses to take, when to apply for financial aid, and when to study for and sit for entrance exams such as the ACT, how to navigate the process, who to ask for help, and where to find necessary resources), and have made the decision to invest in developing their human capital by going to college, there still may be limitations to their access based on what they can afford. In the third paper, I study how student aid offers and social capital formation influence the decision not only to enroll in college, but also the type of college chosen.

These forms of capital connect back to Rawls's theory of justice, because his principles relate to basic rights accessed through equality of opportunity. Valuing – or de-valuing – of different cultures, skills, networks, habits, and information, together with how individuals and societal structures apply human capital investment, influence

behavior that can be examined through Rawls's (2001) three principles of Distribution, Difference, and Just Savings.

A Unified Framework

Theories of justice emphasize equality of opportunity, whether it is Rawls (1971, 2001) with his lexical ordering of basic rights followed by the Difference Principle acknowledging the existence of inequalities, or Nussbaum arguing for a minimum threshold of rights and capabilities with the opportunity to convert capabilities into functionings (2000, 2004a, 2011). As described above, both of their philosophies support the idea of education as a basic right, as does Sen's, whose approach connects specifically to economic development (2000, 2009). Going one step further, one can apply the notion of a loose or implied social contract, whereby mutual advantages exist when a society consists of an educated citizenry and ensures equality of opportunity for residents to enhance their education through college. Not every member of society will choose to advance their education; that is where the individual agency espoused by Sen (2000, 2009) and Coleman (1988) comes into play. But equality of opportunity implies a moral obligation within the loose social contract to make it possible for those individuals willing to work hard and prepare for college – to act as their own agents – to attend a postsecondary institution and invest in their human capital development. This conceptual basis, in combination with Rawls's Just-Savings Principle (1971, 2001), provides a lens through which to examine and interpret the evolving privatization of public higher education.

Rawls would say that the Just-Savings Principle offers a solution for fulfilling the moral obligation on the part of society, that tax revenue could serve to equalize educational opportunity through low tuition, need-based financial aid, or supporting intervention programs (such as Twenty-first Century Scholars) that provide avenues to acquire social capital necessary for navigating the college choice process. However, in the global economy, resistance to taxation has increased to levels previously unseen. States are moving away from the social contract implied by Rawls's principles. As we shall see in Chapter 2, taxes are among several factors that contribute to the overall level of privatization of public higher education in a given state. Chapters 3 and 4, the second and third studies in this dissertation, outline a way one state is attempting to uphold its end of the social contract, offering a different type of support and outreach to underrepresented students, including a guarantee of grant aid that will cover tuition.

Privatization of public higher education appears to be on the rise. The overarching question is how states respond to this policy shift with fairness and justice, to provide equality of opportunity for low-income students and maintain some semblance of a social contract in a society that values social mobility through individual effort.

Significance of These Studies

These studies are interrelated through their examination of postsecondary access for low-income students. What sets these studies apart from other research on low-income students' college access is the philosophical framework of justice that is used to examine state agency and individual agency in a context of globalization of labor and

public resistance to taxation. They examine how to deal with a tough economic climate and strive to achieve equity. They also highlight where organizations may miss the mark and propose possibilities for achieving justice in an environment marred by structural challenges.

CHAPTER 2

STATE VALUATION OF HIGHER EDUCATION:
AN EXAMINATION OF POSSIBLE EXPLANATIONS FOR PRIVATIZATION[2]

Federal and state governments seemed to strike a balance in higher education financing in the late 1960s and 1970s by providing equal opportunity for higher education through reasonable tuition and sufficient aid to meet need.[3] However, the 1980s have brought a change, shifting aid strategies from grants to loans. Economic recession has led institutions to increase tuition. The result moves the cost burden of higher education to individuals and away from the government. What is an appropriate role for the states in higher education financing? One can argue that public funding of higher education is necessary to maintain the social contract implied by the relationship between higher education and society, a relationship that leads to increased individual earnings, economic growth and development, and numerous other non-market and social benefits (McMahon, 2009).

As derived from analysis of John Rawls (1971, 2001), Martha Nussbaum (2011), and Amartya Sen (2009), one may appropriate the term "social contract" loosely to refer to the social cooperation and mutual obligation necessary for functioning when referring to how society is set up, accounting for justice and fairness (i.e., considering some action

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[2] A version of this chapter was previously published as Chapter 6, (pp. 219-243) in Readings on Equal Education Volume 22, *Confronting Educational Inequality: Reframing, Building Understanding, and Making Understanding*, © 2007, AMS Press, Inc. All Rights Reserved. AMS Press, Inc. has granted permission to republish overlapping content. The version in the dissertation expands the data set, updates the methods, and re-analyzes the findings.

[3] See Heller (2006b) for a historical overview of support for higher education, focusing on state support, but also considering federal contributions. Also see Hearn (2001) and Mumper (2001).

based on values rather than obligation. See Chapter 1 of this dissertation.). In an increasingly globalized economy where technological advances develop practically daily, postsecondary education clearly falls into that social contract (McMahon, 2009). Giroux and Giroux (2004) view the tradition of the social contract as one

> in which adult responsibility was mediated through a willingness to fight for the rights of children, enact reforms that invested in their future, and provide the educational conditions necessary for them to make use of the freedoms they have while learning how to be critical citizens, all the while enabling the reproduction of that society (p. 218).

This chapter examines factors associated with state governments' financial commitment to the social contract as it relates to postsecondary funding and privatization. First, a conceptual framework based in a philosophy of justice which also considers aspects of the economy and the political environment is proposed, followed by four questions related to causes and effects of privatization. Next is a description of the data, methodology, and findings. After results are presented, they are interpreted in relation to the conceptual framework, concluding with implications for the future.

Conceptual Framework

John Rawls's Theory of Justice (1971) can be used to frame a philosophical understanding of funding policy in higher education (e.g., St. John, 2004, 2006a, 2006b). The first element of the theory, the distribution principle, states that every individual may lay claim to basic rights that should be applied equally. The second aspect, the difference principle, asserts that social and economic inequalities exist, but these inequalities must be accessible to everyone through the notion of equality of opportunity applied in a just manner; that is, because of equality of opportunity, everyone has access to the benefits and disadvantages of society and the economy – inequalities. Part of this principle

asserts that the least advantaged must benefit the most from overcoming those inequalities. While the difference principle applies within a generation, a third principle exists – known as the just savings principle – that holds between generations. Just savings addresses "how far the present generation is bound to respect the claims of its successors" (Rawls, 2001, p. 159). Rawls uses this principle to understand systems of taxation. The constructs behind these principles speak to the idea of social mobility, a fundamental guiding principle of American culture. Horatio Alger stories[4] are emblematic of this idea.

One can consider a democratic society through a Rawlsian lens. In fact, Rawls (2001) himself claims that justice as fairness is framed for a democratic society that espouses that its citizens should be free and equal and "tries to realize that idea in its main institutions" (p. 39).[5] That is to say, a truly democratic society provides a voice for each person, thus establishing one layer of equality of opportunity. While the United States operates a representative government, the basic democratic dogma still applies.

A final element to consider is the economy. Rawls (1971) examines economic systems in relation to issues of morality and justice. In this section of his theory, he specifically distinguishes between a socialist, more public sector type of economy, and a private-property economy. He further debates about public goods – who is responsible for them and in what ways – concluding that each society develops a system to satisfy those needs. A thriving nation maintains a robust economy, and in today's world, that

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[4] Horatio Alger wrote "rags-to-riches" stories emphasizing the ability to overcome adversity through perseverance, honesty, and hard work.
[5] After the mid-twentieth century massification of higher education, postsecondary education can easily be considered one of U.S. society's main institutions.

means leaving room for industrial positions, even while focusing more heavily on knowledge creation and intellectual pursuits.

Where does higher education fit into this frame composed of justice, the social contract, and the economy? Zumeta (2004) and McMahon (2009) refer to the connection between a nation's educational attainment and its economic development. Particularly in today's current knowledge market, increased levels of education are necessary for a stronger economy (McMahon, 2009), suggesting that higher education benefits society. Postsecondary education benefits society in more than just economic ways, however. Citizens who achieve even some level of postsecondary education are more likely to think critically and in more complex ways. In order for democracy in the United States to function effectively, the citizenry require enough education to be able to partake in decision-making on any level, including to be informed about issues relevant to electing their representatives. Expanding this idea further, individuals' responses to a variety of local, state, and national issues range from conservative to liberal. For example, people who are more fiscally conservative would vote for lower tax rates because they prefer to reduce the scope of government control, while those who are more liberal would increase taxes to fund social welfare programs. Political ideologies play into the complex and critical thinking necessary to participate in democracy, as individuals must be able to evaluate not only their opinions and responses to governmental action, but how they came to feel the way they do and to act on those feelings. Consequently, participation in a democratic society along with the economic advantages of receiving postsecondary education leads to the notion of higher education as a public good.

However, one cannot forget the ideas of equality of opportunity and social mobility – the Horatio Alger notion. Higher education provides the tools necessary to increase one's income potential and advance in the social strata (Hearn, 2001), an indication of its private benefit component. Because of both the private and public benefits, higher education becomes a basic right according to the Theory of Justice. Given the relationship between higher education and potential, postsecondary education would also be on the list of human capabilities as a minimum threshold, because of how it can help to transform capabilities into functions (Nussbaum, 2004a, 2011).

Human capital theory elucidates this idea. Paulsen (2001a) defines this theory as the "productive capacities – knowledge, understandings, talents, and skills – possessed by an individual or society" and adds that "investment in human capital refers to expenditures on education, health, and other activities that augment these productive capacities" (p. 56). Based on this definition, one can conclude that both individuals and the government consider investment in human capital important due to increased lifetime earnings for the individual and expansion of the workforce capacity with resulting impacts on the economy.

Individual investment in higher education as human capital has been found to be predicated on habitus, attitudes and values acquired from the individual's environment; cultural capital, symbolic wealth transmitted through generations, typically among middle- and upper-income groups; discrimination; and access to funds, which is strongly connected to socioeconomic status (SES) (Paulsen, 2001a). The individual investment in human capital thus relates directly back to Rawls's difference and just savings principles.

Looking at the public sector, Paulsen (2001b) notes several benefits of higher education. However, he also points out that individuals underestimate the external benefits, what he also calls the public good, of higher education when deciding on their investment in higher education. McMahon's thorough analysis of the private non-market and social benefits and indirect effects of higher education (2009) support this conclusion. Paulsen argues that without public policy in the form of subsidies to either students or institutions (or both), students would invest less in higher education. Subsidies make it possible for students to "internalize these external benefits" (p. 100). McMahon (2009) suggests that clear, coherent information about these benefits presented to students, families, institutions, and legislators would spur additional investment from both individuals and states. Furthermore, Paulsen's argument that public subsidy for higher education makes it possible for low-income students to participate speaks to Rawls's distribution and difference principles.

With this lens set, we can turn to the debate about the level of investment by each party (individuals and states), based on the private economic benefit versus the public economic good. This all leads to a policy framework for investing in higher education that strikes a balance between higher education as a private benefit and as a public good and finds an intersection between these two notions.[6] In order to maintain justice, Rawls argued that access and equity should be considered in every policy: "Society must establish, among other things, equal opportunities of education for all regardless of

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[6] For a more complete discussion about the inter-connected conceptualization of higher education for the public good, please see Pasque's typology and analysis (2005). In this paper, she analyzes three typologies developed by the Institute for Higher Education Policy and develops a fourth that specifically looks at the interconnections between public and private benefits of higher education.

family income" (Rawls, 2001, p. 44). However, policymakers also must consider what is best - and most efficient - for the economy and democracy.

Instead of focusing on a more interconnected approach to higher education, the financing outcome comparing state allocations and public tuition indicates a growing emphasis on the private benefits. For example, at Rutgers University, the State University of New Jersey, the portion of tuition and fees paid by the state versus that paid by the students flipped in a 20-year time span; in 1990, the students and their families paid 32.9% while the state funded the other 67.1%, but in 2010, that is nearly reversed, with the students paying 62.3% and the state contributing 37.7% (Malwitz, 2010). Bypassing an interconnected approach has long-term effects for low-income and minority students who are priced out of higher education both personally, as a lack of postsecondary education limits their social and economic mobility, and publicly, as it limits their ability to contribute to economic development as well as reduces their opportunities to be involved citizens. A brief overview of privatization follows, in an effort to begin understanding what contributes to the formation of privatization policies that oppose the principles in Rawls's Theory of Justice.

Privatization

In his historical overview of federal aid policy, Hearn (2001) shows that the federal government plays a large role in student aid. Zumeta (2004) points out that states have also maintained a degree of budgetary responsibility for higher education. Increasingly, aid for students has become a large part of the states' domain, particularly in the debate over need-based versus merit-based aid. As recently as the fall of 2005, university officials have claimed that public colleges and universities have a mission of

serving the public good (Dillon, 2005 October 16). Given the previous discussion about the principles of justice, the economy, the political environment, and the public good-private benefit debate, it follows that one would question to what degree states should be involved in the financing of higher education, particularly since the U.S. Constitution leaves authority over education to the states. Although one can come to specific percentages based on economic efficiency concerns (as does McMahon, 2009, in a very thorough analysis), there is value in discussing privatization from several angles, not only from the view of economic efficiency.

Parsons (2004) argues that postsecondary education benefits individuals to an extent so much greater than it does society that policymakers must take those benefits into account when developing their funding plans. Alternatively, one must keep in mind that with the establishment of the Morrill Act in 1862, one of the core missions of public universities has been to provide services that promote the well-being of communities and states. Some consider privatization a force on universities to abandon this implied social contract (Dillon, 2005 October 16). In an environment of increasing privatization, the next logical step would be to transfer the costs of higher education completely to individuals, instead of continuing with state government sponsorship on some level. However, that would void the implied social contract, a key tenet of U.S. society. In order to maintain this basic democratic right, governments ought to continue funding higher education, and not only that, but make it attainable for all citizens. Policy can ensure that is so. The direction of the market makes it impossible for higher education not to move toward privatization, particularly when considering the high personal benefit for individuals to obtain a postsecondary degree. Nonetheless, in an effort to uphold their

end of the implied social contract, governments should continue to subsidize the costs of higher education in an equitable manner. However, politics, taxes, and other social welfare programs complicate maintenance of the implied social contract.

One way to measure for the extent of privatization is the percentage of costs per student of providing public higher education paid for by students and their families. The cost of public higher education per full time equivalent student (FTE) can be constructed from the sum weighted average public tuition charges within a state and the weighted average subsidy in public colleges per FTE (as available from IPEDS) plus the data from the National Association of State Student Grant & Aid programs on state need-based and non-need-based grants per FTE.[7]

What might be some of the causes of the increase in the percentage of education costs paid for by student and their families (or, alternatively, the reduction in the percentage of education costs subsidized by the states)? The framework in Figure 2.1 adapts a logical model developed by St. John (2006) in his effort to reconceptualize the state role in promoting improvement in preparation for, access to, and retention in higher education. This assumes that the percentage of educational costs paid for by students (with reduced subsidy by states) is influenced by:

- Demographic characteristics and wealth in the state,

- Extent of private sector of higher education in the state,

- Constraints on the state budget,

- Tax revenue, and

- Political context (including government ideologies).

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[7] As discussed below, these measures were derived from a state indicators database developed by St. John (2006).
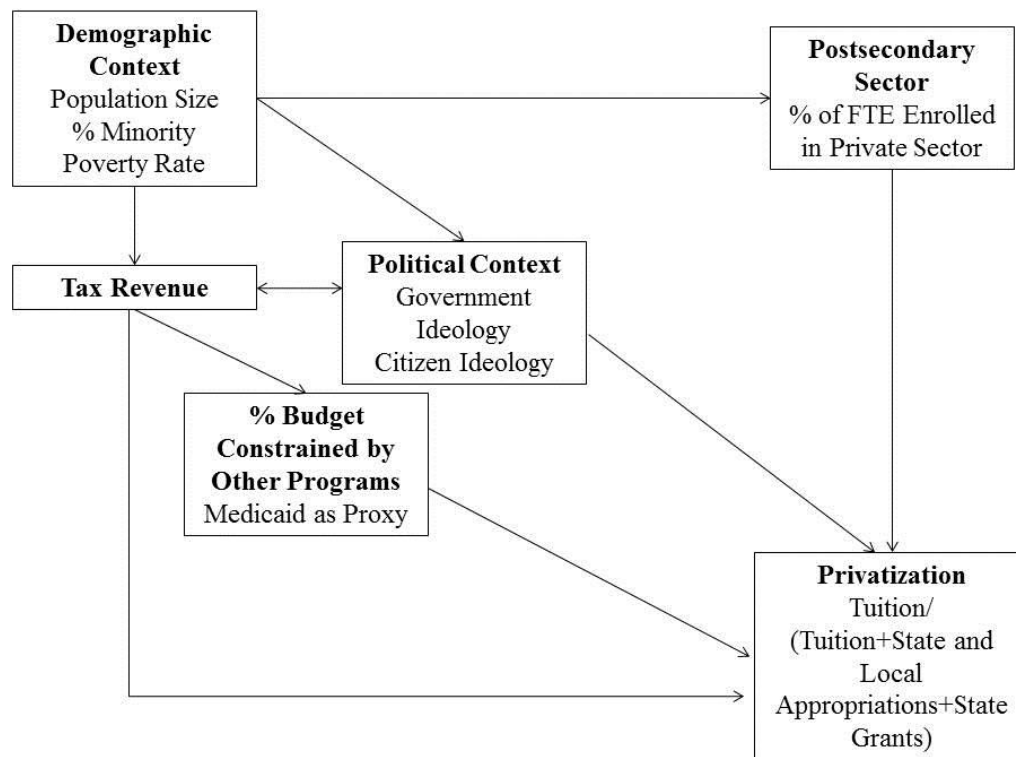
Figure 2.1 Framework for Assessing Influences on Privatization
Source: Adapts logical model presented by St. John (2006). The work focused on variables related to tuition and state subsidies as intermediate variables associated with rates of college enrollment. Political context and public constraints are additional variables considered in the adaptation of the model presented by St. John (2006).

Based on this framework, the analyses that follow focus on the following research questions:

- What impact do mandatory expenditures, in combination with state revenue sources, have on higher education financing strategies? Heller (2006b) argues that such constraints lead to pressure for tuition prices to increase. He claims that Medicaid, corrections, and K-12 funding have become "*de facto* entitlements." Other researchers have noted that these programs have put the squeeze on higher education funding (e.g., Hossler, Lund, Ramin, Westfall, & Irish, 1997). Does

that factor into the perception of public versus private good when states develop their higher education financing approaches?

- In what ways does political ideology influence policies leading toward or away from privatization? Hossler et al. (1997), McLendon, Hearn, and Mokher (2009), and Tandberg (2010a, 2010b) suggest that political context plays a role in funding decisions.

- What are some of the implications of the shift toward privatization, particularly on access for low-income and minority students?

- Will an interconnectedness of higher education for the public good remain possible?

Methods

To address these research questions, I have adapted the basic indicators model set forth by St. John in *Education and the Public Interest* (2006). He uses the state indicators tracking demographic, political, economic, social, and policy characteristics as control variables in analyses of the effects of policy and reform on student outcomes such as SAT scores, college enrollment rates, college choice, and so on. In the analysis presented here, I use the indicators to elucidate influences on policy decisions, specifically, what state characteristics are likely to increase the incidence of privatization of public higher education. Rather than examining how policies affect student outcomes and choices, as St. John previously did, I extend his work to study what may contribute to the formation of policy. To that end, several new variables are included, including the percent of Medicaid expenditures (serving as a proxy for budget expenses constrained by law,

which would include K-12 expenditures among other items) and variables that speak to the political context of the state, noting the effect of liberal or conservative leanings.

Specifically, I want to estimate the determinants of privatization at the state level. Privatization is a function of numerous inputs, including population size, population composition, poverty rate, education level, extent of existing private higher education, financial factors such as tax revenue and prior commitments on the budget (e.g., Medicaid expenditure), and political leanings (see Figure 2.1). What follows is a more thorough description of the data and specific variables employed in the model.

Data

Using state-level data provides an approach for examining the influence of state characteristics on privatization. Privatization here is measured by a ratio of weighted average tuition rates to state and local subsidies for higher education (direct budget allocation and state grants) weighted per FTE and tuition rates as the outcome. Though institutional aid offsets the cost burden placed on students and their families, omitting institutional aid (which is not available to this researcher) does not influence the overarching question involving state funding sources and the effect of state policy on privatization because institutional aid typically does not come from the state. It generally comes from private donors, the institution's endowment, and other non-state sources. As such, it is not subject to state policy. On the other hand, both tuition and state appropriations are subject to state policy and thus directly affect privatization from a state policy perspective.

St. John (2006) created a database culled from numerous sources, including the U.S. Census Bureau, the NCES Common Core of Data, the Integrated Postsecondary

Education Data System (IPEDS), and the National Association of State Student Grant &

Aid Programs. These data are available for multiple years, allowing for analyses that can

consider changes over time relative to policy formation. Data from 1992, 1994, 1996,

1998, 2000, 2004, and 2006 were years that contained the most complete data for the

variables used in this study.[8] This sample includes even-numbered years only because

IPEDS collected information about state residence of first-time freshman (a contributor to

college-going rates by state) only in even-numbered years (United States Department of

Education, National Center for Education Statistics, n.d.). Other variables were added,

including: Medicaid expenditures from the Annual State Expenditure Reports by the

National State Budget Officers (NSBO) and two variables measuring political ideology

(created by Berry, Ringquist, Fording, & Hansen, 1998) from a publicly available source

(through the Inter-University Consortium for Political and Social Research at the

University of Michigan, Berry, Ringquist, Fording, & Hansen, 2007). Tax revenue data

were collected from the U.S. Census Bureau and added to the indicators dataset. All

variables except for those measuring the percent Medicaid expenditure, ideology, and tax

revenue come from the indicators data set created by St. John and his team. Where

possible, I indicate the specific source for each variable within that database.

Variables

The dependent variable, privatization, consists of a ratio. The top half is

calculated by measuring (per FTE) the aggregate in-state tuition rate. The bottom half of

the ratio is calculated by taking the sum of the direct state and local allocations to public

institutions as well as need-based and non-need-based grants to determine the total

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[8] The year 2002 is omitted because data collection methods changed and there is a lot of missing data on
multiple variables for that year, including state and local appropriations for higher education, a crucial
element of the outcome variable

amount of money devoted to higher education in the state budget added to the aggregate

tuition rate. Because the privatization variable is skewed to the right, and regression –

my analytic technique – requires a normally distributed outcome, I took the natural log of

privatization and used that more normally distributed transformation as my outcome.[9]

Data for this dependent variable come from IPEDS and the National Association of State

Student Grant & Aid Programs. Three major groupings of independent variables emerge:

demographic information about the state, including capacity for private higher education

in the state; state financial factors; and the political climate of the state. I explain the

rationale for using each group when I describe each measure below.

Demographic indicators.

The main purpose for including demographic indicators is to control for state

characteristics such as the population size, percentage of minorities[10], poverty rate, the

percentage of the state population that completed high school[11], and the percentage of

FTE students enrolled in private higher education. This will reveal if a relationship

between characteristics of state residents and privatization exists. These data come from

the U.S. Census Bureau. The measure of participation in private higher education is

included because it may indicate both citizens' and the government's attitudes toward

higher tuition. For example, states that have a large capacity for private higher education

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[9] This means that level coefficients (β) may be interpreted as for each unit change in x, outcome y changes by a percentage calculated as $[100(\exp \beta_1)-1]$, which is approximately 100 times β_1 when $-.1 < \beta_1 < .1$. Coefficients of variables that are logs may be interpreted as for each 1% change in x, we expect y to change by β_1 percent.

[10] I created a continuous variable that measures the total percentage of minorities – specifically members of Black, Hispanic, and Native American racial and ethnic groups – in the state. This variable is included partly because minorities earn less, on average, than Whites even at the same level of educational attainment, thus making it harder for them to pay higher tuitions (Kelly, 2005). Moreover, there is a widening gap in attainment between Whites and other minority groups (Kelly, 2005).

[11] This variable hints at the population age and also percentage of the population that would be eligible to participate in public higher education. Some of these people already have postsecondary credentials, but even of those who do, there is potential for them to return to school for further education.

may be more likely to move toward privatizing public postsecondary institutions by increasing tuition and fees. This variable is derived from data available in IPEDS, by dividing the number of full-time equivalent students in private non-profit and private for-profit institutions by the total number of full-time equivalent students enrolled in higher education.

Financial characteristics of the state.

The tax revenue both influences and is influenced by policy. If citizens do not want to pay high taxes, state budget allocations for a variety of needs and services will have to be reduced. Tax revenue data come from the U.S. Census Bureau and the Bureau of Economic Analysis, and have been converted to 2006 dollars. For the sake of parsimony, population size (from the demographic characteristics) and tax revenue are combined into one variable that measures per capita tax revenue in 2006 dollars. The natural log of this variable is used in the analysis.

In most state budgets, higher education is a discretionary item, while several other programs - such as Medicaid, prisons, and K-12 funding - can require mandatory allocations. As a result of a tight economy, there may be less discretionary money available in a given year. It is important to control for this aspect of the budget when determining a state's conceptualization of higher education in order to prevent invalid interpretations of the outcome. Because Medicaid is the fastest growing mandatory expenditure, it serves as an appropriate proxy for non-discretionary state budget items. These data were collected from the annual NSBO State Expenditure Reports.[12]

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[12] Located on the NSBO website: http://www.nasbo.org/publications-data/state-expenditure-report/archives.

Political climate indicators.

There is a relationship between party affiliation, ideology, and policy (Doyle, McLendon, & Hearn, 2005; McLendon, Hearn, & Mokher, 2009; McLendon, Heller, & Young, 2005; Tandberg 2010a, 2010b). I chose variables measuring ideology as opposed to party affiliation because the dominant political parties exhibit different ideologies depending on the region (e.g., Southern Democrats tend to be more conservative than Northern Democrats). Taking into account ideologies of both governments and citizens of states may help explain the adoption of more conservative financing strategies (indicated by the outcome of a high ratio of tuition to state subsidy). Berry et al. (1998) developed two variables, one measuring citizen ideology on a continuum of conservative to liberal, the other measuring government ideology along a similar continuum. The inclusion of government ideology in the model is fairly obvious; since the legislators actually determine policy affecting appropriations, their liberal or conservative leanings should have an effect. Including citizen ideology is important as well, because citizens have ways of influencing legislators, and not just through their election. The algorithm for calculating ideology is complicated; refer to Berry, et al. (1998) for how it is constructed. The data were downloaded from the ICPSR website, and can be found directly at http://hdl.handle.net/1902.1/10570. A correlation matrix of all model variables and additional variables that were considered is included in Appendix A.

Finally, we must also consider time. Privatization is an on-going process, and while various state characteristics affect the degree of privatization, so does time. Time dummies pick up federal time trends and policies that affect all states the same. What happened in 1992 may differ greatly from what occurred in 2006. As such, dummy

variables for the years 1992, 1994, 1996, 1998, 2000, 2004, and 2006 are included. As previously mentioned, because data for the year 2002 are missing for key variables (including the outcome variable), that year has been omitted. In the regression models, 1992 is the comparison year. I chose that because it is the base year of the data, and I am interested in comparing how privatization has changed each year since then.

Table 2.1 displays descriptive statistics for variables included in the model. The mean privatization level across all 50 states in even-numbered years 1992-2006 (except for 2002) is 31%. However, the range is quite large over that 15 year period, from as low as 8% to as high as 69%. A quick glance at Figure 2.2 shows that privatization increased between 2000 and 2004, and a brief analysis of the data reveals that states with privatization rates above 40% tended to reach those levels in 2004.

Among FTE, there is a wide range of participation in the private sector of higher education. Not surprisingly, the higher percentages are concentrated in states in the Northeast, home to a large number of private higher education institutions.

Other statistics of note from Table 2.1 include the per capita tax revenue (2006 dollars), which ranged from as low as $196 (Pennsylvania, 1992) to as high as nearly $4600 (Hawaii, 2006). On average, however, over the 15 years between 1992 and 2006 per capita tax revenue in 2006 dollars hovered around $2150. The percent of a state's expenditure spent on Medicaid also ranged widely, from as low 4% to as high as 38%. State expenditures on Medicaid that were less than 10% of the state's overall state budget tended to occur in 2000 or earlier, and were concentrated in Alaska, Hawaii, and Delaware. Wyoming was the only state to spend less than 10% of its budget on Medicaid as recently as 2006. Only a few states spent more than 30% of their budgets on

Medicaid: New Hampshire did so primarily in the 1990s, and New York did in the late 1990s, while Pennsylvania, Maine, and Missouri all spent at least 30% in both 2004 and 2006. Louisiana only applied that much toward Medicaid in 1994, while Tennessee did so as recently as 2004.

On average, both citizen ideology and government ideology fall toward the middle of the spectrum. Neither group is 100% liberal, though government ideology is 100% conservative in Kansas in 2000. The range for both citizen ideology and government ideology is quite wide, and though most state governments turn out to be what one would expect, there is also a fair amount of variation over time within states. Although time dummies are not presented in the table, each time dummy has a mean of 14% and a standard deviation of 35%. As a reminder, these are coded as if that year, the dummy has a value of 1, otherwise, it has a value of 0. In the regression models, 1992 serves as the comparison year.

Figure 2.2 contains information about the trend of privatization, that is, the increasing percentage of a student's education paid for by the student through tuition, rather than by the state. Privatization rose slightly until 1996, remained stable into 1998, and decreased slightly into 2000. By 2004, however, there was a tremendous increase in the rate of privatization across the 50 states. Possible reasons for this variation (including a brief discussion of the national economic backdrop) will be presented following the discussion of the analytic results. Please see Appendix B for state-by-state privatization trends.

Table 2.1. Descriptive Statistics of Regression Variables, N=348[a]

	Mean	Standard Deviation	Min	Max
Dependent Variable				
Privatization[b]	0.31	0.11	0.08	0.69
Natural Log of Privatization	-1.24	0.36	-2.48	-0.37
Independent Variables				
Percentage of Population that is Black, Hispanic, and Native American	0.19	0.12	0.01	0.56
Poverty Level	0.12	0.04	0.05	0.26
Percentage of State Population Who Completed High School	0.84	0.05	0.69	0.93
Percentage of FTE in Higher Education Enrolled in the Private Sector	0.25	0.12	0.04	0.61
Per Capita Tax Revenue (in 2006 dollars)[b]	2145.96	563.97	195.52	4589.51
Natural Log of Per Capita Tax Revenue (in 2006 dollars)	7.64	0.28	5.28	8.43
Percent of State Expenditures Spent on Medicaid	0.18	0.06	0.04	0.38
Citizen Ideology	48.72	14.96	9.25	93.95
Government Ideology	47.35	25.28	0.00	97.92

a. N is derived using data from all 50 states for the years 1992, 1994, 1996, 1998, 2000, 2004, and 2006. Nevada did not submit data on their Medicaid expenditures to the National Association of State Budget Officers for the years 1992 and 1996, so the total number of observations in the model is reduced from 350 to 348.

b. Variables presented for illustrative purposes. Model uses the natural log of this variable.

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Mean Privatization Rate, 1992-2006
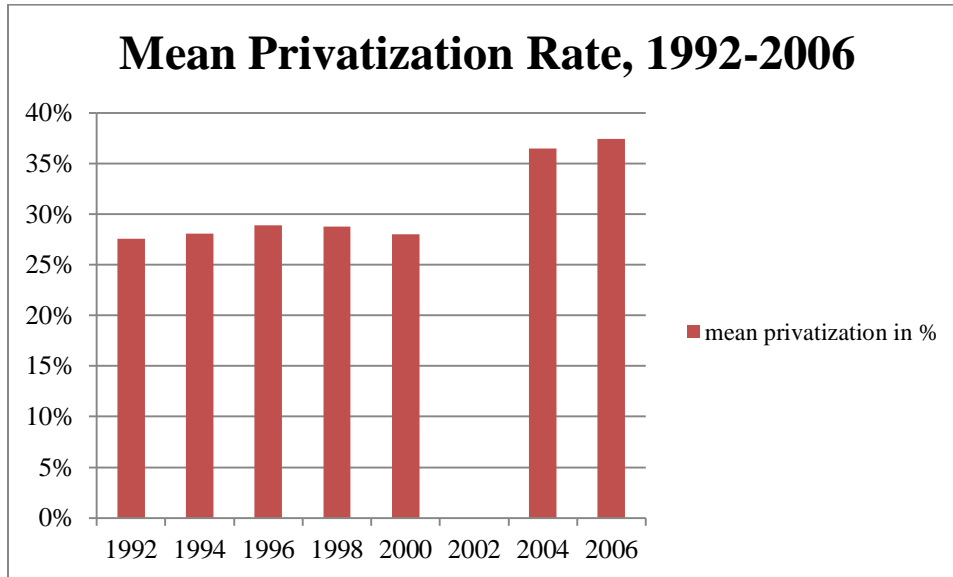
Figure 2.2. Privatization Rate Aggregated for 50 States, 1992-2008. Privatization calculated as tuition and fees divided by tuition and fees, state and local appropriations, and state need- and non-need grants. State and local appropriation data are not available for 2002. Source: Projects Promoting Equity in Urban and Higher Education, National Center for Institution Diversity

Analytic Strategy and Empirical Model

Regression is appropriate for an analysis of the impact of state characteristics, budgets, and ideologies on the ratio of state subsidies to tuition. As noted in Figure 2.1 above, there appears to be a logical relationship between the measures described in the section immediately preceding this one and the outcome of privatization. Multiple regression permits the simultaneous examination of the influences of multiple factors on an outcome. I used STATA SE 12 software to conduct my analyses.

Ordinary least squares (OLS).

Regression can be used in an exploratory manner to identify a group of variables that may predict an outcome (Cohen, Cohen, West, & Aiken, 2003). Ordinary least squares regression is a common approach when the equation contains a normally distributed, continuous outcome.

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A simple ordinary least squares regression would consist of the dependent variable, intercept, several independent variables, and an error term, as expressed by equation 3.1:

$$\text{Privatization} = b_0 + B_k X_k + G_k T_t + e \qquad (3.1)$$

where X contains the variables listed in Table 2.1, T contains the year dummies, and e is an error term. The intercept is represented by b_0. Application of this equation to data yields a set of predicted values for Y (in this case, the natural log of privatization), one for each of the n cases in the data set. What results are partial regression coefficients (B_k) that serve as a weight by which each value of the variable X_k is to be multiplied in the regression equation that includes all of the independent variables.

The independent variables may be included in a few different ways, with a common approach of inputting them hierarchically – starting with a smaller grouping of variables, then adding in subsequent groups based on a logical sequence. If the change in the variance in Y (R^2) is significant between steps, the argument for expanding the model to include the additional independent variables exists. The independent variables in this study fall into three logical groupings: demographic information about the state, financial indicators, and ideology. The variables are entered in the groups sequenced above, with the years included in the demographic set because of the need to control for time in every step of the model.

Fixed effects.

Fixed effects models provide an enhanced way of studying state year panel data sets, the type used in this chapter's analysis. One way they differ from the standard OLS regression is that the individuals (in this instance, states) may be used as their own controls (Allison, 2009) by controlling for characteristics of the group that do not vary over time. In addition, simpler multivariate methods are more likely to produce biased estimates because the error terms are not necessarily independent due to the fact that variables that affect state error terms affect them in multiple years, thus correlating the error terms; with a fixed effects approach the error terms are less likely to be correlated with anything except for *y* because the approach accounts for state fixed effects.

Two conditions must be met in order to perform a fixed effects analysis (Allison, 2009): first, the dependent variable for each individual must be measured on at least two occasions which are directly comparable, and second, the independent variables must change in value across multiple occasions for a major portion of the sample. Thus, fixed effects models can measure differences within groups over time; however, the estimates concentrate on the within-group differences and essentially "discard" information about differences between groups (Allison, 2009, p. 3).

In these models, cases represent a state in a given year; there are also cases that serve as a panel of multiple state-year cases. A fixed effects version of regression controls for additional effects (such as state characteristics and policies) without actually specifying them.

$$y_{it} = \mu_t + \beta x_{it} + \gamma z_i + \alpha_i + \varepsilon_{it} \qquad (3.2)$$

The basic approach to fixed effects regression is summarized in Equation 3.2. In the equation, y_{it} is the dependent variable (natural log of privatization), and βx_{it} is a vector of x predictor variables that vary over time (summarized in Table 2.1) with the vector of coefficients β, while γz_i is a set of z predictors that do not vary over time (these will ultimately drop out of our equation, but will still be controlled for) with a vector of coefficients γ. The intercept is represented by μ_t and estimates the average of unobserved (or fixed) effects. Additionally, there are two error terms, one of which is different for each individual at each point in time (ε_{it}), and one that varies only across individuals, and not over time (α_i). The latter is the combined effect of all unobserved variables that remain constant over time; the former presents purely random variation at each point in time.

Some additional assumptions must be made in a fixed effects analysis. First, we assume statistical independence between α_i and ε_{it}. However, we allow for correlations between α_i and x_{it} (the vector of time-varying predictors). We may also allow for correlations between α_i and z_i if we are not interested in γ. Including these correlations is what controls for time-invariant unobservable characteristics.

The fixed effects approach uses the same variables presented in Table 2.1. By comparing the models using OLS and fixed effects methods, I am attempting to examine the trend of privatization broadly (using OLS), but then also with greater focus on specific within-state variations (fixed effects). Additionally, use of the two methods demonstrates why it is important to select the most appropriate method available for the data. Ordinary least squares regression introduces bias because time-invariant state characteristics correlate with error. Finally, in both the OLS and fixed effects analyses, I

clustered the standard errors by state in order to take into account the arbitrary serial correlation over time within a state.

Limitations

Though some use regression to determine causality, in non-experimental and quasi-experimental research this technique can only provide information about influences on an outcome. However, a logical framework is used to select the variables, and though the use of fixed effects techniques lead one to conclude causation, the results of such an analysis rise to a level higher than mere correlation.

Furthermore, statistical significance typically refers to generalizing from a sample to the population. When using actual population parameters, statistical significance indicates a meaningful linkage between two variables, which is how it is applied in these analyses.

As described above, ordinary least squares regression is an excellent technique for estimating predictors of a continuous outcome, but it cannot account for changes over time within states the way other methods can – even when adding dummy variables indicating years. Fixed effects regression can do that, but it is limited by the number of cases available to the number of groups, not just the number of observations. In this chapter, there are 348 observations, and the OLS approach estimates coefficients assuming that the 348 observations are individual cases. There are still 348 observations in the fixed effects (FE) presentation, but only 50 cases – each state. The observations reflect each state at seven points in time (except for Nevada, which only measures 5 points due to unsubmitted data for the Medicaid expenditure). In order to comfortably estimate the full model (Figure 2.1), more cases would be ideal. Of course, the U.S. only

has 50 states, so that is not possible. Although I am asking a lot from the data (and I must be cautious about the results because of that), it is important to understand the phenomenon of privatization as much as possible. There is a growing wealth gap in this country, and with a continued emphasis on postsecondary education as a tool for economic success (for both society and the individual), understanding privatization can help to identify ways to increase postsecondary access for low-income students. For example, if there is a relationship with the poverty rate, states may want to examine the composition of the poor and how funds (through welfare, Medicaid, and other programs) are distributed; perhaps they may uncover an inefficiency that may allow for reallocation of some money toward need-based grants.

As noted above in the description of the dependent variable, data on institutional aid per FTE were not available to this author. The addition of institutional aid per full-time equivalent student would provide a more complete understanding of privatization as defined by the costs borne by students and their families compared to the total cost. One may still obtain a generalized sense of privatization without it, bearing in mind that the privatization ratio is a little higher without institutional aid data. Furthermore, institutional aid could come from many sources; if the idea is to measure privatization through the lens of state characteristics and budgeting decisions, omitting institutional aid from the ratio would not affect that analysis. Institutional aid, by definition, comes from the institution (through endowed scholarships, individual donors, institutional funds, and other sources) and not from state and local appropriations or state grants. Thus, including institutional aid in the bottom half of the ratio could make the results harder to interpret if specifically considering the government role in privatization. Additionally, state and

local appropriations data were not available for 2002, making it impossible to analyze privatization for that year. Given the jump in privatization rate between 2000 and 2004, that is an unfortunate, but unavoidable omission.

The models presented below made the most sense logically and were the strongest with the data available to me. Analyses are limited by the time period studied. Changing political climates and implementation of new, innovative policies limit the implications of these analyses.

<div align="center">**Findings**</div>

Each of the regression analyses yields results quite different from the other, both in the size and significance of coefficients, as well as in total explanation of variance. After reviewing the results specific to each regression (OLS and FE), I will discuss the differences between the two.

Ordinary Least Squares

The results of the OLS regressions change as each step is added into the analysis, and one variable expected to be an important predictor – the percentage of FTE enrolled in the private postsecondary sector - turns out not to be significant at all once the full model is estimated. Results can be found in Table 2.2.[13] Note that the outcome variable is a natural log, thus permitting interpretation using percent changes. The year dummy variables serve to control for time in each step; the coefficients have been omitted from the table because all they do is pick up trends that are evident by the descriptive statistics.

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[13] For efficiency in presentation, coefficients for the time dummies are not presented in this table. In addition, I attempted several versions of the model with no substantial impact on the main findings. These variations included different race variables, controlling for total population size and then including either a log of total tax revenue or the tax rate, and including college enrollment rates. The variations also included re-ordering how the variable groups were entered into the model (e.g., ideology variables first).

The first model ($F_{10, 49} = 44.66$, p < .001), which contains demographic

characteristics, explains approximately 41% of the variance in predicting privatization

with two significant variables. For each ten percentage point increase in the portion of

the population that is Black, Hispanic, or Native American, the privatization ratio

decreases by approximately 6.7%.[14] A ten percentage point increase in participation in

the private postsecondary sector increases privatization by approximately 11.7%.

Adding in the financial factors explains a significant, additional 11.7% of the

variance. In model 2 ($F_{12, 49} = 40.38$, p < .001), the privatization ratio decreases by nearly

5.9% for a ten percentage point increase in the minority population. A ten percentage

point increase in participation in private postsecondary sector increases privatization by

5.7%, as opposed to the 11.7% change elicited in the first step. Both financial factors are

significant. An increase in the natural log of per capita tax revenue by 1% decreases the

log of privatization by 29.5%. The more money that is available, the more that may be

allocated to higher education. Also not surprising is the positive effect of the percent of

the state budget spent on Medicaid.[15] A ten percentage point increase in expenditure on

Medicaid as a proportion of the total budget increases privatization by 21.1%.

The addition of political ideology in Model 3 ($F_{14, 49} = 35.84$, p < .001)

significantly increases the R-square by an additional 6%. It also removes the significance

associated with the percentage of FTE enrolled in the private sector and increases the

significance level of the percent of the population who are Black, Hispanic, and Native

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[14] Calculated using the formula 100*{exp[β_1*delta(x)]-1}, which in this specific case is 100*{e^[(-.695*.1)]-1} = -6.7%. This formula is used to derive the percentage change in y for each coefficient except for the coefficient for the natural log of per capita tax revenue. In that instance, the coefficient is interpreted such that if we change x by one percent, we expect y to change by β_1 percent.

[15] As a brief reminder, this percentage serves as proxy for all aspects of the state budget constrained by law, including things such as K-12 expenditures and prisons. Medicaid was selected as the proxy because spending for it grows quickly.

American. Coefficients for the financial factors also change. In comparison to Model 2, a ten percentage point change spent on Medicaid increases the privatization ratio by 19.3%. The negative effect of per capita tax revenue increases by an absolute value of 15.4 percentage points to -44.9% and it becomes significant to the .01 level. Both types of ideology are significantly correlated to all of the variables that changed between steps 2 and 3 (see Table A1), except for the percent of the population who are Black, Hispanic, and Native American, which is correlated only with citizen ideology. The effect of citizen ideology, though small, is a bit surprising with a one unit change toward liberalism among citizens increasing privatization by .9%. One would expect privatization to decrease as the citizenry become more liberal. As the government becomes more liberal by one unit on the continuum, privatization decreases by .2. I expected ideology to have a greater effect on the outcome.

In all three steps, only the time dummies for 2004 and 2006 display any significance, with a positive coefficient of approximately .34 and .39 respectively in each step. These reflect unspecified trends occurring at the federal level, to be discussed after a deeper analysis of the main coefficients of interest, those reflecting the state-specific characteristics.

Table 2.2 Ordinary Least Squares Regression Examining Contributors Toward Privatization, N=348[a, c]

		Model 1			Model 2			Model 3		
		Unstd Coef.	Std. Err.[b]	Sig.	Unstd Coef.	Std. Err.[b]	Sig.	Unstd Coef.	Std. Err.[b]	Sig.
Demographics	% Population Black, Hispanic, and Native American	-0.695	0.338	*	-0.605	0.303	~	-0.553	0.259	*
	Poverty Rate	-0.658	1.482		-1.890	1.382		-1.608	1.291	
	% Completed High School	0.191	0.945		1.117	0.965		1.156	0.827	
	% FTE Enrolled in Private Higher Education	1.110	0.298	**	0.552	0.267	*	0.188	0.237	
Financial Factors	Natural Log Per Capita Tax Revenue (2006 Dollars)				-0.295	0.124	*	-0.449	0.142	**
	% State Expenditure Spent on Medicaid				1.916	0.541	**	1.742	0.515	**
Ideology	Citizen Ideology							0.009	0.002	***
	Government Ideology							-0.002	0.001	*
	Constant	-1.553	0.923	~	-0.123	1.048		0.678	1.075	
	R-Square	0.4076	***		0.5245	***		0.5842	***	
	Change in R-Square				0.1169	**		0.0597	**	

Note: ~ p < .1; * p < .05; ** p < .01; *** p < .001

a. N includes all 50 states, but not Washington, DC. It does not include Nevada in 1992 or 1996 because the percent expenditure spent on Medicaid was not available those years.
b. Robust standard errors clustered by state
c. Regressions includes year dummies as controls, with 1992 as the comparison year. There is a gap between 2000 and 2004 because 2002 state appropriations were not reported. Coefficients are not reported in this table, but will be discussed in text.

Fixed Effects

The results of the fixed effects regression differ somewhat from the results of the

OLS model, even though the only difference is the addition of the panel analysis. These

differences are evident across all steps. Results of the fixed effects analysis are displayed

in Table 2.3.[16] A significant F-statistic is equivalent to saying that there is evidence for

state-level unobserved heterogeneity, or that there are stable differences in privatization

rates between states that are not fully accounted for by the measured predictor variables.

Each step of the model has a significant F-statistic; this is to be expected, as not

everything can be measured in a regression model. It is important to interpret these

models cautiously, as few variables reached even a modest level of significance, much to

my surprise.

In the first step of the model ($F_{10, 49} = 35.11$, $p < .001$), the only significant

continuous variable is poverty rate, with a coefficient of 1.169, indicating that for each

ten percentage point increase in the poverty rate, privatization increases by 12.4%. This

is at first a peculiar finding, because one would expect that as poverty rate increases,

privatization would decrease – if one thinks about the education as a tool to escape

poverty. However, one could view it differently. A higher poverty rate implies a weak

economy, which suggests less discretionary funding. As the poverty rate increases, more

money must be devoted to poverty-related social services which may be required by law,

while higher education is typically a discretionary budget item. Moreover, per capita tax

revenue decreases as poverty increases (see the negative correlation in Table A1), and per

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[16] For efficiency in presentation, coefficients for the time dummies are not presented in this table. In addition, I attempted several versions of the model with no substantial impact on the main findings. These variations included different race variables, controlling for total population size and then including either a log of total tax revenue or the tax rate, and including college enrollment rates. The variations also included re-ordering how the variable groups were entered into the model (for example, ideology variables first).

capita tax revenue is negatively related to privatization as well (although the correlation is low, see Table A1), an effect that also appears in Model 2 of the regression.

When adding in the financial factors in Model 2 ($F_{12, 49} = 36.61$, $p < .001$), the significance of the poverty rate decreases, as does the strength of its effect, reducing the change in privatization by almost one quarter of what it was in step 1, to a 9.6% increase for a ten percentage point change in the poverty rate. It is the significant addition of per capita tax revenue (in 2006 dollars) that makes these changes; changing the per capita tax revenue by one percent decreases the natural log of privatization by 16.2%. When there is more tax revenue, the budget can be distributed more broadly. As expected, the percent of the state budget spent on Medicaid is significant, with a ten percentage point change in expenditure increasing privatization by 5.3%.

Most surprising, however is that the addition of the ideology variables in Model 3 ($F_{14, 49} = 32.95$, $p < .001$) changes little.[17] Although government ideology is significant, a one unit movement toward being liberal only decreases privatization by .1%. Given the logic of the model presented in Figure 2.1, I expected that ideology – both government and citizen – would have a greater influence on privatization. I was interested in the effect of moving from more conservative to more liberal outlooks, anticipating that privatization would be lower as a state's government or its citizens became more liberal. This finding is both counter-intuitive (citizen ideology is correlated with privatization, Table A1 in Appendix A), and counter to other analyses that predict state funding policies for higher education (a slightly different but related outcome to privatization)

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[17] Even in models where the ideology variables were entered by themselves, the coefficients were virtually the same.

using the political ideology concepts as independent variables (Archibald and Feldman, 2006; Nicholson-Crotty and Meier, 2003; Tandberg, 2010b).

Also in Model 3, the coefficient for poverty rate drops a small amount, with a ten percentage point change in the poverty rate increasing privatization by 8.5%. Interestingly, the percent of the state expenditure spent on Medicaid loses significance once ideology enters the model. This result is especially peculiar because government ideology is not significantly correlated with Medicaid expenditure (Table A1). The coefficient for the log of per capita tax revenue remains virtually the same.

Finally, although results of the time dummies are not presented in the table,[18] the significance levels generally reflect the trends in privatization presented in Figure 2.2. That is to say, in all of the FE models, the coefficients for 2004 and 2006 are significant (1994 and 1996 are also significant in Models 1 and 2, and 1998 is significant in Model 2), which follows the trend of an increase in privatization in those years from the year before (Figure 2.2). A brief discussion of the federal trends (controlled for by the time dummies) will appear after a discussion of the significant variables (and surprising non-significance of the size of the private sector).

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[18] For simplicity in presentation, the coefficients for the time dummies are not presented. They are available upon request.

Table 2.3 Fixed Effects Regression Examining Contributors Toward Privatization, N=348[a, c]

		Model 1			Model 2			Model 3		
		Unstd Coef.	Std. Err.[b]	Sig.	Unstd Coef.	Std. Err.[b]	Sig.	Unstd Coef.	Std. Err.[b]	Sig.
Demographics	% Population Black, Hispanic, and Native American	0.026	1.011		-0.482	0.878		-0.592	0.845	
	Poverty Rate	1.169	0.481	*	0.875	0.447	~	0.815	0.441	~
	% Completed High School	0.182	0.574		0.261	0.536		0.120	0.540	
	% FTE Enrolled in Private Higher Education	0.377	0.391		0.331	0.392		0.383	0.374	
Financial Factors	Natural Log Per Capita Tax Revenue (2006 Dollars)				-0.177	0.097	~	-0.173	0.093	~
	% State Expenditure Spent on Medicaid				0.517	0.237	*	0.394	0.245	
Ideology	Citizen Ideology							-0.001	0.001	
	Government Ideology							-0.001	0.000	*
	Constant	0.3356	0.0689	**	-0.4523	0.8541		-0.2014	0.8246	
	Within R-Square	0.6600			0.6891			0.6999		
	sigma_u	0.32234			0.28234			0.2888		
	sigma_e	0.10465			0.10041			0.0990		
	F-statistic	35.110	***		36.61	***		32.95	***	

Note: ~ $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$

a. N includes all 50 states, but not Washington, DC. There were 348 observations total, 7 for each state except for Nevada, which had 5 due to unsubmitted data for Medicaid expenditure.

b. Robust standard errors clustered by state

c. Regressions include year dummies as controls, with 1992 as the comparison year. There is a gap between 2000 and 2004 because 2002 state appropriations were not reported. Coefficients are not reported in this table, but will be discussed in text.

Discussion

Differences in the results of each model require exploration of this disparity. Both ordinary least squares regression and fixed effects regression have limitations; by looking at the different results in combination, it may be possible to fine tune what they mean. Following that is a deeper discussion of the results from the fixed effects regression and a brief overview of the federal context.

Disparity of Results

The two different models – OLS and FE – result in different findings based on technique. Ordinary least squares regression introduces bias because it is unable to properly control for time-invariant characteristics. Fixed effects regression, on the other hand, takes care of this concern. Fixed effects regression is also able to control for federal trends and policies that affect all states the same. Federal trends and the national backdrop are discussed later in this section (see subsection entitled *Federal Trends*). First, I present a more in-depth scrutiny of why some variables lost significance moving from OLS to FE methods, followed by an enhanced consideration of certain variables (e.g., percent of state budget spent on Medicaid and the percent of the postsecondary sector that is private) that do not produce expected results.

It is possible that a variable that has been omitted from the OLS model confounded the results. Because fixed effects regression controls for unobserved conditions and characteristics that remain fixed, the technique accounts for missed time-invariant variable(s). Furthermore, fixed effects regression is designed to examine changes over time within a state, whereas traditional ordinary least squares regression is not. Allison (2009) provides several possibilities why the results may differ between

OLS and FE approaches. First, estimates for the variables that are different between the two models may reflect a correlation between that variable and some time-invariant variable that also affects privatization. Because OLS cannot control for time-invariant characteristics, the estimates are often biased upward,[19] an effect that is evident when comparing the OLS and FE results in Tables 2.2 and 2.3 for nearly all variables in all models.

Second, in analyses where conventional regression produces a significant coefficient but the fixed effects regression does not, there are two potential reasons: the fixed effects coefficient is much lower and/or the fixed effects standard error is larger. That is true for several of the variables that are significant in the OLS model but not in the FE model.[20] Allison adds that the standard errors for fixed effects coefficients are often larger than those for other methods, especially when the predictor variable has little variation over time. The variables that lost significance from OLS to FE generally had some variation over time, but that variation may have been limited to only a few of the years or a few of the states. For example, it is possible that due to small amounts of variation in some states and across the mean the significance of the percent of the population that is Black, Hispanic, and Native American disappears in the fixed effects regression.

Citizen ideology is another variable that is significant in the OLS regression, but not in the FE regression. The explanation of lower coefficients and/or higher standard errors in the fixed effects analysis compared to OLS does not stand for this variable,

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[19] They are not always biased upward, however. It depends on the case and the relationship of the variables with time.

[20] These include percent of the population that is Black, Hispanic, and Native American in all steps, and the percent of the postsecondary sector that is private in steps 1 and 2. While also true for the percent of the budget spent on Medicaid, for that variable the standard errors were also lower in the fixed effects model.

however, as the coefficients and standard errors on citizen ideology are similar between the two methods.. An examination of the mean value of this variable by year shows a great deal of variation, from a low mean value of 43.1 in 2000 to a high mean value of 54.3 in 1992, with a lot of movement across all seven time points. Looking more closely within each state reveals variation there, too. The lack of significance of citizen ideology is surprising because prior research supports otherwise (Archibald & Feldman, 2006; Nicholson-Crotty & Meier, 2003; Tandberg 2010b). A further analysis of the surprising nature of the ideology effect (or lack thereof) appears in the next section.

By adjusting for between-individual differences and focusing on within-individual differences, the FE approach indicates that within a state, as the poverty rate increases, so does the natural log of the privatization ratio. Ordinary least squares regression allows the noise of between state differences to muddle that important relationship. It also cannot control for time-invariant characteristics, which may be correlated with variables in the model (including poverty). This may help to explain why the percent of the budget spent on Medicaid is significant in the OLS version, but not in the FE model; poverty rate and Medicaid expenditure are positively correlated, but those correlation levels may vary between states. However, I would have expected Medicaid expenditure to have some sort of positive effect on privatization in the FE model regardless, especially given the modest significance of poverty rate. Mandatory expenditures should theoretically pull from discretionary ones (Weerts, Sanford, & Reinert, 2012); for some reason – perhaps an omitted variable – that was not the case here.

Poverty Rate and Per Capita Tax Revenue

Both per capita tax revenue and the poverty rate were only modestly significant (p<.1), although both seem to have a noticeable effect on the privatization ratio. For each 10 percentage point increase in the poverty rate, privatization increased by about 8.5%, and for each 1% increase in per capita tax revenue, privatization decreased by just over 16%. As noted in the Findings section for the fixed effects analysis, these results are not surprising. Several researchers (e.g., McLendon, Hearn, & Mokher, 2009; Tandberg 2010a, 2010b; Weerts, Sanford, & Reinert, 2012) have observed similar relationships between analogous independent variables (though different measures, such as gross state product instead of tax revenue and unemployment rate instead of poverty rate) and an outcome of state funding policies (a similar, but not exactly comparable variable to privatization).

A high poverty rate is suggestive of a weak economy. States are less capable of supporting discretionary budget items in weak economies, and higher education is a discretionary item. Often, revenue that in more financially flush times would go toward discretionary items is used to help balance the budget instead (Callan, 2002; Hovey, 1999; SHEEO, 2013). Moreover, higher education appropriations are squeezed at a level disproportionate to the state's poor economic condition (Hovey, 1999). With state and local appropriations an important element in the privatization outcome and institutions needing to make up the revenue shortfall somehow (typically by raising tuition), one would expect an increase in privatization when there is a higher concentration of poor people in a given state.

There is little to say about the effect of per capita tax revenue on privatization. Higher levels of revenue suggest greater flexibility in spending, easing the process of balancing a budget that covers mandatory expenditures while making it possible to be more generous with discretionary items. Relative to privatization, if state and local appropriations may increase when there are higher levels of tax revenue, public institutions are less likely to experience their own revenue shortfalls. When revenue from appropriations remains steady or even increases, tuitions can remain more stable. In combination, stable tuition and increased appropriations due to increased tax revenue will reduce privatization.

While these variables appear to have a noticeable (if modestly significant) effect on privatization, the only other significant variable in the full model, government ideology, has a very small effect. The low apparent effect of ideology is discussed in greater detail in the following section. However, it is worthwhile to consider why only a few independent variables influenced the outcome of privatization.. Time-varying endogeneity is one explanation. That is to say, what unobserved variables may be driving changes in the time-varying parameters? Prior policy decisions and past realizations of privatization can affect existing policies and/or the decision to introduce new policies. For example, education reform policies may influence the high school completion rate. Immigration and immigration policies may influence the proportion of the population considered to be a minority. Another example that could influence per capita tax revenue is if an industry that employs thousands of individuals closes a plant or office complex in a given state. Those employees lose their jobs and per capita tax revenue decreases.

Though federal economic trends are discussed in great detail in the section *Federal Trends*, these adverse events occur within states.

Numerous other variables could have helped uncover additional relationships to privatization. A measure of state debt would offer a different perspective of the state's economic stability, beyond those offered by poverty rate and per capita tax revenue. While my statistical model controlled for population size (via the per capita tax revenue variable), a measure of the population growth rate could be related to numerous variables including the minority population and per capita tax revenue. When populations increase rapidly, state appropriations often cannot keep up with growth and the per student budget allocation decreases.

While omitted demographic and policy variables may strengthen the overall model, higher education specific parameters may also influence both the independent variables and privatization. For example, it would be helpful to know what percentage of the state's allocation to an institution is based on performance factors. This particular issue is important at the state level, but also potentially at the federal level with President Obama's recent call to tie Pell awards to institutional performance (Jaschik, 2013 August 22). In addition, it would be helpful to know what portion of total government lobbying is for higher education. Higher education governance structure could also influence privatization, and also the proportion of the postsecondary sector that is private.

Finally, prior levels of privatization could influence the current privatization ratio. It would be statistically complicated, but a lag of privatization may be an important predictor. To manage concern of correlation with residuals, a variable measuring the percent change in privatization might be used instead. These are but a few omitted

variables that could be endogenous with time-varying inputs in the model. As noted previously, several model variables were expected to have a significant effect on the privatization ratio, but did not. These, too, require a closer look.

Non-finding of Proportion of the Postsecondary Sector that is Private, Low Apparent Effect of Ideology, and Non-finding of Medicaid Expenditure in the Fixed Effects Model

The results showing a lack of influence of the private postsecondary sector are quite surprising. I would have expected it to have some influence on the privatization ratio, going back to the logical model presented in Figure 2.1. Theoretically, states with a high proportion of private institutions in the postsecondary sector should have a higher tolerance for privatization. This relates back to the notion of the market model. A market for high tuition/low subsidy postsecondary education not only exists in such states, it is sustainable. Based on that example, it is rational for policymakers to expect success with a similar model in the public sector. However, it could be that in many of these states, the students participating in private higher education come from elsewhere, either other states or foreign countries, changing the structure of the market. Moreover, many states do not have a high rate of private postsecondary participation relative to the entire postsecondary sector. A quick glance at Table 2.1 shows that the mean across years is 25%, with a minimum of 4% and a maximum of 61%. It could be that the private proportion of the higher education sector is not high enough in the balance of states to influence privatization of postsecondary education. Additionally, the privatization variable reflects in-state tuition rates, something an out-of-state or international student would not pay. The competition in the market may not be present or strong enough at this time, and thus perhaps there really is no relationship between the

private postsecondary sector and privatization of public higher education. A relationship may emerge if the postsecondary market changes, however.

Prior research (e.g., Archibald & Feldman, 2006; Nicholson-Crotty & Meier, 2003; Tandberg, 2010b), supports a positive finding on the relationship between political liberalism and state funding. There is evidence for a non-finding on political ideology (McLendon, Hearn, & Mokher, 2009), but in that study, the non-finding came as a surprise to the authors, and they did not discuss the implication. In this study, there is a finding for government ideology, but one that revealed only a small effect on privatization, though in the expected direction. Still, increasing liberalism should have an effect on privatization. In many states, the variation in citizen ideology went up and down, rather than moving in a steady direction, either more consistently liberal or moving more consistently toward a conservative outlook. Because this shifted over time without any clear pattern, it is possible that it takes time for citizen ideology to catch up with policy, or for policy to catch up with ideology. The same is true for government ideology, which was significant (but with a very small coefficient) in the FE regression. There is no clear pattern to the variation in ideology. A future analysis that examines these variables using a two-year lag might uncover a relationship that is not obvious without the time lag. These variables, too, could be influenced by the national trends (discussed below in the subsection entitled *Federal Trends*). Alternatively the small influence of government ideology and non-significance of citizen ideology are a function of the time period studied, and results could be different in a different era (e.g., the influence of political ideology may be different when looking at the 1970s and 1980s compared to the 1990s and early 2000s).

It is also surprising that Medicaid expenditures are not significant in the final FE model, but after reviewing that Medicaid and per capita tax revenue are correlated (r = -.237, p < .1), it is possible that per capita tax revenue is taking the significance from Medicaid, especially when also taking ideology into consideration. What is interesting, though is that Medicaid expenditures correlate with citizen ideology, but not government ideology (see Table A1), although government ideology is the statistically significant ideology variable in the fixed effects regression. Relationships between ideology and other variables in this analysis (such as Medicaid expenditure as a percentage of the state budget) appear to be complex, beyond the scope that may be explained in this dissertation.

Perhaps a different proxy variable for mandatory expenditures would have yielded a different result. In Colorado, there is the possibility that all higher education funding will be eliminated and instead put toward K-12 education (Love, 2012). Although it is an extreme example, it does reflect the tensions of allocating the state budget when there are required budget lines. However, I tend to think that Medicaid serves as the best proxy because of the rate at which it grows. It is also well-correlated with privatization (r = .433, p <.01, see Table A1). Analyses by others support the relationship between state healthcare cost and state higher education support (State Higher Education Executive Officers, 2013). The non-finding in this dissertation may also be limited to the period under study. The report by SHEEO (2013) indicates changes in healthcare costs after 2007. With the Affordable Care Act fully taking hold by 2014, healthcare expenditures – for Medicaid and for the insurance exchanges – may lead to a completely different relationship with higher education funding as states implement insurance exchanges or

opt out. Repeating this study in five to eight years could yield vastly different results because of this.

Federal Trends

The time dummy variables capture federal trends that affect all states the same. In the fixed effects regression, the dummies years 2004 and 2006 were significant to the .001 level, with coefficients of approximately .34 and .38 respectively across all models. In addition, 1994 and 1996 (with coefficients of approximately .03 and .07) were significant to the .1 and .05 levels in Models 1 and 2, respectively. The coefficient for 1998, .09, was significant to the .05 level in Model 2. As noted previously, these levels of significance recall the descriptive analysis of privatization in Figure 2.2. The significant years in the regression reflect years in which the overall privatization of public postsecondary education grew. While factors within states affected privatization, so did events occurring on the national level.

Between 1990 and 2006, the United States experienced two economic recessions. The first, in 1990, resulted in sharp increases in interest rates and a declining availability of credit. Recovery from this recession began in 1991, one year before the start of the time period covered in this dissertation. The 1990s were marked by low inflation, a growing stock market, and a rapid expansion in information technology (IT) from 1995 to 2000 that led to increases in efficiency and decreases in IT prices. This era, known in part as the dot com boom, saw personal incomes double, increasing entrepreneurship, and rising economic productivity (Behr, 2009; Kotz, 2003).

Manufacturing jobs gave way to an increase in service sector positions, from store clerks to financial planners (Conte & Karr, 2001). However, many of these service jobs

did not pay as highly or carry as many benefits as manufacturing jobs, so more women entered the workforce. In addition, President Clinton sought to affect the economy by promoting education and job-training programs designed to develop a highly-skilled – and hence, more productive and competitive – work force (Conte & Karr, 2001). This increased demand for higher education, and enrollments may have grown faster than state support of higher education could keep up (SHEEO, 2013). Alternatively, when the economy is doing well, the government is less inclined to spend on what people can "afford."

The dot com bubble burst in 2000 and the United States entered its second recession in 11 years in 2001. By 2003, the economy was in recovery, and the dot com boom was replaced by a housing boom, leading to an increase in both construction jobs and home prices. People were investing their money into houses and consumer spending, as opposed to something that might generate economic output and jobs that would continue into the future (Irwin, 2010). Also in 2003, the United States entered two wars, in Iraq and Afghanistan, which led to a rise in military spending. According to Behr (2009), the U.S. economy experienced a cycle of booms and busts. Service sector jobs (finance, medicine, hospitality, lawyers, and consultants) expanded, and many of them require a lot of education, increasing demand at a rate faster than states could provide support (SHEEO, 2013). Moreover, continuing the trend of the 1990s, there was a decline of goods production in favor of services. Household wealth increased in the late 1990s and early 2000s, but stagnated as the decade wore on. Irwin (2010) actually describes the 2000s as a "lost decade for American workers" and a decade of debt.

Specifically related to higher education, federal trends with the Pell Grant bear a quick summary. In the 1990s, Pell Grant expenditures occasionally exceeded appropriations (King, 2003), specifically in the middle 1990s, the years that bore significance in the FE regression. By the early 2000s, the estimated costs of the Pell Grant program exceeded the amount appropriated to it, by more than $1 billion in some years (Mercer, 2005). In addition, there was a high increase in the number of Pell applicants and recipients (Mercer, 2005). Encouragement to obtain postsecondary education for participation in the workforce and the larger college-going population due to the coming-of-age of the children of Baby Boomers likely combined to raise the number of Pell applicants. The increase in Pell Grant participation coincided with less consumer saving and stagnating incomes as people earned less in their jobs requiring high levels of education compared to the previous generations who earned comfortable incomes in manufacturing positions – yet the Pell Grant program grew slowly in this time period (King, 2003).

From a national perspective, the economy is suffering. The 2000s started out strong, but as the decade continued, the optimism felt at the beginning gave way to the reality of a Great Recession that lasted several years. The information-based economy continues to drive demand for more education. Yet, privatization is rising rapidly (see Figure 2.2, and it is continuing to grow), making it harder for more and more people, and especially those from low-income backgrounds, to obtain the education necessary to succeed financially in this economy. The effects reach farther than the bank accounts of individual households, however, as additional education is known to have a positive

effect on the public good as well. In all of this, how can access to education, an important goal, be provided in a just manner?

Conclusion

This paper is not intended to debate the degree of investment individuals and the government should make in human capital. Rather, the goal is to understand drivers of privatization and how justice relates to privatization. To that end, per capita tax revenue, the poverty rate, and government ideology all have a significant (if modest) relationship with privatization. Given these relationships, it is time to return to the third research question, which asks "What are some of the implications of the shift toward privatization, particularly on access for low-income and minority students?"

The shift toward privatization has implications for low-income and minority students. States seek to keep taxes as low as possible, especially in this era of resistance to taxation. Moreover, per capita tax revenue is directly and negatively correlated with the poverty rate (Appendix A), so the more low-income people there are in the state, the less tax revenue there is available to distribute to individuals and institutions. Many states seek to keep taxes as low as possible. The role of per capita tax revenue as a modestly significant driver of privatization weakens the implied social contract and challenges Rawls's *Theory of Justice*. That is, the just savings principle proposes that taxation assures equal application of basic moral rights (in this case, education) and that equality of opportunity favors the disadvantaged. However, if the just savings principle is not maintained, it becomes harder to uphold the first two principles in Rawls's theory. The outcome is that low-income and minority students end up behind their peers when it comes to their access to higher education. Available tax revenue must go toward

mandated social welfare programs, which certainly help low-income members of society, but it do not help to advance them. This failure would especially concern Nussbaum (2000, 2004a, 2011) because it means that while capabilities such as health may be met, others, such as the minimum threshold of education (which leads to functionings of other capabilities) will not be.

Individuals' investment in human capital will not compensate for the government's disinvestment, because fewer people will be able to participate in higher education. Without a certain level of per capita tax revenue,[21] public higher education will not receive the subsidies necessary either to keep tuition low or to provide grants to needy students, whichever method is more feasible, efficient, and equitable.

Since the time period covered in this chapter, the United States entered the Great Recession. Privatization has continued to rise (Love, 2012, Malwitz, 2010; Sikorski, 2010). People are encouraged to obtain postsecondary degrees or to return to school for additional training. This increased demand, when people can afford to attend, further hampers states' ability to subsidize higher education. The State Higher Education Executive Officers (SHEEO, 2013) note that recent tuition increases "are driven primarily by the failure of public support to keep pace with enrollment growth and inflation" (p. 22) and not due to excessive spending. In keeping with ideas of justice, SHEEO also found that claims that states are "abandoning their historical commitment" to public higher education are not justified, nor do such claims match what policymakers say (p. 23). Nevertheless, public postsecondary institutions and the states have come to rely on tuition revenue to make up for the shortfall that the states cannot fill.

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[21] Such a level would vary by state, and analyzing the precise level per state is beyond the scope of this study.

The public good of higher education becomes devalued with this disinvestment because even though the trend toward privatization has not affected enrollment rates yet, it has affected who is enrolling. The gap between the wealthy and the poor will widen, because fewer low-income people will be able to participate in higher education. That means diversity in the workforce will diminish, and potentially worse, there will be less diversity in the body politic. If fewer low-income people obtain the education needed to develop the critical and complex thinking required to understand political issues, participants in civic roles may no longer represent the best interests of those the government is in existence to serve – all citizens in the democracy.

A cycle of widening gaps in education results. The negative relationship between per capita tax revenue and the poverty rate suggests that fewer low-income students will have access to postsecondary opportunities. Income is correlated with educational attainment (Kelly, 2005). If fewer low-income students are able to participate in higher education, their incomes cannot increase at the same rate as those from middle- and upper-income backgrounds. As privatization increases, these lower income families become less likely to be able to afford postsecondary education, leading to a gap in wealth and poverty. Furthermore, the economy as it currently exists relies on an educated citizenry. Thus, in addition to a widening gap between wealthy and poor, one can expect economic development to slow because there will be fewer educated within the workforce.

My final research question asks: Will an interconnectedness of higher education and the public good remain possible? Given the limitations to the model, the analysis predicts a cloudy outcome. A trend toward privatization does not have to undermine the

implied social contract, as long as accessible public higher education is preserved. However, the rapid rate at which privatization has increased since 2000 is of concern. The premise of the implied social contract is that mutual advantages arise when governments (federal and state) assist low-income students with college attendance, allowing students to pursue what they value. Increased lifetime earnings for the students should result in higher economic participation (including economic growth and tax payments) for the governments. This mutual advantage provides stability to the implied social contract. If movement in the direction of privatization follows an arc of justice, all prepared members of society will be able to participate equally in higher education, which means they all will be able to experience personal benefits and contribute to the public good. Financial equality of opportunity plays a fundamental role within that arc of justice.

The question is, is there enough tax revenue to cover need-based financial aid to maintain equality of opportunity? In combination with lower per capita tax revenues resulting from the three recessions in the past 25 years, the answer is: not necessarily. In the global economy, resistance to taxation has risen to levels previously unseen. Some describe a "new normal" for society, one in which education competes with health care costs and other expenditures for limited public resources (SHEEO, 2013). In this new normal, state support of higher education will not approach previous levels. Students and their families will be expected to make larger sacrifices in order to achieve higher education, while institutions will have to find ways of managing budget cuts without compromising quality.

Privatization does not have to separate the interconnection between higher education and the public good; however, it does appear that the interconnectedness has weakened, if unintentionally. Since there is no stopping this trend, policymakers need to be aware of the impact of their decisions and act in as just and equitable manner as possible given the budget constraints with which they must contend. "Sound judgments about priorities and an extra measure of commitment and creativity are needed in order to regain our educational and economic momentum" (SHEEO, 2013, p. 49). In the next two chapters, we will see how one state attempts to do just that.

CHAPTER 3

THE ROLE OF SOCIAL CAPITAL IN ACADEMIC PREPARATION:
A QUANTITATIVE ANALYSIS OF THE TWENTY-FIRST CENTURY
SCHOLARS 2004 COHORT[22,23]

In the United States, it is becoming more widely accepted that to succeed – both
economically and personally – attaining a college degree is an important objective (see
Chapter 1). Academic preparation is a fundamental precursor to postsecondary
attainment, and a vast amount of the research literature on postsecondary access focuses
on academic preparation (e.g., Bowen, Kurzweil, & Tobin, 2005; Choy, 2002; Conley,
2005; Daun-Barnett, 2005; Finn, Gerber & Wang, 2002; Hearn, 1991; Oakes, 2005;
Oakes, Rogers, Lipton, & Morrell, 2002; Perna, 2005; Sciarra, 2010; St. John, 2006; St.
John, Chung, Musoba, Simmons, Wooden, & Mendez, 2004; You & Nguyen, 2012).
Another facet to consider is social capital. This non-monetary form of capital plays a role
in academic preparation and in the overall college-decision processes for students and
their families, as will be explored in this chapter and the next.

Typically, social capital is viewed as family-driven and transmitted. It can serve
as a marker of class difference, with higher-income families able to access specific types

of social capital more readily. Several states, including Indiana, Oklahoma, and Washington, have been able to enact policy that provides support services to low-income high school students and their families that helps to imbue social capital in ways that encourage college participation. Indiana, the state studied in this chapter, calls their policy initiative the Twenty-first Century Scholars program (TFCS).

In this paper, I provide a literature review of academic preparation research followed by background information on the state of Indiana, its high school curricular options, and its Twenty-first Century Scholars program. I also outline a research framework that incorporates notions of social justice, social capital, and the balanced access model (St. John, 2003). Next, I detail the research approach and results of the analyses. I conclude with a deeper discussion of the findings and policy implications.

Academic Preparation in Postsecondary Access, Indiana, and a Way to Approach Their Relationship

College access starts early in the college-going decision-making process. Hossler and Gallagher (1987, later enhanced in 1999 by Hossler, Schmit, and Vesper), describe a three stage process of predisposition, search, and choice. They developed this process based on research that focused primarily on middle-income students. Low-income students do not experience the college-going decision-making process in the same way, much as they do not experience education in the same way. As Stanton-Salazar points out (1997), lower-income people operate in different social and economic structures than the dominant group, and learning how to navigate the middle-class discourse influences probabilities of future success. The focus in this chapter lies with academic preparation, an important component of college decision-making. However, before embarking on a

discussion about class differences in navigating college decision-making as it relates to academic preparation, it is important first to have a clear view of what academic preparation for college entails.

Historical Background

The history of academic preparation for postsecondary education goes back to the beginning of higher education. However, the current system of comprehensive schools, with multiple curricula and/or tracks within the same high school, emerged in the first half of the 20th century (Daun-Barnett, 2005) with a clear demarcation between vocational, general education, and college preparatory tracks evolving by the 1950s (Conley, 2005). With increased college enrollment, there evolved a greater emphasis of linking high school to college. The College Board developed Advanced Placement courses (Conley, 2005; Daun-Barnett, 2005; St. John, Daun-Barnett, & Moronski-Chapman, 2013) for those seeking the academic rigor in high school necessary for attending a four-year college. In the 1970s, a certain level of equality in access to a college preparatory curriculum existed, although toward the end of that decade, that degree of equality of access appeared to diminish (St. John, et al., 2013).

The emphasis on academic preparation with defined standards specifically for postsecondary goals as viewed today took hold with the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983). Alignment of a college preparatory curriculum and postsecondary admissions standards rose in importance by this time, and *A Nation at Risk* became a rationale for shifting high schools from comprehensive, local institutions to a system governed by national standards (Conley, 2005; St. John, et al., 2013). Although this viewpoint took hold with clear policy changes

in the later 20th century, even in the late 19th century, the perspective that all students (preparing for college or life) would benefit from a traditional curriculum which valued all subjects equally had some traction (Daun-Barnett, 2005).

Curriculum: Tracking and Standards

A high school curriculum can be viewed from several perspectives; two key ways of looking at it are horizontally (breadth) and vertically (depth) as presented by Powell, Farrar, and Cohen (1985). The former covers all possible courses in a given grade level, including the core academic subjects plus any manual, vocational, or other courses. The latter refers to the skill level (such as general, college preparatory, and honors courses) within the same subject area for a specific grade level. Another element to consider is the sequence within a subject area; math can be sequenced to progress from Algebra I through Pre-Calculus or Calculus over a four-year period. Conley (2005) and others (Adelman, 2006; NCEE, 1983; Oakes, Rogers, Lipton, & Morrell, 2002; Perna, 2005; You & Nguyen, 2012) argue that the rigor of high school courses – especially in math – is important for college success.

In schools with several tracks and student choice in course selection, challenges arise as students may inadvertently close off options. Choices made in the first or second year of high school can constrain – or even eliminate – college options. Conley (2005) suggests that schools that prepare all students for college success appear very different from high schools that prepare only some of their students. In his view, the main difference revolves around an "intellectually coherent program of study based on a curriculum that grows progressively more challenging over the years" (p. 73) with

gradually more demanding assignments designed to master existing skills while learning new ones.

Not all schools were originally designed to prepare all students for college. Many schools across the United States maintain multiple tracks, including those that focus on general education or vocational training (Dornbusch, Glasgow, & Lin, 1996; Finn, Gerber, & Wang, 2002; Gandara, 2002; Oakes, 2005; St. John & Musoba, 2011; Useem, 1991, 1992; You & Nguyen, 2012). The accountability movement, which developed in earnest after the publication of *A Nation at Risk* (NCEE, 1983), called for standardizing curricula with a notable emphasis on math courses, establishing exit exams and other graduation standards, and administering many tests to measure learning. This approach does not necessarily overcome problems of inequality. For example, tracking maintains and may even exacerbate inequality due to who has access to advanced tracks. The experiences (both educational and developmental) vary widely depending on the track placement (Oakes, 2005).

Rigor within the high school curriculum is considered a key element and predictor of college access (Adelman, 2006; Conley, 2005; NCEE, 1983; Oakes, Rogers, Lipton, & Morrell, 2002; Perna, 2005; You & Nguyen, 2012). The number and intensity of math requirements have increased steadily since 1990, as have the percentage of schools participating in the Advanced Placement program (St. John, et al., 2013). Math is not the only area with increased graduation standards, but it is among the easiest to specify due to the clear content progression, and it serves a gatekeeper function in education (Oakes, 2005; U.S. Department of Education, 1997). St. John and his colleagues (2013) note that this standards approach constrains the curriculum (St. John & Musoba, 2011, also

observe that when the number of required preparatory courses increases, students enjoy less opportunity to specialize in a vocational option, for example, or to take electives), but there have also been efforts to differentiate it (e.g., with the increasingly common option of earning an honors diploma). This differentiation can cycle back to the concerns associated with tracking, particularly those involving access to the more advanced curricula.

Social Background

Numerous studies find that not only do wealthier and White students enjoy greater access to advanced curricula, students of color and of lower-incomes may be encouraged to participate in lower-level curricula – even if that encouragement is subtle or unintended. Lower-income students and students of color are also frequently in under-resourced schools so course offerings and other structural factors (such as teacher quality, counseling, etc.) serve as limiting factors (Attewell & Domina, 2008; Bowen, Kurzweil, & Tobin, 2005; Finn, et al., 2002; Gamoran & Mare, 1989; Lareau, 2003; McDonough, 2005b; Oakes, 2005; Oakes, et al., 2002; Perna, 2005; Sciarra, 2010; Useem, 1991, 1992). Parental involvement in schooling has an effect on numerous educational outcomes (Hoover-Dempsey, et al., 2005). Differences in parental involvement – both in how much and type – influence tracking placement, as well (Cooper & Crosnoe, 2007; Dornbush, et al., 1996; Gandara, 2002; Lareau, 1987, 2003; Oakes, 2005; Oakes, et al., 2002; Tierney & Auerbach, 2005; Useem, 1991, 1992)

Differences in parental involvement and engagement in schooling can be traced to differences between low-income and middle families in their parenting styles. Annette Lareau has studied these differences extensively (1987, 2003). Lower-income and

working-class parents tend to offer high levels of autonomy to their children during leisure time and encourage spending significant amounts of time with extended family. Middle-income parents tend to structure their children's time in an effort of "concerted cultivation," with specific extra-curricular activities and interactions with non-family peers (Lareau, 2003). The dominant educational institutions in society value the approach more consistent with concerted cultivation, however, with teachers advocating certain standards for raising children that include talking with children to develop their educational interests, playing an active role in their schooling, and teaching to solve problems through negotiation.

Lareau (2003) has observed that the differential outcomes from these varied approaches generate a sense of entitlement, which she defines as the right to pursue individual preferences and actively manage interactions in institutional settings, in middle-income students and a sense of constraint in institutional settings for working-class and poor children. It boils down to ability versus powerlessness to make rules work in their favor. Furthermore, the social and organizational structure of schools can be confusing even for higher SES parents to navigate (Useem, 1991); given the different orientations and approaches of lower-income parents, they encounter additional obstacles (Ritter, Mont-Reynaud, & Dornbusch, 1993). It is clear how these differences in style can lead to differential educational placement, with lower tracks overrepresented with lower-income students and higher tracks overrepresented with middle- and upper-income students.

Working-class and poor parents want their children to be successful in school, but their approaches do not necessarily align with what educators value (Dornbusch, et al.,

1996; Lareau, 1987; Ritter, et al., 1993). Lower-income parents fear doing the wrong

thing, and thus yield deference to teachers' professional expertise, seeking guidance

where needed (Lareau, 1987, 2003). Lareau (1987, 2003) found that working-class and

poor parents strive to maintain a separation between home and school. They assume the

school would contact them if there were problems, not realizing that the schools expect

them to be proactive and involved. Middle-income parents view themselves as partners

with the teachers (Lareau, 1987). Parent-initiated contact occurs less frequently at

schools with a higher concentration of working-class families, while such contact is less

formal and more frequent from middle-income parents (Lareau, 1987). Middle- and

upper-income parents are more likely to question teachers and demand services and

support for their children. Low-income parents may not realize that is not only

permissible but desired (Lareau, 2003). Moreover, they may not share the vocabulary

teachers use to describe learning difficulties, creating a further challenge to parent-

teacher communications when they do occur.

Social Capital

James Coleman (1988) understands social capital as social networks of trust that

lead to advantageous outcomes and is found in the "relations among persons" (pp. S100-

1, emphasis Coleman). Social capital requires two fundamental elements: trustworthiness

of the social environment and the extent of the obligations present in the society – both

structurally and for the actors within the structure. Information, a crucial third element,

provides a basis for action. These three aspects intertwine to affect choices and behavior.

Lareau (1987) notes the importance of information, particularly that deriving from

social networks. Social networks of lower-income students tend to revolve around the

extended family network, whose members share similar backgrounds and viewpoints. For middle-income students, social networks for the parents include other parents. Interactions between parents during their children's extra-curricular activities, for example, or during a social engagement provide additional information for the parents about the goings-on at school, teachers, and other school-related topics. Thus, middle-income parents become informed about their children's schooling in another way that affects how they approach it. Useem (1991, 1992) found similar results in her studies of parental involvement in math placement.

Social capital denotes resources (in the form of relationships) for individuals to pursue their own goals and interests. Thus, it naturally has an effect on the creation of human capital in the next generation. Coleman (1988) notes the influence of this form of capital in the family and in the community. Social capital within the family is neither wealth nor income, nor is it the parents' education that provides a specific cognitive environment to aid child learning. What matters for social capital in the family is the relationship between the parent(s) and the child(ren), and how involved the parents are in the children's lives and learning.

The concept of building social capital among low-income parents gains further credence when examining the work of Hoover-Dempsey and her colleagues (2005). In their review of research that applies their model of parental involvement processes (original model described in Hoover-Dempsey & Sandler 1995, 1997), they found that parental roles relative to their children's schooling are socially constructed, incorporating elements of their personal beliefs about child development and their values but also integrating expectations of those individuals and groups important to the parent. As such,

the parents' roles constructed for educational involvement may change in response to changes in the social conditions or to intentional, concerted efforts. Hoover-Dempsey and her colleagues (2005; Hoover-Dempsey & Sandler 1995, 1997) also point to the importance of self-efficacy (the belief that their actions will help their child learn) in parental involvement, and that it, too, is socially constructed; thus, self-efficacy may also be influenced with specific, targeted endeavors. In fact, invitations to involvement from others – especially the school, teachers, and students – are a third primary motivator of parental involvement (Hoover-Dempsey & Sandler, 1995, 1997; Hoover-Dempsey, et al., 2005). School climate is crucial for this. The perception of a welcoming environment can help increase parental involvement, especially in schools that serve lower-income and other underrepresented students. This is not socially constructed in the same ways as parental role or self-efficacy and thus cannot be changed through targeted endeavors. However, it is possible that out-of-school programming may be a way to increase parental involvement in school by providing information, confidence, and other skills and techniques that emphasize the value of involvement and increase the ability to communicate with teachers and administration.

Low-income parents may not have the time to invest in their children's schooling that middle- and upper-income parents do (Hoover-Dempsey, et al., 2005; Lareau, 1987). Work schedules, dependency on public transportation schedules, other demands on time, and childcare arrangements inhibit parental involvement in education (Cooper & Crosnoe, 2007; Hoover-Dempsey, et al., 2005; Lareau, 1987). For many low-income parents, money issues pervade all decision-making. Paying for a tutor may require the family to forgo a basic necessity, for example (Lareau, 2003). It is possible to theorize a

parent may be willing to make that type of financial trade-off if s/he could anticipate a subsequent benefit, such as knowing that college was within reach for the child, academically and financially.

Student Aid

Prior research suggests a link between financial aid and academic preparation (Manski & Wise, 1983; St John, Chung, Musoba, Simmons, Wooden, & Mendez, 2004; St. John & Musoba, 2011). Merit aid (often determined in part by grades and curricular rigor) is more likely to be awarded to middle- and upper-income students who may not demonstrate any financial need. Need-based aid typically goes toward students who may not otherwise be able to afford college (Dynarski, 2002b; Heller & Marin, 2002, 2004). Moreover, merit aid as a form of financial aid is increasing, while need-based aid is either decreasing or shifting in nature from grants to loans (Callan, 2001; Dynarski, 2002b; Heller, 2002, 2006b).

To truly benefit from financial aid, students and their families need to know early enough in high school (or even earlier) in order to adequately prepare (Bell, Rowan-Kenyon, & Perna, 2009; Daun-Barnett, 2008, 2011; McDonough, 2004; Perna, 2004; St. John, et al., 2013; St. John, Hu, & Fisher, 2011). As Conley (2005) observed, choices made early in high school can constrain, if not outright eliminate, postsecondary options. For the student who does not think he can afford college and does not know about financial aid, the choice not to participate in a college preparatory curriculum as a high school freshman can seal his fate as a senior, even if he learns about financial aid by then.

State requirements for high school graduation establish a baseline of standards for education. As these requirements lean more toward college preparation, there is a certain implication about how education is viewed: as a basic right for all (St. John & Musoba, 2011). One may extrapolate from this implication that postsecondary education is also a basic right, given the direction of high school graduation requirements. However, schools persist in differentiating their curricula, and equal access to the more advanced curricular options continues to present challenges, especially for low-income students and students of color. These access challenges result from differences in approach toward parental involvement, lack of knowledge about financial aid, and lack of knowledge about what is necessary for college preparation. The state of Indiana has developed a program designed to help overcome these challenges and prepare all of their low-income students for postsecondary education at the two-year and four-year levels.

Indiana

Indiana is a Midwestern state situated in the so-called "Rust Belt" with a population of approximately 6.15 million in 2004 (source is the indicators database described in Chapter 2). During much of the 20th century, manufacturing and industry characterized the state. Looking at the year 2004, Indiana had a median household income of $42,329 (in 2004 dollars), compared to the national median household income of $44,334 (United States Census Bureau, 2011). The College Navigator tool on the National Center for Education Statistics (NCES) web site indicates that as of 2012, Indiana had 64 public and private non-profit two- and four-year colleges and universities (National Center for Education Statistics, 2012).

The Indiana Commission on Higher Education (ICHE) notes several facts about the current climate in Indiana that motivate the commission to create a "Reaching Higher" campaign (Indiana Commission for Higher Education, 2010). Indiana ranks 40th in the nation for average personal income. Manufacturing has dropped significantly, and nearly two-thirds of all new jobs require at least some postsecondary education. The ICHE estimates that Indiana college tuition and fees have grown by nearly 300% since 1990. Defining privatization as the share of the cost of higher education borne by the students and their families, factoring in tuition, fees, state and local appropriations, and state need and non-need grants, privatization in Indiana increased from 29% to 45%, a change of 16 percentage points, or an increase of more than 55% (based on the indicators database), with the increase taking off after 2000 (Figure 3.1, below). Privatization affects access most for students from low-income backgrounds, and the state legislature has established a financial aid program designed to assist meritorious (i.e., academically prepared) students in need. One may conclude from the establishment of financial aid programs and the subsequent "Reaching Higher" campaign that specifically emphasizes the role of higher education in economic development (ICHE, 2010) that the state of Indiana considers postsecondary education to be a public good.

Privatization Rate in Indiana, 1992-2008
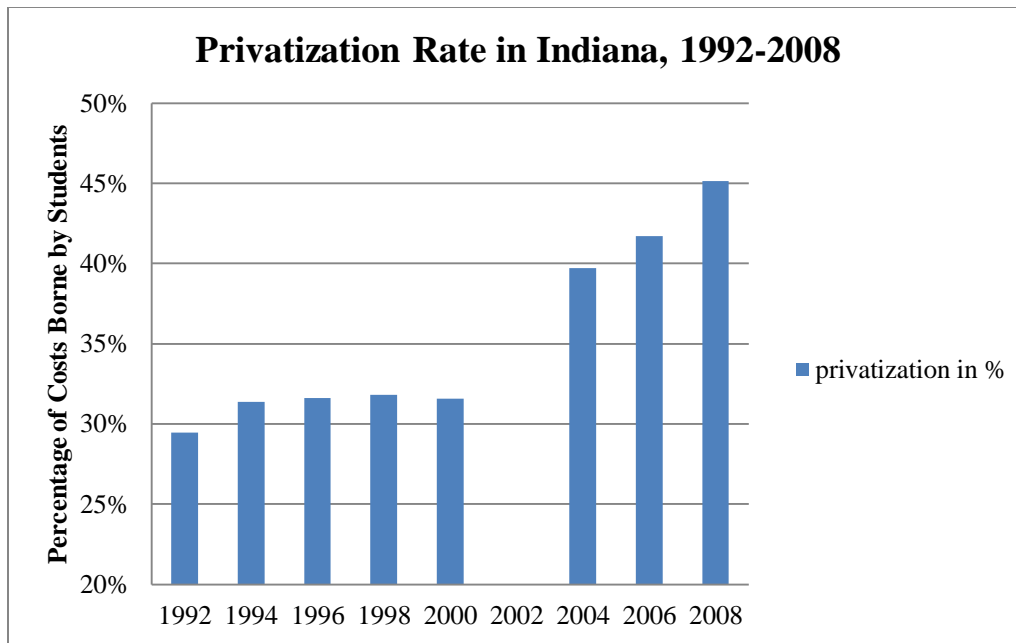
Figure 3.1. Privatization Rate in Indiana, 1992-2008. Privatization calculated as tuition and fees divided by tuition and fees, state and local appropriations, and state need- and non-need grants. State and local appropriation data are not available for 2002. Source: Projects Promoting Equity in Urban and Higher Education, National Center for Institutional Diversity

High School Graduation Requirements

However, before postsecondary education may be considered, it is worthwhile to step back and examine high school graduation requirements, an important pre-cursor to college attendance. At the time the cohort of students examined in this dissertation were in high school, the state of Indiana, at the forefront of high school reform, identified three diploma types each with their own curriculum: Regular (or General), Core 40 (college preparatory), and Honors. Since the cohort in this study completed high school in 2004, the requirements have changed two times, for the classes entering in Fall 2006 or later, and then again for the classes entering in Fall 2012 and beyond.[24] In addition, with the

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[24] Significant changes will be highlighted in footnotes. Updates were located on the Indiana Department of Education website for diploma requirements, with pdf files for Core 40, Academic Honors, and Technical Honors 2006; General Diploma 2006;, Core 40, Academic Honors, and Technical Honors 2012; and General Diploma 2012. http://www.doe.in.gov/achievement/curriculum/indianas-diploma-requirements

class entering in Fall 2006, there are two Honors options: Academic and Technical. However, the minimum number of credits required remains the same even with the slight curricular changes. The General diploma requires 40 credits while the Core 40 and Honors diplomas require 47 credits minimum. Notably, the state of Indiana established the Core 40 curriculum as the default curriculum for all students entering in Fall 2007 or later. For these cohorts, a formal opt-out procedure is required in order to graduate with less than the Core 40 for a Regular diploma. The next few paragraphs discuss how the credits are distributed across subjects for the cohort that graduated in 2004,[25] the cohort analyzed in this chapter.

All diploma types require 8 credits of English/Language Arts. The Core 40 and Honors diploma, require these credits to be distributed among literature, composition, and speech, whereas the General diploma does not specify the courses necessary to fulfill the credit requirement.[26] For the Regular diploma, only 4 credits of math are required, with two specifically in either Algebra I or Integrated Math I.[27] Core 40 requires a minimum of 6 math credits, spread over Algebra I and II and Geometry, or Integrated Math I, II, and II. The Honors diploma requires 8 credits, in Algebra I and II, Geometry, and more advanced math such as Calculus or Trigonometry.[28]

As in Math, the General diploma requires 4 credits in Social Studies which must cover at least U.S. History and U.S. Government. The Core 40 and Honors diplomas both require 6 credits, in the same topics as the Regular diploma but also in World

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[25] Source is St. John & Musoba, 2011.
[26] Beginning in Fall 2006, the English/Language Arts requirement required a distribution among literature, composition, and speech for the General diploma as well.
[27] Beginning in Fall 2012, at least two credits of math or quantitative reasoning must be taken in the junior or senior year.
[28] The Academic Honors diploma requires the Core 40 plus two additional math credits, but does not specify what those credits should be in, beginning in Fall 2006. The Technical Honors diploma does not require more than the 6 credits specified for the Core 40.

History or Geography, Economics, and other topics. The General diploma requires 4 credits in science, with more than one area of science represented. As with Math and Social Studies, the Core 40 requires 6 Science credits, in Biology I, Chemistry I, Physics I, or more advanced topics. The Honors diploma requires the same.[29] All three diploma types require 2 Physical Education credits and 1 credit in Health & Wellness.

For the cohort graduating in 2004, students were permitted 16 credits toward electives and 2 additional credits in any of the required subjects or in a technology competency in order to earn the General Diploma. The Core 40 allowed only approximately 4 credits toward electives. The remainder was designated for more advanced courses in the required subjects, fine arts, computers, or a career or technical area. Honors allowed 9 elective credits, and required 2 credits for Visual or Performing Arts, and 6 credits of one foreign language or 4 credits each in two foreign languages.[30]

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[29] In Fall 2006, Indiana required that at least two science credits must be satisfied by Biology I for the General Diploma.

[30] By 2006, the General Diploma permitted 6 elective credits, 6 credits in a Career Academic Sequence that included selection of electives in a deliberate manner to take full advantage of career exploration and preparation opportunities, and 5 flex credits involving extension of the Career Academic Sequence, workplace learning, high school/college dual credit courses, or additional courses in the required subjects, world languages, or fine arts. By Fall 2012, the Career Academic Sequence was renamed College and Career Pathway Courses. The Core 40 changed for Fall 2006 by allowing 6 elective credits, recommending the Career Academic Sequence, and 5 directed electives in world languages, fine arts, or career-technical subjects.

By 2006, the Academic Honors diploma involved numerous additional requirements, including a cumulative GPA of B, and all courses counting toward the diploma have a minimum of a C grade. In addition, Academic Honors diplomas required a minimum of 4 AP or IB credits with the associated exams, a combined score of 1200 on the critical reading and math portions of the SAT, a composite score of 26 or higher on the ACT, 6 dual high school/college credits, or a combination of AP, IB, and dual high school/college credit courses.

The Technical Honors diploma required completion of the Core 40, a career-technical program for 8 credits, a GPA of at least a B, earning at least a C in courses toward the diploma, 6 college credits in dual high school/college courses or achieving a certain level on Work Keys (job skills assessment system), and completion of an internship, completion of a 140 hour industry-based work experience as part of a two-year technical program, or receipt of a state-approved, industry-recognized certification. It is also recommended that students striving for the Technical Honors diploma earn 2 additional math credits and 4-8 world language credits if they are considering applying to a four-year college. By 2012, the Technical Honors diploma requirements remained relatively unchanged, but added completing some of the requirements for the Academic Honors diploma (e.g., AP or IP credits), or achieving certain scores on other tests (Accuplacer or Compass) instead of WorkKeys.

Indiana designed these curricular options in high school to align with postsecondary entrance expectations in the state system. Students completing the General or Regular diploma are eligible for admission to two-year campuses and some four-year campuses. The Core 40 establishes eligibility to the four-year public campuses, and is recommended for the two-year campuses. The Honors diploma offers the same level of eligibility, but also prepares students for the research universities. With the 2007 change to Core 40 as the default curriculum for graduation, the state of Indiana proclaimed that Core 40 "provides the academic foundation that all students need to succeed in college and the workforce" (Indiana Department of Education, 2010).

Indiana was one of the first states to approve a college preparatory curriculum as the standard (St. John & Musoba, 2011). Indiana high schools have been required to offer the Core 40 option as well as the Honors diploma for much longer than this standard – more than 10 years. The Honors Diploma was enacted in 1987; the Core 40 in 1994. In addition, the state provided a bonus (based on the number of students who earned these diplomas) to schools, as an incentive to increase participation in the programs and support school costs associated with the diplomas (Lumina Foundation, 2008; St. John & Musoba, 2011). By 1990, the Indiana Department of Education began covering the cost of AP exams for students who had taken specific AP courses; the state also paid for teacher training to teach these courses. In addition, Indiana has required all schools to offer AP Math and Science courses since 1994. Students graduating with the Core 40 qualify for a state grant of 90% of demonstrated need for tuition and some fees at college; Honors graduates qualify for a state grant of 100% of tuition and some fees, thus combining elements of need and merit (St. John, et al., 2013; St. John & Musoba, 2011).

These awards apply to all students based on the prior year's tuition and fees; for Twenty-first Century Scholars, they are based on the current year's tuition and fees (Lumina Foundation, 2008). However, not every school (especially in rural and urban areas) fulfilled the Honors obligation. In addition, students sometimes had limited choice selection or were forced to take courses online, at a community college, or through some other means that made the Honors diploma more difficult to earn (St. John & Musoba, 2011).

Twenty-first Century Scholars Program

The Twenty-first Century Scholars (TFCS) program has been in the public consciousness of Indiana since first introduced by then Governor Bayh in 1990 (St. John, Musoba, Simmons, and Chung, 2002). According to St. John, et al., "empowering" parents to support their children was a goal of the program from the very beginning (2002, p. 6). Additional goals include raising educational aspirations of low- and moderate-income families, reduce high school dropout rates, prepare students for the workforce, and decrease drug and alcohol use among students (SSACI, 2007).

Essentially, the program offers a last-dollar grant award to eligible participants who enroll in colleges in the state of Indiana. The state provides support services including mentoring, tutoring, college visits, workshops, and other activities for both students and parents. To be considered for this award, seventh and eighth graders in the state who qualify for free or reduced lunch take a pledge to do the following:

- graduate with an Indiana High School Diploma from a charter school, freeway, or other Indiana school recognized by the Indiana Department of Education,
- achieve a cumulative high school GPA of at least 2.0 on a 4.0 scale,

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- not use illegal drugs or alcohol, or commit a crime,

- apply for admission to an eligible Indiana college, university or proprietary school as a high school senior, and

- apply on time for state and federal financial aid (SSACI, 2007).

It is important to note that after taking the pledge, increases in family income do not affect a student's enrollment in the program. However, participants must maintain Indiana residency in order to receive the award.

Conceptual Frame

In order to grasp how a program such as the Twenty-first Century Scholars could be effective, one may be helped by thinking about social capital (Coleman, 1988), social justice (Nussbaum, 2000, 2004a, 2004b, 2011; Rawls, 1971, 2001; Sen, 2000, 2009), and a balanced access approach to postsecondary education (St. John, 2003).

Social Capital.

As described above, social capital involves information, trust, and mutual obligation, which develop into networks (Coleman, 1988). Within the United States, economic classes create relatively closed network groupings. Members of lower income groups in particular must act as their own agents to break into the networks (and information they contain) associated with higher incomes and higher education. That process may be extremely difficult, and the level of trust in the information may be weak, at least at first. The Twenty-first Century Scholars program expands a lower-income Indiana student's network in order to provide trustworthy, helpful information about higher education and the steps necessary to participate in it.

Outside the family, one can look to the community for social capital in pursuit of human capital – in the relationships between parents, in the tightness of the networks, and in the parents' relations with the institutions.[31] Parents act within a community context. Moreover, students can engage with the community networks directly to develop a support system that may assist with overcoming doubt about the trustworthiness of information about academic preparation and college. This is what the Twenty-first Century Scholars program is designed to do, and the data analysis in this chapter will demonstrate that a relationship between several of the social capital elements of the program and academic preparation exists.

For low-income students, social capital and human capital interact with each other in ways that differ from middle- and upper-income students in relation to academic preparation and college-going. Even if students have the social capital needed to prepare for college and have made the decision to invest in developing their human capital by going to college, there still may be limitations to their access based on what they can afford. This is one reason the TFCS program also includes a financial aid guarantee. Moreover, the financial aid guarantee may encourage students to prepare for college in the first place, although additional research is needed.[32]

Social capital connects back to theories of justice, through the idea that basic rights are accessed through equality of opportunity. Valuing – or de-valuing – of different cultures, skills, networks, habits, and information, together with how individuals

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[31] This has borne out in educational settings. See Hoover-Dempsey, et al., 2005; Hoover-Dempsey & Sandler, 1997; Lareau 1987, 2003; and Useem 1991, 1992.

[32] Prior research suggests this importance (Bell, et al., 2004; Daun-Barnett, 2008, 2011; Heller, 2006a; McDonough, 2004; Perna, 2004; St. John, Chung, et al., 2004), but there is little to no empirical research examining this supposition.

and societal structures apply human capital investment, influences behavior that can be examined with an eye toward social justice.

Social Justice.

The concept of social justice has many underpinnings, as described in Chapter 1. Social justice theory relates specifically to TFCS in Indiana in several ways. First, Rawls's theory of justice (1971, 2001) evolves from contract theory. Students are required to sign a pledge (i.e., contract), and if they satisfy all of the terms, the state of Indiana will fulfill their obligation of providing the financial aid. Both with and because of their postsecondary education, the Scholars are then able to participate in society more robustly, in furtherance of the cycle of mutual obligation. Also, Rawls's first two principles (Distribution and Difference) argue that those with similar talents, abilities, or skills should have similar life chances, regardless of initial social position. Given the comprehensive school reforms in Indiana, there is equality of opportunity in theory. Ensuring that advanced courses are available at all schools (particularly those in rural and urban settings) has been a challenge.

Because Rawls's principles of justice are rooted in contract theory, ideas of reciprocity and give-back are built into his theory (2001). He specifically discusses how people should be encouraged to train and be supported in developing native endowments, such that they can use them to contribute to the less endowed, in other words, make returns to society. The TFCS meshes with Rawls's ideas, because it does provide equality of opportunity in a manner that encourages training and development of skills and abilities. Once recipients of the award complete their education, they are able to give

back to society not only with their knowledge and skills, but also with higher incomes (through taxes and charity).

Martha Nussbaum bases her analysis in the idea of "human capabilities" (2000, 2004a, 2011). The government can aim to deliver the social basis of these capabilities (e.g., comprehensive school reform, financial aid, or development of social capital), which can make up for differences in starting points. Nussbaum's less constrained development extends Rawls's principles in a more expansive, practical, applicable manner.

Sen (2009) emphasizes a freedom-centered view of economic and human development, his foundation for social justice. This freedom-centered approach leads to an agent-oriented view. "With adequate social opportunities, individuals can effectively shape their own destiny and help each other" (Sen, 2000, p. 11). Within the TFCS, students and their parents must act as agents. In order to benefit from the program, they must be actively involved and committed, seeking out the elements of the program most beneficial to their circumstances and engaging in them.

Within a marketplace orientation, Sen (2000) argues that markets in general aim toward private goods or benefits, but there may be a strong case for providing public goods beyond what the private markets would promote. Because basic education endows shared communal benefits beyond the private gains of the individual, basic education may be seen as a semipublic good. Expanding education and literacy in a region enables and may even accelerate social change as well as boost economic progress. State and local authorities may need to provide resources and cooperation in order for the services to be effective. This may extend to postsecondary education in the United States with its

knowledge-based economy. It is precisely the argument the Indiana Commission on Higher Education (ICHE) poses (2010). The argument is not necessarily to provide these resources publicly to everyone, according to Sen, and the ICHE and SSACI follow through on that idea by making this available to lowest-income students through the TFCS.

Balanced Access Model

In order to expand evaluation of the effects of finances and other policies on access and equal opportunity, St. John (2003) looked to John Rawls's theory of justice. This approach allowed him to go beyond the limits of economic theory, and offered him the opportunity to develop what he calls a "balanced access model." The balanced access model developed by St. John (2003) suggests the multitude of influences in the pipeline to postsecondary degree attainment. In an updated version of the model (St. John, 2006), these influences can be divided into three main groupings: K-12 Policies, including funding, curriculum, standards, and testing; Postsecondary Finance and Encouragement, including aid guarantees to ease family finance concerns, K-12 encouragement and college outreach, and state coordination of tuition and grants; and Social and Educational Factors, which include family income and education, student expectations and plans, academic preparation, taking exams, application and admission, college outreach, student services and academic programs, pricing, enrollment in either a two-year or four-year institution or transfer, all the way through persistence to degree. This approach highlights the fact that these influences work together to move students through the pipeline, and acknowledges a logical sequence to the process. For example,

access to postsecondary education is influenced by the student's aspiration in addition to policy interventions (tuition, financial aid, information, etc.).

By implementing the Twenty-first Century Scholars program, the state of Indiana has borne direct influence on several of the linkages between personal and environmental factors and policy. Additional support by the state (for example, requiring all high schools to offer the college preparatory Core 40 curriculum) has further influenced and strengthened these linkages. This study aims to reveal how the Twenty-first Century Scholars program can build social capital as a way to increase academic preparation (and in the next chapter, college enrollment), and will situate the results in a discussion of equality of opportunity, an aspect of Rawls's Difference Principle (1971, 2001).

Adapting the balanced access model, one can specifically look at encouragement through the lenses of parental engagement, counseling, and mentoring – all elements associated with social capital when considering its three major elements: trust, information, and mutual obligation. This adaptation serves as a guide for understanding the connections between encouragement, academic preparation, enrollment, and choice, as displayed in Figure 3.2.
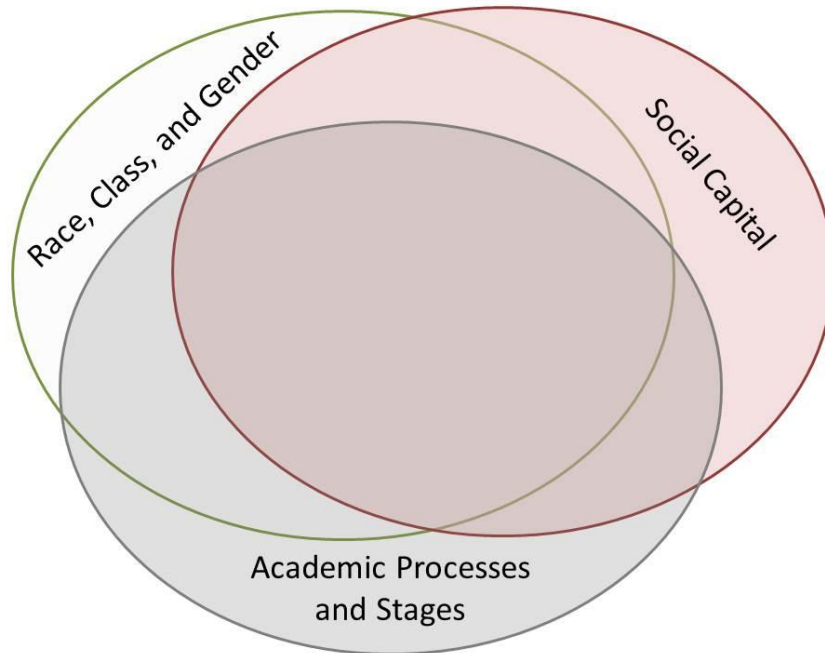
Figure 3.2. Logical Model of the Relationship between Encouragement and College Enrollment. Adapted from St. John, 2006.

The models in Chapters 3 and 4 intend to test the center of the ovals, where all three overlap. This arrangement suggests that the lightest oval (race, class, and gender), the light pink oval (social capital) and the gray oval (academic processes and stages, including academic preparation, college enrollment, and college choice) overlap and interplay with each other. In areas where there is no overlap, these characteristics operate independently and/or have other forces influencing them. For example, academic processes and stages may be influenced by the school structure and urbanicity. Social capital may come from within the family, or be influenced or generated by the community and other organizations. A person's race, class, and gender are an inherent part of his/her personhood, but even those may be experienced differently depending on the environment where the student lives (e.g., degrees of racial tolerance or expectations

of conformity to gender norms, etc.). The next several paragraphs delve deeper into the

cross-cutting relationships among the concepts represented by the ovals in Figure 3.2

Parental engagement, one aspect of social capital influences academic

preparation. The type of curriculum the student chooses and how hard (or not) the

student works in his or her classes may affect parental engagement. Parents may also

engage by seeking out counseling or mentoring opportunities for themselves and for their

student(s); the feedback they receive in those sessions may shape the level of engagement

they put forth, thus creating a feedback loop of sorts. Parental engagement also

influences the decision to apply to college. While there are many students who apply to

and enroll in college in spite of their parents, that is a more challenging path. Logic

would suggest that students are more empowered to apply to college if they have their

parents' support, emotional and/or financial.

Counseling and mentoring (related to social capital) also affect academic

preparation. One could argue that academic preparation affects counseling and

mentoring also – that is, a student who is on a college track may seek out additional

counseling to help achieve the goal of college enrollment. However, there is a power

dynamic at play, with the counselor or mentor having information and access that the

student seeks. Counselors also provide information about and may assist in applying for

financial aid. Financial aid applications are notoriously difficult to complete, and the

support and guidance of someone who is experienced helps.

Within the Academic Processes and Stages sphere, academic preparation

influences application to college; students choose a high school curriculum, often on the

basis of what will prepare them best for their post-high school plans. Those that intend to

apply to college will take a college preparatory curriculum. There is also a relationship between curriculum and standardized test scores (St. John, 2006); students who enroll in a college preparatory curriculum are more likely to earn high scores on the SAT or the ACT. The prospect of financial aid may contribute to postsecondary aspirations. Although it is not specifically noted within the Academic Processes and Sphere, it bears influence on decisions made within that sphere. Applying for financial aid goes hand-in-hand for many who apply to college. Finally, financial aid and applying to college both influence college enrollment. Type or amount of aid may help to determine college choice, however.

Background characteristics of the individual and his or her family shape Social Capital and Academic Processes and Stages. A person's gender, race, and/or class carry great influence over all of the elements discussed above. For example, Latino/a students may be encouraged to stay close to home after high school; if there are no colleges nearby, these students have a disincentive to seek postsecondary education that is some distance from home, or they may be encouraged to attend a lesser quality college in order to stay close to home when a more competitive, but farther, college is better suited to the student's abilities.

Low-income families may rely on a high school student's part-time earnings; such a student may decide early not to attend college, and instead seek full-time employment upon high school graduation (e.g., Hahn & Price, 2008). This is one way a student's background may influence the chosen curriculum in high school. For example, if the student has no intention of going to college, he may choose not to bother with the rigor of a college preparatory curriculum. If the student does prepare, he or she may feel more

comfortable with the flexibility of the course schedule at a community college, even if the student is academically prepared for a rigorous research university. Academically qualified students who choose to go to a two-year college or even no college instead of a four-year institutions "undermatch" (Bowen, Chingos, & McPherson, 2009; Hahn and Price, 2008; St. John and Musoba, 2011). How students evaluate financial aid packages and different postsecondary markets is related to income. Other factors such as family encouragement (or lack thereof) may also influence the decision to enroll at a less prestigious college or university. Hahn and Price (2008) found that of the students who did not enroll in college, only a small number had even taken steps necessary for enrollment, whether that includes taking standardized tests, applying for financial aid, or completing a college application, suggesting that non-enrollees made the decision not to attend college early.

The Twenty-first Century Scholars program guarantees financial aid, but does even more. It offers many opportunities for additional academic support and to build social capital, through various programs, workshops, events, and other activities. For a complete matrix of how the activities link to social capital building, please see Tables 3.1A and 3.1B. Given the theorized relationships described in the model above and the goals of TFCS, three questions emerge:

- What is the influence of social capital on academic preparation for low-income students?

- What is the influence of social capital on college enrollment for low-income students?

- What is the relationship of social capital to college choice controlling for background and academic preparation for low-income students?

The first question will be addressed in this chapter. The other two questions will be analyzed in Chapter 4, framed within a literature of college decision-making processes.

The next section of this paper outlines the data, population, and analytic strategies used to understand these questions. With data from the state about high school curricular choices among enrollees in the public colleges and universities in Indiana as well as about enrollments in the different types of public colleges and universities, I can construct a statistical model that aims to answer these questions.

Table 3.1A Twenty-first Century Scholars Activities and Their Link to the Three Pillars of Social Capital: Student-Oriented Activities			
	Trust	Information	Mutual Obligation
Tutoring: Math (Student)		x	
Tutoring: English (Student)		x	
Tutoring: Other Academic Subject (Student)		x	
Tutoring: Standardized Test (Student)		x	
Tutoring: College Entrance Exam (Student)		x	
Tutoring: Other (Student)		x	
Computer Assisted Lab: English (Student)		x	
Computer Assisted Lab: Math (Student)		x	
Computer Assisted Lab: Other Academic Subject (Student)		x	
Computer Assisted Lab: Prep Standardized Test (Student)		x	
Computer Assisted Lab: Other (Student)		x	
Misc: Other Academic Support Services (Student)		x	
Mentoring: General (Student)	x	x	x
Mentoring: Professional (Student)	x	x	x
Mentoring: Other (Student)	x	x	x
Misc: Postsecondary School Credit (Student)	x		
Counseling: Personal (Student)[a]	x		
Counseling: Academic Advising (Student)[a]	x		
Counseling: Career Advising (Student)[a]	x		
Counseling: Other (Student)[a]	x		
Workshop: College Prep (Student)		x	x
Workshop: Study Skills (Student)		x	x
Workshop: Career (Student)		x	x
Workshop: Other (Student)		x	x
College Visit (Student)		x	
Job Site Visit (Student)		x	
Event: Cultural (Student)		x	
Visit: Other (Student)		x	
Job Shadowing (Student)		x	
College Student Shadowing (Student)		x	
College Professional Shadowing (Student)		x	
Shadowing: Other (Student)		x	
Event: General (Student)		x	
Event: Project Specific (Student)		x	

a. Career Advising, Academic Advising, Personal Counseling, and Other Counseling hung together to create a factor called "Counseling"

Table 3.1B Twenty-first Century Scholars Activities and Their Link to the Three Pillars of Social Capital: Parent-Oriented Activities			
	Trust	Information	Mutual Obligation
Counseling: Single Family (Parent)	x	x	
College Visit (Parent)[a]		x	
Other Service (Parent)		x	
Workshop: College Prep (Parent)[b]		x	x
Workshop: Study Skills (Parent)[b]		x	x
Workshop: Career (Parent)[b]		x	x
Workshop: Other (Parent)		x	x
Workshop: Core 40/Academic Honors (Parent)[c]		x	x
Workshop: Right Questions (Parent)[c]		x	x
Workshop: ISTEP (Parent)[a]		x	x
Workshop: Study Skills/Time Management (Parent)[c]		x	x
Workshop: SAT/ACT (Parent)[c]		x	x
Workshop: Financial Aid (Parent)		x	x
Event: Cultural (Parent)[a]	x	x	
Event: General (Parent)[a]	x	x	
Event: Project Specific (Parent)[a]		x	

a. College Visit, Cultural Events, General Events, Project Specific Events, and the ISTEP workshop came together to create a factor called "Events and Visits
b. College Prep Workshops, Study Skills Workshops, and Career Workshops came together to create a "Career Planning" factor.
c. Workshops on Right Questions, Core 40/Academic Honors, Study Skills/Time Management, and SAT/ACT came together to create a factor called "Academic Preparation"

Method

Several higher education researchers have studied the role of social capital and the importance it bears on encouragement, aspirations, access, and success in higher education (Hossler, Schmit, & Vesper, 1999; McDonough, 1997; Nora, 2004; Perna and Titus, 2005; Walpole, 2003). Numerous primary and secondary school researchers have also found relationships between social capital and both academic preparation and academic success (measured, for example, by achievement test scores) at these educational levels (Cooper & Crosnoe, 2007; Hoover-Dempsey, et al., 2005; Lareau,

1987, 2003; Useem 1991, 1992). Qualitative approaches help to understand the role of these forms of capital. Developing appropriate proxies for these concepts, however, makes it much harder to understand the relationship quantitatively, unless the right forms of data exist. The Twenty-first Century Scholars program administrators collected data so that with analytic techniques such as factor analysis, it is possible to create reasonable proxies for social capital (see Tables 3.1A and 3.1B above, and the Appendix), a concept that is typically difficult to measure because it is found in relationships and less so in content.

The specific research question asks: what influence does social capital have on academic preparation for low-income students? Based on the model suggested by Figure 3.2, I aim to estimate the odds of various social capital factors on academic preparation as determined by high school diploma outcome, with an additional analysis of whether the regional centers that provide services for the Twenty-first Century Scholars program affect academic preparation, compared to the home center based at a major university. Data availability on background characteristics, including high school curriculum selected (an indicator of academic preparation) is limited to students who enrolled in a public college or university in Indiana. Unfortunately, that makes it impossible to predict the relationship between social capital and curricular choice for students who choose not to enroll in college at all, or for those who enrolled in a private college or out of state. However, these data do permit a comparison between one group of low-income students – Scholars – to another group of low-income students – non-Scholar Pell recipients – who enrolled in Indiana's public postsecondary institutions.

The state enrollment data provides some background characteristics, including race and income; I first estimate the odds of completing the Core 40 curriculum or the Honors curriculum compared to the Regular/General Diploma or none at all based on participation in the TFCS program, and then adding in gender and race, followed by a third step that includes income. Gender and race are included separately from income because the first two are not likely to change (perhaps a student undergoes gender reassignment), whereas income can change for Scholars from when they take the pledge to when they complete high school. Including this separately from characteristics that will not change more clearly shows the differing effects of the TFCS pledge and income on diploma outcomes. The last step adds the engagement factors and regional centers. Including the regional centers is intended to determine if the services offered by these centers may be able to offset concerns about the difficulties associated with completing an Honors diploma in rural and urban centers. Because social capital building activities take place in these regional centers, I theorize that they will have a positive effect on academic preparation. All of the students in this analysis were in the SIS database; it does not include Scholars who chose not to enroll in college. However, it does include students who may not have enrolled in a preparatory curriculum. This arrangement more fully tests the model presented in Figure 3.2. With all of this in mind, a description of the data follows.

Data

The Indiana Commission on Higher Education (ICHE) maintains a Student Information Systems (SIS) database of all students enrolled in public colleges and universities in the state. These data include information on background, income, high

school preparation and diploma type, college of enrollment, credit hours, financial aid, campus living situation, and more. Data from the 2004-2005 academic year are the most recent data available to me for the high school graduating class of 2004, the cohort of interest for this study.

In addition to the SIS data, the State Student Aid Commission of Indiana (SSACI) began to keep records of engagement in activities offered by the regional support centers as part of the TFCS program. These data are reshaped to represent individual unit records and contain participation information of each student who took the pledge.

The two databases were merged using encrypted identification numbers. Whenever possible, cases are kept in the models, and categorical coding of variables with missing values keep cases in the model. What follows is a more concrete list of the variables included in the regressions (based on the logic suggested by Figure 3.2), and how these variables are coded.

Population

Because the data contain the entire population of students enrolled in college or participating in the Twenty First Century Scholars program, the group under study is the population, rather than a sample. As such, statistical significance does not mean generalizability to the population. When using actual population parameters, statistical significance indicates a meaningful linkage between two variables, which is how it is applied in these analyses.

Being of low income in 8th grade is a key criterion for eligibility in the Twenty-first Century Scholars program. Although it is possible for a family's income to increase in a five-year period, it seems reasonable to compare Scholars to non-Scholar Pell

Recipients when examining college type because of the income criteria associated with both groups. The Federal Pell Grant program provides need-based grants to low-income undergraduates, and grant amounts are based on a student's expected family contribution, the cost of attendance at the student's institution of choice, enrollment status (full-time or part-time), and whether the student attends for a full academic year or less. Expected family contribution and a student's financial need are determined by a formula developed by Congress. The key elements in the formula include income and assets (both of the student and his/her parents if the student is a dependent, or just of the student if s/he is independent financially), family size, and the number of family members attending postsecondary institutions. Many Scholars also receive Pell grants; the grant associated with TFCS is awarded on top the Pell grant.

One important difference between these two groups is the timing of income eligibility. The TFCS participants' low-income status is determined in 1998 or 1999, when they signed the pledge. At the time, they were in 7th or 8th grade. The non-Scholar Pell Recipients' low-income status was determined based on their completion of the Free Application for Federal Student Aid (FAFSA) their senior year of high school. Incomes can fluctuate in a five-year time span; TFCS participants may have higher levels of income at the time of high school graduation and college enrollment than the non-Scholar Pell Recipients to whom they are being compared. Moreover, some of the non-Scholar Pell Recipients may not have been eligible to participate in the Twenty-first Century Scholars program when they were in 7th or 8th grade. The program structure is clear: eligibility is determined based on free or reduced lunch status in middle school. Students

eligible for free or reduced lunch once in high school miss the cut-off to be able to take the TFCS pledge and all that goes along with it.

The Scholar Track database contains 5,668 students in the cohort of students graduating high school in 2004. It is important to note that the only information in the database relates to specific activities and support centers; there is no information about race, gender, income, or other background characteristics, or about high school curriculum or other aspects of academic preparation. The analysis that follows applies the activity data of these Eligible Scholars to the comparison of Scholars and non-Scholar Pell Recipients. The actual population in the study is limited to the Scholars and Pell recipients who enrolled in public postsecondary institutions. Most have graduated from high school or earned GEDs.

Model Variables

High school diploma types

High school diploma type serves as the dependent variable because I am interested in the odds of completing different levels of academic preparation based on background, activities, and support sites. The state of Indiana offers several types of diplomas. In the analyses, Honors and Core 40 diplomas are compared to Regular diplomas, the default diploma at the time the students in this cohort were expected to graduate high school. As described above, the Core 40 diploma requires more advanced math, science, and English courses compared to the Regular diploma, and the Honors diploma requires more than the Core 40. Since 2007, the Core 40 has become the default; students may opt out and enroll in a regular curriculum only with parental permission.

Background

Controlling for background characteristics leads to a better sense of the degree to which each variable contributes to the outcome. Males and unknown sex are compared to females. Native Americans, Asian and Pacific Islanders, African Americans, and Hispanics are each compared to Whites and those missing race in the data. Income is divided into four groups representing low income (below $31,555), lower-middle income (between $31,555 and $58,754), upper-middle income (between $58,755 and $85,464) and upper income ($85,465 and higher). An additional category indicating no reported income/income unknown is included as well. The descriptive statistics parse out each group, but in the models, low-income students are compared to everyone else because of their higher rates of occurrence.

Activities

The Scholar Track database contains every activity offered, whether or not a student participates in it, and if the student does participate, the frequency of participation. In order to make sense of the data, I conducted a factor analysis of the count variables that indicate the frequency of participation. Four distinct groupings emerged: Counseling for the Students, Academic Preparation for Parents, Events and Visits for Parents, and Career Planning for Parents. Please see Appendix C for a description of the factor analysis process, and a list of all of the activities both in the database and in each factor.

Conceptually, these factors seem to represent classic notions of social capital, and by extension, social capital formation (see Tables 3.1A and 3.1B above). In other words, families must have the cultural competence, trust, and agency to know that participation

in these activities will further increase their social capital. For the model examining

enrollment (Chapter 4), the factors remain in their continuous form. In all other

regression models (high school diploma model in this chapter and college-type model in

Chapter 4), the factors are recoded into participation in the activity compared to non-

participation in the activity in order to include the comparison group of Pell recipients.

Support centers

In addition to the state support center for TFCS participants in Bloomington, there

are several regional support centers throughout the state. For parsimony in the high

school diploma type model (and the college choice model in Chapter 4), all of the

regional centers were collapsed into one group and compared to Bloomington, Unknown,

or did not participate in activities (either because the student was not a Scholar, or

because the Scholar chose not to participate in any of the support services).[33]

Analytic Techniques

Descriptive comparisons

 In order to highlight differences in categorical variables, one method includes

cross-tabulations with chi-square tests of significance. This technique is used to compare

the Scholars to the non-Scholar Pell Recipients. It is important to remember that

significance resulting from these tests indicates a meaningful relationship between the

two groups, rather than indicating a generalizable result. The entire population of

Scholars and non-Scholar Pell Recipients is included in this analysis.

Multinomial logistic regression

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[33] In the enrollment model in Chapter 4, each support site was entered individually, compared to
Bloomington and Unknown.

An appropriate approach when the outcome variable is categorical (and thus non-linear) is logistic regression. Multinomial logistic modeling (MNLM) is frequently used when there are more than two categories in the outcome. Logistic regression is the most frequently used technique for nominal outcomes, and MNLM has the benefit of allowing the effects of the independent variables to differ for each outcome category (Long, 1997). When estimating a non-linear outcome, the results typically provide the probability of a particular outcome occurring given a predictor X. Multinomial logistic models (MNLM) permit simultaneous estimation, enforcing the logical relationship among estimators and using the data more efficiently. This technique can be used to produce several methods of interpreting coefficients. For ease of understanding, the coefficients in this chapter will be presented as odds ratios, also known as factor change coefficients.

First, the general statement of the binary logistic model (after transforming the probability of an outcome occurring into the odds and then taking the log of the odds, or logit, which expands the range of the odds of a particular outcome occurring) is presented in equation 3.1 (Long, 1997, 51):

$$\Pr(y = 1 \mid \mathbf{x}) = \frac{\exp(x\beta)}{1+\exp(x\beta)} \tag{3.1}$$

In essence, the odds indicate how often something (e.g., $y = 1$) occurs relative to how often it does not. The β in equation 3.1 represents the coefficient of x when trying to predict the probability (or odds).

Comparing the odds before (where x equals some value k) and after adding δ to x leads us to the odds ratio, which is equal to $\exp(\beta_k\delta)$, and the parameters can then be

interpreted in terms of odds ratios. The full expression of the factor change for MNLM appears in Equation 3.2 (Long & Freese, 2006, p. 260)[34]

$$\frac{\Omega_{m|n}\ (\text{x},x_k+\delta)}{\Omega_{m|n}\ (\text{x},x_k)} = e^{\beta_{k,m|n}\delta} \tag{3.2}$$

which represents the odds of a particular outcome m or n ($\Omega_{m|n}$) given a δ change (often one unit or one standard deviation) in the specific value of x measured at x_k. The odds ratios included in the analyses can be interpreted as for each unit change in x_k variable, the odds are expected to change by a factor of $\exp(x\beta_{k,m|n})$. What makes this method of interpretation particularly useful is that the factor change in the odds for a change in x_k does not depend on the level of x_k or on the level of any other variable. If the odds ratio is, for example, 1.326 on x_k, then for each unit change in x_k the odds of choosing m outcome over n outcome increase by a factor of .326, holding all other variables constant. When the odds ratio is less than 1 (for example, 0.326), the odds of choosing a particular outcome over another decrease by a factor of 1 minus the odds ratio (so, $1 - 0.326$, or .674). Stata provides an option of producing output with the odds ratio; this option was selected in order to reduce the possibility of researcher error when exponentiating logit coefficients to obtain the odds ratio.

Limitations

No study is without limitations, and this one is no exception. The first is that these analyses were completed in academic year 2007-2008. At the writing of this dissertation, I no longer had permission to access the Twenty-first Century Scholars data

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[34] The same principle applies for binary regression, but the equation is omitted out of space considerations.

and could not make any changes to the models or re-analyze descriptive statistics.[35] As such, I was not able to adjust the models to include variables that were not initially analyzed, including those measuring aspects of the high school context such as the percentage of minority students in the school, the percentage of students in the school who received free or reduced lunch, or urbanicity.

Another is that the SIS database contains information on public colleges and universities only. As a result, this study does not consider those students who may have elected to enroll in private colleges or to leave the state for their higher education.

Selection issues comprise another limitation. First, although every student receiving free or reduced lunch in middle school is eligible to take the TFCS pledge, not every student who is eligible chooses to take it. I did not have data about the eligible students who chose not to take the pledge, thus limiting my ability for an accurate comparison group. Moreover, reasons for not choosing to take the pledge could vary, including levels of motivation or aspiration, concerns about time commitment, missing application deadlines, and a whole slew of other factors that cannot be determined without interviewing those who did not take the pledge. The 1999 cohort of high school graduates did contain data on pledge-takers and those who did not take the pledge, and a propensity score matching analysis was conducted. However, engagement data were not collected for the 1999 cohort, so results of that analysis could not measure what influence, if any, engagement activities may have had on the Scholars – the primary purpose of this study.

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[35] Nor could I make changes to the tables in order to include standard errors, which were accidentally omitted from the tables when the analyses were first performed.

Comparing Scholars to Pell recipients does not offer a precise match, but it was the only logical, available comparison. The descriptive statistics comparing these two groups reveal that they are not perfectly comparable and in fact differ on numerous traits, including race, income, and high school diploma type (as well as test scores and college choice, examined in Chapter 4. See Table 3.2, discussed in detail below). Because of self-selection into the TFCS program, it is not possible to make claims of causality, and even results suggesting correlation or association between participation in the program and various outcomes should be interpreted cautiously, if optimistically.

In addition to whether or not an eligible student chose to enroll in the TFCS program, selection surrounding participation in activities also must be considered. In fact, as Table 3.2 below indicates, more Scholars[36] and their parents than not elected not to participate in the activities and events offered by the support centers. As a result, it will be difficult to make a strong statement about the relationship between the engagement activities and the support centers with the outcomes of high school diploma type or on enrollment and college choice (and in Chapter 4). It is still worthwhile to investigate whether such a relationship exists, because if one appears then there would be a rationale for increasing encouragement and incentives to participate in the programs and then conduct another analysis to examine if the relationship strengthens.

The engagement activities serve as quantitative proxies for social capital formation, because through the program and the engagement activities, students and their families develop relationships that expand their networks in order to gather information, build trust, and develop mutual obligations (see Table 3.1). While it appears that this is

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[36] Of those who enrolled in college. Table C1 in the Appendix includes the rate of participation in each specific activity for all Scholars. This, too, shows, low participation rate.

one way to develop social capital in a way that could increase college-going, one wonders what other forces prevent students from opting to take the pledge or participate fully in the program if they have taken the pledge. Is the existing social capital stronger in the family or the community? Are there other pressures, such as the need to work after school or on the weekends or babysitting a younger sibling, preventing a student from going to the support center? Is there something off-putting into how the services offered by the support centers are presented? These are areas for further research that would likely take a qualitative approach. Using quantitative data to measure social capital formation presents challenges because these types of probes cannot be examined without further questioning that qualitative methods provide. However, quantitative data can provide a lens into the relationships between social capital formation and other outcomes, which is how I am employing it here.

In thinking about the engagement factors, one must consider alternative interpretations. Though suggestive of social capital formation, these variables may also reflect underlying motivation or aspiration of the participants, particularly because the variables used in each factor are continuous based on frequency of participation. Unfortunately, there is no variable measuring student motivation or aspiration in 8th grade and perhaps again by junior of high school in either the SIS or SSACI data.

A final limitation related to the activities involves the timing of participation. The data did not track when in high school Scholars engaged in particular activities, on the frequency of participation. A study examining the sequencing of engagement may provide interesting and enlightening results for subsequent policy formation as well as program offerings. For example, counseling appears to be effective in encouraging

Scholars to enroll in two-year colleges (analysis of results presented in Tables 4.3 and 4.5 in Chapter 4), but if students only engaged in it later in high school, perhaps concerted efforts to offer or encourage counseling in the earlier years may increase the odds of a Scholar enrolling in a four-year or research university. Counseling does not have an effect on diploma outcomes (see Table 3.3 below), but students may have participated in counseling activities too late in high school to change their curriculum. Additionally, the activity variables reflect the frequency of participation in specific activities. As evidenced by the significance of regional centers, other activities and events may have been influential in high school outcomes, although they had less impact on academic preparation or college destination.

Findings

First reviewed are the descriptive results for the variables included in the high school diploma type model.[37] Next I present the multivariate analyses for diploma type. These are displayed in a two-part table, with attendant discussion appearing first.

Descriptive Results

Descriptive results indicate meaningful differences in the groups studied. Studying the entire population (as done here) only allows for examination of relationships between input variables and outcomes, without making claims of causality. Although it makes sense to compare Scholars to Pell recipients, the descriptive results demonstrate that the two groups in fact are different (Table 3.2). Scholars have a higher percentage of students of color. This suggests the importance of social capital formation for the

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[37] Because many of these same variables appear in the college destination model, they are all included in this same table. Variables specific to the college destination analysis in Chapter 4 will be discussed in that chapter, however.

historically underrepresented groups of Native Americans, African Americans, and Hispanics. Harkening back to Stanton-Salazar (1997), this is not to imply a lack of social capital within these groups; rather the types of social capital are different and these groups likely see a value in expanding their social capital. White students and those with race/ethnicity missing are represented more among Pell recipients.

However, Scholars tend to come from families with slightly higher incomes compared to Pell recipients. As discussed above, this is not outside the realm of possibility; income eligibility for participation in the TFCS program is determined based on the family's income when the student takes the pledge in middle school. That income can easily increase or decrease in a five-year time span. Income status of Pell recipients, on the other hand, is based on when they completed the FAFSA, which occurs during the senior year of high school. Moreover, it is not so surprising that a percentage of Pell recipients fall into the upper income groups. Pell grants are awarded based on a number of factors, including expected family contribution (EFC) and the tuition at the institution of enrollment, among others. A person's EFC is determined based on several components, income only being one part – family size, number of family members currently enrolled, and other elements make up the rest.

It is not surprising that more Scholars than Pell recipients completed the Core 40 and Honors diplomas. Scholars take the pledge knowing that they will be preparing for postsecondary education. After all, the purpose of carrying out their side of the pledge is to earn the grant at the end. That so many Scholars did not complete the Core 40 is more surprising; perhaps SIS did not have full reports on the students in the system, or it is possible that Scholars started in the Core 40 and then shifted to another curriculum part

way through high school. A higher percentage of Pell recipients earned a GED or Other type of diploma than did Scholars. This, too, is not particularly surprising. As with the Core 40, however, it is surprising that so many Scholars earned the GED instead of one of the more traditional high school diplomas.

Even so, there are some similarities between the two groups. Scholars and Pell recipients have a similar gender breakdown. Both groups also scored in the higher ranges on both sections of the SAT with a similar frequency.

It was not possible to compare Scholars and Pell recipients on the TFCS related variables, but it is interesting to examine the differences in participation among Scholars who did enroll in college. First, nearly all of the Scholars who enrolled in public colleges or universities participated in some sort of activity – either the ones included in the factors, or ones that ultimately did not make it into the regression model. Nearly 98% of enrolled Scholars went to a support site at least once. However, of the activities that hung together into factors representing social capital formation, only counseling was experienced by more than 50% of the Scholars. Parent engagement in academic preparation, visits and events, and career planning occurred in much smaller numbers of enrolled Scholars. It will be interesting to see how these activities do affect academic preparation (Table 3.3) and college choice (Table 4.3, Chapter 4).

Table 3.2. [§] 2004 Cohort Descriptive Statistics Comparing Enrolled Scholars to Pell Recipients (N=8002)

		Pell Recipient			Twenty-First Century Scholar		
		Count	Col %	Sig. Diff.	Count	Col%	Sig. Diff.
Gender	Female ©	3569	58.59		1160	60.70	
	Male and unknown	2522	41.41		751	39.30	
Race/Ethnicity	Native American	20	0.33		11	0.58	***
	Asian/Pacific Islander	93	1.53		28	1.47	
	African American	947	15.55		417	21.82	***
	Hispanic	229	3.76		106	5.55	***
	White ©	4675	76.75	***	1314	68.76	
	Missing ©	127	2.09	***	35	1.83	
Income Quartiles	Low Income	3602	59.14	***	974	50.97	
	Lower-Middle Income ©	2224	36.51	***	660	34.54	
	Upper-Middle Income ©	202	3.32		176	9.21	***
	High Income ©	22	0.36		47	2.46	***
	No reported income (did not apply for financial aid) ©	41	0.67		54	2.81	***
Dependency status	Dependent on parents or indeterminate ©	5769	94.71		1860	97.33	***
	Self-supporting	322	5.29	***	51	2.67	
SAT Verbal score in categories	Low (<=386)	541	8.88		240	12.56	***
	Middle (>386 and <=568) ©	2762	45.35		1000	52.33	***
	High (>568)	654	10.74		194	10.15	
	Missing	2134	35.04	***	477	24.96	
SAT Math score in categories	Low (<=389)	556	9.13		243	12.72	***
	Middle (>389 and <=571) ©	2801	45.99		1003	52.49	***
	High (>571)	602	9.88		189	9.89	
	Missing	2132	35.00	***	476	24.91	
Engagement Support Site	Bloomington or Unknown Center ©	-	-		169	8.84	
	Regional Center	-	-		1701	89.01	
	No Center: Scholar did not Participate in Activities ©	-	-		41	2.15	
	No Center: Student is Non-Scholar Pell Recipient ©	6091	100.00		-	-	
Engagement	Scholar did not Participate in Counseling ©	-	-		786	41.13	

Activities	Scholar Participated in Counseling		-	-		1125	58.87
	Scholar's Parent did not Participate in Academic Preparation ©		-	-		1710	89.48
	Scholar's Parent Participated in Academic Preparation		-	-		201	10.52
	Scholar's Parent did not Participate in Visits and Events ©		-	-		1202	62.90
	Scholar's Parent Participated in Visits and Events		-	-		709	37.10
	Scholar's Parent did not Participate in Career Planning ©		-	-		1811	94.77
	Scholar's Parent Participated in Career Planning		-	-		100	5.23
	No Activity: Non-Scholar Pell Recipient ©		6091	100.00		-	-
High School Diploma Type	Regular ©		1947	31.97		595	31.14
	Honors		780	12.81		281	14.70 ***
	Core 40		1759	28.88		652	34.12 ***
	N/A, Other, GED ©		1605	26.35 ***		383	20.04
Type of College Enrollment	Public Four-Year		2798	45.94		965	50.50 ***
	Public Two-Year ©		2075	34.07 ***		509	26.64
	Research		1218	20.00		437	22.87 ***
Total		8002	6091	76.12		1911	23.88

~ p < .1; * p < .05; ** p < .01; *** p < .001

© = Comparison group

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Regression Results

The descriptive results indicate that there are, in fact, differences between Scholars and Pell recipients. A closer examination of the regression results suggests differences in high school diploma outcomes and college choices (discussed in Chapter 4) resulting from participation in various engagement activities, but once those activities are included in the model, the differences between Scholars and Pell recipients become less apparent. It is important to note that even though the models contain statistical significance, the overall power of the models is not strong. This could be due to a number of reasons, such as omitting variables providing more information about the students' background (e.g., family size or hours per week the parents work for their employers), school context, or other controls.

Being a scholar has a positive relationship with both Honors and Core 40 diplomas compared to receiving a Regular diploma, but in different ways. As displayed in Table 3.3A (Honors), the positive odds ratio for being a Scholar (compared to being a Pell recipient) maintains significance through the first three steps. From the first step to the second one, both the odds and significance of a Scholar earning an Honors diploma over a Regular diploma or GED increase compared to those of a non-Scholar Pell recipient. In this second step, compared to White students, Asian and Pacific Islander students have more than two-and-a-half times the odds of completing an Honors diploma, whereas as both African American and Hispanic students are less than three-quarters or two-thirds as likely to earn the Honors diploma compared to a Regular or GED diploma. With African American and Hispanic students composing a greater proportion of

Scholars than of Pell recipients (Table 3.2), this discrepancy is disconcerting. Why aren't more students of color earning Honors diplomas?

Step 3 adds income into the mix. The odds of completing an Honors diploma remain higher for Scholars than for Pell recipients, although they drop with the inclusion of income. Scholars tend to be from families with slightly higher incomes by the time they enrolled in college (Table 3.2), so accounting for income in the regression would reduce the effect of being a Scholar. The odds of completing an Honors diploma for students of color do not differ from those in Step 2; compared to White students, Asian and Pacific Islander students are still more than 2.5 times as likely to complete this type of diploma, while African American students remain about 75% less likely and Hispanic students more than two-thirds less likely to complete an Honors diploma compared to a Regular diploma or GED. Coming from a low-income family reduces the odds of completing the Honors diploma by almost half compared to students from high income families and to those who did not report income.

The final step considers the engagement activity factors and regional centers. In this step, the significance of being a Scholar disappears, suggesting that engagement in TFCS activities matters. Parent participation in visits and events was only modestly significant (to the .1 level), and the only TFCS-related variable to indicate significance when comparing Honors diplomas to Regular diplomas. One could argue that this suggest social capital formation, as these visits and events provided information and networking opportunities for parents, who then transmitted information to their children. As evidenced in the college choice analyses (Chapter 4), participation in visits and events increases the odds of students enrolling in four-year and research universities over two-

year colleges (Table 4.3). With the alignment of high school curriculum to postsecondary choices in Indiana, these relationships are not surprising. The Honors diploma is intended to prepare students for Indiana public research universities. Once parents see the campuses and participate in other events, and learn about what is necessary to enroll at these institutions, the next logical step would be for parents to encourage their children to earn the Honors diploma. This outcome is consistent with the model outlined in Figure 3.2. Alternatively, this variable reflects parent aspirations for their children and motivation to help their children succeed. Compared to Step 3, there is virtually no change in the results for race and income.

When looking at Table 3.3B, the results comparing completion of the Core 40 over the Regular diploma or GED differ somewhat from those examining the odds of completing the Honors diploma, particularly for gender and race. As with the Honors diploma outcome, Scholars have higher odds of completing the Core 40 compared to non-Scholar Pell recipients across every step until TFCS-related variables enter the model. When no other variables are considered, these odds increase to 1.35. However, when gender and race are included, they increase slightly to 1.37. Compared to females, males have higher odds of completing the Core 40 over a Regular diploma, a result that differs from the Honors outcome, where the odds of completion are virtually the same. Unlike the Honors outcome, Asian and Pacific Islanders have similar odds of completing the Core 40 compared to White students. Compared to White students, though, the odds of African American and Hispanic students completing the Core 40 over a Regular diploma or GED are lower. For African Americans, that difference is only modestly

significant and hovers around a 10% difference. For Hispanic students, the difference in odds is lowered by a little less than 25%.

The results change slightly in Step 3 when income is added to the model. Being a Scholar compared to being a Pell recipient remains significant, but the odds of completing a Core 40 diploma decrease by .063. Males continue to have higher odds of completing the Core 40 over females; though the odds change only by .02, the significance level drops from .001 to .01. The modest significance of African Americans having lower odds than White disappears when income is added to the model, suggesting a correlation between race and income for this group. However, there is virtually no change for Hispanic students, whose odds of completing the Core 40 remain approximately 25% lower than those of White students. Coming from a low-income family compared to all other levels of income and no reported income reduces the odds of completing the Core 40 by almost half.

As with the Honors diploma outcome, the odds of completing the Core 40 over a Regular diploma become virtually the same for Scholars and non-Scholar Pell recipients when the TFCS activities are added to the model in Step 4. In this case, however, it is going to the regional centers (compared to the one in Bloomington or to no center at all) that increases the odds of completing the college preparatory curriculum. It is important to keep in mind that even though the engagement factors are not significant in this part of the model, the regional centers offer more activities and services than represented by the factors (see Table 3.1). The regional centers provide tutoring services, computer labs, and other resources, as well as networking opportunities. Although only modestly significant, going to regional centers offers more than just academic support; it offers

social capital formation opportunities to students and their parents through the presence of the staff and other students and parents who participate in activities and partake of the resources available. However, it is important to consider motivation with these variables as well. Students who live closer to regional centers may be more motivated to participate in the activities they offer. The significance of regional centers might indicate motivation or convenience as much as social capital formation.

Gender, race, and income change little with the addition of the TFCS variables. The odds of Hispanic students completing the Core 40 continue to decrease slightly, but still hover around 25% lower than those of White students.

Table 3.3A.[§] Multinomial Regression of 2004 Cohort Scholars and Pell Recipients Predicting Diploma Type: Honors

	Model 1		Model 2		Model 3		Model 4	
	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.
Scholars Pledge	1.308	**	1.44	***	1.361	***	0.985	
Male			0.935		0.916		0.914	
Native American			0.397		0.409		0.405	
Asian/Pacific Islander			2.54	***	2.59	***	2.58	***
African American			0.213	***	0.24	***	0.242	***
Hispanic			0.311	***	0.305	***	0.309	***
Low Income (<$31,555)					0.513	***	0.513	***
Student Participated in Counseling Activities							1.145	
Parent Participated in Academic Preparation							0.747	
Parent Participated in Visits and Events							1.299	~
Parent Participated in Career Planning							1.072	
Regional Center							1.198	
Log Likelihood	-7598.447		-7482.45		-7401.199		-7396.001	
LR Chi-Square (df)	30.14 (1)	***	262.14 (6)	***	424.64 (7)	***	435.03 (12)	***
Difference of Chi-Square (df)			232 (5)	***	162.5 (1)	***	10.4 (5)	~
Psuedo R-Square	0.002		0.0172		0.0279		0.0286	

~ p < .1; * p < .05; ** p < .01; *** p < .001.

Note: Compared to Regular, N/A, Other, and GED

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Table 3.3B. [§] Multinomial Regression of 2004 Cohort Scholars and Pell Recipients Predicting Diploma Type: Core 40

	Model 1		Model 2		Model 3		Model 4	
	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.
Scholars Pledge	1.346	***	1.372	***	1.309	***	1.005	
Male			1.201	***	1.178	**	1.178	**
Native American			1.24		1.275		1.282	
Asian/Pacific Islander			1.367		1.39		1.395	
African American			0.881	~	0.973		0.96	
Hispanic			0.778	*	0.762	*	0.755	*
Low Income (<$31,555)					0.574	***	0.576	***
Student Participated in Counseling Activities							0.96	
Parent Participated in Academic Preparation							0.942	
Parent Participated in Visits and Events							1.02	
Parent Participated in Career Planning							1.351	
Regional Center							1.355	~
Log Likelihood	-7598.447		-7482.446		-7401.199		-7396.001	
LR Chi-Square (df)	30.14 (1)	***	262.14 (6)	***	424.64 (7)	***	435.03 (12)	***
Difference of Chi-Square (df)			232 (5)	***	162.5 (1)	***	10.4 (5)	~
Psuedo R-Square	0.002		0.0172		0.0279		0.0286	

~ p < .1; * p < .05; ** p < .01; *** p < .001.

Note: Compared to Regular, N/A, Other, and GED

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Finally, as noted when initially presenting the regression results, the models themselves could be stronger when considering the predictive ability. Background characteristics are the most significant in predicting high school diploma outcomes, although being a Scholar does matter. It is not entirely clear if that is due to the financial aid guarantee associated with being a Scholar, or if it is because of the social capital Scholars are able to build through participation in the program. Most likely, it is a combination of both. As the tables in Appendix C indicate, not all of the activities offered by the support sites converged into factors. I did attempt several models with these other activities in various combinations, but they did not improve the predictive strength of the models, nor were the variables themselves significantly associated with high school diploma type. Going back to the original limitation, these analyses could not be amended because I no longer have access to the data. Setting the models into a high school or neighborhood context or attempting to identify additional characteristics about the students could have controlled for the engagement factors and support sites in a different manner that may have strengthened the overall models or revealed specifically contextual relationships about the engagement factors and the outcomes that could have a greater effect on policy formation and/or program implementation.

Discussion

The results suggest that being a Scholar contributes to the academic success of completing a college preparatory curriculum, whether it is the base college preparatory program or one that encompasses achievements associated with Honors. For some students who may not have considered college as an option, the guarantee of financial aid that comes along with taking the pledge allays some concerns, an idea also explored by

Daun-Barnett (2011). However, the results of these analyses also reveal that the social

capital gained by the students who participated in the support center activities bears

consideration as well. Having the ability to visit a four-year college campus or

participate in other events geared toward personal and postsecondary development is

important for students whose families may not be able to offer those things to them.

When equality of opportunity exists, people will take advantage of what is available to

them if they understand the implications and have the aspirations and motivation

necessary to be their own agents.

Even with the not insubstantial limitations of this study, it could be argued that

the engagement activities (proxies for relationships that accrue social capital) and support

sites do in fact have a positive relationship with academic preparation. A qualitative

analysis of the Twenty-first Century Scholars program (Enerson, Servaty-Seib, Pistilli,

and Koch, 2008) consisted of focus groups and interviews of Scholars ranging from 7th

through 12th grades and their families.[38] They found that the engagement activities made

a difference for Scholars in several ways. First, the relationships developed as a result of

participation in the program were crucial for access and persistence within the TFCS

program. Parental involvement was a significant component of those relationships.

Moreover, the site coordinators believed that building relationships was the most

important element of their work in the program. Relatedly, parents reported value in the

opportunity to develop supportive relationships with other parents, and Scholars

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[38] It is not likely that students interviewed by Enerson and her colleagues are in the quantitative database analyzed here, because the focus group and interview participants were still in the 7th through 12th grades. The quantitative analysis in this dissertation focused on the cohort of students who graduated high school in 2004. Although the students do not overlap between the studies, the results do speak to and support each other. A true mixed-methods design that examined the same group of students would have been ideal but was not possible.

appreciated being able to interact with positive peers and gain new skills and information in the process. Establishing these networks that provided trustworthy information, two of the three main components of social capital as theorized by Coleman (1988), was important for the successful TFCS participants. This study reinforces the research findings of others (Cooper & Crosnoe, 2007; Hoover-Dempsey & Sandler, 2005; Lareau, 1987, 2003; Useem 1991, 1992) who determined the importance of social networking as a source of information and means of advocacy for parents and their children.

Second, Enerson and her colleagues (2008) found that the program (through its engagement activities) provided information that was previously unknown to the Scholars and their families. More than the unknown becoming known, it became familiar and more comfortable to navigate as the Scholar families experienced it more. In addition, Scholars became more aware of the options available to them and were introduced to possibilities that they previously had not considered. Through the programs and events, Scholars and their parents learned what was necessary to achieve those possibilities, including, for example, completion of a college preparatory curriculum, whether it was the Core 40 or Honors. Trustworthy information is another fundamental aspect of Coleman's social capital (1988).

Third, Scholars and their parents considered the pledge to be an important motivator for staying focused and aspiring to postsecondary education (Enerson et al., 2008). This pledge guarantees financial aid in exchange for hard work. The pledge is similar to the third major element of social capital – mutual obligation.

Limitations to the quantitative analyses presented here are counter-balanced by the results of the qualitative study by Enerson and her colleagues (2008). Analyses of the

Twenty-first Century Scholars program in Indiana suggest the importance of individual agency for accessing the social capital available from the program. This indicates that parents recognize their lack of knowledge about college-going processes and how to prepare, and the regional centers provide an opportunity for the parents to fill in that gap. Furthermore, parental involvement sends a signal to students that college is important. The signal develops into social capital internal to the students, which they can then pass to their own children. This program appears to increase the social capital for groups of people who otherwise may not have had the opportunity to access it.

Enerson and her colleagues (2008) found that participation in the program contributed to social capital formation. However, one must also keep in mind that those who increased their social capital may have had higher aspirations or been more motivated than those who chose to participate less – or even not at all – in the engagement activities offered by the regional centers. The program appears to be helpful to those with intrinsic characteristics that impel them to be engaged.

Low-income students and students of color who choose to become Scholars have improved opportunities to complete a preparatory curriculum, an important finding that can lead to uplift within those groups. That these services are available to Scholars and their families is key for Scholars' successes and advancement through the pipeline. However, for other low-income students of African American or Hispanic background – those who did not become Twenty-first Century Scholars – who continue on to the public postsecondary system in Indiana[39], it is clear that access to college preparatory curricula

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[39] Because the data for this cohort only cover students who enrolled in public institutions within Indiana, it is possible that some students of color attended private college or universities or enrolled in postsecondary education out of state and thus most likely completed a college preparatory curriculum. That could not be analyzed with the data available.

is lacking for this cohort. All high schools were required to offer the Core 40 and Honors curricula by the time the 2004 graduating cohort started high school, and even were given cash incentives from the state for each student who graduated with an Honors diploma (St. John & Musoba, 2011). St. John and Musoba (2011) found that schools in urban and rural settings did not always comply with the requirement to offer the Honors diploma, or made it more difficult for a student to earn one because of limited course selection or through courses only accessible online or at a community college.

The differential odds of students of color completing the college preparatory curriculum compared to White students supports prior research on tracking (Attewell & Domina, 2008; Bowen, et al., 2005; Finn, et al., 2002; Gamoran & Mare, 1989; Lareau, 2003; Oakes, 2005; Useem 1992). This is disheartening for any state, but especially for Indiana because of the commitment it has made to increasing college access through requiring schools to provide college preparatory curricula and furnishing funds for teacher training and other resources to schools to increase the effectiveness of these reforms. Given this commitment, it is unfortunate that these resources appear to be differentially distributed. Alternatively, perhaps there are subtle, unintended tracking decisions that contribute to lower odds of college preparation by low-income students of color. To further understand why low-income students of color are not completing the college preparatory curricula, a qualitative analysis exploring tracking may provide insight.

On a more positive note, the state has mandated the Core 40 be the default curriculum for cohorts of students graduating after the one studied in this chapter. All students beginning high school in 2007 (and thus graduating in 2011) or later would have

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to formally opt out of the Core 40 curriculum through a comprehensive procedure that involves the student's counselor and parents and reviews the student's progress, graduation plan, and the potential educational benefits of completing the General diploma instead of the Core 40 (IDOE, 2010). This policy change will hopefully help achieve the goals of the ICHE *Reaching Higher* campaign (2010). In the wake of this policy change, it is necessary to conduct a similar study to the ones presented in this chapter and the next. Such an analysis would not only help shed light on the effectiveness of the Core 40 requirement for academic achievement by underrepresented groups, but also provide new insights into how participation in the TFCS program changes. In what ways will TFCS staff alter their program offerings at the support sites? Will different activities gain prominence compared to the ones that influenced academic preparation for the 2004 graduating cohort?

Although limitations to the quantitative analysis presented in this chapter exist, the supporting results of the qualitative study by Enerson and her colleagues (2008) suggest a positive impact of the program on those who assertively act as their own agents to build social capital, especially when examining college enrollment and college type (results in Chapter 4). Creating opportunities for social capital formation is important for academic achievement and success, particularly in low-income families (e.g., Hoover-Dempsey, et al., 2005; Lareau, 1987, 2003; Useem, 1991, 1992) where other forms of capital may be valued or social capital is experienced differently (Stanton-Salazar, 1997). The Twenty-first Century Scholars program presents a unique, comprehensive approach toward social capital formation that supports and aligns with the goals of the Indiana Commission for Higher Education (2010b). The next step is to figure out how to increase

motivation to participate in it, in terms of increasing the number of students taking the pledge, and also of those who have taken the pledge to engage in the support activities provided by the program.

Conclusion

The evidence suggests that the Twenty-First Century Scholars program offers specific opportunities to low-income students that support their educational aspirations and achievement, helping to equalize opportunity. Although there are limitations to this study, the apparent success of this program serves as a model to other states, particularly those with pockets of low-income groups spread widely. Regional support centers provide access and opportunities students in these areas may not receive otherwise. Increasing parental involvement in ways that are accessible and welcoming, and thus encouraging, has been one way this program helps students stay on a college preparatory course. The program very much relies on individual agency and intrinsic motivation for participation, however. In the next chapter, we will see the different ways parental involvement activities influence both college enrollment and college type through social capital.

The long-term effects, while not yet known, have potential. However, within the context of the default curriculum policy established for the 2011 graduating class, it will be prudent to observe how the short-term effects will change. More Scholars will graduate with at least the Core 40 compared to the 2004 graduation high school cohort (see Table 3.2), assuming they graduate at all. Perhaps the tougher curriculum will create barriers to success. Alternatively, perhaps the tougher curriculum will motivate more

Scholars to partake of the services offered, both in greater variety and in greater frequency, than those in the 2004 cohort did (Table 3.2, Appendix Tables C.1 and C.2).

One element to increasing college-going rates involves increasing the number of students prepared for college-level work. The Twenty-first Century Scholars helps a specific population that has a lower college-going rate: low-income students. Moreover, the program appears to benefit low-income students of color in particular (Table 3.2, higher proportion of Scholars are of color compared to proportion of Pell recipients). It is important to keep the state high school policy context in mind, though. At the time of this study, Indiana was at the forefront of high school reforms, and a program such as TFCS may be successful in part because of other policies in place in the state.

That said, a program of this nature may be able to contribute to increasing the college preparedness of low-income students in other states – especially in states that may not have a mandatory college preparatory curriculum. The encouragement, support, information, and social capital formation provided by the regional centers are fundamental resources for low-income students and families. This would seem to be especially true in states with slices of low-income groups scattered throughout. Other states would have to carefully examine the TFCS program, the policy context in their own state, funding resources (e.g., tax revenue and budget allocations), and economic development goals to see what elements of the program would make sense in their own environment. No program is without cost, so a thorough analysis by each state would be prudent. However, the benefits have long-term potential, for both Indiana and whatever states choose to adopt elements of the program (such as Wisconsin and Washington, which both have, St. John, et al., 2013).

The long-term benefits relate to the social capital that is formed beginning in middle school, and developed in high school and beyond. Social capital is not stagnant; as individuals encounter new opportunities and relationships, and build confidence and self-efficacy, social capital grows, changes, and spreads. Long-term analyses of the TFCS program are not yet possible, but the potential for cross-generational uplift exists. Being prepared for college is an important first step toward cross-generational uplift.

By completing a college preparatory curriculum, students level the playing field of college access. Programs such as TFCS help equalize opportunity by helping students complete this curriculum by focusing their motivation and providing the trustworthy information networks underlying social capital formation. In the next chapter, we will see how that social capital (and how it is transmitted) encourages college enrollment and enrollment in different types of college.

CHAPTER 4

THE ROLE OF SOCIAL CAPITAL IN COLLEGE PARTICIPATION: A QUANTITATIVE ANALYSIS OF THE TWENTY-FIRST CENTURY SCHOLARS 2004 COHORT[40,41]

The prevailing view in today's society is that economic success requires a college degree. In order to obtain that degree, one must first have access to higher education. Much of the research literature on postsecondary access focuses on financial and academic preparation (e.g., Choy, 2002; Choy, Berker, & Carroll, 2003; Hearn, 1991; Heller, 1997; St. John, 2006; St. John, Chung, Musoba, Simmons, Wooden, & Mendez, 2004). Having the ability to pay and the skills and knowledge necessary to succeed are two important elements for access. A third facet to consider is social capital. Chapter 1 delves into social capital in great detail, and Chapter 3 demonstrates how social capital relates to the Twenty-first Century Scholars (TFCS) program. In this chapter, I extend the evaluation of the TFCS program as it relates to social capital to examine college-going and college choice. Following a review of the literature on financial aid in college decision-making, I present some additional descriptive findings not included in Chapter 3

as well as the results of two regressions – one examining the decision to enroll, the other examining the type of college chosen by students who do enroll – and conclude with a deeper discussion of the these results.

Financial Aid in College Decision-Making

College access does not begin with entry into the postsecondary institution. It starts much earlier in the college-going decision-making process, a process that has been described by several researchers. An approach developed by Hossler and Gallagher (1987) and later enhanced by Hossler, Schmit, and Vesper (1999) involves a three stage process of predisposition, search, and choice. Predisposition involves first thinking about college, family background, academic performance, peers, and other factors in the student's environment and high school. Search relates to the student's discovery and evaluation of possible colleges. Narrower college sets are associated with lower-incomes, while broader college sets are associated with high grades, more selective and expensive colleges, and high levels of studiousness. Choice refers to the specific process of choosing or not choosing a particular school. Realism about grades or income/affordability sets in, as do concerns about fit, especially for low-income students. There is a shift in the focus of information sources outside of the family to peers, teachers, counselors, and alumni. During this stage, students apply for financial aid and take standardized tests if needed for admission. In this chapter, I focus primarily on the choice phase of the process.

As noted in Chapter 3, the college choice process was developed based on research that focused primarily on middle-income students. The process for low-income

students differs, involving a need to learn how to steer through middle-class expectations and values in addition to obtaining information about college. For low-income students, college decision-making takes place against a different backdrop than it does for middle-income students. Information about college and financial aid may not be complete or accurate, and even if it is perfectly and fully transmitted to parents, especially of low-income students, the timing of this information-sharing is crucial (Perna, 2004). Learning accurate and complete information about college and financial aid early enough in the education pipeline may have a positive influence not only on academic preparation, but also on family expectations (Bell, Rowan-Kenyon, and Perna, 2009). Lack of knowledge about financial aid, concerns about costs, and availability of grant aid influence decisions about going to college – or not going to college, as is also the case (Hahn and Price, 2008).

Family plays an important role in the process. For low-income students, and especially for those who are first-generation, the family may be very encouraging but may not know enough to provide actual guidance through the process (e.g., Ceja, 2006; Perna, 2004). Research has also demonstrated that families of first-generation students may offer less encouragement and support (Levine and Nidiffer, 1996; Terenzini, Spring, Yeager, Pascarella, and Nora, 1996). Additionally, choice sets may be limited due to pressure not to go far away from home (Bunnage, 2003) or as a result of lack of money to take or re-take standardized exams, or to apply to more than one college (Smith, 2001).

Financial aid guarantees help to make college more accessible for low-income students (Bunnage, 2003; Emeka and Hirschman, 2006; Heller, 2006a; St. John and Hu, 2006; St. John, Musoba, Simmons, and Chung, 2002), especially in an era of

privatization. However, such programs are limited in availability across the country. Furthermore, financial aid simply may not be sufficient. McPherson and Schapiro (1998) and Heller (1997) both found that increases in net cost over time led to a decrease in enrollment of lower income students. The Advisory Committee on Student Financial Assistance (ACSFA, 2001) points out that participation of lower SES students significantly lags behind that of their middle- and upper-class peers. Unmet need is a serious access barrier.

Societal structures further impede college access for low-income students. Luna de la Rosa (2006) found that large, under-resourced high schools tend to have poorer communication about college, career-planning, and financial aid. Bell, Rowan-Kenyon, and Perna (2009) found similarly, in that there were no consistent mechanisms to transmit information to students about the scope of educational opportunities available or the availability of financial aid and how to access it. As a result, perceptions of college-going for low-income students in these schools tend to be negative or that college simply is not an option for them. McDonough emphasizes the role of counselors (2004, 2005a, 2005b) but also observes that their influence is not always operationalized in positive ways for low-income and underrepresented students. Structural biases in society may blind counselors to the promise in these students. Socially dominant paradigms may also leave them to assume that what works for one student will work for all, even though that is not true. Information-sharing as it occurs in schools and by counselors is a key aspect of social capital (Coleman, 1988). Because the availability of information, and more importantly, trustworthy information, is limited in scope or presentation for low-income

students, social capital formation has the potential to change future prospects for students, if they can access useful, trustworthy information.

Perna (2006) argues that the school and community contexts have the potential to be a strong factor in college-going. Combining this component of her model with Tierney and Venegas's suggestion of fictive kin (2006) implies that there are specific mechanisms within social capital that lead toward factors influencing college-going. Identifying these mechanisms becomes crucial to developing effective intervention programs and policies.

Many low-income students do not attend college at all. Others drop out with a higher frequency than their upper-income peers (Chen & DesJardins, 2008). Alternatively, many low-income students bounce between different types of institutions until they find one that is a good fit. One result of increased transfer rates is a longer path to graduation, if the student has the fortitude to work through these challenges to reach graduation. Increased time to degree still implies college attendance, which in turn implies college access – something low-income students are less likely to have.

Another concern that can apply to all students, but especially to those from lower-income backgrounds is that of under-matching – when a student selects a less competitive institution than the one s/he is qualified to attend. There are many reasons why a student may choose to undermatch, including something as simple as inertia, but low-income students consider the finances of college attendance differently. Bowen, Chingos, and McPherson (2009) find that students of color (especially women) are more likely to undermatch, as are students from the lowest incomes and first-generation students. In their study, they suspect that a lack of planning may play a role in undermatching, but

they admit that they cannot account for the possibility that students may be concerned about a lack of comfort at a more prestigious institution. Moreover, they find that undermatching typically takes place at the application stage; that is, students choose the less competitive institutions, rather than be rejected by such schools. In their view, it comes down to academic advising and college counseling about the opportunities open to them and more importantly, the advantages they can derive from taking those opportunities. In addition, there is a need to offer better assistance navigating the process – going back rather far, even to before 8th grade.

In her study on college matching in Michigan, House (2012) finds that students who live closer to community colleges are more likely to undermatch than those who live farther away from a community college campus. She theorizes that it could be due inertia and lack of planning, as Bowen and his colleagues (2009) offer as a possibility for undermatch, or it could be due to the fact that the community college is the most affordable, most appropriate option given other concerns in the student's life. House also finds that the more guidance counselors and advisors in a school, the less likelihood of undermatch compared to low-income students in schools with fewer guidance counselors. This supports the notion that context, and especially access to trustworthy information (two elements of social capital), is important for college-going decision-making.

Roderick and her colleagues (2008) obtain similar results to the Bowen, et al (2009) and House (2012) studies in their study of Chicago Public School students. Moreoever, they attribute college access – or rather, lack thereof in the case of undermatching – to a "social capital gap," which they describe as "the extent to which students have access to norms for college enrollment, information on how to prepare and

effectively participate in college search and selection, and effective guidance and support in making decisions about college" (p. 6). From this literature review, it could be argued that financial aid is connected to social capital, and together they affect many aspects of the college decision-making process.

But what of low-income students who make it past these difficult steps in the college-going decision-making process? What about the students who do adequately prepare, take the standardized tests, and apply for financial aid? The challenges still exist. Family pressure does not disappear. Tuition continues to increase. Is a high-quality public college education within reach for low-income students? The State of Indiana believes that it is, and that its future as a state depends on increasing college access for all its state residents.

The recent background of Indiana and the structure of the Twenty-first Century Scholars program are detailed in Chapter 3. In addition, the research in this chapter extends the conceptual basis and logical framework (summarized in Chapter 3, Figure 3.2, in particular the Academic Processes and Stages component) presented in the previous chapter to examine factors that influence the decision of low-income students to enroll in college and the type of college such students who choose to enroll select, the two research questions posed in the previous chapter that are addressed in this one.

Method

In Chapter 3, I asked two questions to be addressed in this chapter:

- What is the influence of social capital on college enrollment for low-income students?

- What is the relationship of social capital to college choice controlling for background and academic preparation for low-income students?

Because of the structure of the available data, questions of social capital and its relationship to encouragement for, aspirations for, and access to higher education may be answered quantitatively, as opposed to much prior research that employed qualitative techniques (e.g., Hossler, Schmit, & Vesper, 1999; McDonough, 1997, Nora, 2004, Perna & Titus, 2005, Walpole, 2003). Factor analysis assisted in the creation of adequate proxies for concepts associated with social capital

Based on the model proposed in Figure 3.2, I aim to estimate the odds of various social capital factors on college enrollment, plus an additional analysis of whether the regional centers that provide services for the Twenty-first Century Scholars program affect enrollment, compared to the home center based at a major university to answer the first question. Data availability on background characteristics, including high school curriculum selected (an indicator of academic preparation) are not available for this Scholars only group. Because all of the students in this model are Scholars, one can assume that they are most likely of lower income, and that they at least started high school in a college preparatory curriculum (the Core 40), even if they did not stay in it, an outcome that cannot be determined based on the data in the Scholar Track database.

To answer the second question, I look again to the model outlined in Figure 3.2, specifically comparing Scholars to non-Scholar Pell recipients.[42] The state enrollment data does provide some background characteristics, including race and income; I first estimate the odds of enrolling in either type of four-year institution compared to a two-

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[42] As reminder, low-income status was determined at different time points. For the Scholars, it was in 1998/1999; for the Pell recipients, it was they filled out the FAFSA their senior year of high school, in 2003/2004.

year or none at all based on participation in the TFCS program, gender, race, and income. Then I add the engagement factors and re-estimate the odds of each outcome occurring. A third step adds in the regional centers, which tests House's finding that students in rural areas have a greater likelihood of undermatching; because social capital building activities take place in these regional centers, I theorize that they will have a positive effect on both enrollment and college choice.. A final, fourth step adds in high school curriculum choice and standardized test scores, variables that drive each other and also reflect academic preparation. Curriculum choice affects the decision to take the standardized tests and the outcome of the test; making the decision to take a standardized test, particularly if that decision is made earlier in high school, affects curriculum choices in high school. All of the students in this analysis were in the SIS database; it does not include Scholars who chose not to enroll in college. However, it does include students who may not have enrolled in a preparatory curriculum. This arrangement more fully tests the logical model presented in Figure 3.2 by adding in another layer to the Academic Processes and Stages component.

Neither database offered adequate data on completing a FAFSA, so I cannot test the application for financial aid component. However, one condition of the Scholars pledge involved applying for financial aid, and in the second model, Scholars are compared to Pell recipients; thus, one can assume that the students in the model did, in fact, complete an application for financial aid. Moreover, the data available to answer the second question consist of students who enrolled in college; again, one can assume that these students applied to college or at a minimum, sought out an open-access institution.

Unfortunately, though the first analysis examines whether or not a Scholar enrolled, the database does not include a variable describing whether or not a student applied.

With all of this in mind, recall the description of the data from Chapter 3. The Indiana Commission for Higher Education (ICHE) maintains a Student Information Systems database (SIS) of all students enrolled in public colleges and universities in the state, with data points for background, income, high school preparation, college of enrollment, financial aid, and more. The following analysis uses data from the 2004-2005 academic year for the graduating high school class of 2004. The State Student Aid Commission of Indiana (SSACI) kept records of engagement activities offered by regional support centers as part of the TFCS program. These two databases were merged, and categorical coding of variables allowed me to keep cases with missing values in the models.

Population

Because the data contain the entire population of students enrolled in college or participating in the Twenty First Century Scholars program, the group under study is the population, rather than a sample. As such, statistical significance does not mean generalizability to the population. When using actual population parameters, statistical significance indicates a meaningful linkage between two variables, which is how it is applied in these analyses.

Scholars and Pell recipients

Being of low income in 8th grade is a key criterion for eligibility in the Twenty-first Century Scholars program. Although it is possible for a family's income to increase in a five-year period, it seems reasonable to compare Scholars to non-Scholar Pell

Recipients when examining college type because of the income criteria associated with both groups. Though income status for Scholars was determined approximately five years prior to college enrollment, for the non-Scholar Pell recipients, it occurred more recently, when they filled out their FAFSA applications their senior year of high school. A fuller explanation for this choice of comparison groups is provided in Chapter 3.

Eligible Scholars

The Scholar Track database contains 5,668 students in the 2004 cohort. The only information in the database relates to specific activities and support centers; there is no information about race, gender, income or other background characteristics, or about high school curriculum or other aspects of academic preparation. The enrollment analysis focuses on these data, and uses the SIS data for the outcome variable; the SIS data permits identification of those Scholars who did in fact enroll in public colleges and universities in Indiana. This led to the creation of one of the dependent variables, Enrolled in College (or not), for the enrollment analysis among Twenty-first Century Scholars.

Variable Coding

College destination

The other dependent variable examines college choice. Indiana offers a comprehensive postsecondary sector within the public realm. There is a broad system of two-year colleges, as well as numerous four-year colleges. In addition, there are two major research universities. Research universities (Purdue – West Lafayette and Indiana – Bloomington) and all other four-year colleges were compared to two-year colleges.

Many of the independent variables used in the regression models in this chapter are the same as those used in Chapter 3. Specifically, the background, activity, and support center variables are the same. For the analysis examining their relationship to enrollment, each support center was compared to Bloomington and Unknown Center. However, for parsimony in the other models, all of the regional centers were collapsed into one group and compared to Bloomington, Unknown, or did not participate in activities (either because the student was not a Scholar, or because the Scholar chose not to participate in any of the support services).

Academic preparation and standardized test scores

As noted above, the state of Indiana requires all high schools to offer the college preparatory Core 40 curriculum. One variable in this group compares those who completed this curriculum to those who did not (details on the Honors and Regular diploma are included in the Method section of Chapter 3 under the sub-heading *High school diploma type*).

Curriculum choice drives standardized test scores (St. John and Musoba, 2011). However, not every student in a preparatory curriculum will score highly on a standardized test, nor can one assume that every student in a non-preparatory curriculum will score poorly. It is important to include test scores in analyses of college choice and college enrollment because they are indicators of both academic preparation and encouragement; the former because if a student aims for postsecondary education, that student will theoretically prepare, and the latter because if the student receives encouragement and support, that is reinforcement to take the test seriously. Standardized test scores are widely used in admission to more competitive universities (such as the

research universities included in this analysis), as well as for admission to less competitive four-year institutions. Scores for SAT Math and SAT Verbal sections were included in the SIS database. Each subject was divided into four groups: missing, high, middle, and low. High, middle, and low scores for each subject were calculated by measuring plus or minus one standard deviation from the mean; high, low, and missing groups were compared to the middle group for each subject.

Analytic Techniques

As in Chapter 3, the primary analytic techniques include descriptive comparisons using t-tests and cross-tabulations with chi-square tests of significance and regression with categorical outcomes. Though only multinomial logistic regression (MNLM) was employed in that chapter, the outcome variables in Chapter 4 require both logistic regression (a binary outcome, enrollment) and MNLM (an outcome with more than two categories, college choice). A theoretical foundation of logistic and multinomial logistic regression is detailed in Chapter 3.

Limitations

The limitations do not vary from those outlined in Chapter 3. A quick summary recalls that the analysis occurred a few years ago, and I no longer have access to the data with an eye toward refining the models. In addition, the SIS database contains information only for those students who enrolled in public colleges and universities in Indiana; as such, analyses omit students who enrolled out of state or in private colleges, or elected not to pursue postsecondary education immediately after high school.

A third limitation involves issues of selection on several levels, including both into the TFCS program, and if electing to become a Scholar, intensity of participation in

the program. Related to involvement in the program are concerns about timing of participation, something the data do not track.

Finally, the comparison of Scholars to Pell recipients is not perfect, even if it is logical. We saw in Chapter 3 that there are differences between these two groups. For an expanded discussion of the limitation to the analysis in this chapter, please see the *Limitations* section in Chapter 3.

Findings

Results appear in the logical sequence of events occurring. As such, first will be the descriptive results for the variables included in the enrollment model, and then for those included in the college destination model. College destination represents the subset of those who were admitted. Multivariate analyses are presented in the same order, enrollment and then college destination. The enrollment descriptive statistics and regression model use a different, narrower data set (the Scholar Track database, with enrollment information pulled from the SIS database), whereas the college destination descriptive statistics and regression use both the SIS and Scholar Track databases. It makes sense to present the findings in the order outlined.

Descriptive Results

For both sets of analyses, descriptive results indicate meaningful differences in the groups studied. Studying the entire population (as done here) only allows for examination of relationships between input variables and outcomes, without making claims of causality.

Eligible scholars

Students and their families who enrolled in college participated more in both counseling and visits and events. Interestingly, the opposite was true for academic preparation for the parent; participants in this activity tended not to enroll. Significance levels appear in Table 4.1. It is important to remember a limitation of these data – enrollment information exists only for public colleges and universities. It is possible that those who participated in academic preparation activities may be more likely to attend a private college or university, or to go to school out of state. Participation in career planning activities for the parent yielded no significant difference between the students who enrolled and those who did not. However, these activities will be significant in determining college destination for those who do ultimately enroll (Table 4.3 in the regression results section).

Although I did not cross-tabulate each support site with whether or not a student enrolled, it appears evident that at each support site, more students ultimately did not enroll in public colleges and universities than did. Again, some of these students may have enrolled in private colleges or attended an out-of-state institution. However, as will be discussed in greater detail in the regression results (Table 4.2), the regional centers do influence whether or not a student enrolls in postsecondary education. Even with these descriptive findings, the questions of motivation and convenience arise. Are the regional centers a long drive from the student's home, and thus the student may be less likely to take advantage of support services offered through them? Are the students who do enroll in college intrinsically more motivated?

Table 4.1. [§] Descriptive Information of 2004 Cohort Activities and Support Site by Enrollment Decision (N = 5,668)

| | Enrollment[a] | | |
Activities	Enrolled (Mean)	Not Enrolled (Mean)	Sig. Diff.
Counseling for the Student (Standardized Factor)[b]	0.03	-0.02	~
Academic Preparation for the Parent (Standardized Factor)[b]	-0.05	0.02	*
Visits and Events for the Parent (Standardized Factor)[b]	0.05	-0.03	**
Career Planning for the Parent (Standardized Factor)[b]	0.03	-0.01	

Support Sites[c]	Total (Count)	Enrolled (%)	Not Enrolled (%)
Bloomington ©	694	24.64	75.36
Charlestown	254	37.01	62.99
East Chicago	442	32.81	67.19
Evansville	254	37.01	62.99
Fort Wayne	238	34.87	65.13
Gary	228	44.74	55.26
Indianapolis	567	38.10	61.90
Knox	145	35.17	64.83
Kokomo	243	40.33	59.67
Lafayette	202	37.13	62.87
Muncie	475	36.84	63.16
North Vernon	265	29.81	70.19
Richmond	383	26.37	73.63
South Bend	584	38.18	61.82
Terre Haute	302	31.46	68.54
Unknown ©	2	100.00	0.00
Vincennes	252	38.49	61.51
No Support Site - Student Did Not Engage in Activities	138	30.43	69.57

Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$, ~ $p<0.1$

a. Enrollment information comes from the SIS database, which contains data only for students who have enrolled in Indiana's public institutions of higher education.
b. Continuous variable, Mean = 0, SD = 1

Scholars compared to Pell recipients

The majority of the descriptive results comparing Scholars to Pell recipients are outlined in Chapter 3 (refer to the Findings, *Descriptive Results* section and Table 3.2). In this chapter, however, I am also interested in some variables that are not described in the text of Chapter 3 (but are included in Table 3.2), specifically, test scores and college choice.

Higher completion rates of the Core 40 did not translate into higher SAT scores. In fact, Scholars were more frequently in the middle and lower score ranges on both the math and verbal sections of the SAT compared to Pell recipients. More Pell recipients than Scholars were missing SAT scores; that either group was missing could mean that scores were either not reported to SIS or that students chose not to take the test based on where they intended to enroll in college.

Although the Scholars earned lower scores on the SAT, they still enrolled in public four-year and research universities more frequently than their Pell receiving peers. The last dollar award may have placed the four-year or research universities in reach financially, or perhaps participation in various TFCS activities provided the social capital necessary to navigate the process in spite of lower test scores. These differences will be examined further in the regression model predicting college choice.

Regression Results

The descriptive results indicate that there are, in fact, differences between Scholars and Pell recipients. A closer examination of the regression results suggests differences in college choices resulting from participation in various engagement activities, but once those activities are included in the model, the differences between

Scholars and Pell recipients become less apparent. It is important to note that even though the majority of the models contain statistical significance, the overall predictive power of the models is not strong. This could be due to a number of reasons, such as omitting variables related to family background or setting school context, or other controls. First, though, is a summary of the college enrollment model.

Enrollment in College.

This analysis uses all of the students in the Scholar Track database; when merged with SIS, it is possible to know which students enrolled in public colleges and universities of all eligible Scholars who graduated from high school in 2004. The results in Table 4.2 demonstrate that both counseling for the student and visits and events for the parents increase the odds of enrollment in public colleges and universities, as do all of the regional support centers.

Consistent with the descriptive results in Table 4.1, academic preparation for the parent is negatively associated with college enrollment. However, one must keep in mind what is not in the data – private and out-of-state colleges and universities, as well as all background variables. Because of this, it is difficult to interpret this negative finding. Based on these results, one could argue that active engagement in social capital formation positively influences college-going, between the positive results of counseling and visits and events, even with the mysteriously negative result of academic preparation. Alternatively, students whose parents participated in academic preparation activities may have been weaker academically, and the parent was looking for way to encourage a stronger performance from their student. I tend to think this is not feasible because the activities that form the academic preparation factor lean toward students who are on a

college preparatory trajectory (see Table 3.1B). The model itself does not offer a high amount of explanatory power. Had it been possible to include more relevant variables (such as background and family characteristics), the model might have provided further insight into these relationships.

Table 4.2. Logistic Regression of 2004 Cohort Participation in Engagement Activities and Different Support Sites on Enrollment in Indiana Public Colleges and Universities[a] (N = 5,668)

Activities:	Odds Ratio	Sig.
Counseling for the Student (Standardized Factor)[b]	1.206	***
Academic Preparation for the Parent (Standardized Factor)[b]	0.832	*
Visits and Events for the Parent (Standardized Factor)[b]	1.176	***
Career Planning for the Parent (Standardized Factor)[b]	1.019	
Support Sites[c]		
Charlestown	2.341	***
East Chicago	1.975	***
Evansville	2.384	***
Fort Wayne	2.236	***
Gary	2.996	***
Indianapolis	2.496	***
Knox	1.509	*
Kokomo	2.422	***
Lafayette	2.354	***
Muncie	2.194	***
North Vernon	1.576	**
Richmond	1.963	**
South Bend	2.543	***
Terre Haute	1.541	**
Vincennes	1.764	**
No Support Site - Student Did Not Engage in Activities	0.259	***
Number of Cases	5668.000	
Model χ^2 (df)	121.696 (20)	***
Nagelkerke Pseudo R^2	0.029	
% Correctly Predicted	65.51	

Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$, ~ $p<0.1$

a. Enrollment information comes from the SIS database, which contains data only for students who have enrolled in Indiana's public institutions of higher education

b. Continuous variable that has been standardized for Mean = 0, SD = 1

c. Dichotomous variables of participation at this support site or not, with the support site at Bloomington and Unknown support site as comparison

College Destination.

Interesting findings begin to emerge with this analysis. Results for each comparison (odds of enrolling in a public four-year college to a public two-year college in Table 4.3A, and odds of enrolling in a research university compared to a public two-year college in Table 4.3B) are presented separately, in a step-by-step (or model-by-model) approach comparing significance levels and odds ratios as new variable sets are added).

The first step of the model contains an indicator of being a Scholar (versus being a Pell recipient), gender, race, and income characteristics. Being a Scholar significantly increases the odds of enrolling in a four-year college over a two-year college compared to being a Pell recipient. Males are less likely than females to enroll in a four-year college. Additionally, all of the race variables except for Native American are significant. Compared to White students, the odds of enrolling in a four-year college are 3.166 times higher for Asian/Pacific Islanders and .61 times higher for Hispanic students, but they are lower for African American students, by .164 (1-.836). The odds of a Native American student enrolling in a four-year college as opposed to a two-year college are not significantly different from those a White student's odds. Because the lowest income was the largest single income group, these students were compared to all other income groups, including those who were missing income data. Low-income students are about half as likely to enroll in a four-year college compared to their higher-income peers. Interestingly, however, self-supporting students are nearly three times as likely to enroll in a four-year college over a two-year college compared to their financially dependent peers.

The second step of the model adds in the activity factors. All of the variables that were significant in the first step remain so in the second step. However, the significance level of being African-American compared to White increases from $p<.05$ to $p<.01$. The odds of a Scholar enrolling in a four-year college compared to a Pell recipient enrolling in a four-year college increase by .249. The odds ratios of the other significant variables change very little, with only slight movement up or down, if at all.

The activity variables yielded one unexpected result. Participation in counseling activities (compared to not participating in such activities, whether a Scholar or a Pell recipient) has a negative effect on enrolling in a four-year college. This seems counter-intuitive given the positive effect of counseling on Scholars enrolling in college (Table 4.2). Of the various TFCS activity factors, counseling is the one more Scholars engaged in than did not. Counseling may have directed students toward a two-year college, as opposed to no college for some of the Scholars. Without additional information, it is difficult to speculate. The peculiarity of the finding on the counseling factor will be discussed in more depth in the Discussion section of this chapter.

Academic preparation has no influence on enrollment in four-year college versus a two-year college. Compared to those whose parents did not participate in visits and event, those whose parents did had .259 higher odds of enrolling in a four-year college, though the effect is only modestly significant. Parent participation in career planning activities increases the odds of enrolling in a four-year college by just over double compared to those whose parents did not engage in career planning activities. It is noteworthy that only a small portion of the students participated in this – just about 5% of the Scholars, and none of the Pell recipients.

The third step adds in only one variable, the regional centers. However, the significance of being a Scholar compared to being a Pell recipient disappears with this addition, even though the regional centers do not significantly affect enrollment in a four-year compared to enrollment in a two-year. The two are connected, however, and this shift in significance may imply a shift related to social capital building through student and family engagement in the center, or perhaps to motivation and convenience – if a Scholar lives near a regional center, that Scholar may be more likely to take advantage of the services offered through the center. Taking the pledge may open doors to capital formation, which subsequently opens doors to college enrollment (see Table 4.2, where every regional center positively influenced enrollment for those who partook of activities. All of the other variables that were significant in model two remain significant to the same level, and the coefficients do not change substantially.

The final model adds in academic preparation variables, including completion of the Core 40 curriculum and the SAT test scores. Completing the Core 40 greatly increases the odds of enrolling in a four-year compared to enrolling in a two-year college. Low scores on both the verbal and math sections of the SAT and missing a score on the verbal section (compared to scoring in the middle range) significantly decrease the odds of enrolling in a four-year college compared to a two-year college, by about half for a low verbal score, by about 25% for a low math score, and negligibly for missing on verbal. A high math score compared to a middle range score more than doubles the odds enrolling in a four-year college.

The addition of the academic preparation variables changes several of the other variables in this step. The odds of a male enrolling in a four-year college compared to a

female enrolling in a four-year college not only decrease, the significance of that drop increases. Compared to Whites, Asians and Pacific Islanders still have higher odds of enrolling, but the odds not only go down, the significance drops to only a modest level. With the addition of academic preparation, the odds of an African American student enrolling in a four-year college remain significant (with a drop to the .05 level) but more importantly, the odds become positive, compared to those of a White student. This finding seems to confirm the conclusion in Chapter 3, that if a student of color has the appropriate access for the college preparatory diploma, that student will take advantage of the opportunity. The odds of a Hispanic student increase from step 3 to step 4 by nearly 50% compared to those of a White student. Being of low income compared to higher levels of income or missing income still has a negative effect on enrolling in a four-year college compared to enrolling in a two-year college, but the odds are slightly less negative when controlling for academic preparation. Self-supporting students compared to financially dependent students increase their odds of enrolling in a four-year college even more with the addition of the academic preparation variables, nearly doubling the odds compared to when the academic preparation variables are not considered.

The activity variables changed somewhat with the addition of academic preparation. Career planning and visits and events lost significance, while parent engagement in academic preparation activities became modestly significant. These changes suggest a correlation between career plans and academic preparation, and also between visits (such as those to college campuses) and academic preparation. Once on a

certain academic path, career plans and other information related to college-going gleaned from visits and events may be somewhat fixed.

Examining the results in Table 4.3B, with the outcome of comparing enrollment in a public research university compared to enrollment in a public two-year college also demonstrates a positive effect of being a Scholar compared to being a Pell recipient. The results of the first step are actually quite different from those in the first step of Table 4.3A (enrollment in a four-year college compared to enrollment in a two-year college). Being a Scholar compared to being a Pell recipient increases the odds of enrolling in a public research university to .384. As opposed to enrollment in a four-year college (Table 4.3A), the odds of male enrolling in a research university compared to a female enrolling in a research university increase to .234. Compared to Whites, Asian and Pacific Islanders have more than six times the odds of enrolling in a research university, while Hispanic students increase their odds of enrolling in a research university by .532. Unlike the four-year outcome, African American students have odds of enrolling in a research university (compared to a two-year college) that are no different from those of White students. Low-income students have much lower odds of enrolling in a research university compared to their wealthier peers, while self-supporting students increase their odds by almost half compared to financially dependent students.

Step 2 adds the activity/engagement variables. All of the variables that were significant in the first step remain so, though the significance level of being a Scholar drops from the .001 level to the .1 level. The odds of a Scholar compared to a Pell recipient enrolling in a research university also drop to 1.287 from 1.384. This is not surprising, given the fact that only Scholars participated in the activities and two of the

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activities are significant. Unlike in the four-year college compared to two-year college outcome, counseling is not significant in predicting the odds of enrolling in a research university compared to a two-year college at this stage. However, parent involvement in visits and events increases the odds of enrolling in a research university by .370 compared to those students whose parents do not participate in this TFCS activity. Parental participation in career planning more than doubles the odds of enrolling in a research university, compared to enrolling in a two-year college.

Regional centers, the only variable added in step 3, make no significant difference on the odds of enrolling in a research university compared to students who did not engage in an activity at a regional center. All of the significant variables remain so, and with the exception of being a Scholar, the odds remain virtually the same. However, not only does the significance level of being a Scholar compared to being a Pell recipient creep back up to .05, the odds increase a bit as well. Some Scholars engaged in activities that are not included in the factors; these activities, which were presented through the regional centers, may have had a positive effect on enrollment in a research university compared to enrolling in a two-year college.[43]

Step 4 includes the academic preparation variables. Before explaining how the previously significant variables may have changed is a quick summary of the effects of the new variables. Students who complete a Core 40 curriculum compared to those who do not are more likely to enroll in a research university over a two-year college. This is not surprising, given the college preparatory intent of the Core 40. Scores on both sections of the SAT follow the expected patterns; low scores reduce the odds of enrolling

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[43] I did run a series of models that included other activities. Though the specific activities did not appear to have an effect on the outcome, it is possible that just engaging with the people at the center is what makes the difference.

in a research university (as does missing on verbal) compared to the middle group, high scores greatly increase the odds of enrolling compared to the middle group, more than double with a high verbal scores, and just over 5 times higher with a high math score. The test score results are similar to those of the four-year outcome, but the odds are more extreme in the research university compared to two-year college outcome.

Where this step becomes interesting is seeing how the previously significant variables change with the addition of the academic preparation variables. The two activity variables that were significant in Model 3 – parent participation in visits and events and parent participation in career planning – lose significance, while student participation in counseling activities and parent participation in academic preparation gain modest significance. As in the four-year outcome model, students who participate in counseling activities are less likely to enroll in a research university compared to those who do not participate in such activities. Again, this finding is unexpected, given the prior regression (Table 4.2) indicating that participation in counseling activities increases the odds of a Scholar enrolling in college. Perhaps students are being counseled into two-year colleges as opposed to no college; perhaps students are being counseled into less selective institutions if their grades are low. Without additional information, these musings are purely speculative. The role of counseling will be considered in greater detail in the Discussion section of this chapter.

Parent participation in academic preparation increases the odds of enrolling in a research university compared to those whose parents did not participate in the TFCS-sponsored parent academic participation activities. This finding is not surprising when considered in conjunction with the model presented in Figure 3.2. It is in this step that

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the variable indicating whether or not a student is a Scholar loses significance. This change may suggest the role of engagement in the Twenty-first Century Scholars program is helping to build social capital in a way that encourages academic preparation and enrollment in more selective postsecondary institutions. Additional discussion of this relationship follows in the next section. Alternatively, it could also be that Scholars are more motivated academically. Students who aspire to enroll in research universities are more likely to be their own agents and take advantage of workshops and other services that will help them achieve that goal.

Finally, I look at the rest of the background variables. Compared to White students, the odds of Asian or Pacific Islander student enrolling in a research university are higher, but they are half what the odds were for this same group in model 3. African American students are not only significantly more likely to enroll in a research university controlling for academic preparation compared to White students, those odds are almost three times higher. The odds for Hispanic students also increase by more than double what they were in step 3. These findings indicate that with academic preparation, underrepresented students of color are more likely than White students to enroll in a research university compared to a two-year college. Low-income students are still less likely than their wealthier peers to enroll in a research university, although controlling for academic preparation, those negative odds become a little bit less negative. Self-supporting students (compared to financially dependent students) see a large jump in their odds of enrolling in a research university versus a two-year college once academic preparation is controlled in the model.

Based on the results of the regression analyses, there appear to be relationships between being a Scholar and both college enrollment and college choice/destination – a goal of the TFCS program. The engagement activities in which Scholars and their parents participated represent social capital formation (Tables 3.1A and 3.1B). A deeper discussion of the relationships between social capital formation, college enrollment and choice, and privatization follow in the next section.

Table 4.3A. 2004 College Destination Model of Scholars and Pell Recipients: Four Year Colleges and Universities

	Model 1		Model 2		Model 3		Model 4	
	Odds Ratio	Sig	Odds Ratio	Sig	Odds Ratio	Sig	Odds Ratio	Sig
Twenty First Century Scholar	1.372	***	1.621	***	1.383		1.070	
Male	0.857	**	0.854	**	0.854	**	0.669	***
Native American	1.405		1.420		1.424		1.848	
Asian/Pacific Islander	3.166	***	3.189	***	3.200	***	2.034	~
African American	0.836	*	0.805	**	0.803	**	1.217	*
Hispanic	1.607	**	1.561	**	1.560	**	2.129	***
Low Income (<$31,555)	0.419	***	0.421	***	0.421	***	0.581	***
Self-Supporting	2.924	***	2.926	***	2.928	***	5.522	***
Student Participated in Counseling Activities			0.612	***	0.622	***	0.546	***
Parent Participated in Academic Preparation			1.234		1.222		1.718	~
Parent Participated in Visits and Events			1.259	~	1.246	~	1.139	
Parent Participated in Career Planning			2.028	*	2.020	*	1.263	
Regional Center					1.189		1.285	
Core 40 Completed							17.035	***
Low SAT Verbal (<376)							0.455	***
High SAT Verbal (>558)							1.172	
SAT Verbal Missing							0.052	*
Low SAT Math (<380)							0.757	*
High SAT Math (>562)							2.300	***
SAT Math Missing							1.377	
Log Likelihood	-8080.126		-8060.566		-8057.534		-5748.55	
LR Chi-Square (df)	575.79 (8)	***	614.91 (12)	***	620.97 (13)	***	5238.94 (20)	***
Difference of Chi-Square (df)			39.12 (4)	***	6.06 (1)	*	4617.97 (7)	***
Pseudo R-Square	0.0344		0.0367		0.0371		0.313	

~ p < .1; * p < .05; ** p < .01; *** p < .001.

Note: Compared to Two-Year Colleges

Table 4.3B. 2004 College Destination Model of Scholars and Pell Recipients: Public Research Universities

	Model 1		Model 2		Model 3		Model 4	
	Odds Ratio	Sig	Odds Ratio	Sig	Odds Ratio	Sig	Odds Ratio	Sig
Twenty First Century Scholar	1.384	***	1.287	~	1.666	*	1.331	
Male	1.234	**	1.231	**	1.231	**	0.826	*
Native American	1.182		1.158		1.155		1.971	
Asian/Pacific Islander	6.338	***	6.352	***	6.317	***	3.702	**
African American	0.940		0.922		0.926		2.641	***
Hispanic	1.532	*	1.541	*	1.546	*	2.776	***
Low Income (<$31,555)	0.318	***	0.318	***	0.318	***	0.460	***
Self-Supporting	1.633	**	1.639	**	1.635	**	3.284	***
Student Participated in Counseling Activities			0.858		0.833		0.745	~
Parent Participated in Academic Preparation			1.207		1.229		1.754	~
Parent Participated in Visits and Events			1.370	*	1.400	*	1.184	
Parent Participated in Career Planning			2.387	*	2.411	*	1.618	
Regional Center					0.751		0.813	
Core 40 Completed							6.940	***
Low SAT Verbal (<376)							0.274	***
High SAT Verbal (>558)							2.250	***
SAT Verbal Missing							0.028	*
Low SAT Math (<380)							0.233	***
High SAT Math (>562)							5.088	***
SAT Math Missing							0.952	
Log Likelihood	-8080.12		-8060.56		-8057.53		-5748.55	
LR Chi-Square (df)	575.79 (8)	***	614.91 (12)	***	620.97 (13)	***	5238.94 (20)	***
Difference of Chi-Square (df)			39.12 (4)	***	6.06 (1)	*	4617.97 (7)	***
Pseudo R-Square	0.0344		0.0367		0.0371		0.313	

~ p < .1; * p < .05; ** p < .01; *** p < .001.

Note: Compared to Two-Year Colleges

Discussion

The results suggest that being a Scholar contributes to the successful academic transition of enrolling in college. For some students who may not have considered college as an option, the guarantee of financial aid that comes along with taking the pledge allays some concerns. However, the results of these analyses also reveal that the social capital gained by the students who participated in the support center activities merits consideration as well. Having the ability to visit a four-year college campus or to obtain personal advising (be it academic or career in nature) is important in college decision-making for students whose families may not be able to offer those things to them. When equality of opportunity exists, people will take advantage of what is available to them if they understand the implications and have the aspirations and motivation necessary to be their own agents.

Although there are limitations to this study, it could be argued that the engagement activities (proxies for relationships that accrue social capital) do in fact have a positive relationship with college-going. The quantitative analyses of the Twenty-first Century Scholars program in Indiana in this dissertation suggest the importance of individual agency (a result of motivation) for accessing the social capital available from the program. Notably, parental involvement activities came together to form three of the four factors that represent social and cultural capital in the quantitative analysis, and all of the social capital variables were significant in at least one step of each college model (enrollment and college-choice). A qualitative analysis of the Twenty-first Century Scholars program (Enerson, Servaty-Seib, Pistilli, and Koch, 2008) consisted of focus groups and interviews of Scholars ranging from 7th through 12th grades and their

families.[44] They found that the engagement activities made a positive difference in the college-going decisions for Scholars in several ways, particularly through the relationships that developed as a result of participation in the program. These relationships (with site staff, with other parents, and with other Scholars) influence access and persistence within TFCS, and also mimic parent relationships of higher-income families (Lareau, 1987, 2003; Useem 1991, 1992). Establishing these networks that provided trustworthy information, two of the three main components of social capital as theorized by Coleman (1988), was important for the successful TFCS participants to actualize their motivation. Additional positive effects of the TFCS program as relate to social capital and the study by Enerson and her colleagues (2008) are discussed in the Discussion section of the previous chapter.

Although limitations to the quantitative analysis presented in this dissertation exist, the supporting results of the qualitative study by Enerson and her colleagues (2008) suggest a positive impact of the program on those who assertively act as their own agents to access support and build social capital as a byproduct of the experience. With ICHE outlining higher education as an important step toward economic development (2010), it is important to consider how the Twenty-first Century Scholars program fits into the process.

Additionally, engagement activities may emphasize college choice through academic preparation, as revealed by the fact that significance of the activities generally

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[44] It is not likely that students interviewed by Enerson and her colleagues are in the quantitative database analyzed here, because the focus group and interview participants were still in the 7th through 12th grades. The quantitative analysis in this dissertation focused on the cohort of students who graduated high school in 2004. Although the students do not overlap between the studies, the results do speak to and support each other. A true mixed-methods design that examined the same group of students would have been ideal but was not possible.

lessens or disappears when academic preparation variables enter into the model. They are no less important for being indirect effects. Low-income students and students of color who choose to become Scholars have improved opportunities to enroll in college, and specifically four-year and research universities. That these services are available to Scholars and their families, especially in regional centers, is important for Scholars' successes and advancement through the pipeline. Without the TFCS program, low-income students are disadvantaged in preparation and access to postsecondary education, especially to four-year and research institutions.

The role of counseling, however, complicates matters. The enrollment model (which admittedly had no controls for background, context, or anything else due to unavailability of data), suggests that participation in counseling activities has a positive effect on enrollment. However, the negative odds ratio for both public four-year and research universities compared to enrollment in a two-year college would suggest that counseling through the TFCS program (and perhaps the TFCS program itself) is not helpful, at least on its face. In this instance, it is useful to refer to prior research on the role of counseling in access, especially for disadvantaged students.

Much of the extant literature examining the relationship between counseling disadvantaged students and college enrollment focuses on four-year college enrollment (e.g., McDonough, 2005b; Plank & Jordan, 2001). In addition, while some of the literature mentions community counselors through outreach programs (e.g., Tierney, Corwin, & Colyar, 2005), a large segment of the research focuses on the relationship of specifically high school counselors to (four-year) college-going (e.g., Bell, Rowan-Kenyon, & Perna, 2009; House, 2012; Luna de la Rosa, 2006; Perna, et al., 2008; Plank

& Jordan, 2001). There is little research regarding counselors through community or state programs, nor is there much research examining the role of counseling in students attending two-year colleges instead of not enrolling in any postsecondary institution. As such, although the outcome of effect of counseling decreasing the odds of attending a four-year or research university over a two-year college may be startling, there was no option of studying the odds of the effect of counseling on two-year enrollment over no enrollment.

One way to delve into this issue is to look at the concept of undermatching, discussed earlier in this chapter. Roderick and colleagues (2008) propose several reasons a student undermatches, including the possibility that s/he may view beginning postsecondary education at a two-year institution as a more affordable way to obtain a four-year degree after transfer, even if the student is academically qualified to enroll in a four-year institution immediately after high school. By definition, Scholars are either low-income at the time of college enrollment, or come from a low-income background even if the family is more comfortable financially toward the end of high school. Even with the financial aid guarantee associated with being a Scholar, they may hold deep-seated concerns about finances. Taking the undermatch hypothesis in another direction, House (2012) found that the closer a student lived to a community college, the more likely that student was to attend, in comparison to students who lived farther away from community colleges. Without knowing more about the individual counseling sessions the Scholars experienced, it is possible that the counselors through the program advised students to attend the two-year institution. This could be related to reasons of fit, career goals, grades, or any number of factors.

Alternatively, Scholars may have elected to ignore the counselors advice. In a study Avery (2010) published as a working paper with that National Bureau of Economic Research, many of the high school seniors who were offered 10 hours of one-on-one counseling and college advising and ultimately undermatched disregarded some or all of the advice they were given. With so many possible reasons why counseling would have a negative effect on four-year college enrollment over two-year enrollment, it would be helpful to conduct follow-up interviews with Scholars to learn their rationales.

A closer examination of the counseling factor may yield additional information. The factor itself measures frequency of participation in each of four activities: academic advising, career advising, personal counseling, and other forms of counseling (Table 3.1A). Of these, academic advising and other counseling had the most participants, with 46% and 24.5% of Scholars participating, respectively (Appendix C, Table C1). Of the participants in these forms of counseling (among all Scholars, enrolled in a public Indiana postsecondary institution or not), the combined mean was about 1.4 times. The mean participation frequency is similar for enrolled Scholars, and slightly lower for non-enrolled Scholars (Table C2). That is not a lot of counseling, and brings the question about the timing of this counseling. How early in high school is the student seeking this counseling? If it is not until the student's senior year, it is possible that academic preparation choices made earlier limit postsecondary options later, something Conley (2005) notes. It is possible that late counseling meant that a two-year college was the only postsecondary option available. One also must recall that the population in the college type analysis (Table 4.3) includes only those who attended public postsecondary

institutions in Indiana. If a student who participated in counseling went to a private university or out of state, the effect of counseling is unknown.

The goals of TFCS are to empower parents to support their children (St. John, 2002), to increase the educational aspirations of Indiana residents, reduce high school dropout rates, prepare students for the workforce, and decrease drug and alcohol use among students (SSACI, 2007). Though the counseling factor in particular seems to direct students toward two-year colleges, they are still going to college. These students may not have considered postsecondary education prior to taking the pledge. Though the results of the statistical models must be viewed cautiously because of the limitations already noted, to doubt the efficacy of the program based on the findings in this chapter would be premature. More research is needed to understand some of the more curious findings (such as the effect of the counseling factor) of this chapter.

Conclusion

The evidence suggests that the Twenty-first Century Scholars program offers specific opportunities to low-income students that make a difference in increasing their educational aspirations and achievement, helping to equalize opportunity in part by building social capital and providing them with an outlet to actualize their motivation. Although there are limitations to this study, the apparent success of this program serves as a model to other states, particularly those with pockets of low-income groups spread throughout the state. In fact, several states, including Washington and Wisconsin, have adopted similar comprehensive systems based on the results of the Twenty-first Century Scholars program (St. John, Daun-Barnett, & Moronski-Chapman, 2013). Regional

support centers provide access and opportunities students in these areas may not receive otherwise.

Particularly for states that want to increase their college-going rates, instituting a program of this nature may be able to contribute. No policy of this sort is without cost, of course, but states must weigh the costs of the program against the potential advantages in a more educated citizenry, assuming there is active engagement in the program. Identifying ways to increase participation (at every step, from signing the pledge to visiting the centers to being really engaged) is a key aspect to making a program of this nature a success.. Admittedly, the TFCS program is slipping a bit; Scholars complete their degrees at the same rate as other low-income students (St. John, Fisher, et al., 2008). However, Indiana maintains the goal of increasing postsecondary attainment, and continues to tinker with state policies (such as establishing the Core 40 as the default high school curriculum, St. John, Daun-Barnett, and Moronski-Chapman, 2013) in order to achieve that goal. Societal benefits of postsecondary education are well-documented (McMahon, 2009; Pasque, 2005; Paulsen, 2001; Zumeta, 2004), and Indiana's specific goal of economic development is certainly one of them (ICHE, 2010).

The social capital developed through a program such as TFCS is not stagnant, and relies on the individual's motivation [or individual agency, from Coleman's (1988) perspective]. It is continually built on as individuals encounter new opportunities and relationships, whether in college or beyond, in the professional realm and in their private lives. It is transmitted to their children. Long-term analyses of the TFCS program are not yet possible, but the potential for long-lasting constructive and encouraging results exists, for example, cross-generational uplift. It is hard to say what the long-term effects

of a program such as TFCS could be, but there are hopeful possibilities. When considering the connections between the private and public benefits of higher education (McMahon, 2009; Pasque, 2005, 2010; Zumeta, 2004), one may think about programs such as TFCS in managing the trend toward privatization.

Moreover, it is possible to use a social justice lens when reflecting on privatization and the connections between the private and public benefits of postsecondary education, especially regarding a program such as TFCS. Such a program instills the basic skills and capabilities Nussbaum (2000, 2004a, 2004b, 2011) and Sen (2000, 2009) advocate, plus it increases equality of opportunity for the least-advantaged, Rawls's second principle of justice (1971, 2001). Finally, because it is funded through taxes and has the potential to increase the tax base by helping students through college, when considered in combination with the ICHE's view of higher education as a stepping-stone toward economic development, Rawls's Just-Savings principle also comes into play. Through the analysis of the Twenty-first Century Scholars program, one could argue that social capital formation harnessing student motivation as a mechanism for increasing college access has potential for numerous positive outcomes, and can be done in a socially just manner.

CHAPTER 5

CONCLUSION

Postsecondary education is considered a logical and appropriate means to work toward achieving or maintaining a middle class lifestyle for the individual, to train for contributing to economic development and participating in the global marketplace for society, and to develop and mature into a knowledgeable, discerning citizen. These three goals as described by Labaree (1997) – social mobility (private), economic development (public), and citizenship (public) – are constantly in tension and have been emphasized in varying ways throughout the history of higher education in the United States. Moreover, these goals are political in nature, and are resolved by making choices about values and interests. When thinking about access to higher education, especially for low-income students but also for middle-income students, it is important to keep these three competing goals in mind.

This dissertation began with a review of the history of access to postsecondary education in the United States, from its origins as a narrowly accessed domain of the upper class and high-achieving students deemed meritorious from all classes to the presence of thousands of institutions with a range of selectivity for entry which theoretically widens access for all, at least theoretically. However, prior research has indicated that access to higher education in the United States was severely limited for minorities and the poor (e.g., Bennett & Xie, 2000; Bowen, Chingos, & McPherson,

2009; Bozick & DeLuca, 2011; Choy, 2002; Deming & Dynarski, 2009; *Losing ground*, 2002; Luna de la Rosa, 2006; Perna, 1998; Smith, 2001). I then examined several approaches to justice as it relates to education. John Rawls (1971, 2001) was the first to create a theory of justice distilled to three main principles of distribution of rights to all, equality of opportunity where the least advantaged are to benefit the most, and just savings which helps to support the next generation through taxation.

As a result of its basis in social contract theory and its limit in sphere to one nation and to institutions within one nation, Rawls's conception of justice has faced criticism. Martha Nussbaum (2000, 2004a, 2004b, 2011) and Amartya Sen (2000, 2009) acknowledge the important contributions of Rawls while advancing the conception of justice in their own directions. Both rely on the idea of the development of human capabilities as a human right that focuses on the individual and their approaches recognize transnational implications, for a global society and for economic development. Nussbaum's (2011) concern with the social contract relates to situations when power is unbalanced, but she is more accepting of the idea of an implied social contract, in that there is a theoretical level of fairness inherent in the mutual advantage the social contract is meant to secure.   Sen's use of social choice theory (2009) complements discussions of higher education access policy because it both acknowledges the need to constantly reassess and re-evaluate policy effectiveness and permits partial successes. Furthermore, the extent of choice can differ within a society, so it is important to consider outcomes across groups.

Higher education policy is often analyzed within a frame of human capital theory, but recent reframing of the benefits of higher education limits most analyses to primarily

one of the goals Labaree (1997): social mobility for the individual as a private good. The links between public investments in higher education for economic development in states are not as consistently used to rationalize public funding. Introducing social justice theory, as a balancing concept with the reconstructed notion of higher education as a private good, broadens the discussion to include the public goals once again. When we think of the public good, we must also think about fairness, equality of opportunity, and low-income and other underrepresented students in relation to higher education.

Findings

In the preceding chapters, I have examined privatization from multiple perspectives, framed within a philosophy of justice. In Chapter 2, I examined several state characteristics, including demographic, financial, and ideological factors, to predict causes of privatization, and I identified a positive relationship between poverty rate and privatization, and negative relationships between per capita tax revenue and liberal ideologies and privatization. I extended this analysis to Chapters 3 and 4, where I studied how Indiana contended with increasing privatization with the Twenty-first Century Scholars program. This program was designed to encourage college participation among low-income students early in the pipeline (middle school), when students could select a high school curriculum which prepares them for college, knowing they were guaranteed financial aid as well as encouragement and support services. In the current period that combines globalization of labor and public resistance to taxation, privatization of postsecondary education is inevitable. These papers provide a multi-layered analysis of privatization and one way public systems of higher education are responding to it.

Privatization

Policy decisions are neither inherently good nor inherently bad. However, all policies have consequences, some expected and some not. Public finance policy in higher education is no different. Labaree (1997) summarized three main goals of postsecondary education – social, economic, and democratic – independent of how that level of education is financed. Privatization, defined in this dissertation as the proportion of the total costs of public higher education paid for by the student and their families (relative to state and local appropriations and state grants), is a finance policy with consequences that get to the heart of the competing public and private goals of postsecondary education that Labaree (1997) describes.

In Chapter 2, the results of a fixed effects regression demonstrated several predictors of privatization within a state, including the poverty rate, per capita tax revenue, and political ideology. As poverty rates increase, so does privatization – for each 10 percentage point increase in the poverty rate, privatization of postsecondary education increases by 8.5%. This is likely due to the relationship between poverty rates and per capita tax revenue, because the tax revenue of a state decreases as the poverty rate rises. Per capita tax revenue is negatively related to privatization; that is, when per capita tax revenue increases by 1%, the privatization ratio drops by 15.9%. Privatization also decreases by a small percentage (.1%) as the government becomes more liberal by 1 unit on the continuum developed by Berry and his colleagues (1998). Endogeneity may be biasing the significant parameters upward, and the absence of omitted variables may have affected significance levels throughout. Variables I wish I had been able to add in order to strengthen the model include factors determining state appropriations (such as

performance) and the higher education lobbying effort. A full discussion appears in Chapter 2.

As discussed in detail in the conclusion of Chapter 2, the public good goals of postsecondary education are compromised with increasing poverty rates and decreasing tax revenues. Increasing demand for postsecondary education in a time when states cannot provide enough funding to respond to this pressure means that institutions must increase tuition in order to accommodate growing enrollments (State Higher Education Executive Officers, 2013).

Privatization has not had an effect on enrollment rates yet, but it has influenced who can enroll and where, suggesting that social stratification restricting upward mobility is an outcome of this policy. Status attainment theory elucidates stratification processes (Blau & Duncan, 1967; Duncan, Featherman, & Duncan, 1972; Featherman & Hauser, 1978; Hauser & Featherman, 1977; Sewell, Haller, & Ohlendorf, 1970; Sewell & Hauser, 1976) that reflect the importance of education on later occupational achievement. That education mediates effects of socioeconomic background. According to this approach, when examining those of similar socioeconomic backgrounds, subsequent occupational outcomes improve with higher levels of education. Parental education and occupation influence educational attainment in ways one would expect, with those from poorer backgrounds more likely to achieve less education or seek vocational occupations, and those from wealthier backgrounds more likely to continue their educations and maintain or improve upon their family's occupational status. If poorer students are priced out of education completely, or cannot afford to attend four-year institutions, we can expect to see a more rigid stratification system in current and future cohorts, because social

background affects educational achievement. If low-income members of the current cohort achieve proportionately less postsecondary education, and subsequently enter jobs with lower earning potential, their children will be farther behind socioeconomically – with the attendant effects on educational attainment probable – as a result of this cohort's limited educational opportunity. This effect would likely not be alleviated by delayed enrollment in postsecondary education by the cohort, because delayed enrollment has negative effects on later occupational status (Featherman and Carter, 1976).

In the late 1970s, Featherman and Hauser (1978) observed that "over the full range of the educational distribution, the role of schools as instruments of social stratification – leading to the persistence of status inequality between generations – has given even more ground to its dominant role as a vehicle for social mobility" (p. 310). Featherman and Hauser wrote this at a time when discrimination was decreasing, and opportunities expanded with changes to the occupational structure and continued expansion of postsecondary education. In the 1970s, there was a movement toward greater equity in educational access (St. John, et al., 2013). In the twenty-first century, globalization of the workplace has influenced both the occupational structure and postsecondary education, and policies intended to alleviate discrimination (such as affirmative action or the DREAM Act)[45] or to level the playing field (such as the Pell Grant) have been struck down or are subject to resistance by the legislature. The result is that education, a method of social mobility, is becoming a means of social stratification instead, because those from lower strata have reduced opportunities to access it.

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[45] At the writing of this dissertation, affirmative action policies had been struck down in several states, and the Supreme Court was preparing to decide on affirmative action more broadly.

It is not in the public interest to have large segments of the population unable to access postsecondary education or be able only to access it by incurring huge debt. The resulting lower incomes and fear of greater debt will harm economic development, for example, as people reduce their spending. Civic participation by more diverse groups will decrease, because people will spend more time working in low-wage jobs in order to make ends meet, and will have less leisure time to participate in government and community organizations. Social mobility is important for economic growth, and it is a part of the American image (Featherman, 1979). We, however, are in a period of social regression, fueled by the elements of privatization: high tuition, reduction in grants, and high loans. Re-stratification is a serious consequence of privatization.

The findings in Chapter 2 demonstrate that the presence of liberal ideologies in government slightly decreases privatization (Table 2.3). However, there has been a movement toward more conservative ideologies more recently (St. John, et al., 2013). At the same time as the Great Recession, there has also been a greater contraction in the public financing of higher education than occurred in prior years (Figure 2.2). There is not enough tax revenue, especially after the Great Recession, to provide enough need-based financial aid to eligible students, nor is there enough to give eligible students choice of institution type, especially when so many states have prioritized merit aid. The consequences are concerning in light of issues of diversity (in the workforce and in the political arena), economic development, and more broadly, fairness.

The Western Interstate Commission for Higher Education publishes a forecast of high school graduates (Prescott & Bransberger, 2012). After a high in the early 2000s, there is an expected decline in the total number of high school graduates during the

2010s, especially in the Northeast and Midwest. However, by the early 2020s, the number of high school graduates will begin to rise again, particularly in the West and South. The predicted decline of the 2010s may have an effect of reducing privatization, because if appropriation amounts hold relatively steady but the number of students decreases, the per-student appropriation will increase. Alternatively, fewer high school graduates may mean fewer people contributing to the economy through spending or income tax, which may serve to increase privatization due to reduced tax revenue.

The racial/ethnic composition of high school graduates is expected to change over the next two decades. In this time frame, both the Hispanic and Asian populations are expected to grow, while the White and African American populations will decrease. Hispanics are the fastest growing racial group. By 2020, projections indicate a majority-minority high school graduation cohort. Hispanic and African American students have typically been underserved in American education systems, between unequal access to adequate academic preparation and less access to financial resources to pay for college. Furthermore, race and income appear to be correlated to some degree; census reports of median household income by race indicate that non-Hispanic Whites and Asian Americans have higher median household incomes than do Blacks and Hispanics (DeNavas & Clevaland, 2000; DeNavas, Cleveland, & Webster, 2003; DeNavas, Proctor, & Smith, 2012). As noted above, the consequences of privatization relative to racial and economic diversity are problematic. They will grow in their severity given the changing racial landscape in the United States unless steps are taken soon to equalize opportunity and access.

Although the Great Recession ended in 2009, the recovery from it is taking longer than recovery from other recessions, partly because the Great Recession has not followed the normal business-cycle recession (Thomasian, 2010 February 23). The unemployment rate of recent college graduates[46] is higher than pre-Recession levels (Fogg & Harrington, 2012; Spreen, 2013), as is the "mal-employment" level, which reflects college graduates employed in jobs that do not require a college degree and reached approximately 37% in 2012 according to one report (Luhby, 2013, June 25), and as high as nearly 41% according to another (Fogg & Harrington, 2012). Unemployed graduates do not pay income taxes and spend less; mal-employed graduates earn less than their employed peers, but still have student loans to pay. They are limited in their ability to spend, which means less money goes back into the economy. And, because they enter their professional lives earning lower incomes, their lifetime earnings potential decreases (Luhby, 2013, June 25).

The effect of unemployment is observed in reduced tax revenue which leads to privatization, contributing to a cycle of reduced access and privatization. Governors have studied both their state budgets and their economic needs in a time of reduced tax revenue, and they see the connection between higher education and economic development (*Higher Education*, 2011, July 15; Sparks, 2013; Stewart, 2011; Thomasian, 2010). However, the forecast is one of very slow growth in the coming decade (Thomasian, 2010). To maximize the value of state allocations to postsecondary education, many states – such as New Mexico, Missouri, Connecticut, Louisiana, Illinois, Indiana, and Tennessee – are turning to accountability metrics to determine funding

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[46] These studies examine bachelor's recipients and higher.

decisions (Sparks, 2013; Stewart, 2011; Weinberg, 2013). These accountability metrics previously measured inputs such as enrollment growth, but in the post-Recession era, performance outputs such as graduation rates (from institutions and from specific programs within institutions) and employment after graduation are being considered in budget and funding decisions (Reindl & Reyna, 2011; Sparks, 2013; Stewart, 2011). Louisiana intends to consolidate state degree programs with low completion rates, while North Carolina plans to consolidate smaller campuses for administrative efficiency and cost-saving (Stewart, 2011). Both of these types of consolidation may lead to capacity concerns, discussed later in the Findings section of this chapter.

Within the next five years, privatization may even lead to federal intervention related to college affordability. In late August 2013, President Obama announced a proposal intended to rein in college costs. The proposal included numerous measures, including the creation of a college rating system based on outcomes, access, and affordability; and linking student aid to these ratings (Jaschik, 2013, August 22; Lewin, 2013, August 22). Although his proposal will influence institutions and students (especially low-income students with changes to Pell awards), a member of the American Association of State Colleges and Universities observed that the president did not make a solid proposal to hold states accountable for higher education appropriations (Kelderman, August 22). The institutions will be incentivized to keep tuition affordable and to be more efficient with various teaching platforms and graduation goals. Although accountability of states relative to their appropriations was not clear-cut, it is possible that if President Obama can push through this legislation,[47] privatization may decrease simply

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[47] This is a big "if." President Obama has experienced resistance to many of his legislative proposals.

because of tuition incentives. This is a tricky approach, because the constitution authorizes states to be responsible for education, and the boundaries between federal and state involvement will blur.

However, his plan may have unintended consequences. For example, some colleges may attempt to improve their ratings by becoming more selective in their admissions or, alternatively, reducing their graduation standards, both with the goal of increasing graduation rates (Field, 2013, August 22). Schools that seek to become more selective may not admit students who have not had the same level of access to advanced high school curricula. These students tend to be those of lower-income and underrepresented minority groups (e.g., Oakes, 2005; Oakes, et al., 2002), the very groups forecast to increase in number and proportion of population in the next decades. Moreover, smaller, regional institutions (which tend to serve low-income students) often graduate students who go into lower-paying jobs that benefit the community, such as social work and teaching, but these colleges might be penalized under Obama's rating system (Field, 2013, August 22), both in the actual rating, and then again when the rating is linked to Pell amounts.

In summary, privatization, partly as a result of reduced tax revenue, contributes to social stratification in numerous ways. Particularly since the time period covered in the fixed effects regression (1992-2006), privatization has increased. Low-income and underrepresented students suffer in these circumstances. The methods states – and even the federal government – are employing may contribute to this problem. Accountability in outcomes is important, but without fairness in access to inputs, the disadvantaged will fall farther behind, widening the gap between wealthy and poor. Where there is enough

tax revenue to provide for interventional programs and need-based financial aid, outcomes that demonstrate equalized opportunity are more optimistic. A review of the findings from the Twenty-first Century Scholars studies (Chapters 3 and 4) underscores that point.

Twenty-First Century Scholars

From a social justice perspective, the Twenty-first Century Scholars program seems to level the playing field of college access and participation for Indiana's low-income students, allowing for equality of opportunity (Nussbaum, 2000, 2011; Rawls's second principle, 1971, 2001; Sen, 2000). Such programs have the potential to reduce the stratification caused by privatization. The participants in this program build the skills and capabilities Nussbaum emphasizes (2000, 2004a, 2004b, 2011) that allow them to function in society in more complete and contributory ways. Specifically in TFCS, students have the opportunity to build social capital through a variety of mechanisms in the encouragement and support services offered at the support sites. For the 2004 graduating high school cohort, parental participation in programs and events and student attendance at the support sites increased the odds of Twenty-first Century Scholars completing Honors or Core 40 diplomas (respectively) over a Regular diploma, compared to another group of low-income students – college-goers who received Pell grants and did not have access to the services available to Scholars.[48] Counseling and visits and events increased the odds of Scholars enrolling in an Indiana public postsecondary institution. Controlling for academic preparation and other characteristics, parental participation in

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[48] These students may have been eligible to take the Scholars pledge in 8th grade and chose not to participate in the program.

visits and events increased the odds of enrolling in both four-year colleges and research universities compared to enrolling in a two-year college.[49]

There were limitations to the models, discussed in depth in Chapter 3. Among the limitations was limited access to data, and numerous variables I would have preferred to include were not available. On the student level, these include background variables about their family, such as the size (how many siblings, if any, and where in the sibling order does the student fall) and structure (how many parents, legal guardian, etc.) to delve into family dynamics; parent employment status (including full- or part-time, the number of jobs held, and/or the number of hours per week each parent worked for an employer) to gain a sense of the amount of non-working time the parent could spend with the student; and parent education to control for what kind of higher education may have existed in the family. In addition, some measure of motivation and/or aspiration, and a measure of how those may have changed from 9th grade to 11th or 12th grade, would have helped elucidate the effects of the social capital engagement factors more distinctly. From an academic standpoint, the student's grade point average in 8th grade and whether or not the student enrolled in algebra in 8th grade would give some insight into the academic strengths of the students prior to high school.

School context variables (e.g., urbanicity, percent minority, percent of the student body eating free or reduced lunch, school size, teacher experience, and the number of counselors in the school) would have provided a clearer picture of advantages or disadvantages within that context. Such variables would have been helpful in all of the

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[49] Participation in counseling services decreased the odds of enrolling in a four-year college or research university compared to a two-year college. However, these could be students who may not have otherwise attended any college, based on the result of the logistic regression of enrollment. See Results and Discussion in Chapter 4.

models, but especially for the enrollment analysis (Table 4.2) which had no controls for background because the Scholar Track database did not include them. The absence of these types of variables likely biased the estimates upward and increased the amount of error associated with each variable.

In an ideal modeling scenario, random assignment into the program would have resolved the sample selection issues and would have allowed for a closer examination of the motivation question that arises. A random assignment into or not into the program offers the opportunity for a clearer understanding of the program's effectiveness. Unfortunately, an intervention program of this nature does lend itself to random assignment. Even if students could be randomly assigned into the intervention group, participation is still voluntary and could vary greatly by student based on the family's level of information and experience and their perceived needs.

In combination with the financial aid guarantee, the social capital formation available within TFCS may help to overcome some of the discriminating forces that would otherwise prevent low-income students from pursuing postsecondary education. Money alone cannot overcome inequality and social capital formation by itself likely is not enough. By building social capital together with providing financial aid, TFCS contributes to increasing student choice sets, and provides knowledge and skills necessary for successful transitions. Individual agency is an important trait for navigating one's personal and public lives; thus, the social capital and related skills formed and strengthened by this program have the potential to persist long after college graduation.

The Twenty-first Century Scholars program appears to have social benefits. As noted in Chapter 1, Sen (2000) argues that basic education has "shared communal benefits" and can be seen as a "semipublic good." People receiving the education benefit from it, but Sen also observes that "expansion of education and literacy in a region can facilitate social change…and also help to enhance economic progress from which others too benefit. The effective reach of these services may require cooperative activities and provisioning by the state or the local authorities." (Sen, 2000, pp. 128-9). The Twenty-first Century Scholars program falls under Sen's suggestion of "cooperative activities and provisioning by the state" by offering financial aid and other services to prepare students for postsecondary education, a level of education that may take the place of the basic education Sen describes given the current economic and social structure of American society. Indiana strives to increase the number of college participants and completers as a bridge to economic development (ICHE, 2010), a connection studied on the national level by Zumeta (2004) and McMahon (2009).

One problem is that though Indiana offers these services through the Twenty-first Century Scholars program, not all eligible students choose to enroll in it. Of those who do, many do not participate in the support and encouragement services provided. The challenge is to figure out how to increase participation in these services. Thus, while the program has provided a model other states (e.g., Oklahoma, Wisconsin, and Washington) have adapted, state policymakers have not yet discovered a way to optimize participation in this type of remedy to inequality.

With numerous public colleges and universities and the linkage of postsecondary education to economic development, Indiana perceives a public good component within

higher education. Specifically, Indiana has made a concerted effort to align high school curricula with entrance requirements of its public postsecondary institutions. Moreover, during the time period studied in this dissertation, tuition rates were indexed to financial aid, making it possible to provide sufficient grant aid, minimizing, and in some cases eliminating, the need for students to take out loans.

More recently Indiana has experienced an increase in the privatization of its public higher education. One could argue that this recent trend toward privatization indicates a devaluing of the public good perspective by implying that the entity that benefits the most pays the most. The students who participate in postsecondary education obtain numerous personal, private benefits including higher incomes.[50] That does not negate the equally numerous external, public benefits, including and beyond economic development (McMahon, 2009). Though the state of Indiana emphasizes the economic development public good in its Reaching Higher campaign (ICHE, 2010), it does acknowledge a connection between higher education and the overall public good. It identifies greater postsecondary accessibility through greater affordability as one approach to boost economic development. Affordability also helps to equalize opportunity.

However, affordability of higher education is currently a serious issue within the state (ICHE, 2010) even with several financial aid programs already in existence. One way of increasing affordability could be a combination of high tuition with high aid – aid specifically designated for need or merit aid with a need criterion – if aid is indexed to increases in tuition. In Indiana, that had been the case informally when TFCS first was

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[50] For a more expansive discussion of these benefits, please see Chapter 2.

established and in its first decade and a half. With a specific goal of increasing low-income students' participation in college, the TFCS program may emerge as a specific policy initiative that aims to achieve the dual goals of low-income participation in higher education (through the mechanism of social capital formation combined with financial aid guarantees) and postsecondary education as a stepping-stone to economic development – even in an era of increasing privatization of public higher education. An analysis of the other financial aid programs provided by Indiana would help to identify the features of each specific program that may contribute the most to increasing participation – and persistence – in higher education. However, concerns about funding need-based financial aid and state appropriations to public colleges and universities arose more recently, jeopardizing the future effectiveness of TFCS.

Since 2005, Indiana imposed a series of tax cuts and reductions on funding for higher education and other services, with the gap in FTE funding widening between Indiana and the national level (St. John, et al., 2013). Public tuitions increased at the same time that funding both decreased and incorporated a performance mechanism. Raising tuition raised the state's cost of funding TFCS, and when funding for need-based aid dropped in 2008, it became harder to fully fund the TFCS program (St. John, et al., 2013). As St. John and his colleagues point out, "the Indiana strategy for postsecondary access and success has been, by most accounts, comprehensive, but it is proving difficult to sustain given shifts in political attitudes in the states" (p. 208). Still, requiring the Core 40 has increased preparation and TFCS has increased access to postsecondary education for those low-income students who opted into the program, racial disparities notwithstanding. Though it is based on outcomes, performance funding can and does

affect access, both by influencing tuition rates and by the institutions which tend to benefit the most from performance funding (i.e., those with the greatest room for improvement, which tend not to be the flagship campuses of the research universities). Moreover, it can be difficult to improve when there is less state support. Access in several ways is likely to be hindered.

Capacity and Social Justice

One way that privatization affects access is through capacity (physical space, number of class sections, or infrastructure for distance learning) within the public institutions. Even if the institution builds the infrastructure for distance learning, students who cannot afford high speed internet or rely on limited library hours for internet access will not be able to participate in distance learning opportunities.

These types of obstacles to postsecondary access are occurring in institutions nationwide. Physical space limitations present a serious barrier to access in California, especially in two-year college courses that are necessary for graduation or transfer to a four-year institution (Moltz, 2009, July 21). Compounding the problem, students at four-year institutions have enrolled in courses at two-year colleges as a result of cuts at the four-year campuses. Moreover, opportunities to transfer to four-year institutions have decreased. In a four-year period ending with academic year 2011-2012, course sections have declined by approximately 24% at community colleges system-wide, and 80% of colleges having waitlists for classes (Budget Cuts, 2012).

In Louisiana, severe funding cuts may lead to closing postsecondary institutions, which will affect access in part through capacity. If the governor's proposed cuts pass the legislature, higher education funding in the state will have dropped by nearly 85%

between 2008 and 2013 (Addo, 2013, May 9). Community colleges in Florida have had

to limit enrollment by either choosing among students or limiting access to courses

(Education Commission of the States, 2000).

These are just three examples of many states that have reduced access as a result

of limited capacity. From a social justice perspective, it is clear that these capacity issues

not only do not equalize opportunity, they severely restrict it. When opportunity for

those who are prepared is restricted instead of equalized, the implied social contract

weakens.

Weakening of Social Contract

Throughout this dissertation, I have discussed the implied social contract between

higher education and society, a contract that underscores all three goals Labaree (1997)

presents: social mobility (private), economic development (public), and citizenship

(public). In Chapters 3 and 4, I demonstrated how the TFCS program picks up aspects of

the social contract through a literal contract, the pledge that students take. However, the

tide is shifting to emphasize the private good of social mobility over the public goods, to

the extent that the social contract is losing strength, a conclusion discussed in Chapter 2.

St. John, Daun-Barnett, and Moronski-Chapman (2013) point out that with the

emphasis on the private good, society (and especially policymakers) emphasizes rights

for all, as opposed to the needs of underrepresented groups. However, as Rawls (1971,

2001) argues, individuals and individual rights benefit when the least advantaged receive

targeted support to access opportunities such as higher education. Postsecondary

education is not considered a basic right in the way that K-12 education is – from a legal

standpoint – even though the shift to a knowledge-based economy would lead one to

conclude that higher education should be a basic right and a minimum threshold of the education capability.

There are those who view higher education as a universal right. Recently, McCowan (2012) discussed the intrinsic and extrinsic values of postsecondary education affirming that it is a right, a freedom individuals may exercise if they choose. Yet in 1997, before the sharp uptick in privatization that occurred in the first decade of the 21st century, Hossler and his colleagues (Hossler, Lund, Ramin, Westfall, & Irish, 1997) acknowledged the view of higher education as a universal right "at the very moment when the rising costs of higher education and state and federal budget constraints appear unable to support the expectations of the American public" (p. 182). Universal, human, or basic rights are intertwined with the notion of the social contract, a contract which is upheld in part by state support generated by tax revenue.

Lower per capita tax revenue is a driver of privatization, so keeping taxes as low as possible suggests a deterioration of the implied social contract and opposition to Rawls's *Theory of Justice*. As discussed in Chapters 1 and 2, the just savings principle proposes that taxation assures equal application of basic moral rights (in this case, education) and that equality of opportunity favors the disadvantaged. Without fulfillment of the just savings principle, it becomes harder to uphold the first two principles in Rawls's theory. This results in low-income and minority students falling farther behind their peers with regard to postsecondary access.

California may be heading back toward public investment however, with the passage of Proposition 30, a move that raised sales and income tax rates and will not only allow public colleges in California to maintain their 2012 budgets, they will be able to

raise them in 2013 (Gardner, 2012 November 7). As a ballot measure, this proposition was voted on by the people, not the legislature, indicating a direct connection between citizen ideology and tax rates (and by extension, tax revenue).[51] The language of the proposal indicated that at least for the first year, a portion of the new tax revenue would go toward schools and education (California Secretary of State, n.d.).

Portions of this temporary tax revenue increase will go toward one-time expenditures required to implement the Common Core curriculum in K-12 schools.[52] The state budget specifically discusses equality of opportunity in K-12 systems by increasing per FTE funding, with additional funding going toward school districts with higher concentrations of English language learners, low-income students, and foster youth, segments of the population who experience greater disadvantage: "Investing in these students will better prepare the entire state for the future" (Department of Finance, State of California, 2012, p. 4).

For the University of California and California State University systems, the budget provides new funds for reinvestment in the public universities after more recent retrenchments. This reinvestment is rooted in the belief that higher education should be affordable; if they are successful, California universities will once again head toward equalizing access, a hallmark of the California Master Plan. Community colleges will slowly see increases in funding, with some of the additional money earmarked toward student support services including orientation, counseling, and advising. This movement

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[51] A quick glance at Appendix 2A indicates a positive relationship between citizen ideology and both tax rate and tax revenue. As a brief reminder, citizen ideology is measured on a continuum from more conservative to more liberal. The higher the score, the more liberal the people are.

[52] This paragraph and the next one reference the source, Department of Finance, State of California. (2013). *Governor's budget 2013-2014, May revision.* Available from http://www.ebudget.ca.gov/2013-14/pdf/Revised/BudgetSummary/FullBudgetSummary.pdf

by California to reinvest in education, and specifically in postsecondary education, illustrates the potential for reinvestment based on a new understanding of the public good. Within the budget report, the reinvestment in education portions specifically mention investment now for a better California in the future as well as emphasize affordability and equalizing opportunity.

While California is in the position of experiencing a budget surplus, several other states are now able to increase their spending on postsecondary education due to tax revenue increases, though without the cushion of a budget surplus (Schatz, 2013 May 28). This will allow them to monitor tuition increases and class sizes, and begin to take care of maintenance and capital building that were deferred the five previous years when overall state spending had fallen to such a degree that in nearly all states were spending less per postsecondary student in 2013 than they were in 2008. Not all states, however, plan to increase education spending, even with increased tax revenues (Schatz, 2013 May 28). It will be important to monitor state tax revenues and budget allocations in the coming few years to see how privatization evolves and how states understand the public good aspects of public higher education.

Without government investment in human capital (e.g., via education subsidies and financial aid), fewer people will be able to participate in higher education. Individual investment will not be able to compensate for the difference, because only a few can afford it. Public higher education institutions need for there to be higher levels of tax revenue, else they will not receive the subsidies necessary either to keep tuition low or to provide grants to needy students. While human capital investment implies a leaning toward the private good of social mobility, it also applies to the public good of economic

development. One could argue that as a result of social mobility and economic development, human capital investment is even indirectly related to Labaree's third goal (1997), the public good of citizenship or democracy through increased knowledge and critical thinking, as well as leisure time to dedicate to society. These goals, which are consonant with the social contract, are at risk, as is diversity among decision-makers and the opportunity to hear all voices, a hallmark of democracy.

Implications

The results emerging from this dissertation have implications for policy in two main arenas: education finance policy, and development of support programs that incorporate social capital formation. As with many research studies, this one leads to more questions and additional areas for research, including replication with more recent data that reflects changing political, economic, and policy contexts, and new studies that examine different types of students – from different income classes, and nontraditional college students, as well as effects of privatization and intervention programs beyond college enrollment.

Policy

I had started this dissertation with a hope that I could develop recommendations for policy. Specifically I focused on achieving higher education access for low-income students in this policy context of privatization of postsecondary education. Given the rapidly changing funding schema since the Great Recession that began in 2008, it is difficult to make easily applicable recommendations. Privatization in a given state is

connected to the tax revenue generated in that state,[53] and while the nation struggles to recover from this Recession, tax revenue is down. Moreover, in the 2000s there has been an ideological shift toward conservatism, with the attendant views against taxation. This affects state and local appropriations to postsecondary education and influences the ability to fund encouragement programs such as Twenty-first Century Scholars.

From prior research, we know that both academic preparation (see literature review in Chapter 3) and financial aid (see literature review in Chapter 4) matter for college enrollment and college choice, especially for low-income students. This dissertation supports those findings and adds an additional finding, that social capital is a component of the college-going process. For low-income students, intervention programs help make it possible to form the types of social capital necessary for college-going, if the students participate. However, without available funding, these programs are not likely to be sponsored by the state. Those that are will necessarily be limited in scope, either in their ability to reach large numbers of low-income students or in the amount of services they can offer to such students, or both. For example, in Indiana, the number of TFCS service sites has shrunk since the 2004 cohort graduated from high school (Lumina Foundation, 2008).

My primary recommendation is that to increase postsecondary access for low-income students in this era of privatization, globalization, and conservatism, financial aid priorities should shift. States could emphasize need-based aid over merit aid. However, this will not be popular politically. Indiana found bipartisan support for initially funding the TFCS program by incorporating merit criteria into the need-based aid program (St.

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[53] Among other variables, likely including ones not available to this researcher, such as the higher education lobbying effort and higher education governance structure. There are enumerated in greater depth in Chapter 2.

John, et al., 2013). If states that allocate a large percentage of the higher education budget toward merit aid would incorporate need criteria into their award, that would help to equalize opportunity for low-income students in those states. In so doing, these states would also have to ensure equalized opportunity to access the appropriate curriculum; if merit and need are to be co-criteria for financial aid, there must be fair access to qualify for the merit portion. Indiana is a special case because the ICHE made an early, concerted effort to coordinate K-12 requirements with state college entrance standards, and even they had not achieved curricular equality of opportunity, especially in rural areas (St. John & Musoba, 2011). In many states, this would require major school reform, which would require substantial investment by the states.

Lewis (2007) observes that state intervention is responsible for major advances in society and cites anti-discrimination laws and worker safety laws as examples. He goes on to say that schools in poorer areas may require targeted funding, and that schooling in general should eliminate curricular tracking in favor of challenging curricula available in a more democratic manner, consonant with my recommendation. Unfortunately, my recommendation is idealistic and progressive in a policy context that is realistic (availability of tax revenue) and no longer progressive. Without a major reconsideration and shift in emphasis of the goals of postsecondary education that Labaree (1997) describes, these changes are not likely to take effect. As discussed above, the implied social contract between higher education and society is diminished. Yet, as a researcher and member of society, I am still hopeful. It is clear that things have to change, and with the nature of election cycles at the state and federal levels, perhaps they will.

One other potential growth area for policy is the development of programs that build social capital. The findings from Chapters 3 and 4 suggest that social capital formation may positively influence high school outcomes and college enrollment and choice. Prior research on counseling indicates the important role it plays in college decision-making processes (e.g., Bell, et al., 2009; Luna de la Rosa, 2006; McDonough 2004, 2005a, 2005b; Roderick, et al., 2008), and through the TFCS program (as an example of such a program), counseling reflects trust primarily (see Table 3.1A), but also information. Many of the other activities and services provided by the TFCS program incorporate the different elements of social capital: trust, information, and mutual obligation (Coleman, 1988).

Increasing parental involvement has a great effect on both academic preparation (e.g., Cooper & Crosnoe, 2007; Dornbusch, et al., 1996; Hoover-Dempsey, et al., 2005; Lareau, 1987; Useem, 1991, 1992) and college decisions (Bunnage, 2003; Ceja, 2006; Perna, 2004). With three of the four social capital factors emerging from the TFCS engagement data relating to parental involvement, and these factors influencing college decision-making, one could conclude that parental involvement in social capital formation matters.

The possibility of increasing college-going by building social capital in students and families is one worth considering. It seems to have some success in Indiana. However, there is a concern about implementing programs that build social capital. These types of programs are expensive to run; building trust, providing information, and creating a sense of mutual obligation requires a lot of human capital; salaries and benefits are expensive. Moreover, in order to be effective, services would have to reach a large

portion of the population. That involves establishing enough sites that students and their families will not be discouraged to participate due to distance. This type of program would require a hard look at the state budget to see where money to pay for these types of programs could be found.

Assuming a state could put together a program of this nature (such as Indiana did), the next question is whether it will attract the intended participants. That question is difficult to answer. Data on program uptake for the 2004 graduating high school cohort are not available, but we know that taking the pledge in middle school was voluntary, and not all eligible students chose to take the pledge. Furthermore, of those who elected to take the pledge in the 2004 cohort, large percentages did not engage in the activities at the service centers (see Tables 3.2 and A3.1). A social capital formation program as currently conceived would require the student to opt in, thus limiting the reach of the program and its effects. The costs will outweigh the benefits to the state if an insufficient number of students participate. Social capital formation through these types of programs (such as Twenty-first Century Scholars and Washington State Achievers) can be achieved with positive outcomes in terms of academic preparation and college-going (St. John, Hu, & Fisher, 2011), but there are obstacles, including financing and the limitation of opt-in participation being two of them.

Areas for Future Research

Each research study leads to more questions, and the studies in this dissertation are no different. A limitation to each analysis in Chapters 2-4 relates to the years of available data. When examining predictors of privatization, I could only analyze data available through 2006. Given major shifts to the economy since then, including a long-

lasting recession, it would be wise to conduct the analysis again when updated data become available. The national and state contexts have changed greatly, and continue to do so. Furthermore, with the Affordable Care Act to be fully actualized with state insurance exchanges by 2014 and the correlation between Medicaid expenditure and tax revenue, views toward public and private responsibilities will evolve. It is likely that the outlook on privatization of postsecondary education will change as well, but how it will remains to be seen.

As noted above, the context in Indiana is quite different now from what it was when the 2004 cohort graduated from high school. The college preparatory Core 40 curriculum became required for high school students who entered in 2007 (the class of 2011), and funding for higher education dropped tremendously. Re-analyzing the Twenty-first Century Scholars program and its effect on academic preparation, college enrollment, and college choice is important in light of these changes. There is value in seeing how effective the program can be when budgets are cut. Given curricular requirements in the schools, site staff may find a need to shift focus on the types of activities they offer. Tutoring, for example, which did not fall into any of the social capital factors, may become more prominent. If they are prepared for four-year colleges, more students may go. The nature of counseling, which was a social capital factor, may change. In the analyses in Chapter 4, I found that counseling through TFCS seemed to guide students to two-year colleges, perhaps instead of to no college at all. With the Core 40 curriculum as a minimum for all students, counseling may involve encouraging students to go for the Honors curriculum and strive for a research university. Without a

re-analysis that uses more current data, it is hard to say what activities may be most effective.

Another area for future research involves the non-traditional student.[54] Much of the access debate involves the traditional-aged student, and programs like TFCS are designed for such students. In today's economy, many non-traditional students are enrolling in college to gain a competitive edge, learn new skills, increase their earnings potential, discover themselves, improve their lives, and/or enhance their ability to contribute to their communities in some way (e.g., Rose, 2012). McDonough (2004) found that only 25% of college students can be described as traditional. Social capital formation seems to be one way to help the traditional student navigate educational pathways and financial aid. In what ways can social capital that is helpful for college access and success be formed in the non-traditional student?

A third area for future investigation involves two additional ways privatization affects low-income students: retention or persistence and time to degree. Access without persistence can create even more problems for low-income students, especially if they carry a large student debt. So can taking a longer than expected time to complete the degree. Individual institutions within Indiana did begin analyzing retention (e.g., Daun-Barnett, Fisher, & Williams, 2009; St. John, McKinney, & Tuttle, 2006; St. John & Musoba, 2011), but there is much more work to be done, in Indiana and elsewhere. With the right combination of databases, such an analysis would be possible for any state, and would be especially informative to policymakers at both state and federal levels.

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[54] The National Center for Education Statistics defines the non-traditional students as having one or more of the following traits: delayed enrollment after high school, attends part-time, works full-time, financially independent of his/her parents, has dependents other than a spouse, is a single parent, or does not have a high school diploma (U.S. Department of Education, National Center for Education Statistics, 2002).

Finally, a fourth area for future research would examine the relationship between privatization and middle-income students. With the general movement toward high tuition/high loan models, middle-income students also experience tension in both college access and persistence. Access to a college preparatory curriculum in high school may be limited, for example, depending on tracking, especially for racial minorities (Oakes, 2005). College choice sets may be reduced. Some students may opt for community college first and then transfer to a four-year institution. However, capacity limitations may present obstacles in that situation. Equalizing opportunity certainly applies to middle-income students as well. The movement toward privatization without a clear connection to financial aid (for example, indexing financial aid to tuition) appears to reduce opportunity for this income group, too. Analyses that examine middle-income students will help uncover how they respond to privatization and what those implications may be relative to Labaree's (1997) three goals of postsecondary education.

Final Thoughts

Higher education is more than just a means to earning a better income. It provides numerous returns to society (even if these returns have been omitted from more recent discussions about appropriations) and thus deserves public financial support. With the ideological shift toward individual rights and small government, it makes sense to take the broader view of higher education appropriations. There is a return on investment in the form of higher tax revenues, because people with college degrees earn more. College-educated people are also less likely to use many social services designed to assist low-income members of society. In the long view, public support for higher education leaves the state and economy in a better position.

However, privatization is not going to disappear. It is incumbent on policymakers, administrators, educators, and researchers to learn how to manage access to higher education with reduced state support in a manner that balances responsibilities to students and to the taxpayers. This balance requires consideration of all students, but especially those from low-income and underrepresented groups. These disadvantaged students have additional hurdles to overcome in order to access postsecondary opportunity. One should not assume that "in the United States, to be born in poverty is to have poor schools as one's fate" (Lewis, 2007, p. 334), or, by extension, no school or school choice at the postsecondary level. Ideally, all students, regardless of income, should have the opportunity to access the postsecondary education of their choice if they are prepared – which means that all students, regardless of income, should also have fair access to adequate academic preparation. For this to occur, students from poorer backgrounds need extra support to equalize their opportunity.

Social justice theory allows for members of society to choose not to advance their education through the concept of individual agency (Sen, 2000, 2009). Within social justice viewpoints, however, individual agency also works the other way. For those who are willing to work hard and prepare for college, society has a responsibility to provide equality of opportunity. Rawls (1971, 2001) recognized the relationships among economic development, education for democracy/citizenship, and social uplift without assigning relative value to any. With his Just Savings Principle and systems of taxation, we can contend with the evolving privatization of public higher education with fairness and justice to provide equality of opportunity for low-income students in a society that values individual effort. That we as a society have allowed privatization to contribute to

unfairness is our failure. Postsecondary access for low-income students has become a greater challenge in this era of privatization. If equality is to remain a foundation stone of our society we must rethink how we handle privatization in a way that ensures justice for all.

APPENDIX A: Correlation Matrix

Table A1. Correlation of Model Variables Plus Variables Used in Variations on the Model, N=348[a]

	Privatization	Natural Log of Privatization	Total Pop	% Non-White in Pop	% Black, Hispanic, or Native American in Pop	% Asian in Pop
Privatization	1					
Natural Log of Privatization	0.9685*	1				
Total Population	-0.1368*	-0.1477*	1			
% Non-White in Population	-0.3921*	-0.4197*	0.4178*	1		
% Black, Hispanic, or Native American in Population	-0.3325*	-0.3206*	0.4726*	0.8069*	1	
% Asian in Population	-0.2007*	-0.2641*	0.0492	0.5691*	-0.0265	1
% White in Population	0.3921*	0.4197*	-0.4178*	-1	-0.8069*	-0.5691*
% in Poverty	-0.3568*	-0.3362*	0.1811*	0.2907*	0.4488*	-0.1328*
% Completed High School	0.3266*	0.3166*	-0.2069*	-0.2390*	-0.3658*	0.1047*
% Eligible Population Enrolled in HE as FTE	0.2073*	0.2190*	-0.1863*	-0.2893*	-0.2576*	-0.1309*
% FTE in Private Sector	0.5159*	0.4909*	0.1434*	-0.2171*	-0.2654*	0.0022
Tax Rate	-0.2470*	-0.2801*	-0.2351*	0.0945*	-0.0960*	0.2935*
Tax Revenue in Millions (2006 $)	-0.1268*	-0.1414*	0.9570*	0.4025*	0.4181*	0.0991*
Natural Log of Tax Revenue in Millions (2006 $)	-0.1555*	-0.1210*	0.8256*	0.4132*	0.4647*	0.0525

Note: * p < .1

a. N includes all 50 states, but not Washington, DC. It does not include Nevada in 1992 or 1996 because the percent expenditure spent on Medicaid was not available those years.

Table A1, cont. Correlation of Model Variables Plus Variables Used in Variations on the Model, N=348[a]

	% White in Pop	% in Poverty	% Completed High School	% Eligible Population Enrolled in HE as FTE	% FTE in Private Sector	Tax Rate	Tax Revenue in Millions (2006 $)
% White in Population	1						
% in Poverty	-0.2907*	1					
% Completed High School	0.2390*	-0.7030*	1				
% Eligible Population Enrolled in HE as FTE	0.2893*	-0.0689	0.1775*	1			
% FTE in Private Sector	0.2171*	-0.3188*	0.1203*	0.2265*	1		
Tax Rate	-0.0945*	0.0619	0.0499	0.0112	-0.2115*	1	
Tax Revenue in Millions (2006 $)	-0.4025*	0.1053*	-0.1151*	-0.1407*	0.1656*	-0.1183*	1
Natural Log of Tax Revenue in Millions (2006 $)	-0.4132*	0.1224*	-0.1507*	-0.2693*	0.2036*	-0.1829*	0.8015*
Per Capita Tax Revenue (2006 $)	-0.2396*	-0.3400*	0.3967*	-0.0767	0.0875	0.6732*	0.1454*
Natural Log of Per Capita Tax Revenue (2006 $)	-0.2028*	-0.2957*	0.3780*	-0.0538	0.0457	0.6152*	0.1639*
% State Expenditure Spent on Medicaid	0.0603	0.1820*	-0.2052*	-0.0255	0.5120*	-0.3763*	0.2344*
Citizen Ideology	-0.0407	-0.2057*	0.0766	0.0506	0.4851*	0.1827*	0.1589*
Government Ideology	-0.1339*	0.03	-0.1764*	-0.0806	0.2089*	0.2431*	0.0158

Note: * $p < .1$

a. N includes all 50 states, but not Washington, DC. It does not include Nevada in 1992 or 1996 because the percent expenditure spent on Medicaid was not available those years.

Table A1 Correlation of Model Variables Plus Variables Used in Variations on the Model, N=348[a]

	Natural Log of Tax Revenue in Mil (2006 $)	Per Capita Tax Revenue (2006 $)	Natural Log of Per Capita Tax Revenue (2006 $)	% State Expenditure Spent on Medicaid	Citizen Ideology	Government Ideology
Natural Log of Tax Revenue in Millions (2006 $)	1					
Per Capita Tax Revenue (2006 $)	0.1143*	1				
Natural Log of Per Capita Tax Revenue (2006 $)	0.1592*	0.9413*	1			
% State Expenditure Spent on Medicaid	0.2704*	-0.2465*	-0.2365*	1		
Citizen Ideology	0.1149*	0.4186*	0.3653*	0.1442*	1	
Government Ideology	0.0727	0.2775*	0.2373*	0.0191	0.5899*	1

Note: * p < .1
a. N includes all 50 states, but not Washington, DC. It does not include Nevada in 1992 or 1996 because the percent expenditure spent on Medicaid was not available those years.

Table A1, cont. Correlation of Model Variables Plus Variables Used in Variations on the Model, N=348[a]

	Privatization	Natural Log of Privatization	Total Pop	% Non-White in Pop	% Black, Hispanic, or Native American in Pop	% Asian in Pop
Per Capita Tax Revenue (2006 $)	-0.0633	-0.0921*	-0.0287	0.2396*	-0.0404	0.4618*
Natural Log of Per Capita Tax Revenue (2006 $)	-0.0907*	-0.1074*	-0.0239	0.2028*	-0.0164	0.3660*
% State Expenditure Spent on Medicaid	0.4331*	0.4381*	0.2706*	-0.0603	0.088	-0.2246*
Citizen Ideology	0.3765*	0.3427*	0.0807	0.0407	-0.1662*	0.3003*
Government Ideology	0.0397	-0.0174	-0.0295	0.1339*	0.0015	0.2245*

Note: * p < .1
a. N includes all 50 states, but not Washington, DC. It does not include Nevada in 1992 or 1996 because the percent expenditure spent on Medicaid was not available those years.

APPENDIX B: Privatization Trend by State

Table B1. Privatization Trend for Each State with Change Over Time

State	Year	Privatization Ratio	Change in Percentage Points		State	Year	Privatization Ratio	Change in Percentage Points
Alabama					Arkansas			
	1992	0.25				1992	0.2	
	1994	0.23	-2			1994	0.22	2
	1996	0.25	2			1996	0.22	0
	1998	0.26	1			1998	0.22	0
	2000	0.27	1			2000	0.23	1
	2004	0.37	10			2004	0.34	11
	2006	0.35	-2			2006	0.36	2
Alaska					California			
	1992	0.15				1992	0.14	
	1994	0.18	3			1994	0.18	4
	1996	0.21	3			1996	0.17	-1
	1998	0.21	0			1998	0.14	-3
	2000	0.2	-1			2000	0.11	-3
	2004	0.25	5			2004	0.2	9
	2006	0.25	0			2006	0.21	1
Arizona					Colorado			
	1992	0.27				1992	0.36	
	1994	0.28	1			1994	0.36	0
	1996	0.28	0			1996	0.35	-1
	1998	0.28	0			1998	0.34	-1
	2000	0.18	-10			2000	0.34	0
	2004	0.36	18			2004	0.47	13
	2006	0.36	0			2006	0.38	-9

Table B1, cont. Privatization Trend for Each State with Change Over Time

State	Year	Privatization Ratio	Change in Percentage Points		State	Year	Privatization Ratio	Change in Percentage Points
Connecticut					Idaho			
	1992	0.32				1992	0.21	
	1994	0.28	-4			1994	0.21	0
	1996	0.26	-2			1996	0.23	2
	1998	0.26	0			1998	0.25	2
	2000	0.28	2			2000	0.25	0
	2004	0.36	8			2004	0.32	7
	2006	0.37	1			2006	0.33	1
Delaware					Illinois			
	1992	0.38				1992	0.37	
	1994	0.39	1			1994	0.37	0
	1996	0.4	1			1996	0.39	2
	1998	0.4	0			1998	0.39	0
	2000	0.32	-8			2000	0.39	0
	2004	0.41	9			2004	0.46	7
	2006	0.42	1			2006	0.5	4
Florida					Indiana			
	1992	0.18				1992	0.29	
	1994	0.18	0			1994	0.31	2
	1996	0.17	-1			1996	0.32	1
	1998	0.18	1			1998	0.32	0
	2000	0.19	1			2000	0.32	0
	2004	0.23	4			2004	0.4	8
	2006	0.23	0			2006	0.42	2
Georgia					Iowa			
	1992	0.2				1992	0.23	
	1994	0.18	-2			1994	0.23	0
	1996	0.17	-1			1996	0.23	0
	1998	0.16	-1			1998	0.23	0
	2000	0.17	1			2000	0.23	0
	2004	0.23	6			2004	0.35	12
	2006	0.24	1			2006	0.36	1
Hawaii					Kansas			
	1992	0.08				1992	0.21	
	1994	0.09	1			1994	0.22	1
	1996	0.17	8			1996	0.23	1
	1998	0.18	1			1998	0.22	-1
	2000	0.19	1			2000	0.22	0
	2004	0.22	3			2004	0.31	9
	2006	0.23	1			2006	0.33	2

Table B1, cont. Privatization Trend for Each State with Change Over Time

State	Year	Privatization Ratio	Change in Percentage Points		State	Year	Privatization Ratio	Change in Percentage Points
Kentucky					Michigan			
	1992	0.17				1992	0.33	
	1994	0.19	2			1994	0.34	1
	1996	0.19	0			1996	0.34	0
	1998	0.19	0			1998	0.34	0
	2000	0.2	1			2000	0.34	0
	2004	0.3	10			2004	0.42	8
	2006	0.37	7			2006	0.46	4
Louisiana					Minnesota			
	1992	0.28				1992	0.27	
	1994	0.3	2			1994	0.27	0
	1996	0.29	-1			1996	0.29	2
	1998	0.3	1			1998	0.28	-1
	2000	0.28	-2			2000	0.29	1
	2004	0.29	1			2004	0.43	14
	2006	0.28	-1			2006	0.45	2
Maine					Mississippi			
	1992	0.34				1992	0.28	
	1994	0.36	2			1994	0.22	-6
	1996	0.36	0			1996	0.22	0
	1998	0.38	2			1998	0.21	-1
	2000	0.35	-3			2000	0.2	-1
	2004	0.43	8			2004	0.28	8
	2006	0.46	3			2006	0.3	2
Maryland					Missouri			
	1992	0.33				1992	0.32	
	1994	0.35	2			1994	0.32	0
	1996	0.37	2			1996	0.32	0
	1998	0.36	-1			1998	0.31	-1
	2000	0.35	-1			2000	0.3	-1
	2004	0.44	9			2004	0.4	10
	2006	0.44	0			2006	0.42	2
Massachusetts					Montana			
	1992	0.43				1992	0.29	
	1994	0.39	-4			1994	0.35	6
	1996	0.35	-4			1996	0.38	3
	1998	0.3	-5			1998	0.4	2
	2000	0.26	-4			2000	0.39	-1
	2004	0.43	17			2004	0.48	9
	2006	0.41	-2			2006	0.51	3

Table B1, cont. Privatization Trend for Each State with Change Over Time

State	Year	Privatization Ratio	Change in Percentage Points		State	Year	Privatization Ratio	Change in Percentage Points
Nebraska					New York			
	1992	0.2				1992	0.27	
	1994	0.22	2			1994	0.26	-1
	1996	0.22	0			1996	0.32	6
	1998	0.22	0			1998	0.3	-2
	2000	0.23	1			2000	0.3	0
	2004	0.3	7			2004	0.33	3
	2006	0.31	1			2006	0.32	-1
Nevada					North Carolina			
	1992	0.19				1992	0.12	
	1994	0.18	-1			1994	0.12	0
	1996	0.19	1			1996	0.13	1
	1998	0.19	0			1998	0.12	-1
	2000	0.21	2			2000	0.14	2
	2004	0.23	2			2004	0.22	8
	2006	0.23	0			2006	0.21	-1
New Hampshire					North Dakota			
	1992	0.54				1992	0.29	
	1994	0.55	1			1994	0.3	1
	1996	0.59	4			1996	0.31	1
	1998	0.6	1			1998	0.29	-2
	2000	0.61	1			2000	0.3	1
	2004	0.67	6			2004	0.46	16
	2006	0.69	2			2006	0.46	0
New Jersey					Ohio			
	1992	0.32				1992	0.38	
	1994	0.32	0			1994	0.37	-1
	1996	0.35	3			1996	0.36	-1
	1998	0.37	2			1998	0.36	0
	2000	0.37	0			2000	0.31	-5
	2004	0.43	6			2004	0.45	14
	2006	0.41	-2			2006	0.51	6
New Mexico					Oklahoma			
	1992	0.16				1992	0.22	
	1994	0.15	-1			1994	0.23	1
	1996	0.14	-1			1996	0.23	0
	1998	0.15	1			1998	0.21	-2
	2000	0.16	1			2000	0.19	-2
	2004	0.2	4			2004	0.28	9
	2006	0.2	0			2006	0.29	1

Table B1, cont. Privatization Trend for Each State with Change Over Time

State	Year	Privatization Ratio	Change in Percentage Points		State	Year	Privatization Ratio	Change in Percentage Points
Oregon					Tennessee			
	1992	0.25				1992	0.21	
	1994	0.29	4			1994	0.2	-1
	1996	0.31	2			1996	0.21	1
	1998	0.29	-2			1998	0.24	3
	2000	0.28	-1			2000	0.25	1
	2004	0.38	10			2004	0.33	8
	2006	0.37	-1			2006	0.34	1
Pennsylvania					Utah			
	1992	0.46				1992	0.25	
	1994	0.45	-1			1994	0.26	1
	1996	0.46	1			1996	0.25	-1
	1998	0.47	1			1998	0.24	-1
	2000	0.48	1			2000	0.24	0
	2004	0.57	9			2004	0.32	8
	2006	0.57	0			2006	0.33	1
Rhode Island					Vermont			
	1992	0.39				1992	0.62	
	1994	0.39	0			1994	0.63	1
	1996	0.37	-2			1996	0.66	3
	1998	0.35	-2			1998	0.65	-1
	2000	0.36	1			2000	0.63	-2
	2004	0.42	6			2004	0.66	3
	2006	0.46	4			2006	0.69	3
South Carolina					Virginia			
	1992	0.27				1992	0.39	
	1994	0.27	0			1994	0.38	-1
	1996	0.27	0			1996	0.39	1
	1998	0.27	0			1998	0.35	-4
	2000	0.29	2			2000	0.25	-10
	2004	0.43	14			2004	0.43	18
	2006	0.44	1			2006	0.43	0
South Dakota					Washington			
	1992	0.35				1992	0.21	
	1994	0.38	3			1994	0.26	5
	1996	0.37	-1			1996	0.27	1
	1998	0.38	1			1998	0.27	0
	2000	0.4	2			2000	0.27	0
	2004	0.44	4			2004	0.35	8
	2006	0.46	2			2006	0.36	1

Table B1, cont. Privatization Trend for Each
State with Change Over Time

State	Year	Privatization Ratio	Change in Percentage Points
West Virginia			
	1992	0.27	
	1994	0.26	-1
	1996	0.26	0
	1998	0.27	1
	2000	0.25	-2
	2004	0.34	9
	2006	0.36	2
Wisconsin			
	1992	0.24	
	1994	0.24	0
	1996	0.26	2
	1998	0.27	1
	2000	0.26	-1
	2004	0.35	9
	2006	0.38	3
Wyoming			
	1992	0.14	
	1994	0.17	3
	1996	0.18	1
	1998	0.18	0
	2000	0.18	0
	2004	0.17	-1
	2006	0.16	-1

APPENDIX C: Factor Analysis of Engagement Activity Variables

Factor analysis provides a useful method of identifying unobservable relationships between observed events. It is a statistical technique that permits representation of a set of variables in terms of a smaller number of variables (Kim & Mueller, 1978). This method involves a linear transformation using correlations between the original variables. When the resultant smaller number of variables, known as factors, is used as independent variables, it serves in two ways: by making the regression model more parsimonious, and by including measures of otherwise unobservable constructs. Factor analysis is not an analytic tool on its own; rather it creates conceptual variables.

Data collected by SSACI included all of the support activities available to scholars and recorded each incidence of participation. After reshaping the data set to create unique records for each student, two sets of variables for each activity were created: an indicator variable for whether or not a student partook of a particular support service, and a variable counting how many times a student engaged in such an activity. Descriptive information about each of the specific support services for the 2004 Cohort appears in Tables C.1 and C.2.

Factor analysis requires the use of continuous variables; hence only count variables were included in the creation of the factors. Because the support activities could be related to each other conceptually in a variety of combinations, all count variables were entered into an exploratory factor analysis. The exploratory factor

analysis yielded four potential factors based on both statistical and conceptual strength; the broader concepts presented by each factor reflect access to and the opportunity to increase social capital. The next step, confirmatory factor analysis for each potential factor, indicated that each factor stood on its own. For a list of each factor, the variables contributing to it, and the factor loadings, please see Table C3. In that table, the Cronbach's alpha serves as a measure of reliability. This number, which can range from 0 to 1, "represents the mean of the correlations between all of the different possible splits of the scale into two halves" (Cohen, Cohen, West, & Aiken, 2003).[55]

Of final note is the highly skewed distribution of each factor. In order to include these newly created variables in the regression models, they needed to be recoded into dichotomous variables. Each factor was divided into whether or not a student or parent participated in that factor, creating four dichotomous variables.

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[55] This paragraph was first published in St. John, Hu, and Fisher (2011) on page 243. Setting it off as a block quote would have interrupted the flow of the text.

Table C1. 2004 Cohort Basic Descriptive Statistics of Scholar Activities (Regardless of Whether Scholar Applied for Financial Aid) N = 5,668

Student-Oriented Activity	Percent of Scholars Participating	Of Participants, Frequency of Participation (Mean)	Of Participants, Frequency of Participation (Median)	Number of Times Participating	
				Min	Max
Tutoring: Math (Student)	1.08	2.02	1	1	8
Tutoring: English (Student)	0.78	1.70	1	1	6
Tutoring: Other Academic Subject (Student)	0.56	1.69	1	1	4
Tutoring: Standardized Test (Student)	0.19	1.00	1	1	1
Tutoring: College Entrance Exam (Student)	0.30	1.29	1	1	2
Tutoring: Other (Student)	1.73	1.32	1	1	7
Computer Assisted Lab: English (Student)	0.32	1.00	1	1	1
Computer Assisted Lab: Math (Student)	0.04	1.00	1	1	1
Computer Assisted Lab: Other Academic Subject (Student)	1.41	1.00	1	1	1
Computer Assisted Lab: Prep Standardized Test (Student)	0.11	1.33	1	1	2
Computer Assisted Lab: Other (Student)	2.31	1.03	1	1	2
Misc: Other Academic Support Services (Student)	29.38	1.58	1	1	6
Mentoring: General (Student)	19.83	2.35	1	1	14
Mentoring: Professional (Student)	1.29	1.08	1	1	2
Mentoring: Other (Student)	1.82	1.11	1	1	3
Misc: Postsecondary School Credit (Student)	1.13	1.00	1	1	1
Counseling: Personal (Student)	3.92	1.28	1	1	3
Counseling: Academic Advising (Student)	45.75	1.62	1	1	9
Counseling: Career Advising (Student)	9.17	1.45	1	1	5
Counseling: Other (Student)	24.52	1.20	1	1	8
Workshop: College Prep (Student)	11.24	1.09	1	1	3
Workshop: Study Skills (Student)	0.95	1.09	1	1	2
Workshop: Career (Student)	1.29	1.23	1	1	3
Workshop: Other (Student)	22.21	1.29	1	1	7

Student-Oriented Activity	% Scholars Participating	Frequency (Mean)	Frequency of Participation (Median)	Min	Max
College Visit (Student)	13.11	1.58	1	1	10
Job Site Visit (Student)	0.11	1.00	1	1	1
Event: Cultural (Student)	3.14	1.25	1	1	7
Visit: Other (Student)	1.50	1.24	1	1	4
Job Shadowing (Student)	0.05	1.00	1	1	1
College Student Shadowing (Student)	0.11	1.00	1	1	1
College Professional Shadowing (Student)	0.00	-	-	-	-
Shadowing: Other (Student)	0.02	1.00	1	1	1
Event: General (Student)	20.64	2.11	1	1	23
Event: Project Specific (Student)	20.57	1.77	1	1	17
Parent-Oriented Activity					
Counseling: Single Family (Parent)	7.13	1.10	1	1	4
College Visit (Parent)	3.26	1.44	1	1	8
Other Service (Parent)	19.44	2.43	2	1	24
Workshop: College Prep (Parent)	2.82	1.19	1	1	4
Workshop: Study Skills (Parent)	1.92	1.14	1	1	2
Workshop: Career (Parent)	0.76	1.35	1	1	2
Workshop: Other (Parent)	16.48	1.32	1	1	8
Workshop: Core 40/Academic Honors (Parent)	8.15	1.05	1	1	4
Workshop: Right Questions (Parent)	6.46	1.03	1	1	2
Workshop: ISTEP (Parent)	1.62	1.14	1	1	4
Workshop: Study Skills/Time Management (Parent)	7.67	1.05	1	1	3
Workshop: SAT/ACT (Parent)	8.29	1.05	1	1	3
Workshop: Financial Aid (Parent)	8.91	1.07	1	1	4
Event: Cultural (Parent)	1.04	1.22	1	1	3
Event: General (Parent)	8.33	1.51	1	1	14
Event: Project Specific (Parent)	17.54	1.32	1	1	9

Table C2. 2004 Cohort Basic Descriptive Statistics of Scholar Activities Enrolled in College vs. Not Enrolled in College (N = 5,821)

	Enrolled (N=2,096)		Not enrolled (N=3,725)	
Student-Oriented Activity	Percent of Scholar-Enrollees Participating	Of Participants, Frequency of Participation (Mean)	Percent of Scholar-Non-Enrollees Participating	Of Participants, Frequency of Participation (Mean)
Tutoring: Math (Student)	0.22	2.31	0.76	2.00
Tutoring: English (Student)	0.38	1.50	0.89	1.79
Tutoring: Other Academic Subject (Student)	0.24	2.00	0.62	1.74
Tutoring: Standardized Test (Student)	0.19	1.00	0.13	1.00
Tutoring: College Entrance Exam (Student)	0.29	1.33	0.30	1.27
Tutoring: Other (Student)	0.86	1.39	1.99	1.30
Computer Assisted Lab: English (Student)	0.24	1.00	0.32	1.00
Computer Assisted Lab: Math (Student)	0.00	-	0.03	1.00
Computer Assisted Lab: Other Academic Subject (Student)	1.24	1.00	1.21	1.00
Computer Assisted Lab: Prep Standardized Test (Student)	0.14	1.00	0.03	2.00
Computer Assisted Lab: Other (Student)	1.67	1.09	2.31	1.01
Misc: Other Academic Support Services (Student)	16.70	1.62	32.00	1.57
Mentoring: General (Student)	12.21	2.98	21.13	2.15
Mentoring: Professional (Student)	1.05	1.14	1.32	1.06
Mentoring: Other (Student)	1.67	1.03	1.72	1.00
Misc: Postsecondary School Credit (Student)	1.00	1.00	1.02	1.00
Counseling: Personal (Student)	2.81	1.39	4.03	1.26
Counseling: Academic Advising (Student)	38.17	1.61	43.60	1.61
Counseling: Career Advising (Student)	6.87	1.42	9.02	1.46
Counseling: Other (Student)	19.42	1.21	23.97	1.00
Workshop: College Prep (Student)	12.55	1.11	8.99	1.07
Workshop: Study Skills (Student)	1.00	1.14	0.75	1.07
Workshop: Career (Student)	1.43	1.23	1.05	1.26
Workshop: Other (Student)	22.47	1.31	19.11	1.00
College Visit (Student)	11.69	1.69	11.89	1.54
Job Site Visit (Student)	0.14	1.00	0.08	1.00

Event: Cultural (Student)	2.96	1.44	2.90	1.15
Visit: Other (Student)	1.38	1.34	1.23	1.22
Job Shadowing (Student)	0.00	-	0.08	1.00
College Student Shadowing (Student)	0.10	1.00	0.08	1.00
College Professional Shadowing (Student)	0.00	-	0.00	-
Shadowing: Other (Student)	0.00	-	0.03	1.00
Event: General (Student)	18.18	2.28	18.18	2.04
Event: Project Specific (Student)	19.32	1.69	18.74	1.84
Parent-Oriented Activity				
Counseling: Single Family (Parent)	8.16	1.11	5.29	1.08
College Visit (Parent)	3.77	1.32	2.52	1.59
Other Service (Parent)	15.03	2.21	19.09	2.55
Workshop: College Prep (Parent)	2.96	1.18	2.36	1.22
Workshop: Study Skills (Parent)	2.05	1.09	1.66	1.18
Workshop: Career (Parent)	0.67	1.36	0.75	1.36
Workshop: Other (Parent)	14.36	1.39	15.65	1.27
Workshop: Core 40/Academic Honors (Parent)	5.15	1.06	8.89	1.05
Workshop: Right Questions (Parent)	3.53	1.05	7.28	1.02
Workshop: ISTEP (Parent)	1.53	1.16	1.42	1.15
Workshop: Study Skills/Time Management (Parent)	5.06	2.21	8.19	1.05
Workshop: SAT/ACT (Parent)	5.73	1.08	8.72	1.04
Workshop: Financial Aid (Parent)	10.11	1.08	7.06	1.07
Event: Cultural (Parent)	0.86	1.28	0.97	1.22
Event: General (Parent)	9.78	1.52	6.44	1.48
Event: Project Specific (Parent)	16.94	1.31	15.49	1.32

Table C3[§]. Factor Analysis of Engagement in Outreach Activities Between 2000 and 2004 for Twenty-first Century Scholars and Their Parents, Cohort Eligible for College in Fall 2004

Counseling (Student)	Cronbach's Alpha (reliability) = .623	
Variables in Factor	Factor Loading	Factor Score
Count of Career Advising (Student)	0.837	0.376
Count of Academic Advising (Student)	0.823	0.370
Count of Personal Counseling (Student)	0.778	0.350
Count of Other Counseling (Student)	0.489	0.220

Academic Preparation (Parent)	Cronbach's Alpha (reliability) = .925	
Variables in Factor	Factor Loading	Factor Score
Count of Right Questions Workshops (Parent)	0.932	0.284
Count of Core 40/Academic Honors Workshops (Parent)	0.912	0.278
Count of SAT/ACT Workshops (Parent)	0.910	0.277
Count of Study Skills/Time Management Workshops (Parent)	0.869	0.265

Events and Visits (Parent)	Cronbach's Alpha (reliability) = .623	
Variables in Factor	Factor Loading	Factor Score
Count of College Visits (Parent)	0.810	0.340
Count of General Events (Parent)	0.693	0.291
Count of Project Specific Events (Parent)	0.680	0.285
Count of Cultural Events (Parent)	0.628	0.263
Count of ISTEP Workshops (Parent)	0.625	0.262

Career Planning (Parent)	Cronbach's Alpha (reliability) = .756	
Variables in Factor	Factor Loading	Factor Score
Count of Study Skills Workshops (Parent)	0.846	0.404
Count of Career Workshops (Parent)	0.843	0.402
Count of College Prep Workshops (Parent)	0.818	0.391

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