

**Adolescents' Social Capital Resources, Future Life Expectations, and Subsequent
Citizenship Participation as Young Adults**

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(ABSTRACT)

In this study, conceptual models of young adult citizenship participation eight years post high school using Putnam's (1993) theory of social capital are tested. This study uses a longitudinal database. Specifically, the models posit that accumulation of more social capital resources during adolescence will be associated with more positive future life expectations related to educational, occupational, and family life outcomes. Subsequently, these more positive future life expectations and social capital resources will be associated with a higher degree of citizenship participation (as measured by voting behavior, community integration and volunteerism) as young adults. Measures from the 1990, 1992 and 2000 waves of the National Education Longitudinal Study (NELS:88) dataset were used. The models were examined using structural equation modeling procedures.

Findings indicate that school and community social capital had mixed results regarding their effects on the final outcome variables. Teacher interactions were not found to have a statistically significant direct effect on any of the three citizenship participation outcome variables. But this result should be viewed with caution due to possible measurement problems with the construct of teacher interactions. Peer interactions did have a statistically significant, direct, effect on community integration and volunteerism, but it did not have a direct effect on voting behavior.

Participation in extracurricular school activities did have a small, direct, effect on all three outcome variables. Participation in community sports activities had a positive direct effect on community integration, a small negative effect on voting behavior, and no statistically significant effect on volunteerism. Finally, participation in other types of community activities had the largest direct effects on all three citizenship participation outcome variables.

The adolescent social capital variables of teacher interactions, peer interactions, and participation in other types of community activities for tenth graders did have positive, direct effects on future life expectations for twelfth graders. Extracurricular activities participation and community sports participation were not found to have an effect on future life expectations. Future life expectations were found to have a very small, but statistically significant, positive, direct effect on all three citizenship participation variables.

These findings indicate that some adolescent social capital resources can have positive direct effects on the long term, young adult, educational outcome of citizenship participation. But it varies by type of social capital resource and by the particular aspect of citizenship behavior being measured.

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“I am a slow walker, but I never walk backwards.” Abraham Lincoln

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CHAPTER ONE

INTRODUCTION

During adolescence, youth are exposed to social interactions within the school and community, as well as the family. The interactions with these social resources produce social capital. Social capital refers to connections among individuals and, as defined by Robert Putnam, are “features of social organization, such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit” (Putnam 1995a, p.67). According to Putnam, social capital is the most crucial element and indicator of stable societies and individual life satisfaction within those societies.

This study investigates school and community social capital resources available during adolescence and their relationship with the young adult educational outcome of citizenship participation. High degrees of social capital in adolescence have been found to be related to more favorable other young adult educational outcomes such as post secondary educational participation, high school graduation and workforce participation (Doebler, 1998).

Research findings related to the importance of social capital during adolescence to long-term educational outcomes, such as the aforementioned ones, would suggest that another long-term educational outcome, citizenship participation, may also have a positive association with social capital. However, there is a dearth of research on the relationship of social capital during adolescence and the important young adult educational outcome of citizenship participation.

Active citizenship behavior is the bedrock of a thriving and well-functioning democracy. Therefore, it is important to investigate the development of citizens, especially since citizenship participation is a learned behavior. Schools play an important role in training and socializing children for adult roles. Therefore, it stands to reason that they should play a major role in the

development of the important long-term outcome of citizenship participation. For this reason, in this study, citizenship participation is being investigated as an educational outcome.

Much of the research related to citizenship participation has focused on adults and their political participation. This study uses a longitudinal data to investigate the possible influence of social capital on the development of citizens by using an adolescent population and following them into young adulthood. Moreover, this study focuses on a multi-dimensional definition of citizenship that includes the social aspect as well as the political aspect.

Research has also shown that social capital and education-related psychosocial constructs are positively linked (Dika & Singh, 2002). Psychosocial constructs pertain to the influence of social factors on an individual's mind. Levi (1996) has proposed that social capital has a psychological effect in the individual which shapes future encounters with his or her environment. These effects, influenced by social capital and the result of social interactions, could be termed psychosocial factors. Therefore, in this study, the psychosocial construct of future life expectations is explored as both a mediating variable that may serve as a link between social capital and the educational outcome of citizenship participation and as an outcome variable.

Background

There has been an abundance of social capital research, in particular during the last twenty years. Although the construct was first introduced in the field of sociology, researchers in other fields such as psychology, law, journalism, public policy and political science have investigated it as well. In these fields, adolescents have sometimes been the study population of interest, as they are in the current study.

Research, in general, has supported the positive effect of social capital on various psychological, social and educational outcomes for adolescents. Fitzpatrick, Wright, Piko, and LaGory (2005) found an inverse relationship between social capital and adolescent depression. King and Furrow (2004) found that the influence of adolescent religiousness on moral outcomes was mediated through social capital resources.

Other findings indicate that social capital may have a profound influence on adolescents' sexual risk and protective behaviors (Crosby, Holtgrave, DiClemente, Wingood, & Gayle, 2003). Denner, Kirby, Coyle, and Brindis (2001) investigated adolescent birth rates in Latino communities and found that lower adolescent birth rates were associated with higher levels of social capital resources. Stevenson's (1998) research indicated that higher levels of social capital resources were positively associated with better adolescent emotional adjustment. Indeed, Harley (2001) found that social capital provides support for youth as they make the transition to adulthood since it can help them cope with stress and promote healthy behaviors.

For the purposes of this study, the focus is on adolescents and social capital research, specifically in the field of educational research. In the field of education, most of the research with social capital, as a variable of interest, and adolescents as the population of interest, has involved educational outcomes such as attainment and achievement. Findings, for the most part, indicate a positive relationship between social capital and these educational outcomes.

Educational attainment outcome measures include dropping out of school, high school graduation, college enrollment, post secondary degree attainment, and years of schooling attained. For the most part, studies involving these outcome measures and social capital indicators focused on the influence of the family. Israel, Beaulieu and Hartless (2001) found that family social capital indicators, such as number of siblings and prevalence of a nontraditional

family structure, were positively associated with dropping out of school. Likewise, Yan (1999) found that traditional family structure and good parent-teen interactions were positively associated with high school graduation and college enrollment. In his study of young men, Brown's (1993) findings indicate the importance of social capital as a construct for modeling adult attainment, as represented by educational attainment, occupational attainment, and earnings.

Test scores, grades, and grade point average (GPA) are some measures of educational achievement that have been used as outcomes in studies with social capital. Crosnoe (2004) found that emotionally distant relationships with parents were associated with declining academic achievement over two years of secondary schooling. Sun (1999) investigated the relationship between scores on achievement tests and social capital measures, such as family size and non-traditional family structure, and found a negative association. Parent-teen discussion, another popular social capital measure, has been found to have a positive association with achievement (Pong, 1998).

Research also has shown that social capital and education-related psychosocial constructs are positively linked (Dika & Singh, 2002). Psychosocial constructs pertain to the influence of social factors on an individual's mind or behavior. Some studies investigating the relationship between psychosocial constructs and social capital include achievement aspirations (Feldhaus, 2002), self-concept (Marjoribanks & Mboya, 2001), self-esteem (Lindstrom, 2001; Averett, 2001) and depression (Stevenson, 1998). While some studies have found a positive relationship between psychosocial factors and social capital, other studies have not found a relationship. In this study, the psychosocial construct of future life expectations is being investigated.

Statement of the Problem

As mentioned previously, although there has been a wealth of educational research investigating social capital and education-related outcomes, little research has focused on the important educational outcome of citizenship participation. Citizens are made not born (Barber, 1993) and schools, in particular, play a major role in the preparation of young people to assume the role of citizen. Indeed, “the original rationale for public schooling in the United States was the preparation of democratic citizens who could preserve individual freedom and engage in responsible self-government” (McDonnell, Timpane, & Benjamin, 2000, p. 1).

While there are varying perspectives on democratic citizenship participation and what it means to be a good citizen, most people would generally agree that the role of citizen is an important one in a democracy and that preparing younger generations to assume citizenship responsibilities is vital. Indeed, the United States Department of Education’s Strategic Plan for 2002 – 2007 included a goal related to promoting strong character and citizenship among our nations’ youth and a strategy to remind schools of their patriotic mission.

In the Summary Report on the National Commission on Teaching and America’s Future (1996) entitled, “What Matters Most: Teaching for America’s Future,” that was developed for policymakers and educators, the authors identified educating workers for the global economy as the primary mission of education. This fact, in and of itself, indicates that educating citizens and encouraging citizenship participation is a secondary goal at best and that having a job (which could perhaps be construed as one aspect of being a good citizen) has become the major mission of public education. There are those who believe that the citizenship preparation outcome for schools has been overshadowed by the emphasis on the economic purposes of schooling (McDonnell et al., 2000; White & Openshaw, 2005).

Several other reasons related to public education have been brought forth as possibly being connected to a decline in citizenship participation. One reason cited is the notion that “we preach rather than practice democracy especially in our schools” (White & Openshaw, 2005, p.5). Also, some previous research had shown that civics curriculum in schools was ineffective at influencing political attitudes and behaviors (Beck & Jennings, 1982; Ferguson, 1991) although more recent research by Niemi and Junn (1998) indicates that civics courses are influential in shaping political knowledge of young people.

But Robert Putnam (1996) and others (Uslaner, 1995; Brehm & Rahn, 1997) posit that one associated cause of the possible decline in citizenship participation is a corresponding decline in social capital. Putnam (1995a), a researcher who has investigated at length the possible decline in citizenship participation in the United States, has voiced concerns regarding a phenomenon he terms as “generation replacement effect.” In essence, this “effect” results in youth being significantly less involved in civic activities than former generations were at the same age, as well as continuing to be less involved when they become adults. The concern is that younger generations, if less involved as citizens, will transfer those same attitudes and ideals to subsequent generations, thereby weakening citizenship participation, perhaps ultimately to the weakening of our democratic form of government.

Since citizenship preparation has been cited as an outcome of public education and adolescence is a rich developmental period for this preparation, this study investigates social capital resources from the school and community during the adolescence period that may influence subsequent citizenship participation as young adults. It has been proposed that during the difficult transition period between adolescence and young adulthood, late adolescents may no longer have access to some prior external resources, and, therefore, may have to rely on personal

internal resources, to successfully make the transition (Rice, 1991). It may be that psychosocial constructs, such as positive future life expectations, could serve as personal internal resources that could influence long-term outcomes.

Another outcome that is investigated in this study is future life expectations. Future life expectations include the life domains of education, career, and family along with concerns of the self (i.e., will stay in good health). Late adolescents, in particular, are preparing to embark on an important transitional period and, therefore, are more apt to be creating an image of what their future life outcomes will be.

Few studies have explored the relationship between the psychosocial construct of future life expectations and social capital resources during adolescence and subsequent citizenship participation of young adults as an educational outcome. This study attempts to fill that gap by examining the relationship of social capital, future life expectations and citizenship participation, as measured by voting behavior, community integration and volunteerism.

Study Synopsis

The purpose of this study is to investigate the relationship of social capital resources during middle to late adolescence with later life outcomes. In particular, it explores how the presence or absence of community and school social capital may affect future life expectations and the subsequent postsecondary goal of citizenship participation. These relationships are investigated using a longitudinal dataset. Moreover, the study uses a multi-dimensional definition of citizenship participation, whereas some prior studies have used a more narrowly defined construct. A conceptual model is shown in Figure 1.

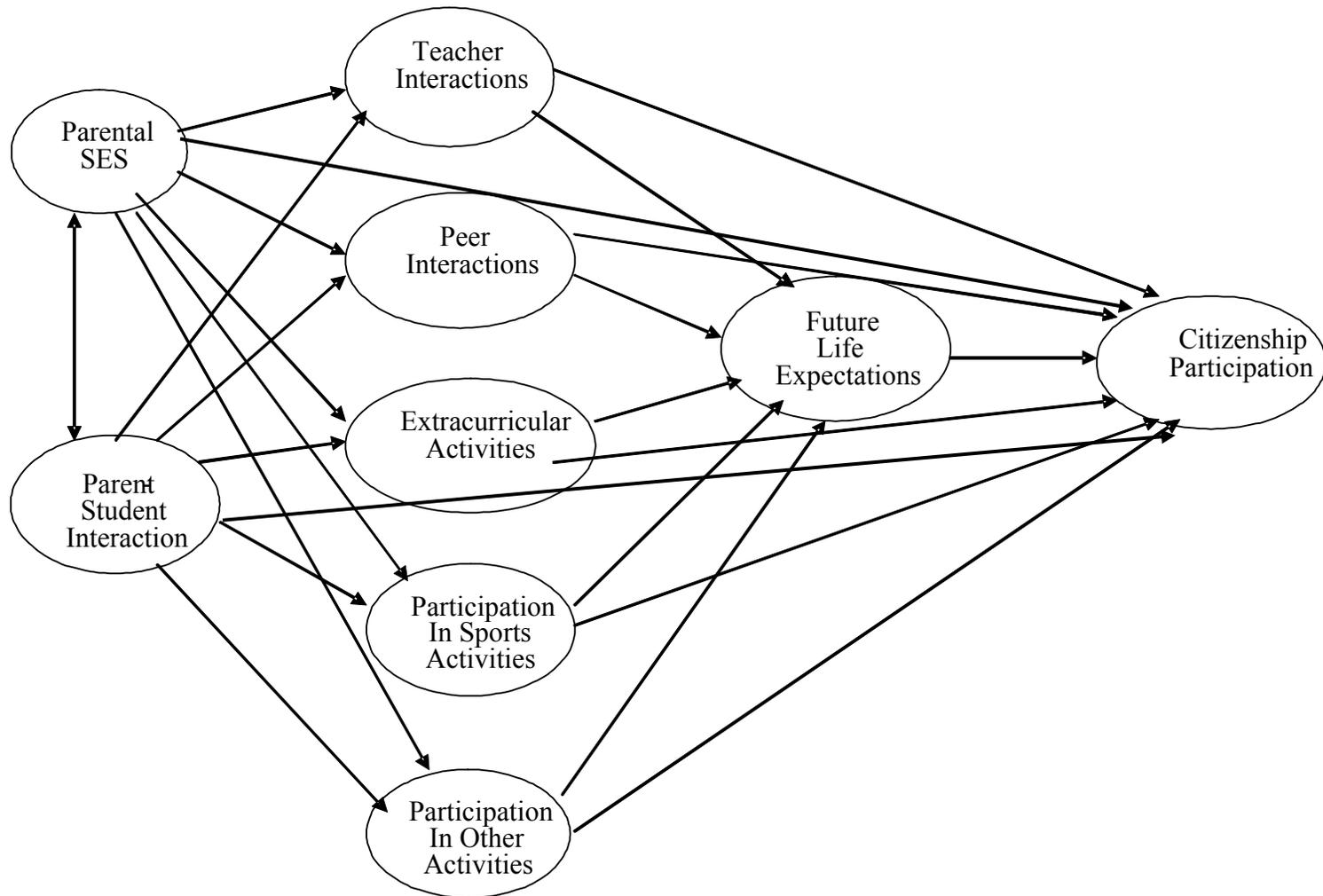


Figure 1: Conceptual model of the effects of adolescent social capital resources and future life expectations on subsequent citizenship participation.

Specifically, it is hypothesized that exposure to more social capital resources during adolescence will be associated with more positive future life expectations (i.e. educational, occupational and family life outcomes). Subsequently, this exposure to more social capital resources and these more positive future life expectations will be associated with a higher degree of citizenship participation as young adults.

Participants in the study are drawn from those who participated in the 1990, 1992 and 2000 waves of the National Education Longitudinal Study (NELS:88). NELS: 88 provides trend data about the experiences of students as they progress through high school and into young adulthood (approximately ages 25 or 26). The 1990 wave was the first follow-up when most of the participants were in the 10th grade. The 1992 wave was the second follow-up for the study. During this wave, most of the participants were in the 12th grade. The 2000 wave was the fourth and final follow-up when most participants were 25 to 26 years of age. Data gathered during this wave included outcomes such as educational attainment, employment, voting, and community integration.

The social capital measures are taken from the 1990 wave of NELS when the participants were in the 10th grade. The social capital definition is that of Putnam's related to social ties (teachers and peers) and participation in organizations, in particular extracurricular and voluntary associations.

Although family social capital has been found to be positively associated with many outcomes for adolescents, the present study concentrates on the two domains of school and community social capital that have received less attention in prior research. Indeed, Feldhaus (2002) has suggested that different forms of capital, not just those related to parents and the family, may contribute to a student's ability to formulate and execute plans. Moreover, Braatz &

Putnam (1996) have suggested that greater attention should be paid to the differing levels of social capital at the community level and possible consequences (such as educational) for the individual. Indeed, previous socialization research on adolescents has found that the importance of the family declines relative to the importance of peers and the “outside” world as one ages (Alwin et al., 1991). Children have varying levels of social capital available to them and it stands to reason that there are consequences related to differential access to social resources in school and community.

The future life expectations construct includes educational, occupational, family life expectations as well as other social expectations. For example, items such as questions related to graduation from high school and college are used to measure educational expectations. Questions about future employment and career options serve as occupational expectations measures. Items such as questions related to marriage and happy family life measure family life expectations, while questions regarding good health and respect in the community are examples of items measuring future social expectations. Examples of the aforementioned measures include “chances that respondent will go to college”; “chances that respondent will have a happy family life”; and “chances that respondent will have friends to count on.” The data are accessed from the 1992 wave of NELS when most participants were in the 12th grade.

The representation of citizenship participation, as mentioned previously, is multi-dimensional. In the past, some studies measured citizenship participation as only related to political involvement, however, a more holistic and social view is necessary to capture a comprehensive definition of citizenship participation.

Indeed, Westheimer and Kahne (2004) acknowledge that underlying beliefs about what good citizenship is and what good citizens do differ. They propose that there are three

conceptions of the “good citizen” – personally responsible, participatory, and justice-oriented. The study uses portions of their concepts to define aspects of citizenship participation that are generally accepted as representing good citizens. These outcome measures are voting behavior, community integration and volunteerism. These measures were derived from the 2000 wave of NELS when most participants were eight years post high school and 25 to 26 years of age.

The full model was examined using structural equation modeling procedures. This statistical approach is appropriate, since the purpose is to test hypotheses about relations among observed and latent variables. Also, the use of this approach allows for the investigation of both the possible direct and indirect effects of social capital resources on citizenship participation.

Organization of the Study

In the next section of this document, Chapter Two, a review of the theories informing the study and pertinent supporting research are provided. Chapter Three reviews the data and methodology that will be employed, specifically the creation of the factors and preparation of the data. Chapter Four provides the results of the data analyses, including descriptive statistics, a discussion of the process for the establishment of the final measurement model, and the results of the testing of the structural models. The final chapter provides a summary and discussion of the research findings, as well as implications and limitations of the study. Suggestions for directions for future, related, research are also provided in Chapter Five.

CHAPTER TWO

LITERATURE REVIEW

This chapter contains a literature review for the variables of interest in the study. The first section discusses the conceptualization of social capital by three main theorists. It also contains a review of the research related to social capital and adolescent outcomes, social capital and educational outcomes in particular, as well as a discussion about the relationship between social capital and psychosocial constructs. In the second section, a review of the literature involving the parental background variables of socioeconomic status and parent-student interactions is provided. Finally, the third section contains a review of the psychosocial factor of future life expectations as it relates to citizenship participation.

Social Capital and Educational Research

History of Prevalent Social Capital Theories

Social capital is defined as “an available resource arising from social networks characterized by norms, trust, reciprocity, and shared responsibility” (Loflin, 2003, p. 5). This concept originated in the field of sociology in the mid 1980s. Since then “it has become one of sociology’s most popular theoretical exports” (Dika & Singh, 2002, p. 31). Although it has been used extensively in the fields of law, journalism, public policy, social work and political science, for the purposes of this study, its use in educational research is most pertinent.

Pierre Bourdieu, a French sociologist, developed his social capital theory in 1986. For Bourdieu, the concept of social capital involves an emphasis on social struggles and the unequal access to institutional resources. He believed that there is a network of relationships that provide

group memberships that in turn allow individuals connected to those groups to access collectively owned social capital (Dika & Singh, 2002). While the access to this capital produces positive results for the dominant class, most notably maintaining their status, the lack of access for the other classes produces a negative effect involving social struggles (Lin, 1999a).

Bourdieu's social capital theory has been used somewhat sparingly by educational researchers to investigate educational outcomes related to educational achievement and attainment. However, Bourdieu's theory of social and cultural capital has been used as a basis for investigating differences in school experiences for children based on class, gender and race (Dika & Singh, 2002).

For the most part, a more widely employed version of social capital theory in educational research is that of James Coleman (1988). Coleman, an American sociologist, believed that society is not composed of singular individuals, but rather individuals are enmeshed in a system of social relationships and networks that serve to structure and facilitate activity and society (Smith, 1999). For Coleman, "social capital inheres in the structure of relations between and among actors" (Coleman, 1988, p. 98). Coleman also believed that one feature of social capital is the more it is used, the more it grows.

Coleman's conceptualization includes a number of forms of social capital including trust among individuals and norms that promote law-abiding behavior and the notion that there are times when the individual sacrifices for the common good of the community. He also identifies social capital as the information gained through social networking and interactions. Coleman believed that social capital can be used at both the individual and the collective levels to solve problems and achieve positive outcomes that could not have been achieved otherwise (Coleman,

1988). Parcel and Menaghan (1993) believe that “Coleman’s unique sociological contribution is in championing the role of social capital as a resource in the socialization process” (p.120-121).

In the field of educational research, Coleman’s theory has been used extensively to investigate social capital’s relationship with educational outcomes. For the most part, the outcomes of interest were educational achievement and attainment. Interestingly enough, even though many of the studies had students as the population of interest, most of the social capital measures employed were those related to parental and familial social capital, not school or community measures. It should also be noted that Coleman emphasized individual-level accrual of social capital, although he also “alluded to a more aggregate effect of social capital as well” (Smith, 1999, p. 39).

Robert Putnam (1993) is a political scientist who built on the concept of social capital as developed by Coleman. Putnam’s concept of social capital brings forth a theory at the collective level, as well as an individual level, and it lends itself to other educational outcomes such as citizenship participation. Putnam’s (1993) concept of social capital contains three components: social networks (in particular, voluntary associations), norms and obligations, and social trust. For both Coleman and Putnam social capital is viewed as a positive asset.

Indeed, Putnam argues that “more effective and efficient governments are characterized by societies with high stores of social capital” (Smith, 1999, p. 40). On the individual level he argues that this connection may be explained in terms of the role played by social capital in facilitating cooperation for the good of the group. (Smith, 1999) Research, using Putnam’s theory of social capital, has generally indicated a positive relationship between social capital and the outcome of civic engagement. However, most of the studies have been cross-sectional and

involved adult populations. For the purposes of this study, Putnam's conceptualization of social capital is being used along with longitudinal data and an adolescent population.

Social Capital and Adolescent Outcomes

Social capital has been used as an explanatory variable in many studies in educational research. For the most part, these studies show a positive relationship between social capital and the particular educational outcomes studied. Coleman (1988) and Furstenberg and Hughes (1995) found a positive relationship between social capital and educational success and stability. McNeal (1999) studied 10th grade achievement tests scores in science, truancy, and dropout prior to grade 10. Educational aspirations were the educational outcome of interest in Smith-Maddox's study in 1999. White and Glick (2000) studied persistency in school and participation in the labor market. Dika (2003) investigated the broader social network of adolescents and the role of non-kin members and teachers.

Smith Beaulieu, and Israel (1992) investigated educational achievement, beyond that attributed just to family social capital, and found a positive relationship. Lopez (1996) concluded that social capital in home and school environments is important in determining educational outcomes for both White and Hispanic youth, holding SES constant. Carbonaro (1998) found that higher levels of intergenerational closure (parents know many of child's friends' parents) are associated with mathematics achievement, but negatively associated with dropout rates. Curran (2005) found that social capital was an important contributor to high-risk behavior management for high school students. Israel and Beaulieu (2004) also found a positive relationship when they studied the effects of school and community social capital in keeping students in school. Social capital can also play a role in helping youth negotiate their way out of

disadvantage (Furstenberg & Hughes, 1995), as well as in influencing fewer behavior problems (Parcel & Menaghan, 1993).

Of course, two of the most popular educational outcomes that have been investigated with social capital are those of achievement and attainment. Educational attainment outcome measures include dropping out of school, high school graduation, college enrollment, post secondary degree attainment, and years of schooling attained. For the most part, studies involving these outcome measures and social capital indicators focused on the influence of the family. Israel, Beaulieu and Hartless (2001) found that family social capital indicators, such as number of siblings and prevalence of a nontraditional family structure, were positively associated with dropping out of school. Likewise, Yan (1999) found that traditional family structure and good parent-teen interactions were positively associated with high school graduation and college enrollment. In his study of young men, Brown's (1993) findings indicate the importance of social capital as a construct for modeling adult attainment, as represented by educational attainment, occupational attainment, and earnings. Marjoribanks (2004) also found that family and school social capital had an effect on educational attainment. Hemmings (2007) found that youth advocates employed in a school-to-work program for inner-city public high school students promoted the college attainments of low-income Black students through the production of social and cultural capital.

Test scores, grades, and grade point average (GPA) are some measures of educational achievement that have been used as outcomes in studies with social capital. Sun (1999) investigated the relationship between scores on achievement tests and social capital measures, such as family size and non-traditional family structure, and found a negative association. Most research involving achievement tests scores and social capital look at the effects of parental or

familial social capital and find a positive association (Pong, 1999; Morgan & Sorenson, 1999; Pribesh & Downey, 1998; McNeal, 1999). Research finds that parental expectations are positively associated with grades (Lopez, 1996) and nontraditional family structure and family size are negatively related to grades (Israel et al., 2001). Marjoribanks (2005) investigated family learning environments and students school-related outcomes and found an effect on school performance. Lee and Bowen (2006) examined the level and impact of parental involvement on academic achievement and found that the types of involvement exhibited by parents from dominant groups had the strongest association with achievement. However, they also found that members of dominant and nondominant groups benefited similarly from certain types of parental involvement and differently from others.

Social Capital Constructs in This Study

In this study, adolescent social capital consists of five constructs. Three of these constructs represent school social capital. These measures are teacher-student interactions, peer-student interactions, and participation in extracurricular activities. Community social capital is represented by two constructs. These measures are participation in community sports activities and participation in other types of community activities such as youth groups and religious activities.

Some research has shown that teachers can be one of the more important influences outside of the family (Dyk & Wilson, 1999; Lopez, 1996). Wimberly (2002) found that teachers talking (interacting) with students was one of the school relationship characteristics that positively impacted African American students' educational expectations and postsecondary participation. Research also indicates that teachers are an important source of social capital that significantly reduces the probability of dropping out, particularly among disadvantaged students

and students with past academic difficulties (Croninger & Lee, 2001). Muller (2001) likewise found that at-risk students who perceived that teachers are interested, expect them to succeed, listen to them, and praise their efforts have improved levels of math achievement.

Peer interactions represent one of the most informal forms of social capital. Putnam (1995b) acknowledges that informal socializing can be important opportunities for developing interpersonal connections which in turn can produce greater social trust and cooperation. He hypothesizes that greater stores of social capital, which is a by product of these informal socializing opportunities, will produce greater levels of civic engagement. Alwin, Cohen & Newcomb (1991) found that the importance of the family declines relative to the importance of peers for some youth as they age. Pribesh and Downey (1999) found that peer interactions were positively associated with achievement scores.

Sun (1998, 1999) found that participation in activities, at both school and in the community, is positively related to educational achievement. Zaff, Moore, Papillo, & Williams (2003) also found that participation in extracurricular activities predicted multiple positive educational outcomes such as attending college, voting, and volunteering, even after controlling for individual, parent, peer, and school process variables. Extracurricular activities provide young people, like voluntary associations in the adult world, to work with other individuals in a group setting to achieve mutual goals. Several studies have shown a connection between extracurricular participation in one's youth and subsequent young adult political participation and volunteerism. These studies include those of Beck & Jennings, 1982; Hanks, 1981; Hanks and Eckland, 1978; Verba, Schlozman, & Brady, 1995; and Youniss, McClellan & Yates, 1997. Smith (1999) also found that extracurricular participation is influential in shaping a student's level of civic virtue.

The community sports activities construct includes measures related to going to the gym, pool, park and participating on sports teams. Hansen, Larson, and Dworkin (2003) found that youth participating in these types of sports activities reported higher rates of self-knowledge, emotional regulation, and physical skills experience. However, it is a concern that they also found that sports activities were the only setting in which students reported higher rates of negative experiences, including negative peer interactions and inappropriate adult behavior. Some other research has shown that participation in these types of activities is related to more positive outcomes associated with reduced problem behavior and staying in school (Eccles & Barber, 1999; Hattie, Marsh, Neill & Richards, 1997; Marsh, 1992).

In the other types of community activities participation construct, an important indicator is that of religious activities participation. Religious participation for adolescents has been identified in the literature as an important form of social capital. Jeynes (2003) found that religiously committed urban children performed better on most academic measures than their less religiously committed peers, even when controlling for SES, race, and gender. These results also held true for students from non-intact families. Smith (1999) found that religious activities participation is positively related to civic virtue for students.

Another form of community activities for adolescents is participating in voluntary associations such as youth groups. Research has shown participation in voluntary associations to be a consistent predictor of political and civic participation (Rosenstone & Hansen, 1993; Verba et al., 1995; Smith, 1999). Frisco, Muller and Dodson (2004) found that adolescent participation in voluntary associations influenced voting behavior in early adulthood, but results varied by race and SES.

Social Capital and Psychosocial Outcomes

Levi (1996) has proposed that social capital has a psychological effect on the individual which shapes future encounters with his or her environment. These effects, influenced by social capital and the result of social interactions, could be termed psychosocial factors.

Stages of development, including that of adolescence, are an integral part of psychosocial theory. Proponents of this theory see “human development as the product of the interaction between the individual (psycho) needs and abilities and societal (social) expectations and demands” (Newman & Newman, 1987, p. 26).

Development taking place in prior stages will influence subsequent phases. This theory offers a lifespan view of development. Humans are constantly under demands from the social context in which they are embedded. Erikson (1982) espouses this concept in his Psychosocial Theory. He believed that these demands served as stimulators in the social processing system.

Newman and Newman offered an extension of his psychosocial theory by identifying a central process through which each psychosocial crisis is resolved. This central process “refers to a mechanism that links the individual’s needs with the requirements of the culture in each life stage” (Newman & Newman, 1987, p. 41). They propose that “each central process results in a reworking of inner space including a reorganization of boundaries, values, and images of oneself and others”. (p. 43)

In psychosocial theory, the needs of society as well as the individual must be considered in conceptualizing human development, including that of inner resources or processes such as the psychosocial factor of future life expectations. “This theory captures the psychological work that takes place during critical life stages” (Newman and Newman, 1987, p. 45).

Education-related psychosocial factors such as achievement aspirations have generally been found to be positively linked with social capital (Feldhaus, 2002). Additionally, studies indicate that self-concept (Marjoribanks & Mboya, 2001) and self-esteem (Lindstrom, 2001; Averett, 2001) have a positive relationship with social capital. Depression (Stevenson, 1998) has been found to have a negative association with social capital. Muller and Ellison (2001) found that homework effort is positively related to parent-teen social capital. However, Smith (1999) found that locus of control in the 10th grade proves to be unimportant in shaping young adult civic virtue.

Some more recent research on psychosocial factors and adolescents mostly investigates other types of outcomes. Grenning & Stoppelbein (2002) found that the effect of depression on perceived suicide risk was moderated by the adolescent's degree of orthodoxy (commitment to core beliefs). Williams, Mulhall, Reis & Deville (2002) investigated psychosocial correlates of adolescents carrying handguns to school and found that the strongest correlates were those variables associated directly with handguns and violence, both behaviors and beliefs.

Since research investigating social capital and psychosocial factors has produced mixed results and no studies have used the psychosocial construct of future life expectations, as is used in the current study, this study will attempt to fill the gap in the literature. Also, Dika (2003) posits that "the direction and nature of the relationship between social capital and psychosocial factors is not entirely clear" (p. 20). Since longitudinal data are being used in the current study, with 10th grade adolescent social capital being measured prior to 12th grade future life expectations, it may be that the relationship will become clearer.

Social Capital and Citizenship Participation

As mentioned previously, one of the lesser studied, long-term educational outcomes is citizenship participation. Wuthnow (1998) defines civic engagement (citizenship participation) as “participation in social activities that either mediate between citizens and government or provide ways for citizens to pursue common objectives with or without the help of the government” (p.7). Robert Putnam (2000) identified two types of citizenship participation: political engagement and civic engagement. Political engagement involves participation in areas of political life related to the democratic process (Saguaro Seminar, 2001b). Civic engagement, also referred to as social citizenship by some, is usually thought of as volunteering and community service.

Some researchers have pointed out that social capital can have negative effects in communities if it creates groups that can be used to exclude others or reinforce inequalities (Kawachi & Berkman, 2000; Portes (1998), but for the most part researchers hypothesize that social capital has a positive association with community engagement activities.

Adolescent social capital in the form of volunteering and participation in extracurricular activities have been found to have a positive association with young adult citizenship participation (Rosenstone & Hansen, 1993; Verba et al., 1995; Smith, 1999). McIntosh (2005) found that the two strongest predictors of youth civic development were youth-parent discussion of politics and participation in organized youth activities. As he points out, the common element in these activities is youth-adult interaction, an important form of social capital.

The literature on adolescent sports participation and civic engagement is mixed but Lopez & Moore (2006) using data from the 2002 National Youth Survey of Civic Engagement identified some positive effects. They found that young people ages 18 to 25 who were involved

in sports during high school were more likely than non-sports participants to have volunteered in the community, registered to vote and voted.

One of the few studies that has dealt directly with adolescents' social capital resources, psychosocial factors and citizenship participation is Smith's (1999). However, even though she used the NELS data set and employed structural equation modeling, she only had the 1999 data set available to her. Most of the study participants were approximately 20 years of age, what some consider part of the extended adolescent period versus young adulthood.

In her study, she found several key social capital resource variables:

- Parental involvement was a good predictor of greater participation in extracurricular activities and was influential in motivating greater political and civic participation in adulthood (although adulthood for her was around age 20).
- Participation in religious activities at a young age was positively related to increased commitment to and participation in community service activities.
- Extracurricular activities in the form of voluntary associations were particularly influential.

Smith finds that "in addition to the recent research of Naomi and Junn (1998) which highlights the importance of the civics curriculum, the research presented here [her research] shows that the school, community, the opportunity to participate in extracurricular activities and success in the academic environment are all importantly related to the development of politically relevant orientations" (Smith, 1999, p. 327).

She also found that in particular, religious involvement, strong relationships with parents and other adults as well as involvement with peers in structured extracurricular activities emerged as important predictors of participatory, engaged orientations, among students.

The study will add to the research in this area by investigating citizenship participation at an older age and using a definition of social capital that is more comprehensive than that used by Smith.

Family Background

Family Background and Social Capital

In many studies, especially those employing Coleman's definition of social capital, parental or familial factors were used to represent adolescent social capital. Two of the most prevalent family background variables are those of parental socioeconomic status and parent-student interactions.

Anderson (1995) found that SES is a significant predictor of grade point average (GPA), but parent-child interactions at home were a stronger predictor. Parent-student interactions were an even stronger predictor than school-initiated parental involvement. SES has also been found to be one of the determining factors between one-time dropouts who finished education and those who did not (Chan,). Battle (2002) found that for Hispanic students SES was a much more important predictor of educational outcomes two years post release than was family configuration. A positive association has been found between SES and achievement in predicting educational outcomes (Padilla, 1996).

Wright, Cullen, and Miller (2001) found that grades were positively related to parent-student discussions. Crosnoe (2004) found that emotionally distant relationships with parents were associated with declining academic achievement over two years of secondary schooling. One finding (Anguiano, 2004) indicated that parental involvement was important in a student's high school completion, whereas school involvement was not significant in influencing the level of parental involvement and the relation to high school completion. Israel, Beaulieu, and

Hartless (2001) found that parent-child interactions was one attribute of family social capital that had a strong influence on students' educational achievement as measured by grade average, standardized test scores, and staying in school. Parent-teen discussion has generally been found to be positively related to academic achievement (McNeal, 1999; Pong, 1998; Sun, 1998; Sun 1999).

Family Background and Psychosocial Outcomes

Parental involvement plays a large part in the psychological development of a child (Blyth & Traeger, 1988). It makes sense then that parental factors would have an influence on psychosocial factors such as future life expectations, but the research is limited in this area. However, Dmitrieva, Chen, Greenberger and Gil-Rivas (2004) studied the effects of parental involvement and parent adolescent conflict and found that these parental factors mediated the link between family-related life events and adolescent depressed mood. This study was also interesting because it compared data from four different countries and basically found that there is considerable similarity in the association of family factors with adolescent depressive symptoms and problem behaviors. Harris (2002) reviews old and recent research on African American father absence as a factor that can potentially give rise to stressors that negatively impact psychosocial and developmental outcomes for children.

Family Background and Citizenship Participation

As mentioned previously the family background variables of socioeconomic status and parent-student interactions have been shown to have an impact on a variety of educational outcomes. Research has shown the importance of parental involvement to the successful socialization of the child (Steinberg, 1996; Verba et al., 1995). Smith (1999) contends that "children who have more frequent and meaningful interactions with their parents are more likely

to develop the cooperative orientation and norms conducive to greater political and civic involvement” (p. 557). She also found that familial social capital is particularly important in terms of motivating greater participation in volunteerism activities and positively influencing the adolescent’s self-concept. As stated previously, Smith (1999) found that parental involvement was influential in motivating greater political and civic participation in adulthood (although adulthood for her was around age 20).

Psychosocial Factors and Citizenship Participation

Psychosocial Factors and Citizenship Participation

One problem with some psychological and psychosocial constructs is that that they may be temporal in nature and they change with maturation and personal experience (Chubb et al., 1997; Lefcourt, 1976). However, the psychosocial constructs of self-esteem and locus of control have been shown in previous research to be related to political participation (Hanks, 1981; Merelman & King, 1986); Sniderman, 1975). The research in this area, however, is limited and mixed. Smith (1999) did not find an association between 10th graders self-concept and young adult civic engagement. There is no previous research, that I am aware of, on the influence of the psychosocial factor of future life expectations and the educational outcome of citizenship participation. This study investigates that relationship.

Summary

Prior research has found that social capital is a resource for both individual and collective action, having the potential to produce a broad range of outcomes. Most studies in the field of education have mainly investigated outcomes such as achievement and attainment, but this study

will investigate another important educational outcome of citizenship participation. Parental background factors have been shown to be influential on many educational outcomes for children. The literature on psychosocial factors and educational outcomes is mixed. Finally, the influence of the psychosocial factor of future life expectations for 12th graders and the subsequent possible effect on the young adult, educational outcome of citizenship participation has not been investigated prior to this study.

CHAPTER THREE

METHODOLOGY

Introduction

In this chapter, the data source and methodology of the study are discussed. The data source, the National Education Longitudinal Study of 1988 (NELS:88), is described as well as the process used to prepare the data for analysis. Measures for constructs in the study and data analysis procedures are identified. The analysis tested a pattern of relationships among social capital resources and future life expectations during adolescence, and subsequent young adult citizenship participation as represented by measures for voting behavior, community integration and volunteerism.

Source of Data

The National Education Longitudinal Study (NELS) was a major data collection effort that the National Center for Education Statistics (NCES) began in the spring of 1988. At that time it was administered to a nationally representative sample of eight-graders. Four additional follow-up data collections were done in 1990, 1992, 1994 and 2000.

This rich dataset contains information on a wide range of topics including: school, work, aspirations, parental involvement, peer relations, and student perceptions. Additionally, for the three in-school waves of data collection (1988, 1990, and 1992), achievement tests in reading, social studies, mathematics and science were administered. Students' parents, teachers, and school administrators were also surveyed. Two post high school waves of data collection took place in 1994 and 2000. During these surveys important outcome data such as postsecondary educational attainment, occupational selection, family formation, and community integration were obtained.

The NELS:88 dataset was designed to support cross-sectional, longitudinal, and trend analyses. For this study longitudinal data was used and measures were selected from three data collection waves of NELS. From the first follow-up wave of NELS (1990), when most of the study participants were in the 10th grade, adolescent (school and community) social capital measures were selected. Measures for the future life expectations construct were drawn from the second follow-up (1992) when most of the participants were high school seniors. Finally, measures for the young adult citizenship participation construct were selected from the fourth (2000) follow-up when most of the respondents were 25 to 26 years old.

NCES provides public use files for NELS:88 as well as software and an electronic codebook (ECB) to facilitate the selection of variables and the exporting of the tagged items to a statistical software package. The Statistical Package for the Social Sciences (SPSS)15.0 software was used in this study.

Sample

NELS:88 was the first NCES sponsored national longitudinal education study to begin surveying students as early as the eighth grade. A two-stage stratified probability sample was used with schools as the first-stage unit and students within the schools as the second-stage unit. The stratification of schools was based on school type (public or private), geographical location, urbanicity, and percent of minority students enrolled. Minority students were oversampled in NELS:88, and NCES provided a weighting variable to be used to eliminate the bias due to the oversampling. The baseline data collection in 1988 contained a final student count of 24,599 participants and was a nationally representative sample of eighth-grade students.

Subsequent data collection waves in 1990 and 1992 surveyed the same cohort but also were freshened with proper statistical techniques to achieve a representative sample of tenth and twelfth graders, respectively. As previously stated, this study only used data from the 1990, 1992, and 2000 waves of NELS and, therefore, a four-step selection process was employed to derive an appropriate study sample.

In the first step, participants who participated in all follow up data collection waves were selected by using the panel flag variable “f4flpnfl” with a code of “1.” After the selection, there were 11,422 students remaining in the sample.

In the second step, only public school students were selected by using the variable “g10ctrl1” and selecting those with a code of “1 – public school.” After this step there was a total of 9,718 cases. Private school students were excluded because while it has generally been accepted that one of the missions of public schooling is the creation of active citizens, there is no such consensus about the mission of private schools. Some people, such as Galston (2001), have even suggested that private schools may be sources of separatism, elitism, and antidemocratic principles. Since it was not the purpose of this particular study to determine possible differences in citizenship participation between public and private school students, only public students were selected for the study.

The third step involved selecting only those students who were in the 10th grade (F4UN12C = 1) during the data collection period. There were 9,078 remaining after this selection step.

Finally, in the fourth step, students who were in the 12th grade (F4UN12D = 1) as of the second follow-up data collection in 1992 were selected. After this step 8,245 cases remained. This study did not include any parent, teacher, or administrator data.

Scale Development

The measures being used in this study were selected based on theoretical and empirical considerations found in the research literature. The NELS data files were initially examined to select measures that appeared to meet the definitions for the variables of interest based on their descriptions.

Exploratory Factor Analysis (EFA) was used to identify and confirm the underlying structures of the items. EFA was also used to reduce the number of items in each scale. Items were selected and factor analyzed using principal components analysis with varimax rotation to form item composites. Eigenvalues and scree plots were used to determine the number of factors. Subsequently, the factor analysis procedure was repeated to determine the loadings on the latent factors. Internal consistency coefficients for each scale were produced to assess the reliabilities of the scales. Table 1 contains the results of the final factor analysis for each scale.

Table 1

Results of the Exploratory Factor Analyses for Scales

Scale	Number of Items	Factors Extracted	Eigenvalue	Explained Variance	Items Loadings	Alpha Coefficient
Parent-Student Interactions	5	1	2.664	53.28%	All exceed .67	.78
Teacher Interactions	4	1	2.234	55.85%	All exceed .70	.73
Peer Interactions	4	1	2.430	60.75%	All exceed .75	.78
Community Sports	3	1	1.672	55.72%	All exceed .57	.60
Community Activities	3	1	1.714	57.15%	All exceed .65	.62
Future Life Expectations	9	1	4.798	53.31%	All exceed .50	.88

The results of the factor analyses revealed that each scale reflects one factor. Through factor analyses the number of measures was reduced while increasing explained variance.

Cronbach's alpha coefficients are acceptable with only one scale, community sports participation, having a coefficient of .60 and most scales having coefficients .70 or higher.

Next the relationships among the scales were examined. The correlation matrix in Table 2 shows the intercorrelations among the scales. All correlations were statistically significant at the .01 level and in the positive direction. The highest positive correlation (.29) was between community sports participation and peer interactions. This finding is not surprising since prior research has shown that during adolescence peers, in particular, are an influence.

Table 2

Intercorrelations among Constructs

	Teacher Interactions	Peer Interactions	Community Sports	Community Activities	Future Expectations	Parent-Student Interaction
Teacher Interactions	1.00					
Peer Interactions	.06	1.00				
Community Sports	.05	.29	1.00			
Community Activities	.13	.15	.15	1.00		
Future Life Expectations	.12	.27	.11	.16	1.00	
Parent-Student Interaction	.22	.19	.15	.23	.23	1.00

Measures

The purpose of this study was to investigate the relationships between adolescent social capital, future life expectations, and citizenship participation as young adults. The placement of the variables in the model represents the longitudinal time dimension. Adolescent social capital measures along with the background variables of parent SES and parent-student interactions were assessed for students when they were 10th graders. Future life expectations measures were

assessed when the students were seniors in high school, and the subsequent outcome measures of citizenship participation (voting behavior, community integration and volunteerism) were obtained when these same individuals were eight years post high school and approximately 25 to 26 years of age.

Since structural equation modeling (SEM) was used to investigate the relationships between the variables of interest, it is useful to discuss the endogenous and exogenous variables. The variation for endogenous variables is explained by the exogenous and other endogenous variables in the model. Exogenous variables are background variables and, therefore, they are assumed to be determined outside of the model.

Endogenous Variables

The endogenous variables used in this study included: adolescent social capital factors, future life expectations and citizenship participation. Each of these variables is described below and detailed wording of the items, the coding, descriptives and reliability estimates of the scales are provided in Table 3.

Adolescent social capital. The adolescent social capital definition used was that of Putnam's related to social ties (created through interactions with teachers and peers) and participation in organizations, in particular extracurricular and voluntary associations. Adolescent social capital consists of five factors: teacher interactions, peer interactions, extracurricular activities participation, community sports participation, and community (other activities) participation.

Teacher Interactions. This scale contains three measures that were used to assess the perception of the student regarding interactions with teachers. The items include questions related to teachers' interest in students, praise received from teachers, if teachers listened to the

students and whether or not the teaching at the school is good. The items originally used a four-point rating scale from 1 = strongly agree to 4 = strongly disagree, but they were recoded, so that more favorable responses received a higher score.

Table 3

Constructs and Items for Endogenous Variables

Construct	Var Name	Item Wording and Codes	M	SD
Teacher	F1s7h	Teachers interested in students	2.84	.65
Interactions	F1s7l	Most teachers listen to R	2.75	.66
	F1s7i	Most teachers praise R	2.58	.73
Alpha .73	F1s7g	The teaching is good at school (1=strongly disagree to 4 = strongly agree) (had to be reverse coded)	2.92	.61
<hr/>				
Peer	F1s67a	Stdnts think of R as popular	1.94	.54
Interactions	F1s67c	Stdnts think R socially active	2.07	.63
	F1s67e	Stdnts think of R as important	2.07	.56
Alpha .78	F1s67g	Stdnts think R part of crowd (1=very; 2=somewhat; 3= not at all)	1.81	.67
<hr/>				
Extracurricular Activities	F1S42	Time Spent on Activities (1=less than 1 hr. wk. to 4=10 hrs. plus)	1.51	1.43
<hr/>				
Community Sports Activities	F1s44e	R goes to park, gym, pool	2.22	1.05
	F1s44f	R play ball or other sports	2.35	1.10
	F1s44n	R takes sports lessons	1.38	.87
Alpha .60		(1= rarely never to 4 = every day or almost)		
<hr/>				
Community Other Activities		<i>How often:</i>		
	F1s44g	R attends youth groups	1.62	.85
	F1s44h	R performs community service	1.29	.62
	F1s44o	R attends religious activities	1.87	.94
Alpha .62		(1= rarely never to 4 = every day or almost)		
<hr/>				
Future Life Expectations		<i>Chances that:</i>		
	F2s67b	R will go to college	4.36	1.05
	F2s67c	R will have job pays well	4.16	.80
	F2s67d	R will be able to own home	4.11	.88
Alpha .88	F2s67e	R will have job enjoys	4.27	.78
	F2s67f	R will have happy family life	4.22	.80
	F2s67g	R will stay in good health	4.11	.78
	F2s67h	R will be able to live anywhere	3.77	.97
	F2s67i	R will be respected in comm.	3.97	.82
	F2s67j	R will have friends to count on (1=very low to 5=very high)	4.22	.78
<hr/>				
Citizenship Participation (Three separate models)	Voting	Voting Behavior (1 = not registered to 4 = voted two or more times)	2.84	1.08
	Integration	Community Integration (1 = less one activity per month to 4 = all three activities)	2.54	.96
	Volunteer	Volunteerism (1 = never or less than once a mo. to 4 = three activities)	1.47	.71

Peer Interactions. Four measures were used to assess the respondents' perceptions of their peers' regard for them. The statement used a three-point rating scale from 1 = very to 3 = not at all. Once again the items were reverse coded. The items were "students think of respondent as popular," "students think of respondent as socially active," "students think of respondent as being important" and "students think of respondent as being part of the leading crowd."

Extracurricular Activities Participation. This measure is a single indicator that represents how many hours a week a respondent spent on these types of activities. Responses ranged from (1) none to (4) ten or more hours a week.

Sports Participation (in Community). The three items used to create this scale assessed how often the student goes to the park (gym and/or pool), plays ball or another sport, and takes sports lessons. A four-point rating scale from 1 = rarely or never to 4 = every day or almost) was used for the items.

Other Community Activities Participation. For this scale, the student was asked three questions related to how often he or she attended youth groups, performed community service, or attended religious services. A four-point rating scale (1 = rarely or never to 4 = every day or almost every day) was used.

Future Life Expectations. The future life expectations factor is comprised of nine measures related to educational, occupational, family life and self-concern measures. The questions include expectations regarding college attendance, employment, happy family life, good health, and respect in the community. These data were obtained in 1992 when the study participants were, for the most part, second semester seniors in high school and were preparing

to embark on the critical transition from high school to young adulthood. A five-point rating scale was used: 1 = very low; 2 = low; 3 = fifty-fifty; 4 = high; and 5 = very high.

Citizenship Participation. As was indicated in the introduction in Chapter One, one of the difficulties of performing research related to citizenship participation is the varying perspectives of what a good citizen is and does. In the proposed study the definition of citizenship participation, will be partially based on the work of Westheimer and Kahne (2004, 2003, 2002). They have articulated a multi-dimensional conceptualization of citizenship based on their analysis of democratic theories (in particular, Walter Parker, 1996). They provide a viable framework within which to investigate the educational outcome of citizenship participation in adulthood and its relationship to social capital resources and future life expectations during adolescence.

Their three conceptions of citizenship include personally responsible, participatory, and justice-oriented. The personally responsible citizen, as the title implies, acts responsibly in his or her community by obeying laws, paying taxes, recycling, and volunteering in times of crisis. The participatory citizen actively participates in the civic affairs and the social life of the community at the local, state, or national level. The justice-oriented citizen attempts to improve society by critically analyzing and addressing social issues and injustices. Of course, as Westheimer and Kahne (2004) indicate, for the most part, it appears that the majority of citizens fall more into the personally responsible and participatory citizen categories versus justice-oriented.

In this study, the original intent was to produce a construct that would contain multiple indicators to represent a personally responsible and participatory citizen. (Unfortunately, there was a lack of social justice measures in the extant database.) But during the exploratory factor

analysis, it became clear that a construct of this nature was not holding together to produce a reliable measure. Therefore, I decided to test three separate models each containing a single indicator of generally-accepted aspects of good citizenship participation. These measures were voting behavior, community integration, and volunteerism. The measures for the citizenship participation construct were selected from the fourth (2000) follow-up when most participants were 25 to 26 years of age.

Exogenous Variables

The exogenous variables of parental socioeconomic status (SES) and parent-adolescent interaction were used in the model. Research has shown that these family background variables influence adolescents' educational and social outcomes. Therefore, they were included as exogenous variables to control for their effects on later variables in the model. Each of these variables is described below and detailed wording of the items, the coding, descriptives and the reliability estimate for the parent-interaction scale are provided in Table 4 below.

Table 4

Constructs and Items for Exogenous Variables

Construct	Var Name	Item Wording and Codes	M	SD
Parental SES	F1SESQ	Composite created by NCES	2.62	1.09

		<i>Discussed with parents:</i>		
Parent	F1S105A	School courses	2.05	.60
Student	F1S105B	School activities	2.08	.66
Interaction	F1S105C	Things studied in class	2.02	.61
	F1S105D	Grades	2.43	.59
Alpha	F1S105G	Going to college	2.28	.66
.78		(1=never; 2=sometimes; 3 = often)		

Parental SES. This is a composite variable constructed by NCES that uses parent questionnaire data when available and includes parent education level, occupation and family income. If the parent data were not available, the scale was constructed using student data.

Parent-Student Interaction. Although adolescent school and community social capital are of interest in the proposed study, much research exists to support the positive relationship between parental social capital and student educational outcomes. Therefore, this construct was used as a background variable. It is comprised of five items assessing the students' discussions with their parents on school-related topics such as school courses, school activities, things studied in class, grades, and going to college. A three-point rating scale is used: 1 = never; 2 = sometimes; and 3 = often.

Data Analysis and Model Estimation

Descriptive analyses, creation of correlation matrices, standard deviations and means were derived using SPSS 15.0. Frequency distributions were reviewed for all measures proposed for use in this study.

The models were specified *a priori* and based on prior theoretical and empirical evidence. The hypotheses below determined the placement of the variables in the model.

Hypotheses About Relationships of Variables in the Models

1. Parental background measures of SES and parent-student interactions are related to higher levels of adolescent social capital.
2. Parental background measures of SES and parent-student interactions are related to more positive future life expectations, but the relationship may be mediated by adolescent social capital measures.
3. Parental background measures of SES and parent-student interactions are related to higher levels of citizenship participation (voting behavior, community

integration, and volunteerism), but the relationship may be mediated by the future life expectations measure.

4. Adolescent social capital measures are related to more positive future life expectations.
5. Adolescent social capital measures are related to higher levels of citizenship participation, but the relationship may be mediated by the future life expectations measure.
6. Future life expectations are related to higher levels of citizenship participation as represented by voting behavior, community integration and volunteerism.

Structural equation modeling (SEM) with latent variables was used to assess the nature of the relationship between social capital resources in one's youth and later citizenship participation as a young adult. The possible mediating influence of the psychosocial construct of future life expectations was also examined.

Structural equation modeling is an appropriate technique for the longitudinal data used in this study. By using SEM the researcher is able to control for measurement error. SEM is an analytical technique used for studying causal relationships in non-experimental data. For SEM estimations, LISREL 8.8 (Joreskog & Sorbom, 2005) was used.

The structural equation modeling process centers around two steps. In the first step, confirmatory factor analysis was used to investigate how well the specified measurement model fits the data and to assess construct validity. The measurement model contains no specified causal relationships.

The overall fit of the model was assessed using indices of model fit. In this study the model fit indices that were used included Chi-square, Root Mean Square Error of Approximation

(RMSEA), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI), Comparative Fit Index (CFI) and Estimated Cross-Validation Index (ECVI). More detail is provided about each of the fit indices in Chapter Four.

After the overall model fit is determined to be acceptable, individual parameter estimates, standardized residuals and modification indices were reviewed to determine if there were any other problems with the model. Model modification may be required prior to step two in which hypothesized causal relationships among the latent and manifest structural variables are specified. Therefore, the resulting model becomes a combination of a measurement and a structural model. In order to derive the final structural model, it may be necessary to make additional model modifications such as the deletion of paths that are not statistically significant. However, all modifications need to be supported by theory and the literature.

CHAPTER FOUR ANALYSIS AND RESULTS

Introduction

This chapter contains the findings from data analysis and hypothesis testing. It consists of three sections. The first section provides descriptive statistics and correlations for the study variables. The second section contains information regarding the development of three measurement models to provide acceptable fit to the data. The third and final section of this chapter discusses the estimation of the structural equation models.

Descriptive Statistics

A review of the descriptive statistics provides some preliminary insight about the study variables. Additionally, analysis of the correlation coefficients gives some indication of the direction and strength of the relationships between study variables. Table 5 contains the descriptive statistics, including mean and standard deviation, for each of the study variables.

Background Variables of Socio-Economic Status and Parent-Student Interactions

Parent socio-economic status (SES) is a composite variable constructed by NCES that includes parent education level, occupation, and family income. If the parent data were not available, the scale was constructed using student data. Since it is broken into quartiles, the scores range from a minimum of 1 to a maximum of 4. The mean score for this group of respondents is 2.62 with a standard deviation of 1.09. Therefore, more students fell into a slightly above average socio-economic status category.

Parent-student interactions is a latent construct composed of five indicator variables with scores ranging from never (1) to often (3). The means for the parent-student items range from 2.03 to 2.44 (refer to Table 4 to view the individual items). For the most part, the tenth graders

report communications with parents about school-related topics with more than 80% of them at least sometimes discussing school courses, activities, things studied in class and going to college with their parents. More than 95% report that they discuss grades with their parents. It should be noted that although the measures do provide an indication of the existence of communication, they do not indicate the quality or outcome, whether positive or negative, of the interaction.

The correlation between the background variables of parental SES and parent-student interactions is .21 and significant at the .01 level. The direction and strength suggest that as the parental socio-economic status increases so may the communication, associated with school-related topics, between the parent and the child (student).

Table 5

Descriptive Statistics for Study Variables

<u>Variable</u>	<u>N</u>	<u>Mean</u>	<u>Standard Deviation</u>
Parent SES	8,116	2.62	1.09
Parent-Student Interactions	7,531	10.86	2.28
Teacher Interactions	8,012	11.09	1.98
Peer Interactions	7,723	7.88	1.87
Extra-Curricular Participation	8,117	1.51	1.43
Community Sports Participation	7,963	5.96	2.26
Community Other Activities	7,974	4.78	1.84
Future Life Expectations	7,415	37.20	5.51
Voting Behavior	8,001	2.84	1.08
Community Integration	8,086	2.54	.96
Volunteerism	8,102	1.47	.71

Means and standard deviations are weighted; sample sizes are not weighted.

Adolescent Social Capital

Adolescents can be exposed to social interactions at both school and in the community. In the school environment, social agents include teachers and peers. Social activities take place both within the classroom setting and outside of the classroom, mainly in the form of extracurricular activities.

Students overall perceive favorable interactions and positive feelings about their teachers. More than 76% agree that teachers at their school are interested in the students, and more than 71% agree that teachers listen to the students. However, only 57% say that teachers praise their effort. Interestingly, a higher percentage (82.2%) agree that the teaching itself at the school is good. The means for the teacher interactions items range from 2.62 to 2.93 with responses from (1) strongly disagree to (4) strongly agree having been available for the respondent to select.

The peer measures give an indication of how the student feels he or she is perceived by other students. Their responses ranged from '(1) not at all' to '(3) very.' The means for the items for this construct range from 1.81 to 2.07. Most students (60% to 70%) selected the middle response (somewhat) to all four questions that formed the scale. Therefore, most of the respondents seem to perceive that they are *somewhat* thought of as popular, socially active, important and part of the leading crowd at school.

Extracurricular activities participation is represented by a single indicator measuring hours spent on these types of activities. Responses ranged from (1) none to (4) ten or more hours a week. The mean of 1.51 indicates that the majority of students do not spend a great deal of time on these types of activities. As a matter of fact, 36% of the respondents do not spend any time participating in extracurricular activities offered at his or her school. However, more than 25% do spend five hours or more per week participating in these school-sponsored activities.

For adolescents, many activities in the community are sports-related. The community sports construct represents respondents' involvement in going to the gym, park, pool, taking sports lessons, and playing ball or others sports. Responses ranged from (1) rarely or never to (4) almost every day. The means for the community sports related items range from 1.38 to 2.22. While 30% indicate that they do not participate in any of these types of activities, another 30% of the respondents do participate at least once or twice a week.

Other types of community activities for adolescents include attending youth groups, performing community services, and attending religious services. Once again responses ranged from (1) rarely or never to (4) almost every day. The means for the other community activities participation items range from 1.30 to 1.90. Overall, a large number of the respondents are not very active in these types of activities. Sixty-one percent (61%) of the respondents reported that they never participated in youth groups, while 79% indicate that they rarely or never perform community services. However, more than 50% of the respondents do participate in religious activities.

The correlations among the adolescent social capital measures are shown in Table 6. All of the correlations were positive and statistically significant at the .01 level. However, only four of the correlations were at an absolute value of .20 or above. The strongest correlations were between peer interactions and extracurricular activities (.27), peer interactions and community sports (.28), and extracurricular activities participation and participation in community sports activities (.28) These findings may suggest that the more favorably respondents thought peers felt about them, the more likely they were to participate in extracurricular school activities and community sports activities. Accordingly, it intuitively makes sense that those who participate in extracurricular activities at school are also more likely to participate in community sports

activities. It is interesting to note that teacher interactions do not appear to correlate strongly with any of the other adolescent social capital measures.

Table 6

Correlations among Adolescent Social Capital Measures

	Teacher Interactions	Peer Interactions	Extra-Curricular Activities	Community Sports Activities	Community (Other) Activities
Teacher Interactions	1.00				
Peer Interactions	.06**	1.00			
Extra-Curricular	.12**	.27**	1.00		
Community Sports	.05**	.28**	.28**	1.00	
Community Other	.13**	.14**	.20**	.15**	1.00

**p<.01

Outcomes of Future Life Expectations and Citizenship Participation

The longitudinal design of this study allows for a time-dimension perspective that may more readily support a cause and effect aspect of prior factors on later outcomes. In this study, future life expectations is a psychosocial construct that represents the respondents' beliefs about their future life outcomes. Since the responses to the measures were collected while the respondents were twelfth graders (and previous measures in the model were collected when respondents were tenth graders), this construct is conceptualized to serve as an intermediate outcome. Therefore, it potentially serves as a mediating variable between the prior measures and the final outcome measures of citizenship participation as measured by voting behavior, community integration, and volunteerism.

Based on the responses to the future life expectations measures it appears that the majority of students had very positive feelings as they were getting ready to embark on an important transition period in their lives. The score possibilities ranged from (1) very low to (5) very high. The mean scores of the items ranged from 3.78 to 4.34. More than 80% of the respondents thought they would further their education, have a job they enjoy, have a happy life, stay in good health, and have friends to count on. They had slightly less favorable expectations for having a job that pays well, being able to own a home, and being respected in the community. Their lowest expectations were related to being able to live anywhere with only 60% selecting the 'high' or 'very high' response for this measure.

Citizenship participation is represented by three separate items measuring voting behavior, volunteer behavior, and community integration. All three measures have scores ranging from 1 to 4, with lower scores representing less participation. The means for the items range from 1.47 to 2.84. In particular, the number and frequency of volunteer activities for this set of respondents are very low with 65% reporting participating in this type of activity never or less than once a month. On the other hand, more than 50% report participating in at least two community integration activities such as attending plays, religious services, and sporting events per month. With regard to voting behavior, more than 63% report that they are registered to vote and have voted in at least one election.

The correlations between the future life expectations construct and the outcome variables are all somewhat low, but in the positive direction, as anticipated, and statistically significant at the .01 level. The correlation between future life expectations and voting behavior is .13. For community integration and volunteerism the correlations with the future life expectations construct are .14 and .11 respectively. This finding may suggest that there is a positive

relationship between having more favorable future life expectations as twelfth graders and, subsequently, having a higher level of citizenship participation as a young adult, but the value of all three of the coefficients is below .20.

Correlations Among All Model Variables

The correlations among all model variables are provided in Table 7. Possible patterns of relationships can be reviewed by examining the correlations.

Table 7

Correlations among Model Variables

	SES	Parent Student	Teachers	Peers	Extra-Curricular	Com Sports	Com Other	Future Expect	Voting	Integrate	Volunteer
SES	1.00										
Parent Student	.21**	1.00									
Teachers	.00	.21**	1.00								
Peers	.12**	.19**	.06**	1.00							
Extra-Curricular	.17**	.23**	.12**	.27**	1.00						
Sports	.08**	.15**	.05**	.28**	.28**	1.00					
Other Community	.17**	.23**	.13**	.14**	.20**	.15**	1.00				
Future Life	.16**	.23**	.12**	.27**	.18**	.11**	.15**	1.00			
Voting	.15**	.16**	.06**	.06**	.12**	.02	.16**	.13**	1.00		
Integration	.11**	.17**	.06**	.17**	.20**	.22**	.22**	.14**	.16**	1.00	
Volunteer	.09**	.13**	.06**	.12**	.14**	.08**	.19**	.11**	.20**	.27**	1.00

**p<.01

SES, Parent-Student Interactions and Adolescent Social Capital. All of the correlations are in the positive direction, as previously predicted, and statistically significant at the .01 level,

with the exception of SES and teacher interactions. There appears to be no relationship between these two constructs. For the rest of the correlations between SES and the adolescent social capital measures none have an absolute value of at least .20. The parent-student interaction construct appears to have a stronger relationship (three correlations above .20) with the adolescent social capital measures, in particular for participation in extra-curricular activities and participation in community activities, such as playing sports, attending religious services and doing community service. This makes sense since previous research findings have indicated that parents have an influence on their children's participation in these kinds of activities and, perhaps, even serve as role models with their own participation habits.

SES, Parent-Student Interactions, Future Life Expectations and Citizenship Participation Outcomes. Once again the correlations are in the positive direction and statistically significant at the .01 level, but the correlations between SES and the future life expectations construct and SES and the citizenship participation outcome variables are low at a range between .09 to .16. The correlation between the parent-student interaction construct and that of future life expectations is .23, while the correlations with the citizenship participation outcomes range from .13 to .17. These findings may suggest that there is a positive relationship between increased parent-student interactions while 10th graders with higher future life expectations as 12th graders may have higher levels of citizenship participation as a young adult.

Adolescent Social Capital, Future Life Expectations and Citizenship Participation Outcomes. The correlations among all the constructs are positive and significant at the .01 level. However, only four of the correlations have an absolute value of .20 or greater. The correlation between the peers construct and future life expectations is .27, perhaps suggesting that the more favorably the respondents perceived their peers to think of them as 10th graders, the more

favorable their future life expectations were as 12th graders. A correlation of .20 between extracurricular participation and community integration may suggest that increased levels of participation in these types of activities as 10th graders may be positively associated with increased levels of participation in community activities as a young adult. Indeed, this finding has been supported by previous research findings and is a central aspect of Putnam's social capital definition regarding the value of participation in community activities and organizations. Along those same lines, the correlation for the participation in community sports activities construct and community integration is .22 and for community (other types of) activities and community integration as a young adult is also .22 . This finding intuitively makes sense because some of the measures for community activities as adolescents (playing sports, participating in religious activities, and performing community service) mirror those being used for young adult participation. Prior research has found that these types of activities can serve as a 'training ground' for future participation in similar activities as an adult.

The next section contains the discussion of the testing of the measurement models with confirmatory factor analysis to develop models with acceptable fit to the data prior to the testing of the theoretical models of interest.

Testing of the Measurement Models

Overview of the Analyses

The structural equation modeling process involves two steps, as recommended by Anderson and Gerbing (1988). The first step involves the validating of the measurement model. The second step involves fitting a structural model once an acceptable measurement model has been obtained.

The measurement model indicates how observed indicators are linked to their associated underlying latent variables. The validating of the measurement model is accomplished through confirmatory factor analysis. I used LISREL 8.80 for the analysis. I analyzed three measurement models, since I was using three final outcome variables (voting behavior, community integration, and volunteerism) that are generally associated with good citizenship. Each model contained both latent and single indicator variables. While it is preferable not use single indicators, these were the only measures available in the dataset to represent those particular variables of interest. All of the latent variables had at least three indicators at the onset of the analyses.

Evaluation of Model Fit

LISREL provides five types of information for evaluating the fit of the model (Joreskog & Sorbom, 1996). The types of information are related to overall goodness-of-fit measures, analysis of residuals, model modification indices, standards errors and correlations of the parameter estimates, and measures of variation accounted for. For each model, I used these five types of information to evaluate the fit and to determine necessary modifications, if improvements were needed.

Goodness-of-fit measures concern the assessment of the overall fit of the model to the data. Brown (2006) describes three classes of model fit indices: absolute fit, fit adjusting for parsimony, and comparative fit. He recommends that at least one index from each fit class should be considered because each provides different information about the fit of the model.

There are varying schools of thought on which indices to use, but some of the most widely reported, and, therefore, used in this study, are Chi-square (X^2), goodness-of-fit index (GFI), standardized root mean square residual (SRMR), root mean square error of approximation (RMSEA), expected cross-validation index (ECVI), and comparative fit index (CFI). Chi-

square, GFI, and SRMR are classified as absolute measures. RMSEA is a fit index that adjusts for model parsimony. CFI and ECVI are considered relative measures of model fit.

The chi-square fit index is the most common fit test. The chi-square value should not be significant, if there is a good fit model, while a significant chi-square indicates lack of satisfactory model fit. If chi-square is $<.05$, the model is rejected because this finding indicates that the model's covariance structure is significantly different from the observed covariance matrix. However, the chi-square test may be misleading, especially with very large sample sizes. The larger the sample size, the more likely the rejection of the model and the more likely a Type II error (rejecting something true). Therefore, it is important to review a combination of fit indices rather than relying solely on one measure such as chi-square.

The goodness-of-fit index (GFI) is the percent of the observed covariances explained by the covariances implied by the model. GFI varies from 0 to 1 with 1 indicating a perfect fit. Generally, especially with large sample sizes, a measure of .95 and above is desirable.

The standardized root mean square residual (SRMR) is viewed as the average discrepancy between the correlations observed in the input matrix and the correlations predicted by the model. It is derived from a residual correlation matrix. The SRMR can take a range of values between 0.0 and 1.0 with 0.0 indicating a perfect fit.

The root mean square error of approximation (RMSEA; Steiger & Lind, 1980) index assesses the extent to which a model fits reasonably well in the population. This measure incorporates a penalty function for poor model parsimony. Hu and Bentler (1999) have suggested RMSEA $\leq .06$ as the cutoff for a good fit model.

The comparative fit index (CFI; Bentler, 1990) evaluates the fit of the specified model in relation to a more restricted baseline model. The baseline model is typically a "null" or

“independent” model in which the covariances among all input indicators are fixed to zero. The CFI has a range of possible values from 0.0 to 1.0, with values closer to 1.0 implying a good model fit.

The expected cross-validation index (ECVI; Browne and Cudeck, 1989) reflects the discrepancy between model-implied and observed covariance matrices. A lower ECVI indicates a better fit. LISREL also provides an estimation of the ECVI for a saturated model as well as an independence model. These estimations can then be used for comparative purposes with the ECVI of the specified model with a value closer to that of the saturated model versus the independent model indicating a good model fit.

Goodness-of-fit indices are descriptive and provide a global summary of the ability of the model to reproduce the input covariance matrix. Brown (2006) suggests that these descriptive fit indices provide information on the extent of the model’s lack of fit, but they cannot be used in isolation of other information to support the conclusion of a good fitting model. Two other aspects of fit evaluation are localized strain (i.e., specific points of ill fit) and the interpretability, size and statistical significance of the model’s parameter estimates.

While goodness-of-fit indices may provide an indication that a model has a lack of fit, they cannot provide information on the reasons why the model fit the data poorly. Two statistics that can be used to indicate areas of misfit in the model are residuals and modification indices.

Using estimates of the parameters, LISREL computes fitted residuals which are the difference between the sample moment matrix and the fitted matrix. Since a fitted residual can be somewhat difficult to interpret, one most often refers to the standardized residual. Standardized residuals are residuals divided by their standard errors. In a model that fits well, these residuals will be small.

Modification indexes are measures associated with the fixed and constrained parameters of the model. For each fixed and constrained parameter, the modification index is a measure of a predicted decrease in X^2 if a single fixed parameter or equality constraint is relaxed and the model is re-estimated. LISREL also provides measures a prediction of the estimated change in each fixed and constrained parameter (EPCs) if modifications are made. However, one should be cautious in making the suggested modifications and only do so when it is justified. “Indeed a key principle of model respecification is that modification indices and standardized residuals should prompt the researcher to relax a fixed or constrained parameter only when there exists a compelling substantive basis for doing so (i.e., freeing the parameter is supported by empirical, conceptual, or practical considerations) and when the EPC (expected value of the parameter) can be clearly interpreted” (Brown 2006, p. 122).

After evaluating the global descriptive fit measures, residuals and modification indices, and finding no cause for concern or resolving identified issues, model evaluation proceeds to the inspection of the direction, magnitude and significance of the parameter estimates (i.e., the factor loadings, factor variances and covariance, and indicator errors.)

LISREL provides a standard error for each estimated parameter in the units of measurement of the corresponding observed or latent variable. The standard errors provide an indication of the accuracy of the estimation of the parameters. Small standard errors are desirable. For each free parameter, the parameter estimate divided by its standard error produces a *t-value* (critical ratio). If a *t-value* is between -1.96 and 1.96, it is not significantly different from zero. When the *t-value* is >1.96 , it indicates that the estimated parameter is significant at the .05 level.

The program also provides squared multiple correlations which indicate the variance extract estimate. This is a measure of the variance captured by the construct as compared with remaining variance due to measurement error. By convention, these estimates should be .50 or higher (Fornell and Larcker 1981).

Approach to Analyses

I first tested the single factor models for the six latent variables (parent-student interaction, teacher interactions, peer interactions, community sports participation, community other types of participation, and future expectations). Next, I analyzed the subsections of each model. The first subsection is the exogenous variables of socioeconomic status and parent-student interactions. The next subsection is adolescent social capital as represented by teacher interactions, peer interactions, extracurricular activities, community sports participation and community other types of participation. The final subsection involved future life expectations and each final outcome variable of voting behavior, community integration and volunteerism. Once all of the subsections had been analyzed, the three entire measurement models were tested with all the variables.

Single-Factor Analyses of Latent Variables

Parent-Student Interactions. The measurement model for parent-student interactions originally contained five indicators and one latent variable. The chi-square value was statistically significant which was not unexpected due to the large sample size. A review of the other fit statistics indicated mixed results. The RMSEA was high at .10 while CFI which was .97 and GFI which was .98 were good. The SRMR was acceptable at .04. The modification indices suggested a possible error covariance between two indicators (discussing grades with parents and discussing going to college). Furthermore, a review of squared multiple correlations for these

two variables indicated low reliabilities. Therefore, I deleted these variables from the model, thereby leaving three indicators and a just-identified model.

Teacher Interactions. This model originally contained four indicator variables and one latent variable. The initial fit statistics were once again mixed with a statistically significant chi-square and high RMSEA (.093). CFI (.98), GFI (.99) and SRMR (.026) all indicated an acceptable fit for the model. However, once again the modification indices and standardized residuals indicated problems with two of the variables. A closer review found that one of them (most teachers praise the respondent) had a very low reliability of .29, so I deleted it from the model. The other (teaching is good at this school) appeared to be somewhat redundant with the other two variables of “teachers are interested in students” and “teachers listen to students”. Since it had a lower factor loading and lower reliability score, I decided to also delete it. The final model contained two variables and, therefore, was just identified. Since a just-identified model is saturated and will have a perfect fit, the improvement in the model will be more telling when it is joined with other variables in the subsection models.

Peer Interactions. The peer interactions model contains four indicators. The fit statistics, other than a statistically significant chi-square, indicated a good model fit. RMSEA was .019 and the CFI and GFI were both 1.00. The SRMR was .0054. The standardized residuals were low, ranging from -1.84 to 2.47, and all parameter estimates were statistically significant. Therefore, this model was retained without any modifications.

Community Sports Participation. The model for this construct contained three indicator variables and, therefore, it was just-identified with a perfect fit. However, a review of the output indicated a problem with the variable “respondent takes sports lessons.” The reliability for this

indicator was very low at .11 and, therefore, it was deleted from the model. The model was left with two indicators and retained a perfect fit.

Community Other Types of Activities Participation. The measurement model for this factor originally contained three indicators (saturated model with a perfect fit). But once again a closer review of an indicator (respondent performs community service) revealed that it was an unreliable (.15) measure. I decided to delete it since unreliable measures can contribute to producing biased parameter estimates.

Future Life Expectations. This measurement model originally contained nine indicators. The fit statistics from the first analysis with all nine indicators revealed a poor fit. RMSEA was .135 while the SRMR was .052 and GFI was .90. All parameter estimates were statistically significant but two indicators (chances respondent will go to college and chances respondent will have friends to count on) had low reliabilities of .20 and .34 respectively. Therefore, I deleted these two variables and ran the revised measurement model. The fit statistics indicated a better fit with RMSEA now .127 and an SRMR of .040. Additionally, CFI was .96 and GFI was .95. However, the modification indices and standardized residuals indicated the possibility of error covariances between some of the measures. A closer inspection of the content of the measures revealed that there was some redundancy. For example, two measures (chances respondent will have a job that pays well and chances that respondent will be able to own home) were both representing financial status. I decided to delete the variable about owning a home because the measure about having a job that pays well had a slightly higher factor loading. Two other indicators (chances that respondent will have a job he or she enjoys and chances respondent will have a happy family life) appeared to be representing satisfaction with status. I decided to retain the measure “chances respondent will have a happy family life” because it had a slightly higher

factor loading and reliability than the other measure. The final model contained five indicators and the fit statistics indicate a better fit. The chi-square value was still statistically significant, but the other fit indices improved. RMSEA was still high at .099, but CFI was .98, GFI was .98 and the SRMR was .028. Therefore, I decided to retain this model as the final one. Table 8 contains the summary of the fit statistics for the final single-factor measurement models.

Table 8

Fit Statistics for Single-Factor Measurement Models

Model	Chi-square	df	RMSEA	ECVI (saturated)	CFI	GFI	SRMR
Parent Interactions	0.00	0	.000	.0000	1.00	1.00	.0000
Teacher Interactions	0.00	0	.000	.0000	1.00	1.00	.0000
Peer Interactions	6.59	2	.019	.0036 (.0032)	1.00	1.00	.0054
Community Sports	0.00	0	.000	.0000	1.00	1.00	.0000
Community Other	0.00	0	.000	.0000	1.00	1.00	.0000
Future Life Expectations	306.72	5	.0990	.0530 (.0048)	.98	.98	.0280

Model Subsection Analyses

Exogenous Variables of Socioeconomic Status and Parent-Student Interactions. This model included the single indicator of parental socioeconomic status and the latent construct of parent-student interactions. The fit statistics indicate a very good fit. Chi-square is not statistically significant ($p=.21$). RMSEA is .009 and SRMR is .0049. The ECVI at .0031 is very close to the saturated model value of .0032. CFI and GFI are both 1.00. All parameter estimates

were statistically significant and the standardized residuals were low at -1.63 to 1.27. Therefore, no modifications were made to the model.

Adolescent Social Capital. The measurement model for adolescent social capital contained four latent variables (teacher interactions, peer interactions, community sports participation and other community activities) and a single indicator for extracurricular participation. The fit statistics for the model indicated a good fit. Once again chi-square was statistically significant and most likely affected by the large sample size. The other indices were all favorable. RMSEA was .030 while ECVI at .062 was closer to the figure of .021 for the saturated model than that of the independence model (2.93). CFI was .98 and GFI was at .99. All parameter estimates were statistically significant. The modification indices did suggest that some of the indicators for community sports and other activities should possibly load onto the extracurricular activities construct. This result was not surprising due to the fact that all of these measures were related to activity participation. However, in keeping with the established definitions for the constructs and the decision to separate community activities from school activities, I did not feel the cross loadings were justified. Therefore, no modifications were made to the model.

Future Life Expectations and Citizenship Participation Outcomes. As mentioned previously, this subsection of the model will contain the future life expectations latent variable and then each outcome variable as represented by single indicators for voting behavior, community integration, and volunteerism.

The fit statistics for the model for future life expectations and voting behavior indicated a good fit, with the exception of a statistically significant chi-square value. RMSEA was .074 and ECVI was .054 (saturated model's ECVI was .0068). CFI and GFI were both .98 and SRMR

was .024. The modification indices continue to suggest possible error covariances between some of the future life expectations measures, but due to the good overall fit of the model and the fact that all parameter estimates looked reasonable and are statistically significant, no modifications were made to the model.

The fit statistics for the measurement model of future life expectations and community integration are similar to those for the aforementioned model. RMSEA is .075 while ECVI is .056 (saturated model's ECVI was .0068). CFI and GFI were both .98 and SRMR was .025. All parameter estimates were statistically significant. The model was retained.

Once again, the estimation of the model for future life expectations and the outcome of volunteerism produced similar results to the other two models. RMSEA was .076 and ECVI was .058 (saturated model's ECVI was .0068). CFI and GFI were .98 and the SRMR was .026. Due to the acceptable fit statistics and the fact that all parameter estimates were statistically significant, no modifications were made to the model. Table 9 contains the summary of the fit statistics for the subsections of the measurement model.

Table 9

Summary of Fit Statistics for the Subsections

Model	Chi-square	df	RMSEA	ECVI (saturated)	CFI	GFI	SRMR
Exogenous Variables	3.10	2	.009	.0031 (.0032)	1.00	1.00	.0049
Adolescent Social Capital	319.47	35	.030	.0620 (.0210)	.98	.99	.0230
Future Life and Voting	312.67	9	.074	.0540 (.0068)	.98	.98	.0240
Future Life and Integration	325.60	9	.075	.0560 (.0068)	.98	.98	.0250
Future Life and Volunteer	334.77	9	.076	.0580 (.0068)	.98	.98	.0260

Final Full Measurement Models

Voting Behavior. The final measurement model contained all variables that were retained after single-factor and subsection analyses. Once again the chi-square value was statistically significant, but the other indices indicated a good fit. RMSEA was .036 and the ECVI of .25 was closer to the ECVI of the saturated model (.075) versus that of the independence model (.8.72). CFI and GFI were both .98, and SRMR was .025. An examination of the phi matrix revealed two insignificant correlations: Socioeconomic status and teacher interactions; and community sports and voting behavior. Brown (2006) suggests that the interpretability of the size and statistical significance of factor intercorrelations depends on the specific research context. “Small, or statistically nonsignificant factor covariances are usually not considered problematic and are typically retained in the solution (i.e., they provide evidence that the discriminant validity of the factors is good).” (Brown 2006, 131) I decided to retain the original model based on theoretical considerations. Table 10 shows the fit statistics for the final measurement model with voting behavior as the final outcome variable.

Table 10

Fit Statistics for Final Measurement Model (Voting)

Model	Chi-square	df	RMSEA	ECVI (saturated)	CFI	GFI	SRMR
Full – Voting Behavior	1407.15	156	.036	.25 (.075)	.98	.98	.025

Standardized factor loadings for the indicator variables for this measurement model are provided in Table 11. All of the factor loadings are statistically significant at the .01 level as indicated by the significant *t* scores obtained, ranging from 14.23 through 48.15. These results establish the convergent validity of the indicators. (The reference indicator for each latent

Table 11

Properties of the Final Measurement Model (Voting)

Construct and Indicators	Standardized Loading	t	Reliability
Voting Behavior (F1)			
Registration and voting status	1.00	--	1.00
Future Life Expectations (F2)			
Chances that R will have job that pays well	.66	--	.43
Chances that R will have a happy family life	.73	46.85	.53
Chances that R will stay in good health	.74	47.39	.55
Chances that R will be able to live anywhere	.67	43.78	.44
Chances that R will be respected in community	.76	48.15	.57
Teacher Interactions (F3)			
Teachers are interested in students	.61	--	.38
Most teachers listen to respondent	.76	14.23	.58
Peer Interactions (F4)			
Students think of R as being popular	.74	--	.55
Students think of R as socially active	.70	46.86	.48
Students think of R as important	.65	44.11	.42
Students think R is part of leading crowd	.70	47.36	.50
Extracurricular Activities (F5)			
Time spent on activities	1.00	--	1.00
Community Sports Participation (F6)			
How often R goes to park, gym, pool	.68	--	.46
How often R plays ball or other sports	.75	23.09	.56
Community Other Activities Participation (F7)			
How often R attends youth groups	.74	--	.55
How often R attends religious activities	.66	20.31	.44
Parent-Student Interaction (F8)			
Discussed school courses with parents	.69	--	.48
Discussed school activities with parents	.80	43.64	.65
Discussed things studied in class with parents	.65	41.33	.42
Socioeconomic Status (F9)			
Socioeconomic status of parents	1.00	--	1.00

variable was set to a value of 1.00 and therefore, no *t* scores were produced for them.) The reliability of each of the indicators is also provided in Table 12. The reliabilities were all at an acceptable (although moderate) level with coefficients ranging from .38 to .65. Due to the positive results of the fit indices and the findings of acceptable reliability and validity of the indicators, this model is retained as the final measurement model for the outcome of voting behavior.

Community Integration. This measurement model contains all of the same factors as the voting behavior model except for the replacement of the final outcome variable with community integration. The fit measures are basically identical. Once again the chi-square value was statistically significant, but the other indices indicated a good fit. RMSEA was .036 and the ECVI of .25 was closer to the ECVI of the saturated model (.075) versus that of the independence model (.852). CFI and GFI were both .98, and SRMR was .025. An examination of the phi matrix revealed one insignificant factor correlation: teacher interactions and parental socio-economic status. For the aforementioned reasons, I decided to retain the model as it was. Table 12 contains the summary of the fit statistics for the final measurement model with community integration as the outcome variable.

Table 12

Fit Statistics for the Final Measurement Model (Integration)

Model	Chi-square	df	RMSEA	ECVI (saturated)	CFI	GFI	SRMR
Full – Community Integration	1398.53	156	.036	.25 (.075)	.98	.98	.025

Standardized factor loadings for the indicator variables for this measurement model are provided in Table 13. All of the factor loadings are statistically significant at the .01 level as

indicated by the significant t scores obtained, ranging from 14.22 through 48.13. These results establish the convergent validity of the indicators. The reliability of each of the indicators is also provided in Table 13. The reliabilities were all at an acceptable (although moderate) level with coefficients ranging from .38 to .65. Due to the positive results of the fit indices and the findings of acceptable reliability and validity of the indicators, this model is retained as the final measurement model for the outcome of community integration.

Table 13

Properties of the Final Measurement Model (Integration)

Construct and Indicators	Standardized Loading	t	Reliability
Community Integration (F1)			
How much participation in community activities?	1.00	--	1.00
Future Life Expectations (F2)			
Chances that R will have job that pays well	.66	--	.43
Chances that R will have a happy family life	.73	46.88	.53
Chances that R will stay in good health	.74	47.38	.55
Chances that R will be able to live anywhere	.67	43.74	.44
Chances that R will be respected in community	.76	48.13	.57
Teacher Interactions (F3)			
Teachers are interested in students	.62	--	.38
Most teachers listen to respondent	.76	14.22	.58
Peer Interactions (F4)			
Students think of R as being popular	.74	--	.55
Students think of R as socially active	.69	46.90	.48
Students think of R as important	.65	44.16	.42
Students think R is part of leading crowd	.71	47.42	.50
Extracurricular Activities (F5)			
Time spent on activities	1.00	--	1.00
Community Sports Participation (F6)			
How often R goes to park, gym, pool	.68	--	.46
How often R plays ball or other sports	.74	24.77	.55
Community Other Activities Participation (F7)			
How often R attends youth groups	.71	--	.55
How often R attends religious activities	.69	22.08	.44
Parent-Student Interaction (F8)			
Discussed school courses with parents	.69	--	.47
Discussed school activities with parents	.81	43.58	.65
Discussed things studied in class with parents	.65	41.22	.42
Socioeconomic Status (F9)			
Socioeconomic status of parents	1.00	--	1.00

Volunteerism. This measurement model contains all of the same factors as the voting behavior model and community integration models, except for the replacement of the final outcome variable with volunteerism. The fit measures overall again indicate a good fit. Even though the chi-square value was statistically significant, the other indices are at an acceptable level. RMSEA was .036 and the ECVI of .25 was closer to the ECVI of the saturated model (.075) versus that of the independence model (.8.33). CFI and GFI were both .98, and SRMR was .025. An examination of the phi matrix revealed one insignificant factor correlation: teacher interactions and parental socio-economic status. As per the previous explanation, I retained the original model. Table 14 contains the summary of the fit statistics for the final measurement model with volunteerism as the outcome variable.

Table 14

Fit Statistics for the Final Measurement Model (Volunteerism)

Model	Chi-square	df	RMSEA	ECVI (saturated)	CFI	GFI	SRMR
Full – Volunteerism	1399.81	156	.036	.25 (.075)	.98	.98	.025

Table 15 contains the standardized factor loadings for the indicator variables for this measurement model. All of the factor loadings are statistically significant at the .01 level as indicated by the significant *t* scores obtained, ranging from 14.20 through 48.16. These results establish the convergent validity of the indicators. The reliability of each of the indicators is also provided in Table 16. The reliabilities were all at an acceptable (although moderate) level with coefficients ranging from .38 to .65. Once again, due to the positive results of the fit indices and the findings of acceptable reliability and validity of the indicators, this model is retained as the final measurement model for the outcome of volunteerism.

Table 15

Properties of the Final Measurement Model (Volunteerism)

Construct and Indicators	Standardized Loading	t	Reliability
Volunteerism (F1)			
How much participation in volunteer activities	1.00	--	1.00
Future Life Expectations (F2)			
Chances that R will have job that pays well	.66	--	.43
Chances that R will have a happy family life	.73	46.88	.53
Chances that R will stay in good health	.74	47.38	.55
Chances that R will be able to live anywhere	.67	43.77	.44
Chances that R will be respected in community	.76	48.16	.57
Teacher Interactions (F3)			
Teachers are interested in students	.62	--	.38
Most teachers listen to respondent	.76	14.20	.58
Peer Interactions (F4)			
Students think of R as being popular	.74	--	.55
Students think of R as socially active	.70	46.89	.48
Students think of R as important	.65	44.16	.42
Students think R is part of leading crowd	.70	47.38	.50
Extracurricular Activities (F5)			
Time spent on activities	1.00	--	1.00
Community Sports Participation (F6)			
How often R goes to park, gym, pool	.68	--	.47
How often R plays ball or other sports	.74	23.12	.55
Community Other Activities Participation (F7)			
How often R attends youth groups	.75	--	.57
How often R attends religious activities	.66	20.67	.43
Parent-Student Interaction (F8)			
Discussed school courses with parents	.69	--	.47
Discussed school activities with parents	.81	43.57	.65
Discussed things studied in class with parents	.65	41.24	.42
Socioeconomic Status (F9)			
Socioeconomic status of parents	1.00	--	1.00

Now that acceptable measurement models have been validated, the structural models, that will specify a pattern of relationships among the variables in each model, can be fitted.

Fitting the Structural Models

Structural Equation Modeling

Structural equation models hypothesize specific explanatory relationships among the constructs. Therefore, this approach can be used to test the plausibility of *a priori* specification of explanatory relationships among the latent variables. After running the model, the researcher reviews various goodness-of-fit indices, as is done with measurement models, to determine if the overall model fit is adequate or if a better fitting model can be attained by respecifying the model.

There are differing views on the justification for model respecification, mainly due to the fact that post hoc fitting should be viewed as exploratory and results may only apply to the particular dataset being used. But, for the most part, and for practical reasons, it has become an accepted practice. However, just as the *a priori* model is determined based on theoretical and empirical considerations, modifications should be viewed in the same light and only undertaken when justified.

There are three *a priori* models for this study due to the fact that there are three different final outcome variables representing citizenship participation: voting behavior, community integration, and volunteerism. Therefore, there are three final structural models that are discussed in more detail in this final section of Chapter Four.

Structural Model for Voting Behavior

Initial Structural Model for Voting Behavior. Figure 2 contains the *a priori* model of the hypothesized relationships among the exogenous variables, parental socioeconomic status and parent-student interaction, and the endogenous variables of adolescent social capital, future life expectations and the citizenship participation outcome of voting behavior. The initial model

specifies that each construct has an explanatory relationship with all other constructs with the exception of the two background variables that are hypothesized to have only a covariance relationship.

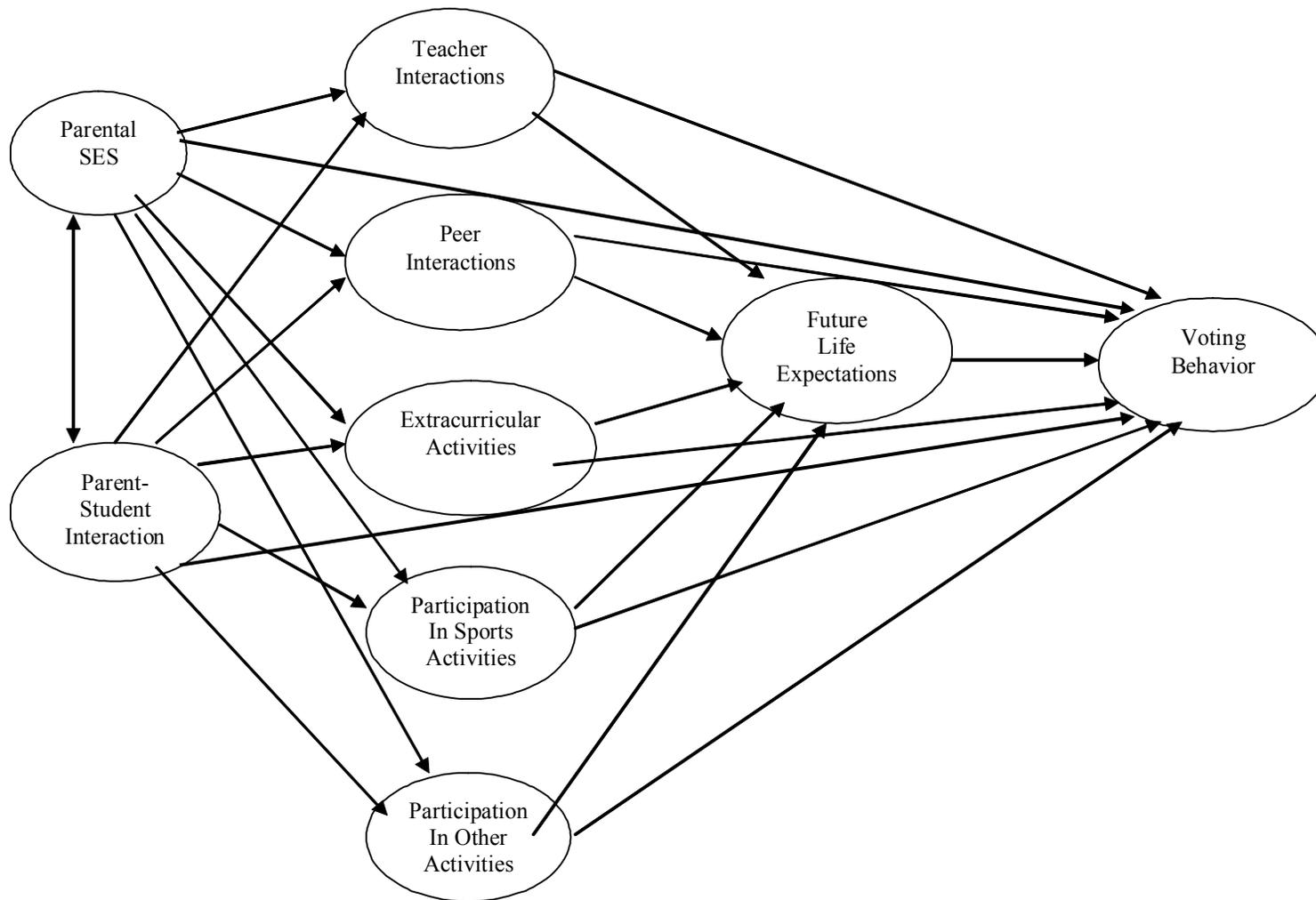


Figure 2. Initial structural model of the effects of adolescents' social capital resources and future life expectations during adolescence on subsequent citizenship participation as represented by voting behavior.

The hypothesized model was tested and the initial fit indices were acceptable as shown in Table 16. The chi-square value was statistically significant, but the other fit indices indicated a good fit. However, a review of the parameters indicated that there were some paths that had a value less than .05 and were not statistically significant. After reviewing each of these paths and giving consideration to the theoretical and practical implications, I decided to respecify the model in an attempt to obtain a more parsimonious model without reducing model fit. I revised the model in five steps by removing the paths one-by-one that were less than .05 and not statistically significant. Each modification to the structural model involved one of two matrices: gamma or beta. The gamma matrix contains the effects of exogenous variables on endogenous variables, while the beta matrix contains the effects of endogenous variables on endogenous variables.

Model 2. Raykov and Marcoulides (2006) suggest that with the use of a chi-square difference test a researcher can examine the plausibility of imposed restrictions from one model to another. The chi-square difference test involves the comparison of the chi-square value difference in fit of the two models relative to their degrees of freedom. Since I am deleting one path at a time, I will be assessing whether the chi-square difference between the two models is a value of 3.84 or greater (significance level of .05) with one additional degree of freedom. If there is no statistical significance, then I can retain the hypothesis of validity of the modification (imposed constraint). To make the first model revision, I deleted the path from parental socioeconomic status to participation in community sports activities. As shown in Table 16, the chi-square difference is not statistically significant, and the model fit indices remained virtually unchanged. Therefore, I proceeded with the next modification.

Table 16

Specification and Fit Statistics for Structural Model (Voting)

Model	Parameters deleted	χ^2	df	RMSEA	ECVI (sat. .075)	CFI	GFI	SRMR	$\Delta\chi^2$	Δdf
1 Initial	-----	2579.06	166	.048	.44	.96	.96	.048	---	---
2	SES → Community Sports	2579.26	167	.048	.44	.96	.96	.048	.20	1
3	Extracurricular → Future	2581.00	168	.048	.44	.96	.96	.048	1.74	1
4	Com Sports → Future	2581.22	169	.048	.44	.96	.96	.048	.22	1
5	Teachers → Voting	2581.52	170	.048	.44	.96	.96	.048	.30	1
6 Final	Peers → Voting	2582.20	171	.048	.44	.96	.96	.048	.72	1

Model 3. The second revision involved the deletion of the path from extracurricular activities to the future life expectations construct. Once again the difference was not statistically significant, and the model fit indices remained the same.

Model 4. For the third revision, I deleted the path from community sports participation to future life expectations. The chi-square value increased by only .22 and, therefore, the increase was not statistically significant. The model fit indices remained at an acceptable level.

Model 5. The fourth revision involved deleting the path from teacher interactions to voting behavior. The chi-square value increased by .30. Since the increase was not statistically significant and the fit indices remained the same, I proceeded to the fifth and final revision to the model.

Model 6 (Final Model). The fifth and final revision was the deletion of the path from peer interactions to voting behavior. The chi-square value increased by .72 and was, therefore, not statistically significant. RMSEA was .048, while the ECVI value of .44 was much closer to the ECVI value of the saturated model (.075) than the value of the independence model (8.32). CFI and GFI were both .96, while the SRMR was .048. Therefore, I decided to accept this structural model, since it was more parsimonious and the overall model fit indices remained acceptable. Figure 3 contains the revised final structural model for the background variables, adolescent social capital, future life expectations and citizenship participation as represented by young adult voting behavior.

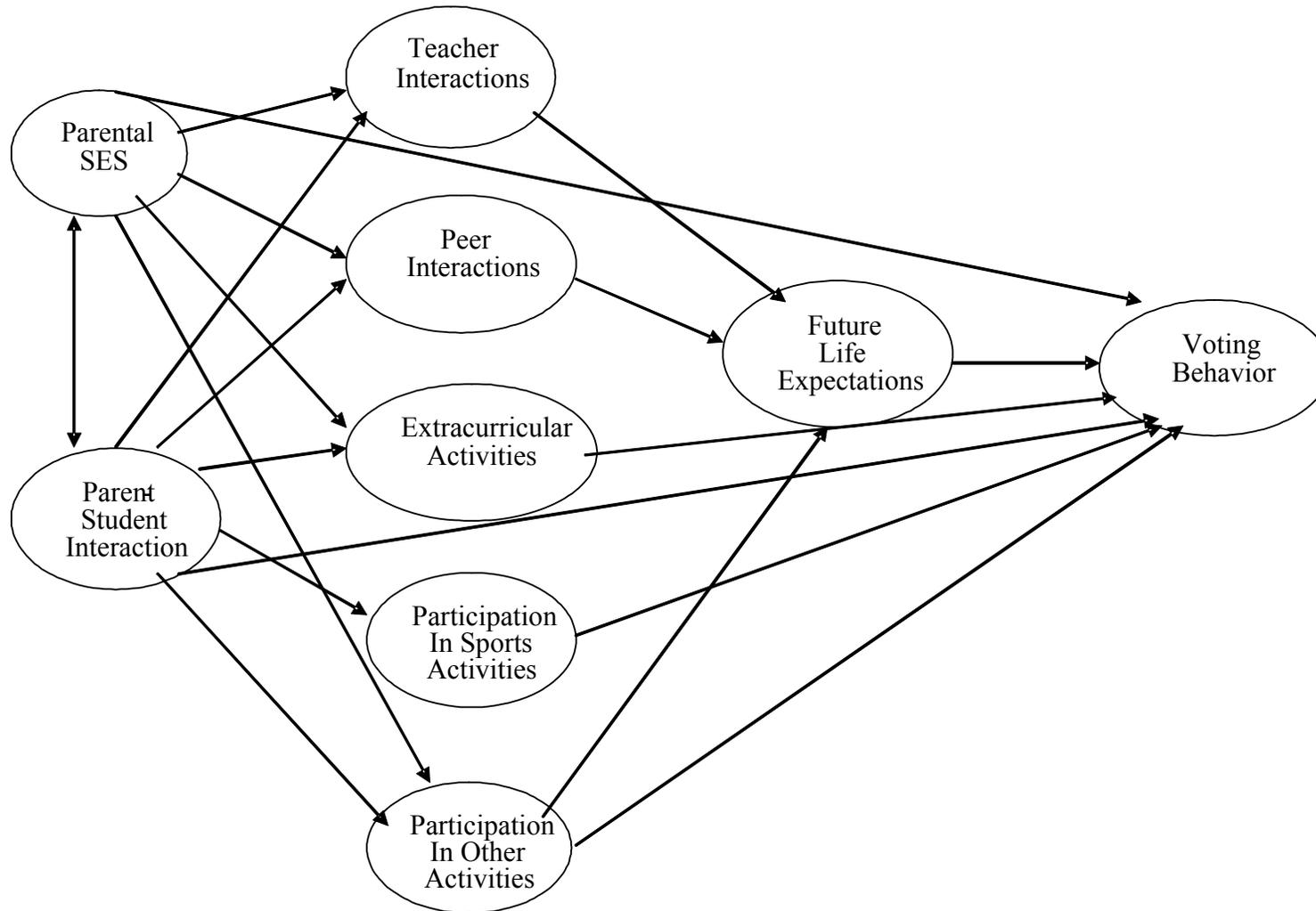


Figure 3. Final structural model of the effects of adolescents' social capital resources and future life expectations during adolescence on subsequent citizenship participation as represented by voting behavior.

The standardized path coefficients for the final model are shown in Table 17. All of the remaining coefficients are statistically significant at the .05 level, although the largest coefficient is only .33 (the effect of parent-student interactions on participation in extracurricular activities). It is interesting to note that two of the coefficients represent small negative effects. Community sports participation has a negative effect on voting behavior, and parental socioeconomic status has a negative effect on teacher interactions. Neither of these results is totally surprising and perhaps not much stock should be given to these results due to the lower reliability of the measures. Some studies have shown that sports participation can have a positive effect on later citizenship participation, such as voting, but many of those studies involve school related sports activities. The definition being used here is participation in community related sports activities. Also, the literature on socioeconomic status and student-teacher interactions is mixed and the interactions themselves are complex and influenced by many factors. The small negative coefficient would lead one to infer that higher parental socioeconomic status may produce less favorable interactions with teachers, but this inference should be viewed with caution, especially since the effect is so small. All other coefficients indicate a positive effect between the independent and dependent variables.

Table 17

Standardized Path Coefficients for Voting Behavior Model

Parameters	Coefficient
Voting - Future Life Expectations	.08*
Voting - Extracurricular Activities	.05*
Voting - Community Sports Participation	-.05*
Voting - Community Other Activities	.12*
Voting - Parent SES	.09*
Voting - Parent-Student Interactions	.09*
Future - Teacher Interactions	.10*
Future - Peer Interactions	.26*
Future - Community Other Activities	.09*
Future - Parent SES	.06*
Future - Parent-Student Interactions	.10*
Teacher - Parent SES	-.06*
Teacher - Parent-Student Interactions	.28*
Peers - Parent SES	.07*
Peers - Parent-Student Interaction	.28*
Extracurricular - Parent SES	.10*
Extracurricular - Parent-Student Interactions	.33*
Com Sports - Parent-Student Interactions	.24*
Com Other Activities - Parent SES	.13*
Com Other Activities – Parent-Student	.28*

*p<.05

All indirect, direct and total effects are provided in Tables 18 to 20. Table 18 displays the effects of the background variables of parental SES and parent-student interactions on the adolescent social capital measures. Table 19 contains the effects for the background variables and the adolescent variables on the future life expectations construct. The effects for all of the model variables on the final outcome variable of voting behavior are contained in Table 20.

The exogenous variables of SES and parent-student interactions have direct effects on the adolescent social capital variables as indicated in Table 18. Although the SES effects are mainly small in value, they are statistically significant. As mentioned previously, SES has a small negative effect on teacher interactions and no statistically significant effect on participation in community sports. However, SES has positive effects on peer interactions, participation in

extracurricular activities, and participation in other types of community activities. The exogenous variable of parent-student interactions has the greatest impact in the model. This is not unexpected since there is much research to support the pivotal influence of parents on many aspects of a child's life. Parent-student interactions had positive effects on teacher-student interactions, peer-student interactions, participation in extracurricular activities, community sports participation, and participation in other types of community activities.

Table 18

Effects of Background Variables on Social Capital Variables

	Teacher Interactions			Peer Interactions			Extra Activities			Community Sports			Community Other		
	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total
Parent Socioeconomic Status	-.06	--	-.06	.07	--	.07	.10	--	.10	--	--	--	.13	--	.13
Parent-Student Interactions	.28	--	.28	.28	--	.28	.33	--	.33	.24	--	.24	.28	--	.28

All are statistically significant ($p < .05$)

There were direct effects and some indirect effects for the background variables and adolescent social capital variables on the future life expectations construct as reflected in Table 19. Once again the effect values are relatively small, but statistically significant. The largest direct effect was for peer interactions on future life expectations. The largest indirect effect was for parent-student interaction on future life expectations. Two of the adolescent social capital variables (extracurricular activities participation and community sports participation) did not have a statistically significant (direct or indirect) effect on the future life expectations for twelfth graders. Perhaps this finding is due to the fact that none of the future life expectation questions had anything to do with participating in these types of activities.

Table 19

Effects of Model Variables on Future Life Expectations

	Future Life Expectations		
	Direct	Indirect	Total
Parental Socioeconomic Status	.06	.02	.08
Parent-Student Interaction	.09	.13	.22
Teacher Interactions	.10	--	.10
Peer Interactions	.26	--	.26
Community Other Participation	.09	--	.09

All are statistically significant ($p < .05$)

Table 20 displays the direct, indirect, and total effects of all of the model variables on the final outcome of voting behavior. Overall, the effects are somewhat small, but they are all statistically significant. Parental socioeconomic status had both a direct and indirect positive effect on voting behavior. The other background variable of parent-student interaction also had both a direct and indirect effect on voting behavior. Therefore, both of the background variables had an effect on the final outcome variable. Two of the adolescent social capital variables, teacher interactions and peer interactions, did not have a direct effect on voting behavior and only a very small, insignificant, indirect effect on it. This finding was not surprising because teacher and peer interactions during high school are, for the most part, temporal in nature, and in some respects this aspect probably makes their impact diminish over time. As mentioned previously, community sports participation in the 10th grade has a small negative effect on future life expectations for those same students as 12th graders. I once again am cautious in interpreting this finding due to my awareness of the lower reliability of the measures. Two of the adolescent social capital measures, extracurricular activities and participation in other types of community activities, did have a positive, and mainly direct, effect on voting behavior. This finding is encouraging because it provide support for the value of these types of adolescent activities in preparing young people to participate in an important adult activity, such as voting, and having a positive effect even nine or ten years after participation as an adolescent.

Table 20

Effects of All Model Variables on Voting Behavior

	Voting Behavior		
	Direct	Indirect	Total
Parental Socioeconomic Status	.09	.03	.12
Parent-Student Interaction	.09	.05	.14
Extracurricular Activities	.05	--	.05
Community Sports Participation	-.05	--	-.05
Community Other Activities	.12	.01	.13
Future Life Expectations	.08	--	.08

All are statistically significant ($p < .05$)

Structural Model for Community Integration

Initial Structural Model for Community Integration. Figure 4 contains the *a priori* model of the hypothesized relationships among the exogenous variables of parental socioeconomic status and parent-student interaction, and the endogenous variables of adolescent social capital, future life expectations and the citizenship participation outcome of community integration. The initial model specifies that each construct has an explanatory relationship with all other constructs with the exception of the two background variables of parent SES and parent-student interactions that are hypothesized to covary.

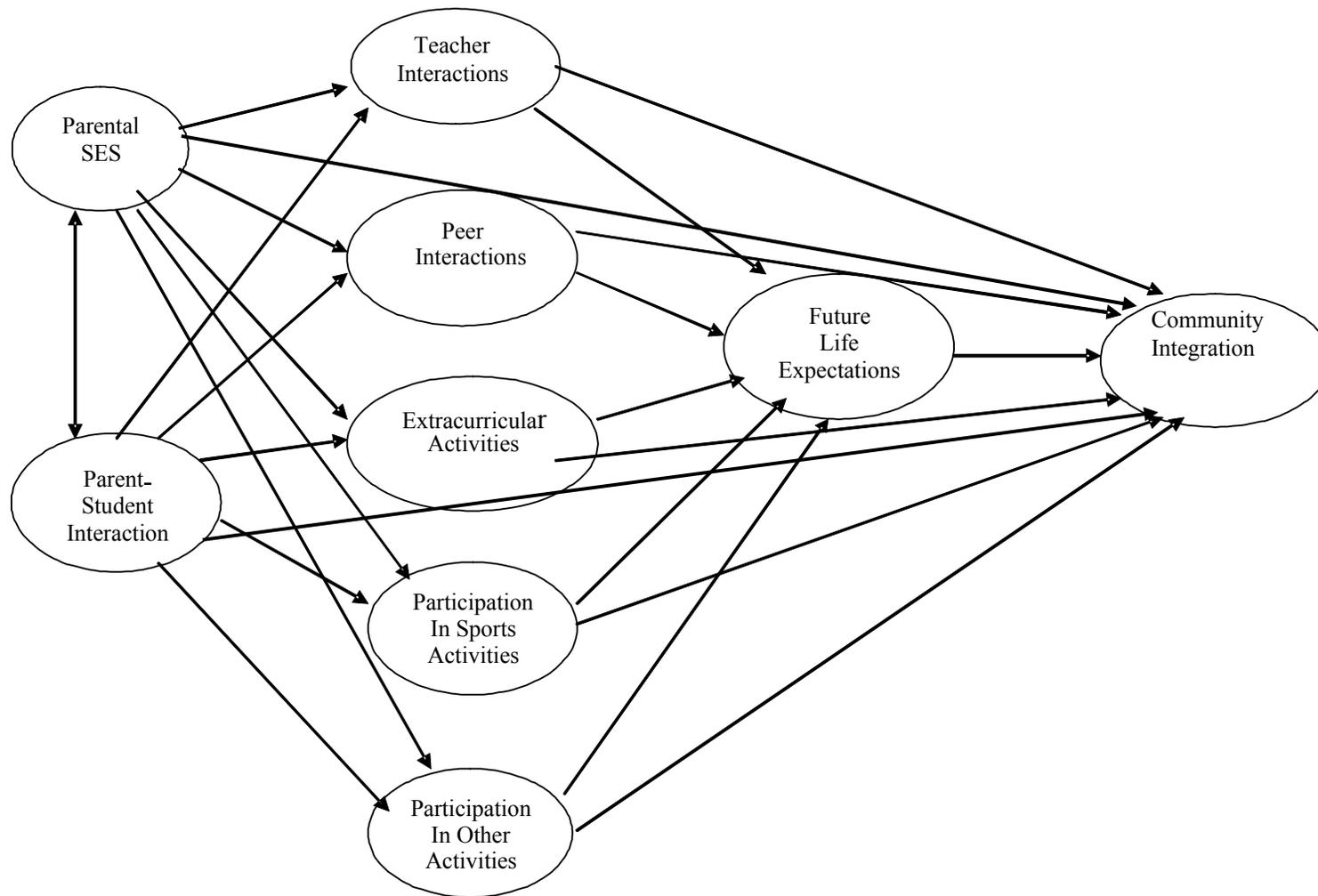


Figure 4. Initial structural model of the effects of adolescents' social capital resources and future life expectations during adolescence on subsequent citizenship participation as represented by community integration.

The hypothesized model was tested and the initial fit indices were acceptable as shown in Table 21. The chi-square value was statistically significant, but the other fit indices indicated a good fit. However, a review of the parameters indicated that there were some paths that had a value less than .05 and were not statistically significant. I decided to respecify the model in an attempt to obtain a more parsimonious model without reducing model fit. I initially thought I would be revising the model in five steps by removing the five paths one-by-one that were not statistically significant. The modifications involved both the gamma and beta matrices. However, after I made the fourth revision, the chi-square difference value between this model and the preceding one was statistically significant. According to Raykov and Marcoulides (2006) this result indicates that the imposed constraint may not be valid, so I accepted the third revised model as the final structural model.

Model 2. To make the first model revision, I deleted the path from extracurricular activities to future life expectations. As shown in Table 21, the chi-square difference is not statistically significant, and the model fit indices remained virtually unchanged. Therefore, I proceeded with the next modification.

Model 3. The second revision involved the deletion of the path from participation in community sports activities to the future life expectations construct. Once again the difference was not statistically significant, and the model fit indices remained the same.

Model 4. For the third revision, I deleted the insignificant path from teacher interactions to community integration. The chi-square value increased by only .60 and, therefore, it was not statistically significant. The model fit indices remained at an acceptable level.

Table 21

Specification and Fit Statistics for Community Integration Model

Model	Parameters deleted	X^2	df	RMSEA	ECVI (sat. .075)	CFI	GFI	SRMR	ΔX^2	Δdf
1 Initial	-----	2557.70	166	.048	.43	.96	.96	.048	---	---
2	Extracurricular → Future	2559.26	167	.048	.43	.96	.96	.049	1.56	1
3	Community Sports → Future	2559.55	168	.048	.43	.96	.96	.049	.29	1
4 Final	Teachers → Com Integration	2560.15	169	.048	.43	.96	.96	.049	.60	1

Model 5. The fourth revision involved deleting the path from teacher interactions to community integration. The chi-square value increased by 7.79. As mentioned previously, the increase was statistically significant and, therefore, indicated that the imposed constraint may not be plausible. I decided to reject this model and designate Model 4 as the final structural model.

Final Structural Model. Figure 5 contains the revised, final structural model for the background variables, adolescent social capital, future life expectations and citizenship participation as represented by young adult community integration. The chi-square value is statistically significant, but the other model fit indices are acceptable. RMSEA was .048, while the ECVI value of .43 was much closer to the ECVI value of the saturated model (.075) than the value of the independence model (8.52). CFI and GFI were both .96, while the SRMR was .046.

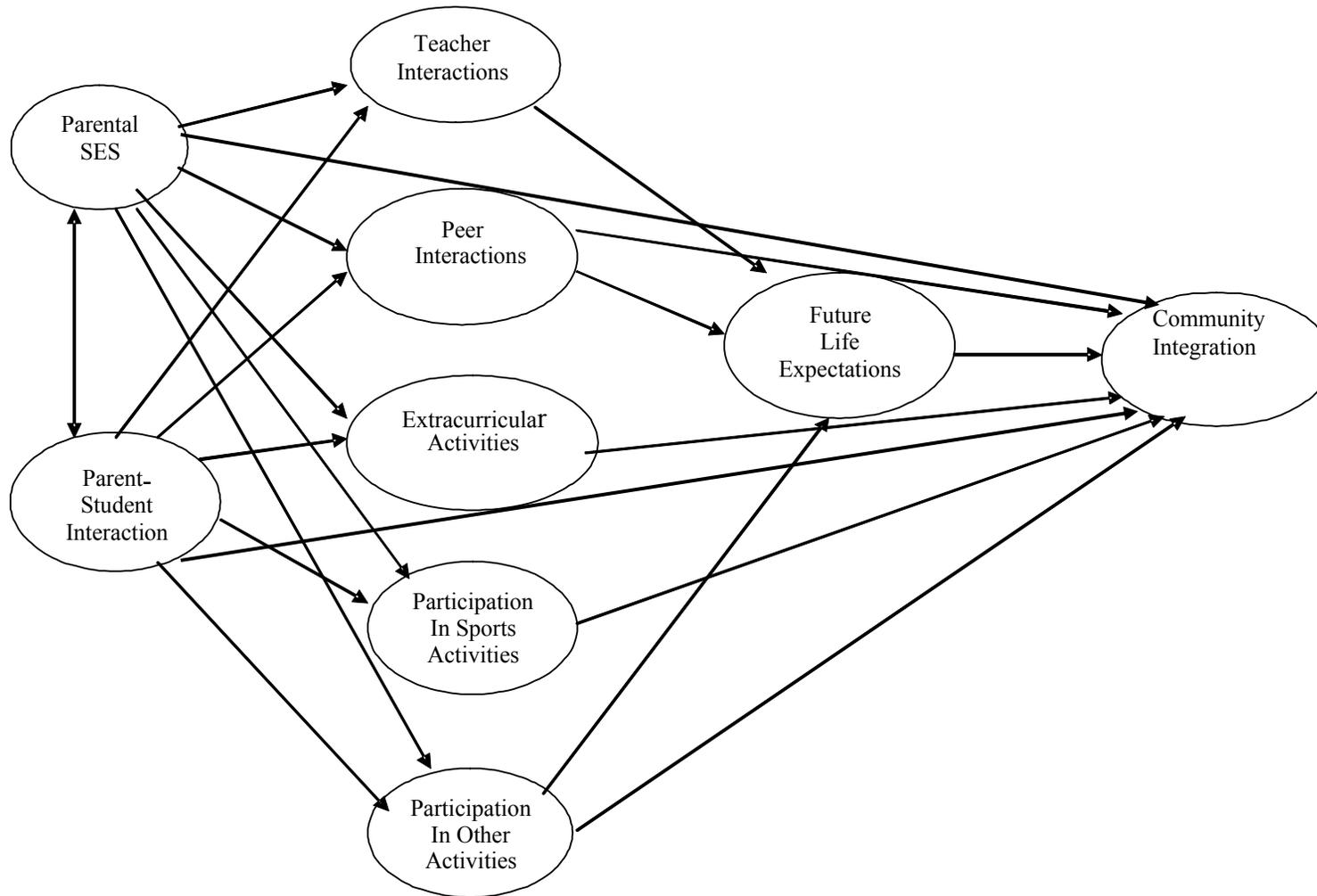


Figure 5. Final structural model of the effects of adolescents' social capital resources and future life expectations during adolescence on subsequent citizenship participation as represented by community integration.

The standardized path coefficients for the final model are shown in Table 22. All of the remaining coefficients, with the exception of parent SES on community sports participation (therefore, not included on the table), are statistically significant at the .05 level, although the strongest coefficient is only .33 (the effect of parent-student interactions' on participation in extracurricular activities). Only one of the coefficients represents a negative effect: parental SES on teacher interactions. Also, as mentioned previously, the literature on socioeconomic status and student-teacher interactions is mixed and the interactions themselves are complex and influenced by many factors. Therefore, one should be cautious with this interpretation. All other coefficients indicate a positive effect.

Table 22

Standardized Path Coefficients for Community Integration Model

Parameters	Coefficient
Community - Peer Interactions	.07*
Community - Extracurricular Activities	.08*
Community - Community Sports Participation	.18*
Community - Community Other Activities	.20*
Community - Future Life Expectations	.04*
Community - Parent-Student Interactions	.04*
Future - Teacher Interactions	.10*
Future - Peer Interactions	.26*
Future - Community Other Activities	.09*
Future - Parent SES	.06*
Future - Parent-Student Interactions	.10*
Teacher - Parent SES	-.06*
Teacher - Parent-Student Interactions	.28*
Peers - Parent SES	.07*
Peers - Parent-Student Interaction	.28*
Extracurricular - Parent SES	.10*
Extracurricular - Parent-Student Interactions	.33*
Com Sports - Parent-Student Interactions	.24*
Com Other Activities - Parent SES	.13*
Com Other Activities - Parent-Student	.28*

*p<.05

All indirect, direct and total effects are provided in Tables 23 to 25. Table 23 displays the effects of the background variables of parental SES and parent-student interactions on the adolescent social capital measures. Table 24 contains the effects for the background variables and the adolescent variables on the future life expectations construct. The effects for all of the model variables on the final outcome variable of community integration are contained in Table 25.

The exogenous variables of SES and parent-student interactions have direct effects on the adolescent social capital variables as indicated in Table 23. Although the SES effects are mainly small in value, they are statistically significant. As mentioned previously, SES has a small negative effect on teacher interactions and no statistically significant effect on participation in community sports. However, SES has positive effects on peer interactions, participation in extracurricular activities, and participation in other types of community activities. Once again, the exogenous variable of parent-student interactions has the greatest impact in the model. This finding supports prior research results on parental influence. Parent-student interactions had moderately positive effects on teacher-student interactions, peer-student interactions, participation in extracurricular activities, community sports participation, and participation in other types of community activities.

Table 23

Effects of Background Variables on Social Capital Variables

	Teacher Interactions			Peer Interactions			Extra Activities			Community Sports			Community Other		
	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total
Parental Socioeconomic Status	-.06	--	-.06	.07	--	.07	.10	--	.10	--	--	--	.13	--	.13
Parent-Student Interactions	.28	--	.28	.28	--	.28	.33	--	.33	.24	--	.24	.28	--	.28

All are statistically significant ($p < .05$).

There were direct effects and some indirect effects for the background variables and adolescent social capital variables on the future life expectations construct as reflected in Table 24. Once again the effect values are relatively small, but statistically significant. The largest direct effect was for peer interactions on future life expectations. The largest indirect effect was for parent-student interaction on future life expectations. Two of the adolescent social capital variables (extracurricular activities participation and community sports participation) did not have a statistically significant (direct or indirect) effect on the future life expectations for 12th graders. As indicated previously, perhaps this finding is due to the fact that none of the future life expectation questions had anything to do with participating in these types of activities.

Table 24

Effects of Model Variables on Future Life Expectations

	Future Life Expectations		
	Direct	Indirect	Total
Parental Socioeconomic Status	.06	.02	.08
Parent-Student Interaction	.09	.13	.22
Teacher Interactions	.10	--	.10
Peer Interactions	.26	--	.26
Community Other Participation	.09	--	.09

All are statistically significant ($p < .05$).

Table 25 displays the direct, indirect, and total effects of all of the model variables on the final outcome of community integration. Overall, the effects are very small, but they are all statistically significant. The results of the analysis indicate that both of the background variables have a direct and indirect effect on community integration. Parent-student interaction had a larger indirect versus direct effect on the final outcome variable. Teacher interactions did not have a statistically significant direct or indirect effect on community integration, but the other adolescent social capital measures of peer interactions, extracurricular activities participation, community sports activities participation and participation in other types of community activities had direct positive effects. The future life expectations construct had a small, but statistically significant, direct effect on the final outcome variable of community integration. Indeed, the community participation variables (sports related and other activities) provided the strongest direct effects on community integration. This result is in keeping with prior research findings that participation in these types of activities as adolescents sets the stage for the continuation of participation in similar types of community activities as adults. Once again, the findings in the current study provide support for the value of providing these types of activities to adolescents and encouraging their participation to thereby increase their community integration and participation in community activities as young adults.

Table 25

Effects of All Model Variables on Community Integration

	Community Integration		
	Direct	Indirect	Total
Parental Socioeconomic Status	.05	.02	.07
Parent-Student Interaction	.04	.15	.19
Peer Interactions	.07	.01	.08
Extracurricular Activities	.08	--	.08
Community Sports Participation	.18	--	.18
Community Other Activities	.20	--	.20
Future Life Expectations	.04	--	.04

Structural Model for Volunteerism

Initial Structural Model for Volunteerism. Figure 6 contains the *a priori* model of the hypothesized relationships among the exogenous variables of parental socioeconomic status and parent-student interaction, and the endogenous variables of adolescent social capital, future life expectations and the citizenship participation outcome of volunteerism. The initial model specifies that each construct has an explanatory relationship with all other constructs with the exception of the two exogenous variables that are hypothesized to only have a covariance relationship.

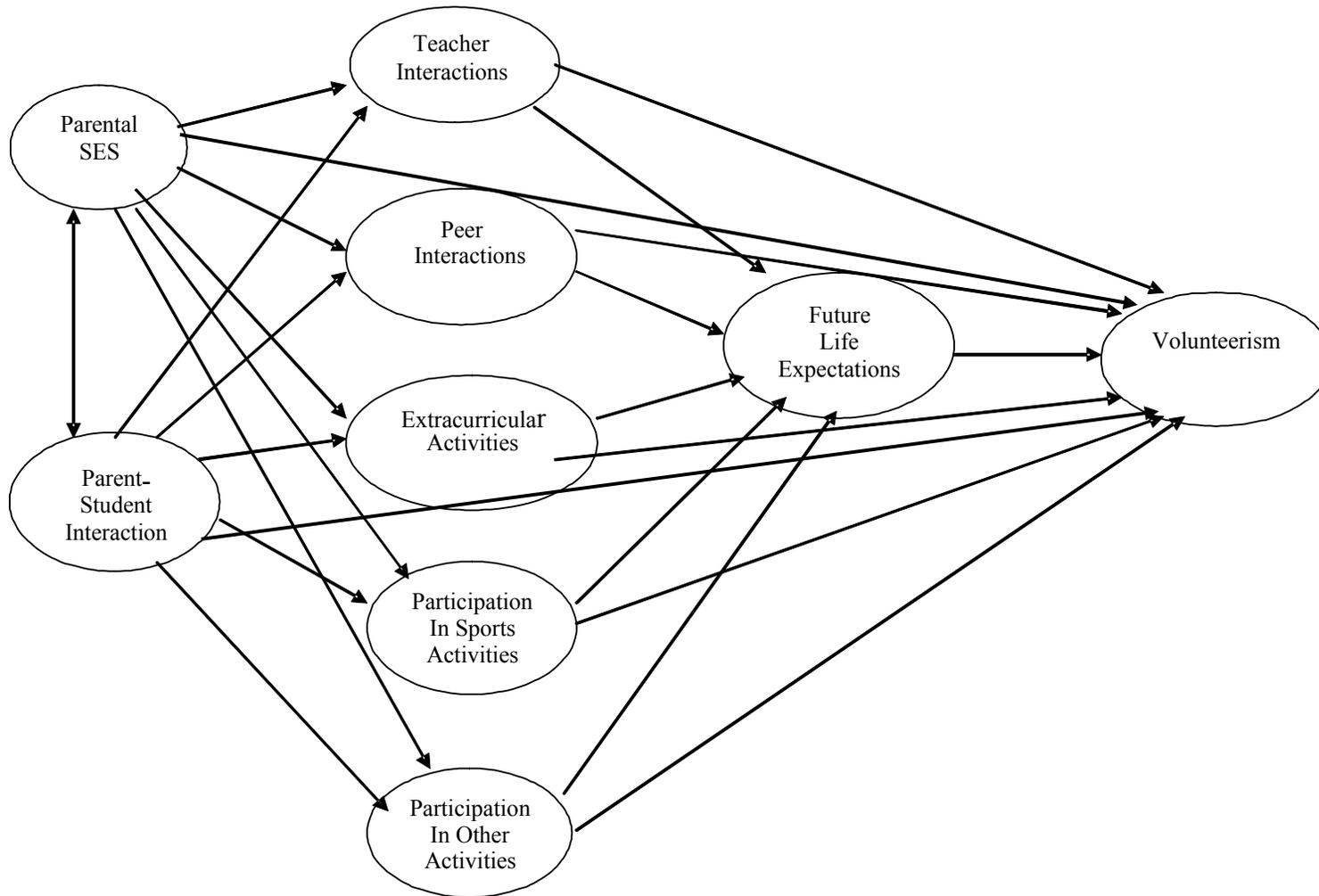


Figure 6. Initial structural model of the effects of adolescents' social capital resources and future life expectations during adolescence on subsequent citizenship participation as represented by volunteerism.

The hypothesized model was tested and the initial fit indices were acceptable as shown in Table 26. The chi-square value was statistically significant, but the other fit indices indicated a good fit. However, a review of the parameters indicated that there were some paths that had a value less than .05 and were not statistically significant. After reviewing each of these paths and giving consideration to the theoretical and practical implications, I decided to respecify the model in an attempt to obtain a more parsimonious model without reducing model fit. I revised the model in five steps by removing the paths, one-by-one, that were less than .05 and not statistically significant. Each modification to the structural model involved one of two matrices: gamma or beta. Once again I used the chi-square difference test to evaluate the plausibility of the imposed constraint at each step of the respecification process.

Model 2. To make the first model revision, I deleted the path from extracurricular activities to future life expectations. As shown in Table 26, the chi-square difference is not statistically significant and the model fit indices remained virtually unchanged. Therefore, I proceeded with the next modification.

Model 3. The second revision involved the deletion of the path from community sports participation to future life expectations. Once again the difference was not statistically significant, and the model fit indices remained the same.

Model 4. For the third revision, I deleted the from teacher interactions to volunteerism since it was not statistically significant. The chi-square value increased by only .19 and, therefore, it was not statistically significant. The model fit indices remained at an acceptable level.

Table 26

Specification and Fit Statistics for Volunteerism Model

Model	Parameters deleted	X^2	df	RMSEA	ECVI (sat. .075)	CFI	GFI	SRMR	ΔX^2	Δdf
1 Initial	-----	2568.79	166	.048	.44	.96	.96	.048	---	---
2	Extracurricular → Future	2570.60	167	.048	.44	.96	.96	.048	1.81	1
3	Com Sports → Future	2570.73	168	.048	.44	.96	.96	.048	.13	1
4	Teachers → Volunteerism	2570.92	169	.048	.43	.96	.96	.048	.19	1
5	Com Sports → Volunteerism	2571.23	170	.048	.43	.96	.96	.048	.29	1
6 Final	Parent SES Com Sports	2571.50	171	.048	.43	.96	.96	.048	.27	1

Model 5. The fourth revision involved deleting the path from community sports participation to volunteerism. The chi-square value increased by .29. Since the increase was not statistically significant, and the fit indices remained the same, I proceeded to the fifth and final revision to the model.

Model 6 (Final Model). The fifth and final revision was the deletion of the path from parent socioeconomic status to participation in community sports activities. The chi-square value increased by only .27 and was not statistically significant. RMSEA was .048, while the ECVI value of .43 was much closer to the ECVI value of the saturated model (.075) than the value of the independence model (8.33). CFI and GFI were both .96, while the SRMR was .048. Therefore, I decided to accept this structural model, since it was more parsimonious and the

overall model fit indices remained acceptable. Figure 7 contains the revised, final structural model for the background variables, adolescent social capital, future life expectations and citizenship participation as represented by young adult volunteerism.

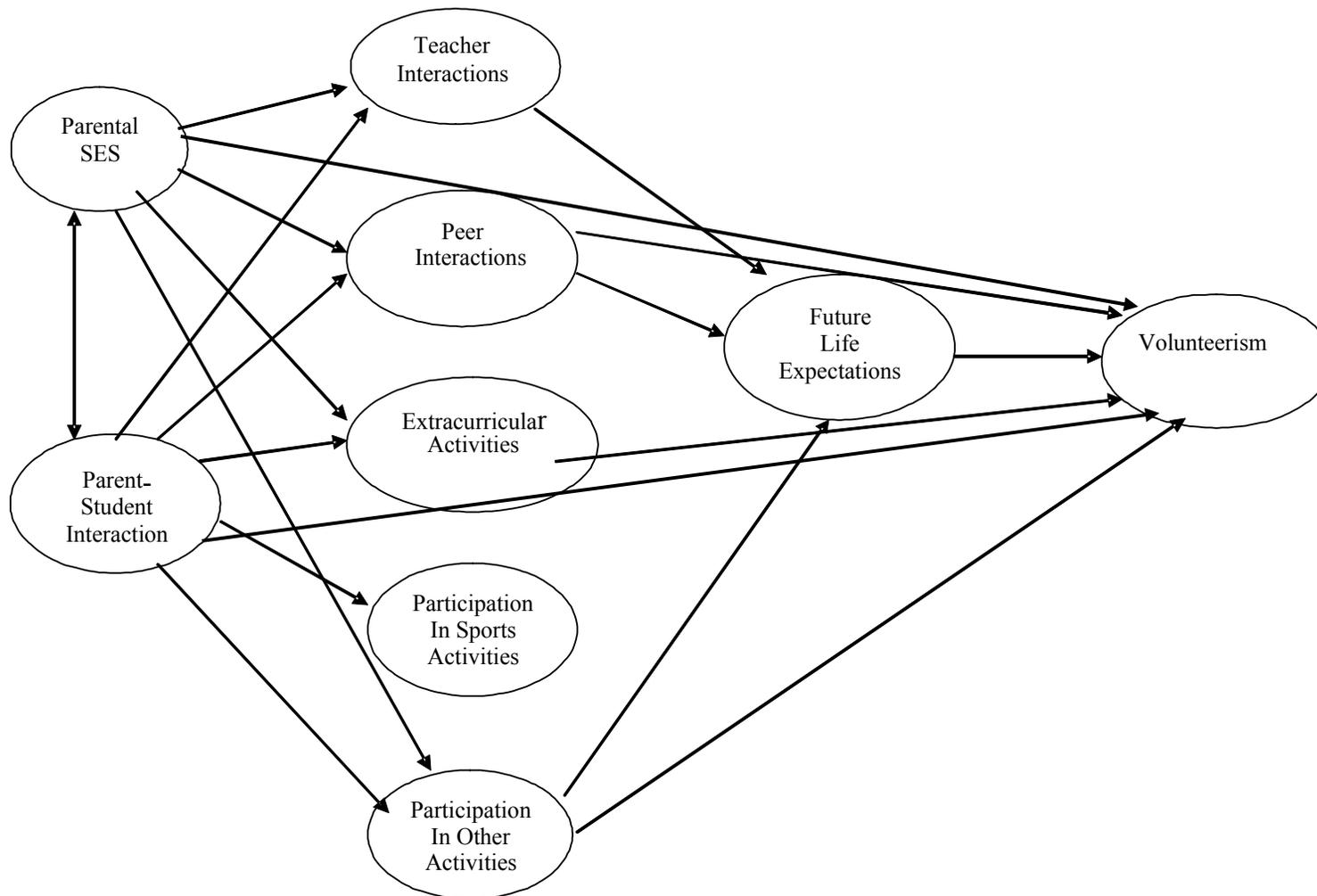


Figure 7. Final structural model of the effects of adolescents' social capital resources and future life expectations during adolescence on subsequent citizenship participation as represented by volunteerism.

The standardized path coefficients for the final model are shown in Table 27. All of the remaining coefficients are statistically significant at the .05 level. There is once again one negative effect: parent socioeconomic status on teacher interactions. Also, as shown in the previous models, the parent-student interactions measure produces some of the largest effects on the other model variables, in particular, the adolescent social capital variables. All of the coefficients involving the final outcome variable of volunteerism are very small with the exception of the coefficient representing the effect of participation in other community activities as a tenth grader with volunteerism as a young adult.

Table 27

Standardized Path Coefficients for Volunteerism Model

Parameters	Coefficient
Volunteer - Peer Interactions	.06*
Volunteer - Extracurricular Activities	.07*
Volunteer - Community Other Activities	.15*
Volunteer - Future Life Expectations	.04*
Volunteer - Parent SES	.03*
Volunteer - Parent-Student Interactions	.05*
Future - Teacher Interactions	.10*
Future - Peer Interactions	.26*
Future - Community Other Activities	.09*
Future - Parent SES	.06*
Future - Parent-Student Interactions	.10*
Teacher - Parent SES	-.06*
Teacher - Parent-Student Interactions	.28*
Peers - Parent SES	.07*
Peers - Parent-Student Interaction	.28*
Extracurricular - Parent SES	.10*
Extracurricular - Parent-Student Interactions	.33*
Com Sports - Parent-Student Interactions	.24*
Com Other Activities - Parent SES	.13*
Com Other Activities – Parent-Student	.28*

*p<.05

All indirect, direct and total effects are provided in Tables 28 to 30. Table 28 displays the effects of the background variables of parental SES and parent-student interactions on the

adolescent social capital measures. Table 29 contains the effects for the background variables and the adolescent variables on the future life expectations construct. The effects for all of the model variables on the final outcome variable of volunteerism are contained in Table 30.

The exogenous variables of SES and parent-student interactions have direct effects on the adolescent social capital variables as indicated in Table 28. Although the SES effects are mainly small in value, they are statistically significant. As mentioned previously, SES has a small negative effect on teacher interactions and no statistically significant effect on participation in community sports participation. However, SES has positive effects on peer interactions, participation in extracurricular activities, and participation in other types of community activities. The exogenous variable of parent-student interactions has the greatest impact in the model. Parent-student interactions had positive effects on all of the adolescent social capital variables: teacher-student interactions, peer-student interactions, participation in extracurricular activities, community sports participation, and participation in other types of community activities.

Table 28

Effects of Background Variables on Social Capital Variables

	Teacher Interactions			Peer Interactions			Extra Activities			Community Sports			Community Other		
	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total	Dir	Ind	Total
Parental Socioeconomic Status	-.06	--	-.06	.07	--	.07	.10	--	.10	--	--	--	.13	--	.13
Parent-Student Interactions	.28	--	.28	.28	--	.28	.33	--	.33	.24	--	.24	.28	--	.28

There were direct effects and some indirect effects for the background variables and adolescent social capital variables on the future life expectations construct as reflected in Table 29. Once again the effect values are relatively small, but statistically significant. The largest direct effect was for peer interactions on future life expectations. The largest indirect effect was for parent-student interaction on future life expectations. Two of the adolescent social capital variables (extracurricular activities participation and community sports participation) did not have a statistically significant (direct or indirect) effect on the future life expectations for twelfth graders. As mentioned previously, perhaps this finding is due to the fact that none of the future life expectation questions had anything to do with participation in these types of activities.

Table 29

Effects of Model Variables on Future Life Expectations

	Future Life Expectations		
	Direct	Indirect	Total
Parental Socioeconomic Status	.06	.02	.08
Parent-Student Interaction	.09	.13	.22
Teacher Interactions	.10	--	.10
Peer Interactions	.26	--	.26
Community Other Participation	.09	--	.09

Table 30 displays the direct, indirect, and total effects of all of the model variables on the final outcome of community integration. Overall, the effects are very small, but they are all statistically significant. Both parental socioeconomic status and parent-student interactions had direct and indirect positive effects on volunteerism. However, the effects (both direct and indirect for) for parental socioeconomic status are both under .05. For parent-student interactions the indirect effect was larger than the direct effect. Two of the adolescent social capital variables, teacher interactions and participation in community sports activities, did not have a statistically significant direct or indirect effect on volunteerism. The other three adolescent social capital measures of peer interactions, extracurricular activities participation and participation in other types of community activities, did have a positive effect and mainly direct effect on volunteerism. The future life expectations construct had a statistically significant, positive, direct effect on volunteerism, but it was small at .04. In the final analysis, participation in other types of community activities as a 10th grader had the largest direct effect on participating in volunteer activities as a young adult, while parent-student interactions had the largest indirect effect.

Table 30

Effects of All Model Variables on Volunteerism

	Volunteerism		
	Direct	Indirect	Total
Parental Socioeconomic Status	.03	.03	.06
Parent-Student Interaction	.05	.09	.14
Peer Interactions	.06	.01	.07
Extracurricular Activities	.07	--	.07
Community Other Activities	.15	--	.15
Future Life Expectations	.04	--	.04

Summary of Structural Equation Modeling Analyses

Each of the three models in this study investigates an aspect of citizenship participation that is generally accepted as part of the definition of what it means to be a good citizen: participation in voting, community integration, and volunteer activities. By using the same variables in each model, with the exception of the final outcome variable, it is possible to review the relative impacts of the background variables, adolescent social capital variables and future life expectation construct on each of these aspects.

The background variables of parental socioeconomic status and parent-student interactions for 10th graders, for the most part, still had an effect on the young adult outcomes

nine or ten years later. They had a slightly larger direct effect on voting behavior than they did on community integration or volunteerism. As has been shown in many prior research studies, parental influence may diminish somewhat as adolescents mature and interact with other social capital resources, but overall the long term effects of familial social capital remain relevant even into young adulthood.

As was hypothesized, most of the adolescent social capital measures had an effect on future life expectations as 12th graders and young adult citizenship participation, with the exception of teacher interactions which did not have a statistically significant effect on any of the three outcome variables. Even though peer interactions in the 10th grade did not have a statistically significant effect on voting behavior for young adults, it did have a positive effect on community integration and volunteerism. Participation in extracurricular activities as 10th graders had a small, but statistically significant, direct effect on all three citizenship participation measures. Participation in community sports activities had a small negative effect with voting behavior, a statistically significant, positive, direct effect on community integration, and no statistically significant effect on volunteerism. But the adolescent social capital measure with the strongest direct effect on the three outcome variables was participation in other types of community activities as 10th graders. This result is not surprising and supports findings from prior studies.

Finally, in the study I wanted to investigate the relationship between the psychosocial construct of future life expectations, as measured when study participants were 12th graders, with the young adult citizenship participation outcomes produced eight years later. The results indicate that future life expectations do have a statistically significant, but very small, direct effect on all three outcomes. The direct effect was slightly larger on voting behavior than on the

other two outcomes of community integration and volunteerism. These findings may provide some indication that students who have more positive future life expectations when they are getting ready to embark on an important transitional period in their lives will be more likely to become more active citizens as young adults.

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

Introduction

Three models were tested during this study to examine the pattern of relationships between adolescent school and community social capital, future life expectations, and subsequent citizenship participation, as represented by voting behavior, community integration and volunteerism. This final chapter contains a summary and discussion of the research findings and their implications for educational practitioners and policymakers. The contributions of the study, as well as the limitations, are discussed. Finally, some ideas for future research are provided.

Summary of Research Findings

Each model contains the two exogenous background variables of parental socioeconomic status and parent-student interactions. The five endogenous variables representing adolescent social capital were teacher interactions, peer interactions, extracurricular activities participation, community sports participation, and other types of community activities participation. The future life expectations construct served as both a mediating variable and outcome variable in each of the models. The final outcome variable for each of the three models was voting behavior, community integration and volunteerism, respectively. The following summary of the research findings is organized by the constructs as they appear in the models.

Parental Socioeconomic Status (SES)

The parent socioeconomic status (SES) variable serves as a background variable that has been shown in previous studies to influence many outcomes for children. In this study, based on the mean score for parental SES, more study participants fell into a slightly above average socioeconomic status category.

The correlations between SES and the other variables in the model were positive and statistically significant at the .01 level, with the exception of the teacher interactions construct. The strongest correlation of .17 was between SES and participation in extracurricular activities, and SES and participation in other community activities.

In the measurement model, SES was represented by a single indicator assumed to be measured without error. It is actually a composite variable constructed by NCES that includes parent education level, occupation, and family income.

In the initial structural models, SES was hypothesized to have a direct effect on all of the adolescent social capital variables and future life expectations. However, results indicated that it had no statistically significant effect on community sports participation and a very small negative effect on teacher interactions. As previously mentioned, this latter significant result may most likely be due to the large sample size. SES did have a small, positive, direct effect on the three remaining adolescent social capital variables of peer interactions, participation in extracurricular activities and participation in other types of community activities, thereby indicating that adolescents from higher SES backgrounds are more likely to have stronger peer relations and higher levels of participation in extracurricular and community activities. SES also had a small direct and very small indirect effect on future life expectations.

In each structural model, SES was also hypothesized to have a direct effect on each citizenship participation outcome variable. Indeed it had a small direct effect on the outcome variables as well as a small indirect effect. For the three outcome variables, SES had the largest total effect (.12) on voting behavior versus community integration (.07) or volunteerism (.06).

Parent-Student Interactions

Parent-student interactions is the other background variable included in the models. In this study, most participants reported that they held discussions about school-related topics with their parents. The correlations between parent-student interactions and the other variables in the model were all in the positive direction and statistically significant at the .01 level. The largest correlation was .23 which occurred between parent-student interactions and three of the other variables: extracurricular activities participation, participation in other community activities, and future life expectations.

In the original measurement model, parent-student interaction was a latent variable with five manifest indicators, but due to low reliabilities for two of the indicators, this construct was represented by three indicators in the final measurement model.

In the initial structural models, the parent-student interactions construct was hypothesized to have a direct effect on all of the adolescent social capital variables and the future life expectations construct. Results indicated that parent-student interactions had a statistically significant, positive, direct effect on all of the adolescent social capital variables. The largest direct effect (.33) was on participation in extracurricular activities. Indeed, since these were 10th graders when the data were collected, it makes sense that parents are still somewhat involved at that age, especially since they most likely had to provide support in the form of transportation. It

had a positive total effect of .22 on future life expectations, but there was a larger indirect effect (.13) versus direct effect (.09).

Findings from the analyses of the final structural models, indicate that parent-student interactions had both direct and indirect effects on each of the citizenship participation outcome variables. It had the largest direct effect (.09) on voting behavior, while having the largest indirect effect on community integration (.15). For volunteerism, parent-student interactions had a direct effect of .05 and an indirect effect of .09. All effects were significant.

Teacher Interactions

The teacher interactions construct measured study participants' feelings about the teachers at their schools. For the most part, student thought that teachers were interested in students and that they listen to students. They also felt that the teaching was good at their school. However, only 57% of the respondents said that teachers praise their efforts. As mentioned previously, teacher interactions and parental SES did not have a statistically significant correlation. But the teacher interactions construct did have a statistically significant, positive correlation with each other variable in the models.

In the initial measurement model, the teacher interactions construct was a latent variable with four manifest indicators. However, analyses indicated that two of the indicators had very low reliabilities and borderline factor loadings, so they were deleted in the final measurement models. Therefore, in the final measurement model, the construct was represented by two indicator variables.

In the structural models the teacher interactions construct was hypothesized to have a direct effect on the future life expectations construct as well as the three final outcome variables. It did have a positive, direct effect of .10 on future life expectations, but it did not have a

statistically significant effect on any of the three citizenship participation outcome variables. These findings indicate that family may be more important in determining later citizenship participation outcomes than school relations.

Peer Interactions

The peer interactions construct gives an indication of how the student feels he or she is perceived by other students. Most students (60% to 70%) selected the middle response of “somewhat” for each question. Therefore, most of the respondents seem to think that they are somewhat thought of as popular, socially active, important, and part of the leading crowd by the other students. The peer interactions construct has a statistically significant, positive correlation with all other variables in the models. Its largest correlation (.28) is with participation in community sports activities.

In the initial measurement model, the peer interactions construct is a latent variable measured by four indicators. Since the model fit indices indicated a good fit and the reliabilities and factor loadings were acceptable, no modifications were made.

Peer interactions were hypothesized to have a direct effect on future life expectations and each of the three final outcome variables. Results indicate that it had a positive direct effect of .26 on future life expectations. It also had a small, mainly direct, effect on community integration and volunteerism. But peer interactions did not have a statistically significant direct or indirect effect on voting behavior.

Extracurricular Activities Participation

The extracurricular participation measure represents how much time the study participants spent on these types of activities. While 25% of the students indicated that they spent five or more hours per week on these types of activities, a larger percentage (36%) say they

do not spend a great deal of time participating in these types of activities. The correlations between the extracurricular activities participation measure and the other variables in the models are all statistically significant at the .01 level. The largest correlation (.28) is with participation in community sports activities.

In the measurement model, participation in extracurricular activities is represented by a single indicator assumed to be measured without error. There are four responses ranging from (1) none to (4) ten or more hours of participation a week.

The extracurricular participation construct is hypothesized to have a direct effect on future life expectations and the three final outcome variables in the structural models. Findings indicate that, for this study, extracurricular activities participation has no statistically significant effect on future life expectations. However, it does have a statistically significant, albeit small, positive, direct effect on voting behavior (.05), community integration (.08), and volunteerism (.07).

Community Sports Participation

In this study, the community sports participation construct represents respondents' involvement in going to the gym, park, and/or pool, taking sports lessons, and playing ball or other sports. While 30% of the study participants reported that they do not participate in any of these types of activities, another 30% of the respondents indicate that they do participate in these types of activities at least once or twice a week. The correlations between community sports participation and the other variables in the models were statistically significant with the exception of voting behavior. Moreover, the correlations between the construct and those of parental SES and teacher interactions were very small.

In the initial measurement model, community sports participation is a latent variable comprised of three indicator variables. However, the reliability and factor loading for one of the indicators, “respondent takes sports lessons”, were very low and it was deleted from the model. Therefore, in the final measurement model, this construct was represented by two variables.

Similar to the other adolescent social capital variables, community sports participation was hypothesized to have a direct effect on future life expectations and the final outcome variables of voting behavior, community integration, and volunteerism. Findings reveal that it did not have a statistically significant, direct effect on future life expectations nor did it have a direct or indirect effect on volunteerism. It actually had a small negative effect (-.05) on voting behavior, although this significant result may have been influenced by the large sample size and should be interpreted with caution due to the small size of the effect. The community sports participation has a positive direct effect (.18) on the longer term citizenship participation variable of community integration.

Other Community Activities Participation

Other types of community activities for adolescents include attending youth groups, performing community services, and attending religious activities. Overall, the respondents, in this particular study, were not very active in these types of activities. While over 50% of the participants reported attending religious activities, 61% said they never participated in youth groups, and 79% indicated that they rarely or never perform community services. The correlations between participation in these types of community activities and the other variables in the model were all in the positive direction and statistically significant at the .01 level. The largest correlation (.23) was between participation in other types of community activities and parent-student interactions.

In the initial measurement model, other community activities participation is a latent construct comprised of three indicators. However, analyses indicated that one of the indicators (respondent performs community service) had low reliability (.15) and it was deleted. Therefore, in the final measurement models, the construct was represented by two indicators.

In the structural models, the construct was hypothesized to have a direct effect on future life expectations and the final outcome variables. Findings support these predictions. Participation in other types of community activities has a statistically significant, positive direct effect on future life expectations (.09), community integration (.20) and volunteerism (.15). It also had a direct effect (.12) and a very minor (.01) indirect effect on voting behavior.

Future Life Expectations

In this study, future life expectations is a psychosocial construct that represents the respondents' beliefs, as 12th graders, about their future life outcomes. Based on the responses, most of the study participants had very positive feelings about their futures with regard to furthering their education, having a job that pays well and one that he or she would enjoy. They also thought that would stay in good health, be able to own a home and have friends to count on. The correlations between this construct and the other variables in the model were all in the positive direction and statistically significant. The largest correlation (.27) was between future life expectations and peer interactions.

This latent variable had nine indicators in the initial measurement model, but analyses revealed that two indicators had low reliabilities and two were somewhat redundant with other indicators. Therefore, in the final measurement model, the construct was comprised of five indicators.

The future life expectations measure was hypothesized to have a direct effect on each of the three final outcome variables. Findings indicated that it did have positive, statistically significant, direct effects. However, these effects were very small in magnitude. The largest direct effect (.08) was on voting behavior. The direct effect on both community integration and volunteerism was .04.

Discussion and Implications

Even though the findings indicate small to modest effects, they do provide an indication of the relationships of the model's variables of interest. These findings are best discussed by reviewing results related to each of the study's hypotheses.

Parental Background Variables and Adolescent Social Capital

The parental background variables of SES and parent-student interactions were hypothesized to relate to higher levels of all of the adolescent social capital measures. Findings indicated that this was indeed the case for parent-student interactions, which had moderate, positive direct effects on all of the adolescent social capital measures. But parental SES had only very small direct effects on three out of the five adolescent social capital measures. These measures are peer interactions, extracurricular activities participation, and participation in other types of community activities. These findings, for the most part, support previous research findings about the influence of parental factors on the accumulation of social capital by adolescents and other student outcomes. Wright, Cullen, and Miller (2004) found that grades were positively related to parent-students discussion. In particular, the results regarding parent-student interactions having a greater impact than SES are in keeping with Anderson's (1995)

findings. He found that SES is a significant predictor of grade point average but the parent-child interactions were a stronger predictor.

Some studies have investigated parental social capital as an endogenous variable. In this study I was interested in using it as an exogenous variable to explore its relationship with the other two prevalent types of adolescent social capital derived from interactions at school and in the community. The findings from this current study suggest that parental SES does not relate to school and community social capital as strongly as parent-student interactions. The policy implication is that SES is not easily manipulated, but parent-child interactions can be encouraged and nurtured more easily. Indeed, these results are promising because it is conceivably easier to encourage and promote productive parent-student interactions via targeted efforts such as encouraging parental involvement in school and community activities than it is to impact parental SES.

Parental Background Variables and Future Life Expectations

Parental background variables were hypothesized to relate to more positive future life expectations. The findings indicate that the effect of parental SES was small. While the total effect of parent-student interactions was larger, it was mainly due to the indirect effect via the adolescent social capital variables. This study is the only one I am aware of that has investigated future life expectations as a psychosocial construct. Therefore, the findings related to it should be viewed as exploratory and may simply provide some initial ‘food for thought’ regarding the relative importance of the effect of parental background variables on future life expectations for students as they embark on an important transitional period in their lives.

Parental Background Variables and Citizenship Participation

In prior studies (Padilla, 1996; Crosnoe, 2004; Anguiano, 2004), parental factors have been shown to be related to educational outcomes such as achievement and attainment. In this study, I was interested in investigating the effects related to another educational, but less studied, outcome variable of citizenship participation. As hypothesized, the background variables were found to have a direct effect on all three of the citizenship participation outcome variables, but there was some variance. Parental SES did not have as strong of a relationship with the outcomes as did parent-student interactions. But overall all total effects were fairly small and all were composed of direct and indirect effects. Once again, positive parent-student interactions, in particular, related to school-related topics and activities should be encouraged since it appears that in addition to influencing educational outcomes such as attainment and achievement these interactions may also relate to the long-term educational outcome of citizenship participation.

Adolescent Social Capital and Future Life Expectations

The adolescent social capital measures were hypothesized to relate directly to higher levels of future life expectations. Interestingly enough, the results were mixed for the different types of capital. School social capital was represented by teacher interactions, peer interactions, and participation in extracurricular activities.

Teacher interactions were found to have a small, positive direct effect on future life expectations, while peer interactions were found to have a stronger, positive direct effect on the future life expectations of high school seniors. But participation in extracurricular activities did not have a statistically significant effect. It intuitively makes sense that positive relationships with the major social actors (teachers and peers) in the school environment would promote more positive expectations related to future life outcomes. Likewise, after reviewing the specific life

outcomes that were included in the future life expectations measures, it is not surprising that extracurricular activities participation is not related to them. None of the questions asked about similar activities participation in adulthood, but rather were more related to employment, family, and financial outcomes. But it is noteworthy that positive school relations and interactions with teachers and peers have a positive relationship with positive future orientation toward important life outcomes.

Community social capital was represented by the two constructs of participation in community sports activities and participation in other types of community activities. Once again the results were mixed. Participation in sports activities in the community had no statistically significant effect, while participation in other types of community activities did have a small, statistically significant, positive direct effect on future life expectations.

Once again, there is limited prior research on the psychosocial construct of future life expectations and adolescent social capital. Other education-related psychosocial factors such as achievement aspirations have been found to be positively linked with social capital (Feldhaus, 2002). The current findings do provide an indication of differing effects on outcomes for different types of adolescent social capital.

Adolescent Social Capital and Citizenship Participation Outcomes

In this study it was hypothesized that adolescent social capital variables would be directly related to the three final outcome variables of voting behavior, community integration and volunteerism. Previous research findings (Rosenstone & Hansen, 1993; Verba et al, 1995; McIntosh, 1995; Smith, 1999) indicate that social capital has a relationship with educational outcomes including that of citizenship participation. But some of the studies have used cross sectional data and, therefore, they could not actually determine the specific direction of the cause

and effect. Also, some prior studies have used young adult outcome data from NELS:88/1994 when the participants were actually only two years out of high school. In the current study, longitudinal data were used and the outcome data were from the 2000 NELS data collection when study participants were 25 to 26 years of age and had been out of high school for eight years.

Once again the results are mixed and dependent upon the specific type of adolescent social capital. The results suggest that teacher interactions had no statistically significant effect on any of the three outcome variables. However, this conclusion should be viewed with caution. It could be that the teacher interactions measures used in this study were deficient in capturing the nature of the relationship between teachers and students. Thus, the hypothesis that interaction with teachers will have long-term direct effects on the outcome variables of voting, community integration, and volunteerism were not supported.

Indeed, once students are in high school they generally will interact with a particular teacher for a year or so at the most so the effects of teacher interactions are most likely stronger when the outcomes are more proximal. Prior research studies (Lopez, 1996; Dyk & Wilson, 1999; Croninger & Lee, 2001) have shown that social capital derived from teacher interactions can have a direct effect on other educational outcomes such as attainment and achievement. It is possible that teacher effects are more specific and more likely to be related to educational outcomes such as achievement and attainment.

Peer interactions did not have a direct effect on voting behavior, but it had small, positive direct effect on the other two outcome variables of community integration and volunteerism. Unlike teacher interactions, interactions with particular peers may continue throughout high school and sometimes after graduation. It makes sense that the two outcome variables of

community integration and volunteerism, which contain more of a social aspect than voting behavior, would be related to peer (social) interactions. Voting behavior is for the most part an individualized, personal activity.

Participation in extracurricular activities as 10th graders had small direct effects on voting behavior, community integration, and volunteerism of young adults. Indeed this finding is in keeping with previous research findings that have shown these types of activities to be related to similar types of activities as adults. Williams et al. (2003) found that participation in extracurricular activities predicted multiple positive educational outcomes such as attending college, voting, and volunteering. Several other studies (Beck & Jennings, 1981; Hanks, 1981, Hanks & Eckland, 1978; Verba, Schlozman, & Brady, 1995; Youniss, McClellan & Yates, 1997) have shown a connection between extracurricular participation in one's youth and subsequent participation as young adults. Indeed, the current findings also support the notion that extracurricular activities provide important opportunities for adolescent to become prepared to participate in similar activities when they reach adulthood.

In the current study, it was hypothesized that participation in community sports activities would relate directly to increased levels of citizenship participation as represented by voting behavior, community integration, and volunteerism. This construct had more mixed results with the three final outcome variables than did any of the other variables in the model. The literature in this area is also mixed. Hansen, Larson, & Dworkin (2003) found that youth participating in sports activities reported higher rates of positive outcomes such as better emotional regulation and improved physical skills experience, but in the same study students also reported higher rates of negative experiences, including negative peer interactions and inappropriate adult behavior. N

Participation in community sports activities actually had a small negative effect on voting behavior. While some prior studies (i.e., Lopez and Moore, 2006) have indicated a positive relationship between sports activities during adolescence and voting behavior, some of those studies investigated school sports activities and some investigated particular types of sports activities. Perhaps if these approaches had been used in this study the results would have reflected similarly. But in this study community sports activities were used and no analyses were performed based on the type of sports activity.

With regard to the other two outcome variables, community sports participation had no statistically significant effect on volunteerism, but a positive direct effect on community integration. It could be that study participants who participated in community sports activities as adolescents continued that behavior in adulthood and were well integrated in the community yet did not volunteer. On the other hand, since the community integration measure represented participation in similar types of activities such as community sports participation, there was a relationship between participation as adolescents and then subsequently as young adults.

Finally, participation in other types of community activities as adolescents did have positive direct effects on all three citizenship participation outcomes. In fact, the construct of participation in other types of community activities, had the largest direct effects on the three outcome variables out of all of the model variables. This result is not surprising for the outcome of community integration because this measure was in essence comprised of similar types of activities as the participation in other community activities as adolescents. Along those same lines, the measure representing volunteerism as a young adult was similar to one of the indicators used to represent participation in other types of community activities. But it is encouraging to see that participation in other types of community activities as an adolescent has a direct effect

on voting behavior as young adult. These findings support the importance of encouraging adolescents to participate in community activities in addition to school-related activities. It should be noted that prior research (Smith, 1999) has shown that participation in religious activities as adolescents has a positive relationship with citizenship participation activities as young adults. In this study, participation in religious activities was subsumed under the participation in the other types of community activities construct and may be one reason for the strength of the direct effects on the three outcome variables.

Future Life Expectations and Community Participation Outcomes

Future life expectations for 12th graders were hypothesized to be directly related to higher levels of citizenship participation as young adults. Results from the study indicate that very small positive direct effects do exist. Therefore, caution should be used in the interpretation of these results. It may be that 12th graders who hold more positive future life expectations may be more likely to participate in citizenship participation activities as a young adult, but future studies should be performed to more fully investigate the relationship.

Contributions of the Study

The purpose of this study was to investigate the relationships between adolescent social capital resources, future life expectations, and citizenship participation as young adults. The study improved upon prior studies by using a longitudinal dataset and the more advanced analytical technique of structural equation modeling. Additionally, a somewhat forgotten educational outcome of citizenship participation was represented by three outcome variables, thereby allowing for a comparison of the effects of the variables in the model on the various aspects of what is generally considered to be the definition of a 'good citizen.' The use of

adolescents as the study population was important and critical because most citizenship studies have used adults and, therefore, they could not explore the important developmental aspects of earlier experiences on citizenship. The study also used student data (perceptions) as compared with prior studies which used parent and teacher (perception) data to investigate educational outcomes. It is important, in particular with social capital, to recognize that student perceptions represent their feelings about social interactions versus a second hand interpretation from adults. Finally, this study is one of the few, and perhaps the only study, to investigate future life expectations as an important psychosocial construct. In this study the construct serves as a both a mediating variable and an outcome variable.

The study findings should encourage practitioners and policymakers to continue to invest in and promote adolescent participation in extracurricular activities and community activities in the schools and outside activities in the community. Additionally, it should be recognized that the influence of peers on an educational outcome such as citizenship participation remains into adulthood and steers adolescents in the right direction of increased participation in social and community life. It further provides a benefit not only to them, but to the other adolescents they interact with. The results from this study also reiterate the importance of parental social capital while at the same time providing promise that other forms of adolescent social capital may also influence longer term beneficial outcomes.

Limitations of the Study

This study, like most, has limitations that should be noted. From a measurement perspective, several variables were represented by single indicators, including all three of the final outcome variables. It is preferable to have at least three indicators per latent variable. The

inclusion of more indicators will improve reliability in the measure and allow for the analysis of measurement error. The reliabilities of the measures in this study were low to moderate with a range of .38 to .65. The single indicator variables were assumed to be perfectly reliable and measured without error which, of course, is most likely inaccurate.

Situations of this nature are not uncommon with the use of an extant database such as NELS. The dataset was not created specifically for the purposes of this study and, therefore, the choice of variables is limited to what is made available in the data set. Only small amounts of variance were explained in the outcome variables. This resulted in large amounts of unexplained variance which indicates that there are important variables that could affect the outcome variables that were not investigated in this study. Indeed some prior studies have shown that demographic and structural factors can have an impact of citizenship participation outcomes. This study did not include any intervening variables from the time period of 1992 (leaving high school) and 2000 (collection of outcome data).

Due to the fact that one purpose of the study was to investigate school social capital, dropouts were not included. Additionally, race and gender differences were not explored in this study and these factors may be important ones in an investigation of differences in citizenship participation outcomes.

Finally, there are varying perspectives related to the conceptualization of social capital. In this study, adolescent social capital was mainly represented by the students' perceptions on interactions with teachers, their interpretation of their peers' opinions of them, and self-report on participation in activities at school and in the community. The parent-student interaction variable measured whether or not the interactions existed. However, none of these measures provided important qualitative aspects of social capital, such as the positive or negative results of

the interactions. Indeed, one criticism of past interpretations of social capital is that it is always perceived of as a positive entity when indeed it could in reality be a negative entity and produce negative outcomes, especially as related to the social capital produced from peer networking.

But overall, the study does provide a contribution to the existing research literature, especially by bringing attention to the important educational outcome of citizenship participation. It confirms the importance of earlier social experiences on later community participation and integration. There is no doubt that earlier interactions with parents and peers and participation in community activities predisposes young adults to participate in community life, and become better citizens.

Directions for Future Research

Future studies should further explore the relationships hypothesized in this study. A more qualitative conceptualization of social capital should be used to capture the richness and directional impact from social interactions and social networks. More studies should be designed to more fully and accurately measure social capital. The measurement of social capital in the educational context needs to be further refined and better measures need to be developed that would capture the quality of relationships and social networks. The development of valid and reliable measures of social capital is an important area for future research. The measures of relationships with teachers, school administrators and peers in the NELS often count the frequency of contact rather than the quality, nature and emotional content of the relationship.

A current data collection effort by NCES is producing another longitudinal study similar to that of NELS. The Educational Longitudinal Study (ELS) began in 2002. When it began study participants were 10th graders. Two follow-up data collection efforts have been completed.

In 2004, the first follow-up surveyed participants who were for the most part 12th graders. The second follow-up took place in 2006 when most study participants had been out of high school for two years. This dataset has just been recently released by NCES. Plans are underway to have at least one more follow-up data collection when participants are somewhere between the age of 26 to 30. No final decision has been made, as of yet, as to when that data collection will take place. If young adulthood outcomes are obtained, it would be interesting to redo this study with that database. In general, NCES constructs their studies in such a way that trend data between various data collection efforts can be investigated. Since NELS 88 data were collected prior to September 11, 2001, and the events of that day appeared to have renewed an interest in citizenship participation, and the data for ELS 2002 was collected after that date, there may be some interesting findings related to adolescent social capital and young adulthood citizenship participation.

Finally, it should be recognized that technology is changing many aspects of modern life. In particular, in the coming years, the conceptualization of both social capital and citizenship participation may be affected. Online interactions through e-mail, chat rooms, and similar activities may be producing a form of social capital that will be different in nature and frequency but will prove to be influential. New terms such as cyber citizenship and digital democracy may indicate possible changes in the definition of citizenship participation, based on technological advances and opportunities.

Conclusion

Social capital has sometimes been viewed as a cure all for societal problems. This also explains its emerging popularity over the last twenty years. The concept has been used in different contexts in different domains such as business, marketing, rural and urban development

and in globalization. The findings from this particular study do suggest that an emphasis on adolescent social capital will result in more citizenship participation.

Participation in citizenship activities such as voting, volunteer work and community activities are important educational outcomes. A well-functioning, productive democracy requires active citizenship participation in order to thrive. Citizenship participation is a learned behavior. By providing opportunities for school and community interactions and encouraging students to participate, schools will provide important opportunities for students to learn citizenship behavior and carry that learned behavior into adulthood.

There are many factors that influence why people vote, why they participate in community activities and why they volunteer. But social capital does appear to be one piece of the puzzle that can be targeted for emphasis to provide some level of impact, not only on the development of citizens, but on other important long term beneficial outcomes as well.

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VITA

Eugenia (Jean) L. Mottley was born in Farmville, Virginia. Ms. Mottley obtained her bachelors degree in Spanish from Longwood College in December of 1978 and her Master of Science degree in Supervision in Education from Longwood College in May of 1981.

Ms. Mottley began her career as a teacher. She taught Latin and French classes at several secondary schools in Virginia. She then entered the field of business and spent eight years as a manager and finally as an assistant vice president for an insurance company in Arlington, Virginia. After leaving Arlington, she spent two years working for the Dean of the Faculty at Hampden-Sydney College. It was during that time that she decided to return to school to pursue a doctorate.

Ms. Mottley arrived at Virginia Tech in September of 1996 to enroll in the Department of Educational Leadership and Policy Studies to pursue a doctoral degree in Educational Research and Evaluation (EDRE). She spent two years as a full time student on campus. During this time, she worked as a graduate assistant in the EDRE computer lab, spent a summer working as an intern for the State Council of Higher Education in Virginia (SCHEV) in Richmond, and worked as a graduate assistant for Dr. Patricia Hyer, Assistant Provost at Virginia Tech.

Ms. Mottley then became a part time student and returned to full time employment while completing her degree. She spent a year as a librarian at Hampden-Sydney College. For the last eight years, she has been employed as a program evaluator for the Virginia Department of Corrections. Her work has mainly focused on the

evaluation of correctional programs, in particular, the substance abuse treatment programs within the prisons. However, she has also served as the project manager for the development and implementation of an online data collection system for the substance abuse treatment programs and for the implementation of an agency-wide offender risk and needs assessment instrument.