EFFECTS OF SOCIAL CAPITAL AND ADOLESCENT EXTRACURRICULAR ACTIVITIES ON SCHOOL TRUANCY

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Francis A. Kombarakaran, MSW

* * * * * * *

The Ohio State University
2002

Dissertation Committee:
Dr. Denise E. Bronson, Advisor
Dr. Thomas K. Gregoire
Dr. Mary Ellen Kondrat

Approved by

Advisor
College of Social Work
ABSTRACT

Using cross-sectional data from The National Longitudinal Study of Adolescent Health, this study examines the role of social capital resources and adolescent participation in extracurricular activities in predicting school truancy. Hierarchical logistic regression analyses of the sample of 3,470 adolescents in the seventh through twelfth grades revealed that social capital resources in the family, in the school, and in the neighborhood, and school-based extracurricular activities contribute significantly to the reduction of truancy.

The findings of this study support a social capital hypothesis (Coleman, 1990) in explaining adolescent participation in extracurricular activities and school truancy. Adolescents whose parents are involved in their lives and who experience a sense to connection to their school tend to participate in extracurricular activities. Additionally, parental involvement in school activities, and intergenerational closure in the neighborhood also promote participation in extracurricular activities.

Access to social capital resources in the various loci of adolescent life was found to predict the likelihood of non-truancy. Adolescents who experienced closeness at home and acceptance in school were less likely to be truant than others. Whereas parental involvement in school and in community activities were more protective for middle school children, parental involvement in community activities was more beneficial for
poor children. Participation in arts and music activities was found to protect particularly middle school children from truant behavior.

In summary, increasing adolescents' access to social capital resources and promoting participation in extracurricular activities appear to be a legitimate pathway for reducing the likelihood of school truancy.
VITA

1981.......................... Bachelor of Philosophy
Jnanodaya, Yercaud, India

1984.......................... Bachelor of Science
University of Pune, India

1990.......................... Baccalaureatum in Theologia
Kristu Jyoti College, Bangalore, India

1997.......................... Master of Social Work
Tata Institute of Social Sciences, Bombay, India

PUBLICATIONS


FIELD OF STUDY

Major Field: Social Work
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Vita</td>
<td>iv</td>
</tr>
<tr>
<td>List of Tables</td>
<td>vii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>ix</td>
</tr>
<tr>
<td><strong>CHAPTERS:</strong></td>
<td></td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Theoretical Framework: Social Capital</td>
<td>4</td>
</tr>
<tr>
<td>1.3 Purpose of the Study</td>
<td>6</td>
</tr>
<tr>
<td>2. THEORETICAL FRAMEWORK AND REVIEW OF THE LITERATURE</td>
<td>9</td>
</tr>
<tr>
<td>2.1 Social Capital Theory</td>
<td>9</td>
</tr>
<tr>
<td>2.1.1 Strengths and Limitations of Social Capital Theory</td>
<td>17</td>
</tr>
<tr>
<td>2.2 Research Literature on Social Capital</td>
<td>22</td>
</tr>
<tr>
<td>2.2.1 Family-based Social Capital</td>
<td>22</td>
</tr>
<tr>
<td>2.2.2 School-based Social Capital</td>
<td>29</td>
</tr>
<tr>
<td>2.2.3 Neighborhood-based Social Capital</td>
<td>36</td>
</tr>
<tr>
<td>2.3 Extracurricular Activities</td>
<td>42</td>
</tr>
<tr>
<td>2.3.1 Antecedents of Participation in Extracurricular Activities</td>
<td>43</td>
</tr>
<tr>
<td>2.3.2 Consequences of Participation in Extracurricular Activities</td>
<td>47</td>
</tr>
<tr>
<td>2.4 Truancy</td>
<td>51</td>
</tr>
<tr>
<td>2.5 Truancy and its Linkage to Social Capital Contexts</td>
<td>53</td>
</tr>
<tr>
<td>2.6 Social Capital and the Effects of Extracurricular Activities in Reducing Truancy</td>
<td>57</td>
</tr>
</tbody>
</table>
3 METHODOLOGY ................................................................. 66
  3.1 Data Source and Sample ............................................. 67
      3.1.1 The National Longitudinal Study of Adolescent
           Health ............................................................. 67
  3.1.2 Study Sample ...................................................... 68
  3.2 Measurement of Variables ......................................... 70
      3.2.1 Construction of Social Capital Variables ................. 72
  3.3 Missing Data ......................................................... 87
  3.4 Methods of Analyses ................................................ 90

4 RESULTS ............................................................................ 93
  4.1 Descriptive Summary of the Data .................................. 93
  4.2 Bivariate Associations: Control Variables and Extracurricular
      Activities Participation ............................................... 97
  4.3 Bivariate Associations: Control Variables and Truancy ....... 100
  4.4 Results of Logistic Regression Analyses ......................... 103
      4.4.1 Model 1: Social Capital Resources Predicting
            Adolescent Participation in Extracurricular
            Activities ............................................................. 104
      4.4.2 Model 2: Social Capital Resources Predicting
            Truancy ................................................................ 114
      4.4.3 Model 3: Participation in Extracurricular Activities
            Predicting Truancy .................................................. 117
      4.4.4 Social Capital and Extracurricular Activities
            Predicting Truancy .................................................. 119
  4.5 Multicollinearity, Linearity in the Logit, and Analysis of Residuals

5 DISCUSSION AND CONCLUSIONS ........................................ 146
  5.1 Social Capital and Adolescent Participation in Extracurricular
       Activities ................................................................. 147
  5.2 The Effects of Social Capital and Participation in Extracurricular
       Activities on Truancy ................................................ 155
  5.3 Limitations of the Study ............................................... 166
  5.4 Implications for Social Work ......................................... 167
  5.5 Directions for Future Research ...................................... 171

LIST OF REFERENCES ............................................................. 174
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Principal components analyses</td>
<td>74</td>
</tr>
<tr>
<td>2</td>
<td>Internal consistency reliability values</td>
<td>75</td>
</tr>
<tr>
<td>3</td>
<td>Categorizations of extracurricular activities</td>
<td>86</td>
</tr>
<tr>
<td>4</td>
<td>Independent and control variables with missing data</td>
<td>88</td>
</tr>
<tr>
<td>5</td>
<td>Testing for MAR: Independent variables</td>
<td>89</td>
</tr>
<tr>
<td>6</td>
<td>Sample distribution by control variables</td>
<td>94</td>
</tr>
<tr>
<td>7</td>
<td>Sample distribution by truancy, by EAP</td>
<td>96</td>
</tr>
<tr>
<td>8</td>
<td>Bivariate associations: Control variables by EAP</td>
<td>97</td>
</tr>
<tr>
<td>9</td>
<td>Sample distribution: Control variables by EAP</td>
<td>98</td>
</tr>
<tr>
<td>10</td>
<td>Bivariate associations: Control variables by truancy</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>Sample distribution: Control variables by truancy</td>
<td>101</td>
</tr>
<tr>
<td>12</td>
<td>Logistic regression: Social capital resources predicting EAP</td>
<td>106</td>
</tr>
<tr>
<td>13</td>
<td>Relative importance of predictors of EAP</td>
<td>110</td>
</tr>
<tr>
<td>14</td>
<td>Odds ratios for significant predictor variables by type of activity</td>
<td>112</td>
</tr>
<tr>
<td>15</td>
<td>Logistic regression: Social capital resources predicting truancy</td>
<td>115</td>
</tr>
<tr>
<td>16</td>
<td>Logistic regression: EAP predicting truancy</td>
<td>118</td>
</tr>
<tr>
<td>17</td>
<td>Logistic regression: Social capital and EAP predicting truancy</td>
<td>121</td>
</tr>
<tr>
<td>18</td>
<td>Logistic regression: Types of extracurricular activities predicting truancy</td>
<td>123</td>
</tr>
<tr>
<td>Page</td>
<td>Section</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Significant predictors of EAP, truancy</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Relative importance of predictors of truancy</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Logistic regression coefficients: Age as moderator: Two-way interaction</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Logistic regression coefficients: School level as moderator: Two-way interaction</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Logistic regression coefficients: Poverty status as moderator: Two-way interaction</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Coefficient values showing improvement in fit of model</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Excluded interactions</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Logistic regression: Social capital and EAP predicting truancy: Main effects and interactions</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Coefficient variance-decomposition analysis with coadition indices</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Tests of linearity: selected independent variables</td>
<td></td>
</tr>
</tbody>
</table>
### LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Three-person structure: Human capital in nodes and social capital in relations</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>The study model</td>
<td>59</td>
</tr>
<tr>
<td>3</td>
<td>Social capital resources predicting participation in extracurricular activities</td>
<td>104</td>
</tr>
<tr>
<td>4</td>
<td>Social capital resources predicting truancy</td>
<td>114</td>
</tr>
<tr>
<td>5</td>
<td>Extracurricular activities predicting truancy</td>
<td>117</td>
</tr>
<tr>
<td>6</td>
<td>Social capital and extracurricular activity participation predicting truancy</td>
<td>119</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

The Office of Juvenile Justice and Delinquency Prevention estimates that there has been a 67 percent increase in the number of court processed truancy cases between 1985 and 1994 in the United States (Butts, 1996). Reports from school districts around the nation indicate a substantial increase in truancy among students. New York City public school records suggest that about 15 percent of students miss school everyday, including those with legitimate reasons (Garry, 1996, citing Shuster, 1995). A Los Angeles school district reports about 10 percent daily absenteeism, with only half of the students producing written excuses for their absences (Garry, 1996, citing Shuster, 1995). During the 1994-95 school year, 66,440 complaints of truancy were investigated in Detroit, Michigan (Richardson, 1996). The substantial increase in school truancy and the severe consequences associated with it has brought this to the forefront of public concern.

Truancy has been linked to crime and delinquency (Baker, Sigmon, & Nugent, 2001). There are indications that truants are involved in daytime crime, including homicides, sexual assaults, robberies, and shoplifting. For example, a research report from Milwaukee suggests that the reduction of truancy resulted in a significant decrease in daytime crime (Ingersoll & LeBoeuf, 1997, citing Community, 1995). Students who
are truant and experience school failure are more likely to bring weapons to school, threaten other students, and disrupt the learning environment (Ingersoll & LeBoeuf, 1997).

Astone and McLanahan (1991) note that truancy is a sign of disengagement from school that often culminates in dropping out of school. According to the National Center for Education Statistics, in 1993, about 63 percent of all high school dropouts were unemployed (National Center, 1993). School dropouts are also more likely to depend on welfare benefits (Catterall, 1987). Truancy is suggested to be the “first step to a lifetime of problems” (Garry, 1996, p.1), including employment problems, criminality, violent behavior, marital instability, and incarceration (Snyder & Sickmund, 1995; Dryfoos, 1990; Robins & Ratcliff, 1978). The economic consequences of truancy and school failure include, both, the resources spent on crime control, welfare benefits, healthcare, and social services, and losses incurred due to lost wages and taxes (Ingersoll & LeBoeuf, 1997). The increase in truancy, its linkage to lifelong problems, and the consequent social and economic burden it imposes on society (Garry, 1996) makes it imperative and urgent to examine truancy and to identify the salient factors likely to reduce it.

The increase in truancy and its consequences have prompted the development of numerous prevention and intervention programs on the local and national level (Baker, et al., 2001; Garry, 1996). Among the several approaches that find support in research literature, student extracurricular activities participation (EAP, hereafter) has been of interest to educators, social workers, and other youth development professionals. In general, despite the limitations of existing research, evidence indicates that participation
in extracurricular activities can contribute positively to reducing truancy and increasing attendance (Mahoney & Cairns, 1997; McNeal, 1995; Marsh, 1992). Although limited, research on extracurricular activities and truancy suggests that student participation can strengthen student ties to the school (Brown, 1999) and possibly reduce truant behavior.

The family, the school, and the neighborhood are three important contexts that influence truancy. Among the many factors that influence truant behavior, family factors include poverty, single-parenthood (Miller & Plant, 1999), defective relationships among members in the family (Fergusson, Lynskey, & Horwood, 1995), more siblings (Sommer & Nagel, 1991), and diminished parental expectations (McCall, 1995).

School factors empirically linked to truancy are large school size (Gardner, Ritblatt, & Beatty, 2000), ineffective curricula (Galloway, 1982), negative relationships with teachers and other students (Reid, 1999), imbalanced racial/ethnic composition of the school, alienation (Reid, 1999; Williamson & Cullingford, 1998), and problems with authority (Fergusson & Horwood, 1998; Franklin & Streeter, 1995). Other related variables include dislike for school (Fuller & Sabatino, 1996), lack of participation in extracurricular activities, poor academic performance (McCall, 1995), and low parental involvement (Gardner et al., 2000).

Neighborhood factors associated with truancy include high neighborhood mobility (Baker et al., 2001), neighborhood breakdown, as indicated by drug trafficking and gang activity (Howard & Jenson, 1999), peer-affiliated antisocial activities (Hays & Elickson, 1996), and lack of norm-enforcing structures, especially in rural settings (Beaulieu & Israel, 1997).
An examination of these family, school, and neighborhood-related factors may lead to an enhanced understanding of the underpinnings of truancy, the linkage between these three contexts and their social consequence.

Theoretical Framework: Social Capital

Coleman (1988, 1990) posits that, in addition to physical, financial, and human capital that exist in persons, a fourth type of capital exists between persons. This fourth type of capital is termed ‘social capital,’ which exists in the relationships between individuals embedded in a social structure. The creation of social capital is facilitated by a social structure that provides opportunities for interaction among members, and by processes that produce trust through mutual expectations and obligations.

Individuals who are part of a network that is social capital-rich can benefit by accessing information and support in an environment that is governed by trust. A social capital context, both familial and extra-familial, can serve at least three functions: social control of members, family support, and acquisition of benefits through extra-familial resources (Portes, 1998). Thus, creation of social capital conditions can serve to improve individual and community functioning. However, it necessitates the creation of structures and processes that support the trustworthiness of relationships, the establishment of prosocial norms and legitimate sanctions, the closure of networks, and stability (Coleman, 1988, 1990).

Social capital in the family is understood to reside in “the relations between children and parents (and, when families include other members, relationships with them
as well)” (Coleman, 1988, p. S110). Family relationships produce social capital when they are “reciprocal, trusting and involving positive emotion” (Paxton, 1999, p.93). Hence, the strength of the bond between the child and other significant members of the family is a measure of the family support available to the child. Conversely, the lack of parental availability, attention, and positive interaction between adolescents and parents (or other parental figures) weakens the parent-adolescent bond and, consequently, limits the potential to generate social capital. The availability of family social capital is so critical to the transmission of human capital, that without it, little human capital can be transferred from parents to children (Coleman, 1988).

Social capital outside the family resides in the network of relationships in the community of which one is a member. For adolescents, the school and the neighborhood are important social capital contexts. Positive relationships in these contexts can serve as resources that provide information and support for normative adolescent behavior. Although social capital theory acknowledges that relationships with non-normative peers can also lead to negative behavior, the presence of adult monitoring and supervision of adolescent behavior can reduce its impact. The communities that fail to provide supervised activities and to regulate adolescent behavior are associated with increased delinquent gang behavior (Elliott et al., 1996). Communities that are characterized by intergenerational closure (parents, teachers, and other adults know each other and interact in multiple settings) are better able to establish common norms and sanctions, which facilitates the generation of social capital. In these communities, parents, teachers,
mentors, coaches, employers, and other adults have similar expectations of adolescent behavior. This collective socialization of adolescents results in less deviance (Elliott et al., 1996), such as truancy.

In summary, we have presented various ramifications of the social problem of truancy and its consequences. The correlates of truancy identified above reflect three loci of adolescent life: the family, the school, and the neighborhood. Social capital theory suggests that the establishment of supportive, interacting social networks in these contexts can protect adolescents from non-normative behaviors. The correlates of truancy may be, in themselves, indicators of the absence of social capital. By implication, the generation of social capital in the family, the school, and the neighborhood may moderate the effect of these factors on truant behavior. Also by implication, social capital resources may increase adolescent participation in extracurricular activities, and thereby, reduce truancy.

Purpose of the Study

This study endeavors to explicate social capital factors affecting truancy, a pressing school issue that has serious impact on the lives of young people today (DeKalb, 1999). The extent of truancy and its correlates have produced numerous initiatives and interventions that address the multi-contextual factors associated with truancy. Evaluations of intervention programs (Baker et al., 2001; U.S. Department of Education, 1996; “Urban Policies,” 1997; Garry, 1996) suggest that supportive social networks can
increase school engagement, and thereby, reduce unexcused absenteeism. The findings further suggest that structural factors, such as family composition, neighborhood poverty, smaller class sizes, changes to the curricula, and increased discipline are insufficient without adequate attention to the process of human dynamics, including student-teacher relationship, parental involvement, student-school acceptance and belongingness. The identification of complementary structures and processes related to truancy reduction suggest a potential avenue of research incorporating both these dimensions.

Social capital theory addresses both social structures and processes. In order to explain human behavior, social capital theory posits both the formation of networks among people (social structures) and the interactions among them (social processes). Previous research (Wright, Cullen, & Miller, 2001; Kowaleski-Jones, 2000; Lewis & Houseknecht, 1998; Furstenberg & Hughes, 1995; Parcel & Menaghan, 1993) using the same theoretical framework indicates that the presence of social capital structures and processes in families, in schools, and in neighborhoods can protect adolescents from engaging in negative behaviors. Given the usefulness of these constructs in explaining adolescent outcomes, this study investigates truant behavior using social capital constructs. It employs both structure and process factors involving family, school, and neighborhood.

Using the National Longitudinal Study of Adolescent Health (hereafter, Add Health) data set, this study will empirically test whether social capital contributes to reducing truancy among adolescents and whether participation in extracurricular activities makes any additional contribution to the effects of social capital on truancy.
The findings of this study regarding adolescent participation in extracurricular activities and school attendance can contribute to furthering social work theory and practice in the areas of families, schools, and neighborhoods. The design and development of school and neighborhood-based intervention programs targeting adolescents can benefit from a deeper understanding of the underlying structures and processes affecting truancy.
CHAPTER 2

THEORETICAL FRAMEWORK AND REVIEW OF THE LITERATURE

The first section of this chapter will describe social capital theory and then review the literature related to three types of social capital, namely, family-based, school-based, and neighborhood-based social capital. The second section provides an exhaustive review of the literature related to adolescent participation in extracurricular activities, including empirical research on both the antecedents and the consequences of participation. The third section of this chapter will explore unexcused absence from school and its linkage to the dimensions of social capital. The conclusion will discuss the associations between social capital, extracurricular activities, and adolescent school truancy.

Social Capital Theory

Following in the rich tradition of the Enlightenment's concern with freedom and democracy, Tocqueville (1969) stressed that it is critical for democracy, and in fact for the survival of civilization itself, for people to work together and develop the habits of working together. Although the idea of social capital is present in seminal form in the classic sociological literature, especially in the writings of Karl Marx and Emile
Durkheim emphasizing group life and the benefits that accrue from it, the concept of social capital is of recent vintage (Portes, 1998). Scholars (Bourdieu, 1986; Coleman, 1988, 1990; Putnam, 1993) suggest that just as physical resources constitute physical capital, financial resources constitute financial capital, and human skills and capacities constitute human capital, the relationships among people constitute a fourth type, social capital. Whereas all forms of capital are productive, human capital and social capital are less tangible than physical and financial capital. Because of its tangible expression, physical and financial capital can be readily exchanged for one another. The exchange between the more tangible and the less tangible forms of capital is complex, with one being more easily measured directly and the other measured indirectly. Physical and financial capital can be used to build human capital in individuals. All three forms of capital can be useful in building social capital but are insufficient in themselves to create the needed investment in relationships.

Social capital has been conceptualized at three levels of depth and complexity. Putnam (1993) views social capital as consisting in horizontal associations among people based on cooperation leading to increased benefits for all in the community. Coleman's (1988, 1990) understanding of social capital broadens this conception to cover not only subjective norms of behavior but also objective social structures. The third, the broadest view of social capital, elaborates on the earlier conceptions to include the macro environment and its institutions such as the government, the legal system and the marketplace that influence norms and social structures (Serageldin & Grootaert, 2000).
This study will utilize the second view of social capital as developed by Coleman (1988, 1990) because this formulation better accounts for both the objective social structures and the subjective norms of behavior that influence truancy.

Coleman (1990), who introduced the concept of social capital into American Sociology (Portes, 1998), described it as “a variety of different entities having two characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure” (p.302). Paxton (1999, p.93) synthesized the previous theoretical work on social capital as containing both an objective and a subjective component. The objective (that is, structure) component consists in the associations between individuals creating a network that ties individuals to each other in social space. The subjective (that is, process) component refers to the particular type of relationships characterized by reciprocity, mutual trust, and positive emotional bonds.

Unlike other forms of capital that is possessed by individuals or groups, “social capital inheres in the structure of relations between actors and among actors” (Coleman, 1988, p. S98).
Figure 1: Three-person structure: Human capital in nodes and social capital in relations

Figure 1 is a diagrammatic presentation that clarifies the concept of social capital and its relationship to human capital (Coleman, 1990, p.305). The vertices of the triangle represent persons who are possessors of human capital and the sides of the triangle represent the relations between them. Social capital resides in the relations between persons, both in the number of relationships and in the quality of those relationships.

Like other forms of capital, social capital is productive in the sense that it makes available the resources that would otherwise be unavailable to individuals and groups. Coleman (1988, 1990) contends that the availability of social capital facilitates several potentially positive outcomes for individuals and groups. Coleman (1988) gives an
example of how social capital in the New York City's Jewish community facilitates the
wholesale diamond trade based on the inherent trust that members of the diamond
business have for each other. As members of a closed, interdependent social and
religious group, business transactions occur without the encumbrances or formalities of
insurance devices. Sanders and Nee's (1996) investigation of immigrant self-
employment suggests that availability of family social capital facilitates access to
financial resources that supports the establishment of small businesses by the immigrants.
Boisjoly, Duncan, and Hofferth (1995) who studied 3,311 Black and White families
using the 1980 Wave of the Panel Study of Income Dynamics report that families that
had invested in social capital networks could access monetary and time-assistance when
they were in need.

For social capital to produce positive outcomes, there must be a high level of
trustworthiness among individuals in a group, so that mutual obligations are upheld and
members' expectations about other members extending support and resources are
fulfilled. That is, there exists an essential interdependency between and among members
and groups that is built on trust, and on mutual obligations and expectations. In such
environments, the presence of social capital makes available to individuals and groups
those very resources that other members and groups possess. For example, loans
obtained from ethnic-owned lending institutions by immigrants are guaranteed by the
trustworthiness of the individual in the local community (Sanders & Nee, 1996).

In particular, Coleman (1988) underscores the "potential for information that
inheres in social relations" (p. S104). Social networks provide valuable sources of
information that can be exploited for maximizing opportunities for personal and group enrichment. For example, social networks that have members who are involved with the stock market may be potential sources of investment information for other members. Furthermore, Bourdieu (1986) explains that the amount of social capital resources available in a community depends on the amount of the other types of capital that members of a social network possess. Membership in the professional association of university professors, whose education and position reflect higher human capital than membership in a volunteer church group, may have potentially more social capital resources available to other members of their association. However, access to group resources will depend on members’ closeness to other members of the group rather than on their individual financial or human capital. Boisjoly et al. (1995) found in a large scale study that the financial status of individual families was not related to accessing the monetary and time-assistance resources of the group of which they are members. Onyx and Bullen (2000), in their study to test the empirical basis for social capital concepts, found that access to social capital resources was independent of the human or financial capital of those who sought them.

Social capital theory posits that the establishment and maintenance of effective norms can “build...nations...strengthen families...and in general lead persons to work for the public good” (Coleman, 1990, p.311). Social regulation, that involves the use of sanctions, internal or external, to uphold norms may benefit society. Although norms may benefit some members of the group, it may constrain others. Social capital theorists (Coleman, 1990; Putnam, 1993) contend that the establishment of effective norms also
necessarily implies group leadership. Leaders of groups (families, associations, institutions) have social capital available to them by virtue of the right of control transferred to them by other group members. The exercise of leadership by legitimate authority can generate social capital and also be a resource for members of the group. The case study (Zhou, 1997) of families and community organizations in Chinatown provides a good example of the effectiveness of norms in facilitating the assimilation of immigrant children to mainstream American society. The norms and sanctions established by families and the community assist children to avoid the gang subculture and succeed in school.

In his treatise on social capital, Coleman (1990) discusses four factors that play a part in the creation, maintenance, and destruction of social capital: closure of networks, stability of social structures, ideology, and affluence. Closure of networks exists in a group when members know one another and interact in multiple settings. Closure in a group is characterized by cohesion among members, which leads to the acceptance of common norms and sanctions. Closure of networks creates an environment of trust in which members borrow and lend goods and services. Thus, closure among members in a group makes resources of the group available to individuals. Families that live in Chinatown are able to access various services provided by the community as a result of the closure in the community (Zhou, 1997).

For the maintenance of social capital, it is necessary that the social structure and the relations embedded therein remain in a stable state. Because social capital inheres in the relations between individuals in a network, any instability that is caused by a fracture
of relations will lead to the destruction of available social capital. Coleman (1990) suggests that, for example, when a family leaves a community and moves away, social capital is decreased because relationships are strained and the resources available to members are diminished. Hagan, MacMillan, and Wheaton's (1996) empirical findings support Coleman's assertion. They found that family migration diminished community social capital, the effects of which were more severe in families where parents were less involved. Hofferth, Boisjoly, and Duncan (1999) found that family social capital, operationalized as access to help from kin, was reduced when families moved away from their home community. Similarly, Teachman et al. (1996) found that frequent change of schools decreased school social capital and influenced the dropping out of school for adolescents of the National Education Longitudinal Study (hereafter, NELS:88) sample.

Coleman (1990) asserts that ideologies can generate as well as dissipate social capital. For example, religious ideologies that influence believers to act in accordance with altruistic motives can generate social capital because self-interest is subordinated to the interests of the community. Using empirical data, Coleman and Hoffer (1987) suggest that the lower dropout rate in Catholic schools is also influenced by the common ideology that is shared by the community. In a similar manner, ideologies that uphold individualism to the detriment of social relations can inhibit the generation of social capital.

In addition to closure, stability, and ideology, a fourth factor that determines the creation of social capital or its destruction is affluence. Affluence often leads to decreased dependence on others in the community, thus preventing the formation of
social capital. Affluent communities, for example, where individuals cultivate few network relationships and consequently experience minimal 'closure' among members are weak and ineffective contexts for the generation of social capital (Coleman, 1990). Boisjoly et al. (1995) report a negative relationship between social capital available in the community and neighborhood poverty, suggesting that families in poverty may have more social capital due to the interdependence among families.

**Strengths and Limitations of Social Capital Theory**

The concept of social capital has received much attention and acceptance from several scholars in various disciplines (Arrow, 2000). As expected in the early stages of theory development, beginning in 1916 by Lyda Judson Hanifan (Fukuyama, 2000) to its contemporary popularization by Coleman (1988) and Putnam (1993), social capital theory has been applied in so many different ways by different theorists that it no longer has consistent meaning. Whereas the conceptualization by Coleman (1988) is congruent with that of Bourdieu (1986), Putnam's (1993) construction of social capital deviates slightly from that of his predecessors. Putnam describes social capital in terms of civic associations built on trust and cooperation, and suggests that volunteerism, membership in religious groups, voter turnout, community participation, and attendance at community meetings are among the appropriate indices of social capital. Unlike Coleman (1988), whose conception of social capital emphasized the existence of close networks, Burt (1992) understands social capital as the absence of strong networks, which he calls 'structured holes.' Unlike strong networks that provide redundant information among
those who have close relationships, weak networks among acquaintances in tertiary relationships can be sources of new knowledge. Economists have used the concept of social capital to underscore the importance of personal relations in the marketplace, but they are not in agreement about whether social capital can actually be considered ‘capital’ at all (Arrow, 2000). Clearly, social capital remains an amorphous construct that needs to be defined more clearly and applied with less ambiguity.

Although Coleman’s treatise on social capital (1990) provided visibility for the concept, his treatment was more descriptive than analytic. He uses several examples to indicate its existence and to justify recognition of the concept but his definition lacks clarity, setting the stage for varied interpretations. The idea of ‘obligations, expectations and trustworthiness’ that Coleman posits as a ‘form of social capital’ is actually a pathway for the generation of social capital. Again, the establishment of norms and sanctions is another mechanism that creates and maintains social capital, rather than a form of social capital. ‘Information channels’ that form an important resource for recipients is not a form of social capital but a consequence of its possession. The lack of clear distinctions between social capital and its precedents, processes, contexts, and consequences introduces vagueness and confusion (Portes, 1998).

Group membership gives individuals access to resources available in the group. The ability to acquire these resources is clearly different from the resources themselves. In addition, social capital is not the available resource but that which makes these resources available. Such distinctions are not clear in Coleman’s exposition of social capital. In the process of exchange between persons, there are various elements that must
be clearly distinguished one from another: those who seek resources, those who possess valuable resources, and the resources that are sought. Coleman fails to separate these elements clearly and is obscure in spelling out the motives of both parties. Those in need of resources are motivated by self-interest and those who possess resources are driven by a combination of self-interest and altruism (Portes, 1998).

According to Coleman, trust and cooperation that form the core of social capital are products of rational choice about the benefits that will result from it. Coleman (1990) and others (Bourdieu, 1994/1998) view trust as instrumental for efficient social exchange. Human exchanges, therefore, are mere social contracts that are motivated by material benefits or capital value that results from it. Rational calculations form the basis for expectations and obligations in society, norms, and other sources of social capital. However, trust, cooperative behavior, and social exchange between individual persons cannot be adequately explained solely by the contractual model posited by social capital theorists. Human interactions that generate social capital can also be motivated by affection, transcendental or altruistic motives as exemplified by persons like Mother Teresa or Martin Luther King. The commodification of social capital and the reliance on contractual rules to sustain it threatens the very foundation on which social capital generation is based, that is, the formation of trust.

Another criticism that is leveled against social capital revolves around the measurement of the concept. Unlike economic capital that takes tangible forms, social capital is intangible as it resides in relationships and not in persons. This implies that it
cannot be measured directly but only through the effects it produces. The absence of
commonly agreed upon criteria that enable researchers to assess whether an action
produces social capital or not, has been a reason for confusion.

Despite these limitations, the strength of social capital theory lies in its emphatic
articulation of the significance of the non-economic dimensions of social life and in its
bridging of two intellectual traditions, the social and the economic. Firstly, social capital
theory highlights the importance of non-economic resources such as associations between
individuals, trust, cooperative action, and common values and beliefs that serve to benefit
individuals and groups. Collective action and cooperation has always been valued for its
'social' effects but conceptualizing it as 'capital' brings it into central focus. It
establishes equivalence between social resources and other valued resources, and outlines
strategies of conversion to other forms of capital. Secondly, social capital theory brings
together two intellectual streams that account for social action (Coleman, 1988). The
sociological tradition suggests that social action is shaped and directed by the forces that
operate in the environment. The economic tradition places greater emphasis on the
individual who acts in accordance with self-interest. Social capital theory with its
emphasis on both social and individual domains integrates these two traditions.

A review of social science literature points to various applications of social capital
theory in explaining human behavior. In the empirical literature, the presence of social
capital has been used to explain outcomes such as adolescents' educational and
vocational aspirations (Marjoribanks, 1998), children's cognitive and social outcomes
(Parcel & Menaghan, 1994), child social adjustment (Parcel & Dufur, 2001), reduction of

20
truancy (McNeal, 1999b), educational attainment (Astone & McLanahan, 1991),
successful outcomes with at-risk youth (Furstenberg & Hughes, 1995), access to time and
money help from friends and kin (Hofferth et al., 1999), immigrant children’s adjustment
to the American way of life (Zhou, 1997), and immigrant self-employment (Sanders &
Nee, 1996). Similarly, the lack of social capital has been suggested to explain juvenile
delinquency (Wright et al., 2001), dropping out of school (Teachman et al., 1996),
children’s behavior problems (Parcel & Menaghan, 1993), violent crime (Kennedy,
Kawachi, Prothrow-Stith, Lochner, & Gupta, 1998), homicide (Rosenfeld, Messner, &
Baumer, 2001), and teen childbearing and cohabitation (Lewis & Houseknecht, 1998).
Portes (1998) highlights the usefulness of social capital theory in understanding informal
social control in society, positive outcomes associated with family support, and upward
mobility achieved through extra-familial networks. Communities with dense networks
and intergenerational closure that share common values do not need overt mechanisms of
social control. Social capital theory has been useful in explaining such social phenomena
and outcomes associated with them.

Thirdly, social capital theory is useful in understanding the role of extra-familial
support in achieving upward mobility and improving one’s position in the social order.
Loury (1977) used the concept of social networks to assert that occupational mobility
would be limited for those with decreased social connections. For example, blacks from
disadvantaged backgrounds have fewer sources of information and support in the labor
market, leading to decreased opportunities for economic advancement. Those from elitist
backgrounds use their professional networks to exploit the market and perpetuate their
dominance in the social order. The availability of social capital in network connections, and the resources they provide for individuals and families have been useful in explaining mobility among immigrant and ethnic groups (Sanders & Nee, 1996). Rotating-credit associations in Asian communities (Coleman, 1988) are examples of the economic resources that are available to members of close-knit groups. Such access to financial capital and other forms of group support enable individuals and families to set up small business enterprises and move up the ladder of economic success.

Research Literature on Social Capital

Having critically reviewed Coleman’s (1988, 1990) postulation of social capital, we examine three components of social capital, namely family-based, school-based and neighborhood-based social capital that will constitute and operationalize the construct of social capital in our investigation of adolescent extracurricular activities participation and school truancy. The following review of the literature will function to establish the linkages between social capital dimensions, extracurricular activities participation, and unexcused absenteeism.

Family-based Social Capital

Coleman (1988) understands social capital in the family as “the relations between children and parents (and, when families include other members, relationships with them as well)” (p. 1110). In generating social capital that can promote positive outcomes for children, Coleman (1988) contends that parents must be physically present, as well as
invest time and attention to cultivate relationships that are “reciprocal, trusting and involving positive emotion” (Paxton, 1999, p.93). Such relationships are built on mutual obligations and expectations, and are accompanied by both the norms and the effective sanctions (Coleman, 1990) that lead to the healthy socialization of children. Children and adolescents who are raised in such contexts guided by trusting relationships can be expected to engage in positive behaviors.

Coleman (1988) argues that social capital in the family can facilitate the transfer of parents’ human capital to the children. Parental human capital is understood as skills, knowledge, and abilities that parents possess, and is generally operationalized in social capital research as parental education and/or occupation (Astone & McLanahan, 1991). Coleman (1988) states “…children are strongly affected by the human capital possessed by their parents. But this human capital may be irrelevant to outcomes for children if parents are not an important part of their children’s lives, if their human capital is employed exclusively at work or elsewhere outside the home” (p. S 110).

Using family structure (among other variables) as a proxy for the amount of social capital in the family, the absence of adults in the home, termed “structural deficiency” (Coleman, 1988, p. S111) is associated with increased dropout rate. This may simply imply that children have access to diminished attention from fewer adults, when all other variables are held constant. A more recent study by Teachman et al. (1997) found no evidence to indicate that the effect of varying family structures on dropping out of school could be explained by social capital.
According to McNeal (1999b), when there is social capital in the form of parent-child communication including communication that is specific to the school situation, parents are better able to monitor their adolescent’s progress and to detect any disengagement from the school, thereby reducing the likelihood of truancy. The beneficial connection of parent-child communication to detection of disengagement applies to the more advantaged segments of the population and is non-existent for lower SES and single parent families. Ensminger and Slusarick (1992) found that parent adolescent communication is associated with an increased likelihood of graduation from school.

A more recent analysis of the NELS:88 data by Teachman, Paasch, and Carver (1997) provides evidence of the intergenerational transfer of human capital in the presence of social capital. The researchers operationalized ‘social capital’ using several variables including family structure, parent-school connectivity, parent-child connectivity, and closure among parents. Measures of parents’ financial and human capital were included. Interaction between human, financial and social capital variables suggest that when occurring in the presence of social capital, the effect of the other forms of capital is to enhance the reduction of the likelihood of dropping out of school. Additionally, the results also indicate that children with increased family social capital (parent-child connectivity) are more likely to remain in school than their counterparts.

Astone and McLanahan’s study (1991) of the High School and Beyond data provides a clearer picture of how social capital in the family operates to produce positive educational outcomes for adolescents. The researchers operationalized social capital in
terms of family structure, parental aspirations, parental monitoring of schoolwork, general supervision, and verbal communication. The results indicate that adolescents in single parent or stepparent families receive “less parental encouragement and attention with respect to educational activities” (Astone & McLanahan, 1991, p.318) than others in families with both biological parents. Adolescents from intact families also indicated significantly higher scores on parental expectations, parental monitoring of schoolwork, and general supervision. Interestingly, adolescents from intact families, however, spend less time talking to their parents than those from single parent families.

This study (Astone & McLanahan, 1991) also revealed that the mere presence of an additional parent in the home (structural dimension) may not compensate for the lack of positive interaction (process dimension) between parent(s) and children. Irrespective of whether the adolescent was from a two-parent stepfamily or a single parent family, the level of early disengagement from school (measured by attitude towards school, educational aspirations, attendance, and school completion) was the same, and higher than his/her counterpart from an intact family. Therefore, both structural and process factors must operate to produce social capital, and the access to social capital can produce positive educational outcomes for adolescents.

In his treatise on social capital, Coleman (1990) contends that the well being of children is dependent on the creation and maintenance of social capital. Empirical investigations (Parcel & Menaghan, 1993, 1994) indicate that parental investment of their resources build social capital in the family, and support child social adjustment (Parcel & Dufur, 2001). Parcel and Dufur (2001) found that social capital at home (maternal work
hours, parental monitoring, and the number of adolescent's friends that the parent knows) had a significant effect in reducing behavior problems among youth in the National Longitudinal Survey of Youth (NLSY79) sample. An earlier study (Parcel & Menaghan, 1993) suggests that social capital in the family operates to transmit social norms from parents to children, leading to normative behaviors. This empirical finding supports Coleman's (1990) claim that social capital generation and the establishment of norms in a social system are interlinked. In a social capital-rich family, parents are able to transfer values and socially accepted norms to their children in the context of close relationships.

Social capital in the family has been found to protect adolescents from early childbearing and cohabitation (Lewis & Houseknecht, 1998), and delinquency (Wright et al. (2001). Lewis and Houseknecht (1998) found that eighth grade girls with close family ties were less likely to cohabit as teenagers and become teen mothers than those with less access to family-based social capital. Analyses (Wright et al., 2001) of the longitudinal data from the National Youth Survey (NYS) showed that adolescents who were closely bonded with their families exhibit less delinquent involvement and achieve greater success over the life course. Furstenberg and Hughes's (1995) analysis of a sample of 252 children in poverty showed that children who were embedded in supportive families remained in school and achieved socioeconomic success as young adults.

Researchers have used several indicators to measure the availability of social capital in the family. Parental academic expectations and aspirations for their children, and communication centered on academic or other adolescent experiences are two frequently used indicators (Ensminger & Slusarcick, 1992; Marjoribanks, 1998) of
family-based social capital. Although both measures have been found to be directly associated with higher academic achievement (Ensminger & Slusarcick, 1992), there may be differences across ethnic groups.

In addition to the relevant research studies cited above which explicitly employ social capital constructs, there is a burgeoning body of literature that implicitly links various social capital dimensions of family relationships such as parental involvement, parental supervision and control, closeness of parent-child relationships, and family cohesion with adolescent outcomes. Higher levels of parental involvement have been associated with improved scholastic performance and better grades (Griffith, 1996; Keith et al., 1993). There are also robust findings in research literature that suggest that adolescents with strong family ties are less vulnerable to substance use and other problem behaviors (Dorobusch, Erickson, Laird, & Wong, 2001; Allen, Moore, & Kuperminc, 1997; Farrell, Barnes, & Banerjee, 1995). Conversely, lack of parental support, monitoring and supervision of adolescent behavior has also been associated with aggressive behaviors, substance use (Saner & Ellickson, 1996), drinking, delinquency, and school misconduct (Barnes & Farrell, 1992).

The discussion of family social capital, understood in terms of parental involvement, support, and monitoring of adolescent behavior necessitates that factors such as family structure, socioeconomic status, racial/ethnic composition, and gender be taken into consideration because the availability and access to social capital may be dependent on these characteristics as well. Research investigations reveal socioeconomic differences across families on the effects of family social capital on adolescent behavioral
outcomes. In single-parent homes that may also be poor, parents tend to confide in their children more, which may lead to closer relationships (Astone & McLanahan, 1991). Parents from middle-class homes tend to be more involved with their children, that suggests a greater intergenerational transfer of values, aspirations, and human capital. Sampson and Laub (1994) found an inverse relationship between household poverty and parental supervision that also correlated with delinquent behavior.

Racial/ethnic and gender related differences also exist in family-based social capital generation and availability. Racial/ethnic differences have been found to persist even after accounting for socioeconomic disparities between groups (Duncan, 1994). For example, Paschall, Ennett, and Flewelling (1996) found that, unlike black males, white males engaged in less aggressive behaviors when family support was available. Also, Asian-American adolescents’ marijuana use was more strongly associated with diminished parental control in comparison with the use of marijuana by black or white adolescents (Richardson, Radziszewska, Dent, & Flay, 1993). Parental relationships and family bonds seem to moderate problem behaviors more strongly in females than in males (Saner & Ellickson, 1996).

In summary, the existence of family-based social capital has considerable empirical support in the literature, and serves as a resource that adolescents can draw on to achieve success and avoid problem behaviors such as truancy.
School-based Social Capital

Coleman (1994) argues that with the emergence of new non-intact family structures and dual-income families, there has been a decrease in the social capital available to children. A recent meta-analysis (Greenwald, Hedges, & Laine, 1996) suggests that the effects of family-based social capital on student performance has been decreasing since the 1960s, indicative of changing family structures and the consequent dissipation of social capital in families. However, as Coleman (Coleman, 1987; 1988; 1994) contends, such a decrease in family-based social capital can be compensated by other extra-familial contexts such as schools that provide social capital resources for children. Parcel and Dufur’s study (2001) of family and school effects on social adjustment found evidence suggesting that social capital in one context can compensate for lack of it in another context, underscoring the importance of the school environment. Furthermore, the study indicates that the optimal situation for children is when they have access to social capital resources both at home and at school.

Social capital in the school context is understood as consisting of the network of relationships among students, parents, teachers, and other school personnel that result in positive benefits for everyone, especially for the children. Coleman (1990) emphasized that the generation of social capital in this context is dependent on school quality, stability, norms, and 'closure.' He states that closure is present only when there is a relation between adults who themselves have a relation to the child. The adults are able to observe the child’s actions in different circumstances, talk to each other about the child, compare notes, and establish norms. The closure of the network can provide the
child with support and rewards from additional adults that reinforce those received from the first and can bring about norms and sanctions that could not be instituted by a single adult alone. (p.593).

He argues that this linkage between teachers and parents enables them to set consistent standards of behavior for children based on expectations and rules that apply to all families in the network. When teachers and other school personnel establish trusting relationships with students and their parents, social capital is produced and the school becomes a positive environment that supports successful educational outcomes. The creation of such a supportive context, that is social-capital-rich, has been found to reduce truancy and improve academic achievement (McNeal, 1999b). Parcel and Dufur’s analyses (2001) based on the National Longitudinal Survey of Youth also indicate that the presence of social capital in the school is associated with the reduction of behavior problems, including truancy.

Closure in the school is fostered when parents are involved in their children’s school activities and participate actively in associations and activities that bring parents and teachers together. McNeal (1999b) considers involvement in the PTA as one of the important aspects of parental investment in the educational life of their children. He states that when parents are members of parent-teacher networks, they are modeling interest in educational matters, and are naturally positioned to monitor their children’s progress in school. Such parents may be better able to notice the early and subtle signs of disengagement from school and respond in ways to avert increasing disengagement behavior such as truancy. The children may see parental involvement in the school
network as indicating concern for their educational well being, which communicates positive parental expectations to their children. These expectations can serve to motivate children to respond by investing themselves in their schoolwork. Marjoribanks (1998) found evidence that supports this explanation. In a study of Australian adolescents, he found that school social capital, measured by children’s academic interaction with parents and teachers was associated with their educational aspirations.

Investigations by Furstenberg and Hughes (1995), and Ensminger and Slusarcick, (1992) also point out that parental involvement in school associations such as the PTA supports student outcomes. Social capital generated through parental connections with other parents encouraged poor youth to remain in school, and subsequently, to achieve socioeconomic success (Furstenberg & Hughes, 1995). Ensminger and Slusarcick (1992) found that among high risk Black adolescents, those whose parents were involved with other parents and teachers were more likely to graduate than other adolescents whose parents were not part of the social capital network. Parental involvement may be more beneficial for children at risk, and those from minority groups. Parcel and Dufur (2001) also found that parental involvement in the PTA was most helpful for minority children. It must be noted that such positive outcomes for children may not be the product of mere participation by parents in school activities. Effective involvement implies that parents have the opportunity for regular and informal interaction with school personnel that can create trust, closure, and the joint collective monitoring of children. Other parental activities such as helping teachers with classroom work and volunteering at school has also been associated with better student outcomes (Parcel & Dufur, 2001).
Teachman et al. (1996) found that parent involvement in school activities was linked with children’s enrollment in Catholic schools. This finding is supportive of Coleman’s (1988) assertion that Catholic schools facilitate the generation of social capital. Coleman’s analyses revealed that the dropout rate in Catholic schools was one-fourth that of public schools and one-third that of other private high schools. He attributed the difference in dropout rates to the generation of social capital in Catholic school environments that supported the formation of networks among students, parents, teachers, and the community. In a contrasting perspective, Morgan and Sorensen (1999) contend that their analyses of the NELS:88 data reveal a negative relationship between closure of networks and student achievement in public schools. They suggest that the effect of higher achievement of students in Catholic schools cannot solely be explained by the closure of networks but suggest the presence of other social capital factors such as the acceptance of common norms, and expectations, and their sanctions. This remains a highly debated (Carbonaro, 1999; Hallinan & Kubitschek, 1999) and complex issue that requires an expanding body of future research to explicate. The role of discipline, the different populations served and the role of commonly held norms versus a plurality of norms may be some of the variables to be explored.

Social capital theorists (Croninger & Lee; 2001; Parcel & Dufur, 2001) contend that a child’s relationship with a teacher is one of the more important sources of social capital for school children. Croninger and Lee (2001) found that, for children who were at risk for dropping out of school, the probability was reduced by nearly half by social capital generated in positive teacher-student relationships. The guidance and support by
teachers was found to be more beneficial for those children who were at risk for academic failure. The perception of being adequately supported and cared for in the school was also found to mitigate the effects of academic disadvantages (Clark, 1995). In another study that underscored the importance of the student-teacher relationship, Sanders and Jordan (2000) suggest that social capital so generated is also productive, that is, students with these relationships to their teachers tend to invest more in their educational process, pay greater attention to their homework, and exhibit better conduct in school.

The absence of teacher-based social capital, perceived as the lack of caring, was reported as one of the reasons why children drop out of school (Catterall, 1998). One of every three children in the NELS:88 sample (Catterall, 1998) reported that the lack of closeness with teachers and other students was one of the key reasons for discontinuing with school. Similarly, Bryk and Thum's analyses (1989) of the effects of school organization on absenteeism and dropping out revealed that increased student-teacher interactions was associated with less absenteeism and with school drop out. Higher teacher expectations, perceived as interest in the student's well being, were also found to increase the likelihood of school completion (Ensminger & Slusarcick, 1992).

Theorists (Cornell & Wellborn, 1991) in the field of education contend that a sense of belonging and connection to the environment is fundamental to one's motivation to learn. The connection to the learning environment provides the learner with a sense of security and enables him/her to accept the norms of the institution (Deci, Vallerand, Pelletier, & Ryan, 1991). Furthermore this sense of belonging, "sense of being accepted,
valued, and included, and encouraged by others (teachers and peers) in the academic classroom setting” (Goedenow, 1993, p.25), influences motivation that in turn affects adolescent behavior.

When students experience alienation in the school environment, their performance is affected and often leads to dropping out from school (Jordan, Lara, & McPartland, 1996). In general, smaller schools and lower enrollment provide a more favorable overall environment that facilitates closer connections between teachers and students (Ascher, 1994). Smaller schools that encourage greater teacher-student connectivity promote a greater sense of belonging and a more positive attitude toward school (Fowler & Walberg, 1991). Contrarily, large schools with impersonal bureaucratic structures alienate students from the environment (Whelge & Rutter, 1986) making them vulnerable to negative outcomes, including absenteeism (Williamson & Cullingford, 1998).

Schools where children feel safe are indicative of the presence of positive relationships that create social capital. Scholars (Reid, 1999; Bowen & Bowen, 1999; Bryk & Thum, 1989) suggest that when students sense danger or threat in a school environment, they tend to be absent from school. Harris and Associates (1995) reveal that about 11 percent of students in their national sample reported staying away from school because of crime. But positive interactions with peers can increase the sense of safety, strengthen the connections among peers and can generate social capital that generate social capital that can be utilized to resist negative peer influences. However, in
the absence of adult monitoring and regulation of deviant behavior, gangs and peer
groups can have a negative influence on adolescent behavior (Sampson, 1997a).

Research (Dornbusch et al., 2001; Resnick et al., 1997; Battistich & Hom, 1997)
suggests that the lack of connection and social bonding in the school context is associated
with a multitude of risky behaviors, such as alcohol and drug use, delinquency, and
violence. Jenkins (1997) in measuring adolescents’ commitment to, belief in, attachment
to, and involvement in school found an inverse relationship between connection and
social bonding and school problem behavior.

Another important variable that has been at the center of social capital research is
school and residential mobility (Teachman et al., 1997; Furstenberg & Hughes, 1995;
Boisjoly et al., 1995; Coleman, 1988). Teachman et al. (1997) found that the odds of
dropping out of school increased for children who changed schools. When children are
compelled to change schools for whatever reason, it disrupts their network of relations,
leading to a destruction of social capital. A change of school implies a needed
investment into building new relationships that may be facilitated or hindered by the
social capital environment of the new school.

In summary, the preponderance of empirical evidence suggests two theoretical
premises: that school contexts are important potential sources of social capital for
adolescents, and social-capital-rich schools can discourage negative behavior such as
truancy, and thereby improve scholastic performance.
Neighborhood-based Social Capital

While emphasizing the importance of family-based social capital for successful adolescent outcomes, Coleman (1990) argues that neighborhood-based social capital is also a necessary resource. Neighborhood social capital resides in the interlocking networks of relations between persons in the neighborhood, with expectations and obligations that would be upheld, providing them access to information and other resources, and leading to the establishment of common norms and sanctions to regulate behavior (Coleman, 1990). Social capital generation in a neighborhood is facilitated by ‘closure’ among persons, meaning that, persons are tied together in close, trusting relationships and interact with one another in multiple settings. Such communities make available to their members the resources of others to whom they are interlinked.

Attempting to develop an empirical definition of social capital, Onyx and Bullen (2000) factor analyzed 68 potential social capital items that were administered to 1,211 adults in 5 Australian communities. The results revealed that “participation in community activities, proactivity in a social context, feelings of trust and safety, and neighborhood connections” (p.37) were included among the more salient features that defined neighborhood social capital. From these constructs indicating the presence of social capital, researchers (Coleman, 1988; Teachman et al., 1997; Furstenberg & Hughes, 1995) have often used neighborhood connections, and parental participation in neighborhood activities as the indicators of family embeddedness in the community.

Involvement in neighborhood activities enables parents to interact with other adults, to establish social capital connections, and to seek information and support when
necessary. Social capital theory assumes that parental participation in community activities would be beneficial for their children because it provides parents with increased resources for the socialization of children. Using the German Socioeconomic Panel data, Buchel and Duncan (1998) investigated the effects of parental social activities on adolescents’ school attendance. The strongest effects were found for boys and those from low-socioeconomic families. For boys, academic attendance was positively associated with fathers’ sports and volunteer activities but was negatively associated with their social activities. Girls benefited when their fathers were involved in sports and in voluntary work. While fathers’ influence is clear, social capital associated with mothers’ involvement in activities was not related to children’s attendance.

Runyan et al. (1998) found that parental connections in the community serve to benefit young children considered at risk for abuse and neglect. Neighborhood support, among other measures of social capital, was found to improve the probability of doing well by 29% for the children in the sample. The researchers suggest that for disadvantaged families, access to social capital may reduce the risk of the children experiencing abuse and neglect.

According to Coleman and Hoffer (1987), adolescent socialization depends on two interconnected neighborhood features, social integration and value consensus. Social integration or cohesion in the community leads to increased value consensus, resulting in the establishment of common norms and sanctions related to adolescent behavior. This form of social capital can open channels of information with other members of the community creating closure that enables parents to monitor their children even when they
are physically absent. Adolescent behavior can be monitored by several adults in the community including parents, community leaders, law enforcement persons, and other residents. This collective supervision of children through informal social control by the neighborhood community supports families in the socialization of their children (Greenberg & Rohe, 1986). Coleman (1990) suggests that such neighborhood social capital can compensate for the lack of social capital in the home. Coleman and Hoffer (1987) provide empirical support for this argument by showing that children from low social capital families who live in social-capital-rich neighborhoods perform academically as well as those from families with high social capital.

Empirical investigations (Elliott et al., 1996; Barnes & Farrell, 1992; Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993) document that collective monitoring of children can protect them from problem behavior. Barnes and Farrell (1992) found that the prevention of adolescent problem behaviors, including truancy, was related to concrete monitoring of the physical location of adolescents and their friends. Furstenberg and Hughes (1995) also report that positive outcomes for their high-risk adolescent sample were related to the social capital resources available from mothers’ network of neighborhood connections. Adolescents whose mothers had strong links in the neighborhood did not drop out of school, had no major altercations involving the police, and achieved socioeconomic success in young adulthood. Most adolescent girls in the sample appeared to be inoculated against teenage pregnancy and parenthood. Analysis of
the Panel Study of Income Dynamics (PSID) by Brooks-Gunn et al. (1993) also suggest that neighborhood affluence via collective monitoring and socialization has a strong positive impact on adolescent school dropout and teenage childbearing.

Informal social control by the community, an indicator of social capital, has been found to reduce adolescent deviance (Sampson, & Laub, 1994), problem behavior (Elliott et al., 1996), violence (Kennedy et al., 1998; Sampson, Raudenbush, & Earls, 1997), and homicide (Rosenfeld et al., 2001). Sampson and Laub (1994) studied adolescents from disadvantaged neighborhoods to find that deviant behavior is strongly related to the amount of informal social control that exists in the community. When present together, community monitoring of adolescent behavior and a positive adolescent connection to the school can serve to inhibit deviant behavior.

Social cohesion within the community is a potential resource for reducing neighborhood violence. Sampson et al. (1997) found that the social capital indicators, social cohesion and a collective willingness to act for the common good, are related to reduced violence. Kennedy et al.’s (1998) fifty-state study measuring social trust and volunteering and pointing to the consequences of the lack of social capital found that decreased social capital is associated with a lack of willingness to enforce the norms that reduce crime. The effect of income inequality on violent crime was found to be mediated by the amount of social capital in the neighborhoods utilized to enforce crime-reducing norms. A more recent study by Rosenfeld et al. (2001) reached a similar conclusion that the absence of social capital contributes to an increased homicide rate.
In analyzing several neighborhoods in Chicago and Denver, Elliott et al. (1996) found that neighborhood disadvantage is negatively associated with social cohesion. Less informal social control of problem behaviors implying less social cohesion was found in disadvantaged neighborhoods. But while, disadvantaged neighborhoods influenced adolescent behavior, this effect was mediated by informal social control. Clearly, informal social control was found to have a positive influence on youth behavior, and to be inversely related to the incidence of problem behaviors. Thus, the research evidence on neighborhood social capital in the forms of social cohesion, normative consensus, and informal social control indicates that its presence can influence and produce desirable, positive social outcomes for adolescents.

Socially integrated neighborhoods with normative structures facilitate the creation of social capital, and provide a safe and secure environment for children. Empirical data (Bowen & Bowen, 1999) indicates that school attendance is also related to adolescents’ perception of safety in the neighborhood. Adolescent attendance in school was negatively related to the sense of danger and threat that adolescents experienced. This study also found that school achievement was related to students’ sense of safety in the environment, suggesting that neighborhood social capital has some influence, possibly indirect and possibly reciprocal, on student school outcomes.

In addition to safety, the stability of the neighborhood is necessary if adolescents and their families are to forge close relationships with others. The lack of neighborhood stability that is characterized by a mobile residential population impedes the processes that create mutual expectations and obligations, open channels of communication and
lead to neighborhood cohesion. Analyses (Sampson, Morenoff, & Earls, 1999) of 342 Chicago neighborhoods show that residential stability, together with affluence, facilitate intergenerational closure and sharing of goods and services in the community. Neighborhoods with increased closure and reciprocal exchange were also found to be associated with collective monitoring of children’s behavior.

Kowaleski-Jones (2000) points out that residential stability served to protective adolescents from problem behavior, particularly aggressive behavior. Adolescents who lived in criminal and violent neighborhoods where there was decreased investment by the community were more likely to be deviant. Aneshensel and Sucoff (1996) suggest that low socioeconomic status neighborhoods that are characterized by low stability tend to have a negative influence on the mental health of adolescents. Neighborhoods with a large percentage of residents who are poor, mobile, and racially/ethnically heterogeneous indicate low social capital due to fewer social connections and decreased participation in community activities (Elliott et al., 1996; Sarason et al., 1997). Such neighborhoods have been associated with increased rates of homicide and violence (Sampson, 1997b).

Neighborhood influences on adolescents are mediated and moderated by other family-level and individual variables. For example, neighborhood factors have a lesser impact on females than on males (Crane, 1991). Although an affluent residential neighborhood enhances the development of most youth, there is a differential impact based on racial/ethnic background. For black youth, high school graduation rates improved only when their neighbors were also African American (Duncan, Connell, &
Klebanov, 1997). Similarly, the benefits of having educated neighbors, in terms of decreased delinquency and teen childbearing, was found to be greater for white than for black youth (Crane, 1991).

In general, the neighborhood context, both the social structure and the network of relationships that generates social capital, may influence adolescent behavior including the reduction of truancy. This review of social capital (family-based, school-based, and neighborhood-based) and related literature substantiates the proposed inferential chain that will be used in this study. Cumulatively, the empirical investigations reviewed above provide compelling evidence of the potential connection between social capital contexts, adolescent involvement in activities, and reduction of truant behavior.

**Extracurricular Activities**

In general, ‘extracurricular activities’ are defined as non-graded, voluntary activities that are organized outside the regular academic curriculum, outside school hours, and are conducted on the school premises (Mahoney & Cairns, 1997). Extracurricular activities are available to virtually all students (O’Brien, & Rollefson, 1995) and at least seventy percent of all students engage in some form of these activities (Office, 1986). Lisella and Serwatka (1996) estimate that about 70 to 80 percent of all students are involved in some from of extracurricular activity. The researchers also suggest that more students participate in school-sponsored activities than in community-organized activities.
Brown and Theobald (1998) have identified three phases in the development of the relationship between school and extracurricular activities. Until the nineteenth century, the school system was focused only on academic matters and consequently schools ignored extracurricular activities. The second phase that began in the early 1900s was one of opposing viewpoints; students supported participation in athletics and teachers opposed such participation on the grounds that it diminished academic achievement. The third phase began in the 1920s when extracurricular activities were accepted as contexts for learning and as an important feature of the school system. This change triggered a research interest and studies to explore the relationship between extracurricular activities and various outcomes for children.

The review of literature on extracurricular activities participation is organized into two sections: factors associated with adolescents' rates of participation (antecedents) and potential outcomes of participation (consequences).

Antecedents of Participation in Extracurricular Activities

School size and location.

Research studies over the years (Morgan & Alwin, 1980; Schoggen & Schoggen, 1988; Jacobs & Chase, 1989; Coladarci & Cobb, 1996; McNeal, 1999a) are in agreement that there is clearly a negative correlation between participation rates and school size. An exhaustive review of literature by Holland and Andre (1987) confirm that students in smaller schools tend to participate in a greater number and variety of after-school programs than students in larger schools. Schoggen and Schoggen (1988) who assessed
the participation rates among a large sample (n=10,412) of high school seniors in 27 public schools and a national study of 6,587 11th and 12th graders by Jacobs and Chase (1989) also support this finding. Although, participation rates, in general, are related to school size, Morgan and Alwin (1980) observe that participation in low-status activities such as hobby clubs increases with school size. Participation in high-status activities such as athletics, cheerleading, student government and academic clubs that have more aspirants for membership with a limited number of slots is negatively correlated with school size.

**Socioeconomic status, academic ability, race, and gender.**

Participation in extracurricular activities also varies by socioeconomic status, academic ability, race, and gender of participants. Analysis of the 'High School and Beyond' data by researchers at the Office of Educational Research and Improvement (Office, 1986) and other research studies (Murtaugh, 1988; Jacobs & Chase, 1989) point out that fewer students from lower socioeconomic backgrounds tend to participate in extracurricular activities than those from more affluent families. More recent analyses (McNeal, 1998; O'Brien & Rollefson, 1995) of the NELS data confirm this finding.

Children with superior academic ability (Jacobs & Chase, 1989; Lisella & Serwatka, 1996) and who are better adjusted in school engage in activities more than children who are found to have academic and behavior problems. McNeal (1998) observes that retained students and those with lower academic potential are less likely
than their peers to participate in all activities except in vocational clubs. This trend may be because students of lower academic ability plan to pursue the vocational instead of the traditional academic track.

Overall participation rates among minority students equals (Lisella & Serwatka, 1996) or may be higher than that of white students (McNeal, 1998), even in schools with disproportionately small number of non-white students (O’Brien & Rollefson, 1995). There seems to be more minority students who are involved in athletics, cheerleading and fine arts (Office, 1986), and more white males in religious groups (Lisella & Serwatka, 1996). Asian students tend to be engaged in academic activities, newspaper/year book activities and student government (McNeal, 1998).

Engagement in the extracurriculum is also related to gender, with a greater likelihood of female participation in most activities with the exception of athletics that is dominated by boys (McNeal, 1998; Murtaugh, 1988; Jacobs & Chase, 1989). Girls tend to have higher participation rates than boys in academic activities, fine arts, student government, service clubs, career clubs, publications and social clubs (Jacobs & Chase, 1989; McNeal, 1998). Whereas boys tend to spend more time in coached sports, girls tend to be more engaged in academic work and socializing (Fuligni & Stevenson, 1995). As girls move from lower to higher grades, academic work assumes less importance (Hofferth, Brayfield, Diech, & Holcomb, 1991). For boys, the move to high school results in a reduction of TV time and an increase in time spent in sports activities (Larson & Richards, 1991).
Type of activity, peer participation, and career goals.

Extracurricular activities participation rates of children also vary according to the type of activity that is available to them. There is a consensus among researchers that sports activities are the most favored by students, especially by males (Melnick, Sabo, & Vanfossen, 1992; McNeal, 1998). Eder and Parker (1987) found that for middle school girls, cheerleading was the most prestigious activity. Athletics for boys and cheerleading for girls increased their status among peers, which may be the reason for their popularity.

Peer participation plays an important role in the generation of interest and in the continued participation of middle school and high school children in the extracurriculum. Qualitative investigation by Patrick et al. (1999) revealed that adolescents continued being involved in those activities that had peer support. The opportunity to spend time with friends and socialize was found to be a motivating factor for engaging in new activities.

Engagement in extracurricular activities is associated with interests as well as abilities of participants. Although participation in some activities such as athletics and music require particular abilities, there is some research support for the association between personal interest (Dawis & Sung, 1984), life goals (Baggaley & Dole, 1977) and participation. Furthermore, a qualitative study by Murtaugh (1988) also revealed that students who perceived their activities as pathways to their future goals showed greater
involvement. Twenty three percent of non-participants in a national study by Jacobs and Chase (1989) reported that the non-availability of activities that matched their interests was the reason for their non-participation.

Constraints to participation.

Research literature (Hultsman, 1992; Gade & Peterson, 1980; Kleese & D’Onofrio, 1994; Jacobs & Chase, 1989) has identified several constraints to participation in extracurricular activities including employment, transportation problems, costs involved, denial of parental permission, lack of discretionary time, and domination by students and/or teachers. The Gade and Peterson (1980) report that compared working and non-working adolescents found no significant association between employment and participation. In contrast, Murtaugh (1988) pointed out that some students found employment to be a constraint to their participation in after-school programs. After-school employment that exceeds 20 hours (Jacobs & Chase, 1989) can lead to decreased or nonparticipation in programs.

Additionally, some of the reasons for participants quitting the program have been identified as diminishing of interest, lack of financial resources, family mobility, discontinuation of previously offered activity, and time schedule conflict (Hultsman, 1992). Among the girls in the sample, another reason for the termination of their involvement was that their friends had discontinued participating in the activity.

Consequences of Participation in Extracurricular Activities

Reviews (Holland & Andre, 1987; Reynolds & Karr-Kidwell, 1996) of research over the years reveal that extracurricular activities enhance the lives of children by
contributing to increased motivation, self-esteem, and social skills. Well-managed programs are linked to improved behavior at school, increased interest in learning, and higher aspirations for the future (Rombokas, 1995). Kleese (1994) suggests a connection between participation in extracurricular activities and success in school, college and in one's professional career. Those who were engaged in activities reportedly spent more time on homework, and had higher grade point averages (Lamborn, Brown, Mounts, & Steinberg, 1992).

Mahoney and Cairns (1997) opine that extracurricular activities participation creates a sense of belonging to the school and discourages dropout. Levels of participation have been found to be significantly lower among those who dropped out of school. Especially students who experience academic challenges are found to benefit from EAP (Finn, 1989; McNeal, 1995). However, it is important to note that not all research investigations have produced positive school outcomes for extracurricular activity participants. For example, Melnick and colleagues’ investigation (1992) of African-American and Hispanic adolescents revealed that participation in sports activities did not improve their academic achievement. Similarly, Hanson and Kraus (1998) found that participation in sports had no significant effect on achievement for boys. Lisella and Serwatka (1996) found gender differences among minority participants; while male adolescents did not improve their scholastic performance, girls seemed to benefit from involvement in activities.

Scholars (Marsh, 1988; Stevens & Peltier, 1994) suggest that for beneficiaries of EAP, higher academic achievement may be mediated by the enhancement of traits that
improve attendance, attention to homework, and discipline. Steinberg, Cider, Kaczmarek, and Lazzaro (1988) point out that better performance by students who are involved in extracurricular activities may be a result of the support they receive from extracurricular environments. Of the many benefits that are associated with extracurricular activities participation, researchers are most in agreement about the increase in self-esteem that result from such engagement (Reynolds & Karr-Kidwell, 1996). The increase in self-confidence that results from participation in group activities, taking on of leadership roles, support received from peers, and guidance from youth professionals tend to result in positive outcomes for youth.

Researchers (Landers & Landers, 1978), examining the negative linkage between EAP and youth problem behavior, report that those who participated in activities were least likely to engage in disruptive behavior. Substance use among participating adolescents is also reported to be minimal (Brown, 1999; Cooley, Henriksen, Nelson, & Thompson, 1995). Brown (1999) concludes that participation in extracurricular activities not only prevents problem behavior but is also correlated with “prosocial attitudes and behaviors” (p. 107). In general, it has been suggested that EAP tends to protect youth from a host of problems ranging from failure at school and school dropout to juvenile crime (McNeal, 1995; Shilts, 1991).

Although research studies (Holland & Andre, 1987; Brown, 1999) link EAP with a multitude of positive outcomes, it is necessary to underscore some of the limitations of these research studies. Firstly, EAP is voluntary and this implies that those who participate may be less at-risk than those who do not participate in activities. This self-
selection bias makes it difficult to determine whether EAP promotes positive outcomes or whether positive outcomes encourage participation in extracurricular activities. In cross-sectional studies that rely on a single wave of data, 'cause' and 'effect' variables cannot be clearly separated.

Secondly, a number of studies have ignored pre-existing differences between participants and non-participants making associations unreliable (Marsh, 1988). Holland and Andre (1987) in their review article assert that when background characteristics are controlled for, the correlation between GPA and athletic participation is considerably weakened. Thirdly, most researchers have collapsed all non-sports activities into one category assuming that they produce similar outcomes, resulting in inaccurate estimates of associations between variables. Rombokas (1995) who investigated outcomes of participation in sports, dance, music, theater, and student government found different outcomes for each of these activities. Also, most researchers have only looked at participation rates and ignored the intensity of adolescent involvement. Therefore, in order to gauge accurately the contribution of EAP to adolescent outcomes, it may be necessary to examine the different types of activities, and the extent and degree of participation as well.

Despite the limitations of research such as methodological flaws, the bidirectionality of effects, and issues related to self-selection, available evidence generally supports the view that participation in extracurricular activities contributes to positive adolescent outcomes.
Truancy

Truancy, understood as absence from school without a bona fide excuse, is at the center of much national attention because of the increase in truancy cases and their linkage to other adolescent problem behaviors. In 1985, national estimates (Sommer, 1985) indicated about 7-percent incidence of truancy. Tuck and Shimburi (1988) points out that about 8,500 students (10%) were absent from class every day in the District of Columbia Public School district. Richardson (1996) reports that 66,440 complaints of truancy were investigated in Detroit, Michigan during the 1994-95 school year. According to the Office of Juvenile Justice and Delinquency Prevention, there has been a 67 percent increase in the number of court processed truancy cases between 1985 and 1994 (Butts, 1996). Although accurate national data on the extent of the problem is unavailable (Baker, et al., 2001), estimates suggest that truancy is on the increase among adolescent students, totaling thousands in some large cities (Heaviside, Rowand, Williams, & Farris, 1998).

Truant behavior among adolescents has been found to vary with age, gender, and race/ethnicity. The relationship between truancy and gender has been mixed (Galloway, 1982), suggesting that gender may not be a significant factor in predicting truancy. Students who are in high school tend to be truant more frequently than those in lower grades (Bowen & Bowen, 1999). Minority students were found to be more frequently truant than white students (Bowen & Bowen, 1999; Rood, 1989). Levine, Metzendorf, and VanBoskirk (1986) point out that for every truant white student, there were three black students who were truant.
Research provides accumulating evidence of the connection between truancy and other problem behaviors such as substance abuse (Brown, Schulenberg, Bachman, O'Malley, & Johnston, 2001; Miller & Plant, 1999), association with counternormative peers and gang violence (Fritsch, Caeti, & Taylor, 1999), deviant behavior (Hays & Ellickson, 1996; Fergusson, et al., 1995), and shoplifting and stealing (Quaranta, 1998). School related problems associated with truancy include poor academic performance (Sommer & Nagel, 1991; Sommer, 1985), authority problems (Franklin & Streeter, 1995), and dropping out of school (Jordan et al., 1996; Rumberger, 1995; Rumberger, Ghatak, Poulos, Ritter, & Dornbusch, 1990). Of these, absenteeism and truancy are particularly important because of their association with dropping out of school (Bryk & Thum, 1989). Analyses (Ekstrom, Goetz, Pollack, & Rock, 1987) of the High School and Beyond data revealed that 54% of those who dropped out of school were truant in comparison to only 25% of those who remained in school. Similar results were reported by Rumberger et al. (1990). Rumberger (1995) found that school dropouts skipped class more frequently than other students, and adolescents who were truant for more than one quarter of the year tended to also drop out of school.

Truancy is suggested to be the “first step to a lifetime of problems” (Garry, 1996, p.1) including employment problems, criminality, violent behavior, marital instability, substance use, and incarceration (Howard & Jenson, 1999; Snyder & Sickmund, 1995; Dryfoos, 1990; Robins & Ratcliff, 1978). The severity of the social and economic
sequelea of truancy make it urgent and imperative to explicate the underlying factors and mechanisms of truancy (Berg, 1992) and to suggest empirically based interventions and prevention strategies.

**Truancy and its Linkage to Social Capital Contexts**

The Office of Juvenile Justice and Delinquency Prevention’s most recent report on truancy (Baker, et al., 2001, p.2) categorizes the correlates of truancy into four groups: family factors, school factors, economic influences, and student variables. Because neighborhood influence is considered to overlap all four categories, it is not mentioned separately. Now we will proceed to discuss those variables in each of these categories that have implications for family-based, school-based, and neighborhood-based social capital.

Family poverty and its correlates such as single-parenthood (McCall, 1995), and lack of parental education (DeSantis et al., 1990) have been associated with adolescent truancy. Both these research studies (McCall, 1995; DeSantis et al., 1990) found that truant children tend to be from families where parents did not have a college education. Additionally, McCall (1995) reports that children who did not receive parental attention in completing their homework assignments were found to be truant more often than children whose parents assisted them with homework. Another factor associated with truancy is family socioeconomic status. Those from families with diminished economic resources were found to be truant more frequently than others (McCall, 1995). However,
the researcher also found that truancy was linked more to the lack of family support, the presence and attention of adults rather than their material resources such as at home, illustrating the importance of family social capital.

Parent-condoned truancy (Reid, 1999) is often associated with children from low socioeconomic families. Parents are either unaware of the truant-behavior of their children or are unable to remedy it because older children are needed to care for younger siblings, are working in the home, or are spending time with a sick family member. Such family conditions, indicative of diminished financial and social capital, are associated with truancy (Li, Feigelman, & Stanton, 2000; Levine et al., 1986).

Parental investment in their children is associated with truancy (McNeal, 1999b). In single-parent families, where family structure often implies a diminished investment of time and attention for children, the children are more likely to perform poorly in school (DeSantis, et al., 1990), and to be truant than are those from two-parent families (Miller & Plant, 1999; McCall, 1995; Sommer & Nagel, 1991). Truant children have also been found to more frequently reside in large families (Sommer & Nagel, 1991). Family dysfunction and the associated defective parent-adolescent relationships are often linked to school truancy (Fuller & Sabatino, 1996; Fergusson, Lynskey, & Horwood, 1995).

Parental expectations, particularly those of the mother, were found to predict truancy (McCall, 1995). Ninth graders whose mothers had high future educational expectations of them reported less truancy than other ninth-graders whose mothers did not have similar expectations. Interventions programs designed to combat truancy suggest the need to assess the family environment, and to work with families, especially
with parents to reduce truancy among adolescents (Bell, Rosen, & Dynlacht, 1994). The empirical studies taken together suggest that the generation and maintenance of family-based social capital may be an effective pathway mitigating or counterbalancing other influences to reduce school truancy.

Neighborhood factors that affect truancy include high neighborhood mobility (Baker et al., 2001), and peer-affiliated antisocial activities (Hays & Ellickson, 1996). Reid (1999) suggests that pre-planned group truancy occurs more frequently than individual truancy, suggesting the importance of peer influence in school truancy. Neighborhood breakdown, indicated by drug trafficking and gang activity (Howard & Jenson, 1999), tends to be associated with truant behavior especially among adolescents from families and neighborhoods with decreased adult supervision. School dropout frequently the culmination of truant behavior, has been associated with communities that do not have norm-enforcing structures, especially in rural settings (Beaulieu & Israel, 1997). Neighborhoods that are characterized by ‘closure’ and collective efficacy possess social capital that can be utilized for monitoring of the behavior of adolescents, and thereby to reduce truancy.

The school environment may be considered the most significant factor affecting adolescent truant behavior. Research documents the linkage between truancy and several school related variables including large school size (Gardner et al., 2000), ineffective curricula (Galloway, 1982), relationship problems with teachers and other students (Reid, 1999; Sommer, 1985), racial/ethnic dissonance (Reid, 1999; Williamson & Cullingford, 1998), problems with authority (Fergusson & Horwood, 1998; Franklin & Streeter,
1995), and school discipline (Sommer, 1985). Sommer (1985) found that whereas nontruants received 19 and 80 discipline referrals in the seventh and eighth grades respectively, truants had 89 and 294 referrals during the same years.

Institutional truancy (truancy associated with institutional factors) accounts for the largest category of truants that is estimated to include between 65 and 80 percent of all truants (Reid, 1999). The predominant reasons for institutional truancy include disregard for teachers and other authority figures, lack of fear of consequences, and a feeling of anomie in the school setting. Bryk and Thum (1989) note that absenteeism was reduced when students perceived teachers as caring and interested in them. Attendance was also found to be associated with effective exercise of authority in school and where students perceived fairness in discipline practices. School environments that do not foster close relationships and ‘closure’ among students, teachers, and parents may lead to the exclusion of certain students and their alienation (Franklin & Streeter, 1995). Williamson and Cullingford (1998), in their study of 254 13-15 year-old British students, found that alienation was associated with absenteeism.

Other interconnected school variables that may affect truancy include dislike for school (Fuller & Sabatino, 1996), lack of participation in extracurricular activities, poor academic performance (McCall, 1995), and parental involvement in the school (Gardner et al., 2000; McCall, 1995). Gardner et al.'s study (2000) of 67 large and 60 small public schools in California reveals that parental involvement in the activities of the school
serves as a protective factor against persistent absenteeism. Although there are racial and socioeconomic differences in the effects of parental involvement, McNeal (1999b) found that parental involvement positively influenced children’s engagement in school.

In summary, the literature reviewed suggests that specific school characteristics and a variety of relationship and connectedness factors may play a significant role in increasing/decreasing chronic absenteeism. Although empirical literature linking truancy and school social capital is sparse, the available evidence supports the thesis that the presence of school-based social capital can reduce adolescent truancy.

So far, we have posited the main elements that constitute social capital theory, and reviewed extant literature on family-based, school-based, and neighborhood-based social capital. We have also examined the antecedents and consequences of adolescent participation in extracurricular activities. Finally, factors correlated with truancy and its possible linkage to social capital has been discussed. The following section will discuss the possible interactive relationship between social capital and extracurricular activities in the reduction of truancy among adolescents.

**Social Capital and the Effects of Extracurricular Activities in Reducing Truancy**

Social capital theory and the research literature suggest that social capital resulting from the web of supportive relationships can promote positive outcomes for adolescents. Three interacting, potential social-capital-generating contexts, namely the
family, the school, and the neighborhood are venues that provide adolescents with resources that facilitate participation in extracurricular activities, and in addition, reduce school truancy.

The literature reviewed in the earlier sections suggests lines of argument that support the proposed tentative framework outlined here. While acknowledging the limitations imposed by the available variables in the data set, the possible bidirectionality of the selected variables, and the overlapping structure of social capital components, the framework provides a plausible beginning for the investigation of the interactive relationship between social capital and extracurricular activities in the reduction of truancy among adolescents. The proposed framework (see Figure 2) suggests that family-based, school-based, and neighborhood-based social capital synergistically influence participation in extracurricular activities and consequently, may reduce truancy among adolescents.
Figure 2: The study model

Participation in extracurricular activities implies a willingness to engage in group activity and an openness to establish connections with other participants who share similar goals. Such involvement also requires teamwork, cooperative behavior, an adherence to norms, and a sense of shared experiences, that can lead to the development of prosocial attitudes and behavior. This social orientation is indicative of a healthy home environment that encourages positive development. The ability to invest in relationships with other adolescents and adults may be cultivated and reinforced through relationships with significant others in the family. Therefore, the proposed framework
suggests that those adolescents who come from families that possess high social capital are more likely to engage in extracurricular activities than others from social-capital-deficit families. The acceptance of norms and rules of behavior, learned at home and strengthened through the extracurricular context, may protect adolescents from truant behavior. The presence of social capital in the family, indicated by mutual expectations and obligations among parents and children in the family, suggests that adolescents are more likely to show interest and engage in schoolwork in response to parental involvement, reducing the likelihood of unexcused absenteeism.

The association between school size and EAP (McNeal, 1999a), and school size and truancy (Gardner et al., 2000) suggests that smaller schools have more student extracurricular activities participation and less truancy. Therefore, it is argued that smaller schools as compared to larger ones may promote greater ‘intergenerational closure’ among students, teachers, parents, mentors, and other adults, resulting in increased school-based social capital. The structure of smaller schools facilitates the creation of social capital through relationship-building processes that promote greater affiliation to school. Therefore, it is plausible that greater engagement in extracurricular activities may be the result of an increased commitment to one’s school. Extracurricular activities expose children to a network of peer and adult relations that potentially bind them to the school and its normative structure (Mahoney & Cairns, 1997), leading to less truancy. This argument is strengthened by findings from truancy reduction projects that link student engagement in school activities (among other factors) with reduced school absenteeism (Ingersoll & LeBoeuf, 1997).
The adolescent-school connection is an important predictor of behavior (Goodenow & Grady, 1993; Calabrese, 1987). Research (Battistich & Hom, 1997) associates students' sense of alienation in the school context with a variety of problem behaviors, including truancy (Williamson & Cullingford, 1998; Franklin & Streeter, 1995). Furthermore, Reid (1981, 1999) suggests that the lack of connection to the school may be correlated to school absenteeism. Jenkins (1997), who investigated the relationship between belief, commitment to school, and school attendance, found that skipping school was more common among those who lacked commitment to school. Efforts to reform school environments to improve student attendance (Sommer, 1985) and performance suggest the need to encourage positive student-teacher relationships, parental involvement and community partnerships (Sanders & Epstein, 2000). Positive school environments that promote healthy relationships among students, teachers and parents, where teachers invest time and attention in individual students, norms and rules of behavior are enforced, and parental involvement is encouraged, reduce truancy and thereby improve school performance (McPartland, Legters, Jordan, & McDill, 1996). Therefore, research literature provides sufficient support for the contention that structures and processes that generate school-based social capital, and adolescent participation in school activities, may work together to reduce school absenteeism.

Scholars (Aber, Gephart, Brooks-Gunn, Connell, & Spencer, 1997) acknowledge the neighborhood as another context that overlaps with the family and the school in influencing adolescent school outcomes. Parental involvement in the community enables the family to establish links with others in the community, making available community
social capital resources for the socialization of children (Coleman, 1990). Involved parents also serve as role models to their children who, in turn, become engaged in community activities. "Collective efficacy," understood as "social cohesion among neighbors combined with their willingness to intervene on behalf of the common good" (Sampson et al., 1997, p.918), exists in a social-capital-rich community, and supports desirable outcomes for adolescents, such as encouraging school attendance (Barnes & Farrell, 1992). Adults in such neighborhoods and with whom social capital connections have been established can be relied upon to supervise children when parents are absent (Logan, & Spitze, 1994). In summary, neighborhood research literature supports the thesis proposed in our model; namely, neighborhood-based social capital may encourage adolescent involvement in structured extracurricular activities and reduce truancy.

Although research on the effects of extracurricular activities suggests overall benefits for participants, few studies identify mechanisms that produce positive effects. Much of the research has focused on the structure of extracurricular activities to the neglect of processes that actually trigger change in participants (Holland & Andre, 1987; Brown, 1999). Snyder (1975) attributed positive outcomes to the connections with adults that are fostered in the context of engaging in various activities. Hanks and Eckland (1976) concluded that prosocial outcomes for students who participated in non-athletic activities were a result of the social networks established in the context of the programs. An investigation by Otto and Alwin (1977) found that encouragement from friends and parents played a role in influencing educational success. Based on the extant literature,
the model for this study suggests that the generation of social capital in the context of extracurricular activities is one of the mechanisms that produce positive effects for participants.

In summary, social capital is embedded in structures such as relationships, activities, norms, and legitimate authority that provide the framework for social processes. Social processes that generate social capital are characterized by positive interactions and social bonds that lead to mutual support, and expectations and obligations. Environments that support such social capital structures and processes develop trust, intergenerational closure and collective monitoring of behavior. Three environments that significantly impact adolescent behavior are the family, the school, and the neighborhood. Families with strong affectional ties among members, positive parental involvement, and adolescent supervision foster healthy development and an attitude of cooperation and mutual expectations. Schools augment this healthy development by creating a caring environment where students are engaged in learning, parents and teachers collaborate to promote positive outcomes, and children are supported in negotiating successful peer relationships. Neighborhoods with intergenerational closure support families in adolescent socialization by the establishment of common norms and collective monitoring. Social-capital-rich structures and processes present in these three contexts encourage the adolescents' fulfillment of parental and societal expectations including participation in extracurricular activities, and regular school attendance.
The study model (see Figure 2) posits that families, schools, and neighborhoods that are rich in social capital contribute to increased adolescent participation in extracurricular activities that, in turn, reduces school truancy. This model will be tested employing the following research questions and their component hypotheses:

1. How do social capital resources in the family, in the school, and in the neighborhood predict adolescent participation in extracurricular activities?
   a. Adolescents from social-capital-rich families are more likely to participate in extracurricular activities than adolescents from families with less social capital.
   b. Adolescents from social-capital-rich schools are more likely to participate in extracurricular activities than adolescents from schools with less social capital.
   c. Adolescents in social-capital-rich neighborhoods are more likely to participate in extracurricular activities than adolescents from neighborhoods with less social capital.

2. How do social capital resources in the family, in the school, and in the neighborhood predict adolescent school truancy?
   a. Adolescents from social-capital-rich families are less likely to be truant than adolescents from families with less social capital.
   b. Adolescents from social-capital-rich schools are less likely to be truant than adolescents from schools with less social capital.
c. Adolescents from social-capital-rich neighborhoods are less likely to be truant than adolescents from neighborhoods with less social capital.

3. In presence of social capital resources in the family, in the school, and in the neighborhood, does participation in extracurricular activities contribute additively to the reduction of adolescent school truancy?

   a. Adolescents who participate in extracurricular activities are less likely to be truant than adolescents who do not participate in extracurricular activities.

   b. Adolescents from families, schools, and neighborhoods that are rich in social capital, and who participate in extracurricular activities are less likely to be truant than adolescents from families, schools, and neighborhoods that are not rich in social capital, and who do not participate in extracurricular activities.
CHAPTER 3

METHODOLOGY

The research questions investigated in this study are: (1) Does access to family-based, school-based, and neighborhood-based social capital increase the probability of adolescent participation in extracurricular activities?; (2) Does access to family-based, school-based and neighborhood-based social capital reduce the probability of adolescent school truancy?; (3) Does participation in school-sponsored extracurricular activities reduce the probability of adolescent school truancy?; and (4) How do access to social capital, and participation in extracurricular activities reduce the probability of adolescent school truancy? These questions are investigated for a nationally representative sample of adolescents who were part of the National Longitudinal Study of Adolescent Health (hereafter, Add Health). This chapter describes the research methodology used to investigate these questions, together with a description of the data set, the sample, the variables used, and the data analyses plan.
Data Source and Sample

The National Longitudinal Study of Adolescent Health

This study used data from the National Longitudinal Study of Adolescent Health that looks at the influence of multiple social environments on adolescent health-related behaviors. The design for the Add Health study was predicated on the varying impact of individual (such as personality, skills, intelligence, etc.) and environmental (family, school, community, peers, etc.) factors on adolescent behaviors. Data was collected in two waves (wave 1 from September 1994 and April 1995, and wave 2 in 1996) from a nationally representative sample of 7th through 12th graders (Bearman, Jones, & Udry, 1997).

The Add Health researchers used a multistage, clustered sampling method to select the study samples. Of 26,666 schools in the United States that had a student population of more than 30 students and included an 11th grade, a sample of 80 eligible high schools were selected using systematic and stratified sampling methods. The schools were stratified by region of country, school type, school size, urbanicity, and ethnicity. For each of the 80 schools, a feeder school that included 7th grade was selected with probability proportional to the number of students it sent to the high school. There were 132 discrete schools in the study since some high schools included 7th through 12th grades (Bearman et al., 1997).

Add Health includes several sources of data, including In-school and In-home interviews of adolescent students, In-home interviews of parents, interviews of school
administrators, and a variety of contextual sources such as the US Census, the National Center for Health Statistics, and the Centers for Disease Control and Prevention. The In-school questionnaire was a self-administered instrument that 7th to 12th adolescents completed with the consent of their parents. 90,118 adolescents completed the In-school questionnaire. Including special groups such as ethnic minorities, Black adolescents from well-educated families, students with physical disabilities, and genetically related adolescents who were over-sampled and included in the In-home sample, a total of 20,745 adolescents completed the In-home interviews during Wave 1 between April 1995 and December 1995. A second wave of data was collected between April and August 1996 from 14,738 adolescents. The sample at Wave 2 was the same as that at Wave 1 with the exclusion of both those who were in 12th grade and were not part of the genetic sample at Wave 1, and students with disabilities at Wave 1 (Bearman et al., 1997).

Data generated through multiple sources provide extensive information on demographic characteristics, adolescent health status and risk behaviors such as substance abuse, violence, and sexual activity, mental health, school performance, peer relationships, perceptions of school and neighborhood, extracurricular activities, family composition and relationships, school policies and procedures, teacher characteristics, and parental involvement in school and community activities (Bearman et al., 1997).

**Study Sample**

The researcher is interested in examining whether social capital is useful in explaining truant behavior among adolescents. Since the nature of the inquiry does not
require the use of longitudinal data, this study uses only Wave 1 of the Add Health public-use data set. The data were collected between September 1994 and December 1995, and includes 2,801 variables. The researchers report a response rate of 78.9% (Lang, McKean, & Peterson, 1997).

Three types of data are included in this data set: In-school and In-home data collected from students, and Parent data collected from a parent for each student. From 6,504 students in the data set (Lang et al., 1997), the sample for this study will deselect those with physical disabilities, those who are mentally retarded or developmentally disabled, those who have severe mental health problems, those who have learning disabilities, those with special education needs, those who live alone or in group homes, and those who appeared drunk or high during the interview. The rationale for the exclusion of these students is that physical or mental disabilities may have a differential effect on extracurricular activity participation, as well as school attendance. Students who live outside family settings, that is, those who reside in group homes or live alone were assumed to have minimal access to family capital, and hence, were deselected from this study. Those adolescents who appeared drunk or high during the interview were excluded because the data provided by them may not be representative of their non-inebriated state and, hence, lack reliability. Additionally, those adolescents who were not enrolled in school during the year were also excluded from the sample.

After deselecting these cases, the researcher also excluded from the study sample those adolescents who were younger than 12 years and older than 18 years. Normatively, children tend to enter adolescence about age 12, and the age range of twelve to eighteen
years old that is used in this study is commonly referred to as adolescence. Those who are eighteen years old and older were excluded from the study because they are beyond the usual high school age that may indicate that they are atypical. It is also more likely that eighteen year olds are emancipated and not residing in a family context. Developmentally, truancy as a form of authority avoidance tends to become more prominent at age 12 (Kelley, Loeber, Keenan, & DeLamatre, 1997). The data set also provides sufficient data points for this age range. Finally, those cases that did not have a valid response on the dependent variable, truancy, were also deselected to include a final sample of 3,470 adolescents.

The availability of 2,801 variables (Lang, et al., 1997) related to multiple contexts such as the family, the school, and the neighborhood that influence behavioral outcomes for adolescents makes Add Health data well suited for this study. Although Add Health data was not collected with the explicit purpose of measuring social capital constructs, there are several indicators of social capital that enable the adequate measurement of social capital. The data set also provides variables to measure extracurricular activities participation and the extent of truancy among adolescents in the sample.

**Measurement of Variables**

Researchers in various academic disciplines have used varied measures of social capital. For this study, the researcher has selected, from among the many available variables, those variables that are most representative and congruent with the study constructs, and those that were used in prior research. With a few exceptions
(Furstenberg & Hughes, 1995; Teachman, Paasch, & Carver, 1997), much of previous research employing the social capital framework have examined ‘structural variables’ such as family structure, number of siblings, socioeconomic status, family mobility, and neighborhood characteristics (Sanders & Nee, 1996; Stanton-Salazar & Dornbusch, 1995). Social capital generation necessitates that together with ‘social structures’ that set up networks of individuals, ‘social processes’ that create trust are also initiated. Both social structures and social processes work conjointly to generate and maintain social capital in social groups. In order to capture not just the potential availability of social capital through structure variables but evidence for actual social processes that generate social capital, the researcher has selected both structure variables as well as process variables for this study.

This section presents descriptions of the measures of the constructs that are used in this study: social capital, extracurricular activities, and truancy. Variable descriptions are organized into the categories of background variables, family-based, school-based, and neighborhood-based social capital variables, extracurricular activities variables, and a truancy variable. Each of these variables actually form proxy variables for social capital, or as approximations of the conditions in the family, school and neighborhood environments that give rise to social capital.

The review of the literature suggests that certain variables such as age of the adolescent, gender (Jordan & Nettles, 2000; McNeal, 1998), grade in school (Cooley et al, 1995), race (McNeal, 1998; Melnick et al., 1992), parental education, socioeconomic status (Jordan & Nettles, 2000; McNeal, 1998), and family structure (Fitzpatrick, 1994)
are linked to participation in activities. Similarly, certain background variables have also been found to influence school absenteeism and truancy. Children from single-parent families (Fitzpatrick, 1994), with diminished financial and human resources (McCall, 1995) are more likely to be absent from school. Research also suggests that truancy may vary by age, gender (Galloway, 1982), school level, and race/ethnicity (Bowen & Bowen, 1999).

In order to examine the influence of social capital resources on extracurricular activities participation and truancy, these background variables, that may otherwise confound the findings, will be used as control variables. Control variables included in this study are adolescent age, gender, school level, race/ethnicity, poverty status, education of parent, and family structure.

Construction of Social Capital Variables

The selection of items from the Add Health data set that were aggregated to form social capital variables was guided by an exhaustive review of social capital literature. Items that reflected social capital concepts were selected, reviewed by two experts, and then subjected to two types of analysis: principal component analysis and reliability analysis. In this process of variable construction, some items were deleted either because they did not load significantly on any component or because their exclusion improved the reliability of the variable scales considerably. For example, the construct ‘parental
availability' (alpha = 0.36) was dropped from the study because of low reliability. The variable 'parental involvement in community activities' was reduced to a single item variable because the reliability value was 0.34 with the other items included.

**Principal components analyses.**

Following the selection of items that were indicative of various social capital variables of interest, the researcher subjected these items to a principal component analysis (hereafter, PCA). The purpose of this analysis was to determine whether the selected items were loading together and represent the same latent constructs (Hair, Anderson, Tatham, & Black, 1998). Consequently, those items that failed to load on any of the components were deleted from the scale.

Prior to performing PCA, the suitability of data for factor analysis was assessed. All correlation matrices were inspected for the presence of coefficients of .3 and above. The Kaiser-Meyer-Oklin value (a measure of sampling adequacy) was examined for each variable to ensure that the value exceeded the recommended value of .6. The Bartlett's Test of Sphericity, a measure of the factorability of the correlation matrix was checked for statistical significance. Eigenvalues (exceeding 1) and the screeplot were used to retain components for further analyses. To aid in the interpretation of the components, Varimax rotation was performed in each case, and resulted in the simplest factor structure for all independent variables (Hair et al., 1998). A summary table (See Table 1) presents the variable and its components, Kaiser-Meyer-Oklin values and percentage of variance.
<table>
<thead>
<tr>
<th>Variable &amp; Components</th>
<th>K-M-O values</th>
<th>Components</th>
<th>% Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent closeness to family</td>
<td>.85</td>
<td>3</td>
<td>67.16</td>
</tr>
<tr>
<td>- Relationship with father</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Relationship with mother</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Relationships among family members</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>.68</td>
<td>2</td>
<td>53.51</td>
</tr>
<tr>
<td>- Communication – school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Communication – personal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental involvement with adolescent</td>
<td>.60</td>
<td>4</td>
<td>59.38</td>
</tr>
<tr>
<td>- Sports/outings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Religious services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Shopping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- School projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental expectations</td>
<td>.58</td>
<td>1</td>
<td>65.33</td>
</tr>
<tr>
<td>Adolescent connection to school</td>
<td>.81</td>
<td>2</td>
<td>56.28</td>
</tr>
<tr>
<td>- Positive school environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Relationships with teachers &amp; students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighborhood social cohesion</td>
<td>.65</td>
<td>2</td>
<td>55.71</td>
</tr>
<tr>
<td>- Relationships with neighbors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Positive environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intergenerational closure</td>
<td>.64</td>
<td>1</td>
<td>52.44</td>
</tr>
</tbody>
</table>

Table 1: Principal components analyses results (N = 3470)

Internal consistency reliability.

Additionally, all variable scales used in the study were tested for internal consistency reliability using the Cronbach’s alpha criterion. For scales with less than eight items, instead of Cronbach’s alpha values that are sensitive to the number of items on the scale, the mean inter-item correlation is reported. Cronbach’s alpha values of 0.7 or higher, and mean inter-item correlation values of 0.2 and higher are commonly used.
indicators of internal consistency reliability (Pallani, 2001). Using these criteria, all the variable scales (with the exception of one variable) used in this study are found to be internally consistent (see Table 2).

<table>
<thead>
<tr>
<th>Variable</th>
<th># of items</th>
<th>Cronbach’s alpha</th>
<th>Mean inter-item correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent closeness to family</td>
<td>11</td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>8</td>
<td>.72</td>
<td></td>
</tr>
<tr>
<td>Parental involvement with adolescent</td>
<td>10</td>
<td>.61</td>
<td></td>
</tr>
<tr>
<td>Parental expectations</td>
<td>4</td>
<td></td>
<td>.53</td>
</tr>
<tr>
<td>Adolescent connection to school</td>
<td>9</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td>Neighborhood social cohesion</td>
<td>6</td>
<td></td>
<td>.20</td>
</tr>
<tr>
<td>Intergenerational closure</td>
<td>4</td>
<td></td>
<td>.35</td>
</tr>
</tbody>
</table>

Table 2: Variables with internal consistency reliability values

**Family-based Social Capital Variables**

Social capital in the family is conceptualized as the web of interconnectedness among family members that generates benefits for all, especially for children (Coleman, 1988). The creation and maintenance of reciprocal, positive, and trusting relationships
among members is a result of the investment of time and attention by individual members. Members have expectations of one another, and the fulfillment of mutual obligations alone can foster and sustain these relationships. Coleman (1988) and others contend that family environments that are governed by trust and nurtured through open communication generate social capital in the family that can produce positive outcomes for children, including improved scholastic performance (Furstenberg & Hughes, 1995; Smith, Beaulieu, & Seraphine, 1995), and decreased problem behavior (Parcel & Menaghan, 1993), including truancy (McCall, 1995).

This study uses four variables, adolescent closeness to the family, parental expectations (process variables), parent-adolescent communication, and parental involvement with the adolescent (structure variables) to measure family-based social capital.

Adolescent closeness to the family.

This variable is essentially a proxy for the relationship between the adolescent and her/his family because it represents the underlying process of the relationship in which social capital is embedded. From among the several items in the Add Health data set, the researcher selected 13 items that are indicative of the relationship between the adolescent and his/her family. The 13 items include:

1. Adolescent’s perception that her/his residential mother is warm and loving
2. Adolescent’s perception that his/her residential father is warm and loving
3. Overall satisfaction with her/his relationship with her/his residential mother
4. Overall satisfaction with her/his relationship with her/his residential father
A five-response category scale ranging from ‘strongly agree (1)’ to ‘strongly disagree (5)’ was used to measure these four items. These scores were reverse-coded so that higher scores reflect greater closeness.

5. Closeness to his/her biological mother
6. Closeness to her/his residential mother
7. Closeness to his/her biological father
8. Closeness to her/his residential father

For items five to eight, the researcher selected the one maternal and one paternal relationship with the highest indicated level of closeness.

9. Adolescent’s perception of whether his/her mother cares about him/her
10. Adolescent’s perception of whether her/his father cares about him/her
11. Adolescent’s perception of whether his/her family has fun together
12. Adolescent’s perception of whether her/his family understands him/her
13. Adolescent’s perception of whether his/her family pay attention to him/her

Responses to items 9 to 13 ranged from ‘not at all (1)’ to ‘very much (5)’.

These 11 items were aggregated to form the Adolescent Closeness to the Family scale with scores ranging from 14 to 55, with higher scores indicating greater closeness to the family.

Parent-adolescent communication.

Add Health provides several indicators of parent-adolescent communication that may be suggestive of the amount of social capital available in the family. The In-home questionnaire provides 16 items that inquire whether the adolescent talked to his/her
residential and biological mother (and his/her father) about a personal problem, about someone he/she was dating or went to a party with, about schoolwork or grades, and about other school-related activities. The responses to these 16 questions are dichotomously coded, with '0' indicating 'no' and '1' indicating 'yes.'

In order to capture the best indicator of communication between the adolescent and her/his mother, the researcher selected the one higher score between either the residential or non-residential mother. The same procedure was used to select the one best available indicator for communication between the adolescent and his father (either residential or non-residential). This procedure reduced the number of items to eight, which were then aggregated to create the composite score on Parent-Adolescent Communication. Scores for parent-adolescent communication ranged from 0 to 8; the higher scores indicating a greater level of communication parent and adolescent.

Parental involvement with adolescent.

There are twenty items in Add Health that indicate parental involvement in the day-to-day activities of the adolescent. There are ten questions that examine the involvement of the father, and ten questions that examine the involvement of the mother; together these items constitute the parental involvement scale. These items include questions about whether within the past four weeks the adolescent had gone shopping; played a sport; gone to a movie, play, museum, concert, or sports event; worked on a school project, or attended a religious service with his/her residential/biological mother and/or residential/biological father.
The pattern of adolescent responses suggests that children may tend to engage in some activities with one parent and other activities with another parent, for example, shopping with mother and sports activities with father. From the perspective of social capital available to the adolescent, the specific parental source and specific activity is not the focus of inquiry, but rather, the focus is the total amount of social capital available. Hence, the responses to all parental activity with the adolescent will be combined.

The responses are dichotomized into ‘yes (1)’ or ‘no (0).’ The scores on the five items will be aggregated to form the parental involvement scale, ranging from 0 to 5, with higher scores indicating greater parental involvement with the adolescent.

Parental expectations.

Add Health data provides four questions that measure parental expectations regarding adolescent educational outcomes. Two questions measure parental disappointment with the adolescent if he/she did not graduate from high school and two other questions measure parental disappointment if he/she did not graduate from college. Parental responses range from ‘low disappointment (1)’ to ‘high disappointment (5).’ For each adolescent response on projected parental disappointment, the higher of the two parental scores will be used, that is, for items indicating both disappointment in not graduating from high school and disappointment in not graduating from college, only the higher parental score will be used. The scores will then be aggregated to form the parental expectations scale. The scores range from 2 to 10, with higher scores indicating greater parental expectations regarding adolescent educational outcomes.
School-based Social Capital Variables

Educational research (Sanders & Jordan, 2000; McPartland, et al., 1996) supports the linkage between ‘closure’ of relationships in the school environment and positive student outcomes. Smaller schools that encourage parental involvement have been found to be associated with reduced truancy and improved academic performance (Gardner et al., 2000). Bryk and Thum (1989) note that when students perceive teachers as caring individuals who are interested in them, absenteeism is reduced. Improved academic achievement is associated with a caring-learning environment that is characterized by supportive relationships, parental involvement, and student involvement in school-based activities (McNeal, 1999b). In other words, the presence of social capital in the school environment can lead to positive adolescent outcomes.

This study employs two variables, parental connection to school (structure variable) and adolescent connection to school (process variable) that describe school-based social capital. Although previous research has used participation in extracurricular activities as an indicator of social capital, this study will treat it separately in order to examine the functional role of extracurricular activities in the reduction of truancy.

Parental connection to school.

This variable will be measured using one question from the parent questionnaire that asks whether the parent is involved in the parent-teacher organization of the school. Response to this question is dichotomously coded, with ‘0’ for ‘no’ and ‘1’ for ‘yes.’ It will be treated as a categorical variable in the analyses.
Adolescent connection to school.

The adolescent’s connection to school will be determined using 9 Likert-scale items. The first 7 items elicit responses to whether he/she feels close to people at school, whether he/she feels part of the school, whether he/she is happy to be at school, whether teachers treat students fairly at school, whether he/she feels socially accepted, loved and wanted, and safe at school. The response categories for these 7 questions range from ‘1’ indicating ‘strongly agree’ to ‘5’ indicating ‘strongly disagree’. These scores were reverse-coded so that higher scores indicate stronger connection to school. Items 8 and 9 ask how often he/she gets into trouble with teachers and other students. The responses to these questions were coded from ‘never (0)’ to ‘everyday (4)’. These responses were re-coded with responses ranging from ‘never (5)’ to ‘everyday (1)’ to match the other seven items on the scale.

These 9 items were aggregated to create a composite score for adolescent connection to school, with scores ranging from 9 to 36. Higher scores are indicative of greater adolescent connection to school.

Neighborhood-based Social Capital Variables

Coleman (1988) argues that the neighborhood community can be a social capital resource outside of the family. The provision of social capital generating conditions in the community can buffer the negative effects of growing up in a social capital-deficit family. Community integration and the resulting collective monitoring of adolescent behavior have been found to reduce problem behavior and produce positive outcomes for
adolescents (Elliott et al., 1996). Parental participation in neighborhood activities enables the family to establish connections with other families, leading to intergenerational closure and the consequent generation of social capital (Furstenberg & Hughes, 1995; Astone & McLanahan, 1991). Neighborhood social capital will be conceptualized and measured using the following indicators: parental involvement in community activities (structural variable), neighborhood social cohesion, and intergenerational closure (process variables).

**Parental involvement in community activities.**

Parental involvement in the community will be measured using one item that asks whether the parent is a member of any civic or social organization such as Junior League, Rotary, or Knights of Columbus. The responses are measured dichotomously; with ‘1’ indicating ‘yes’ and ‘0’ indicating ‘no.’ It will be treated as a categorical variable in the analyses.

**Neighborhood social cohesion.**

This social capital construct will be measured using 6 items from the In-home adolescent questionnaire. Three items elicit responses to whether the adolescent perceives neighbors as ‘looking out for each other,’ whether he/she ‘stops on the street to talk with someone who lives in the neighborhood,’ and whether he/she knows ‘most of the people in the neighborhood.’ The response categories include ‘1’ indicating ‘true,’ and ‘2’ indicating ‘false’. These will be re-coded as ‘true (+1)’ and ‘false (-1), so that the positive value indicates greater social cohesion.
The fourth item asks whether the adolescent feels safe in the neighborhood. The responses are coded, ‘no (0)’ and ‘yes (1).’ These responses will be re-coded as ‘no (-1)’ and ‘yes (+1)’ so that a greater sense of safety in the neighborhood is indicated by the positive value.

Two more items that measure how happy the adolescent is in the neighborhood, and how happy or unhappy he/she is to move from the neighborhood is included in the Neighborhood Social Cohesion scale. Responses to the former question range from ‘not at all (1),’ to ‘very much (5).’ These responses will be re-coded by collapsing categories ‘1’ and ‘2’ and re-coding it as ‘-1’ and similarly collapsing ‘4’ and ‘5’ and re-coding it as ‘+1.’ The middle category ‘somewhat happy (3)’ will be re-coded as ‘0.’

Responses to the latter question range from ‘very unhappy to move (1),’ to ‘very happy to move (5).’ These responses will be re-coded by collapsing categories ‘1’ and ‘2’ and re-coding it as ‘+1’ and similarly collapsing ‘4’ and ‘5’ and re-coding it as ‘-1.’ The middle category ‘no difference (3)’ will be re-coded as ‘0.’

The Neighborhood Social Cohesion scale will be formed by aggregating all 6 items, with scores ranging from -6 to +6. Higher scores indicate greater neighborhood social cohesion.

**Intergenerational closure.**

Intergenerational closure (Coleman, 1988) in the community will be measured using four items of the parent questionnaire. The four items include:

1. whether the parent has met the adolescent’s friend,
2. whether the parent knows the school that the friend attends,
3. whether the parent has met the friend’s parents, and

4. the number of friends’ parents that the parent has talked to in the past four weeks.

The first three items are measured dichotomously, with ‘1’ indicating ‘yes,’ and ‘0’ indicating ‘no’. Responses to the fourth question was coded as ‘talked to no one (0)’ and values ranging from 1 to 6 indicating the number of persons that the parent has talked to. These responses were re-coded as ‘0’ indicating that ‘the parent has not talked to any of the parents,’ and ‘1’ indicating that ‘the parent has talked to at least one parent.’

The Intergenerational Closure scale will be created by aggregating the responses to these 4 items. Scores range from 0 to 4, with higher scores indicating greater intergenerational closure in the community.

Extracurricular Activities Variables

Literature on extracurricular activities suggests that youth with minimal interest in extracurricular or religious activities tend to perform poorly in school and may be more likely to engage in problem behavior (Elliott et al., 1996). Furthermore, the effects of participation on adolescent outcomes have been found to be dependent on the type of activity (Eccles & Barber, 1999) and the intensity of involvement (Marsh, 1988). In order to adequately measure the differential effects of type of activity on outcomes, previous researchers have grouped activities into genotypes. For example, Rubinson (1998) factor-analyzed the NELS:88 variables to discover four groups of extracurricular activities; namely, academic, service, sports, and arts and music activities. Based on Rubinson’s empirical groupings and other suggestions from researchers (Holland &
Andre, 1987; Hanks & Eckland, 1976; McNeal, 1995; Gerber, 1996), this study will categorize activities into four mutually exclusive, non-overlapping activity domains: ‘academic,’ ‘sports,’ ‘arts and music,’ and ‘others.’ Such grouping of activities into genotypes will allow a more specific and detailed look at the connection between the type of activity and its linkage to social capital resources and truant behavior.

Adolescent participation in school clubs and organizations are measured using 33 items from the In-school questionnaire that asks whether the adolescent participates in any of the listed extracurricular activities. Participation in an activity is coded as ‘1’ and lack of participation is coded as ‘0.’ Additionally, two more variables have been created from the 33 items to measure ‘intensity of involvement’ and ‘type of activity’ in which an adolescent is engaged. Activities are categorized into genotypes as presented in Table 3.
<table>
<thead>
<tr>
<th>Academic</th>
<th>Sports</th>
<th>Arts and Music</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Debate Club</td>
<td>7. Swimming</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>History Club</td>
<td>8. Tennis</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Science Club</td>
<td>10. Volleyball</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Wrestling</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. Other sport</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Categorizations of extracurricular activities

Participation in any of the academic clubs was coded as ‘1’ and lack of participation was coded as ‘0.’ Similarly, participation in any of the activities belonging to each particular genotype was coded as ‘1’ and lack of participation was coded as ‘0.’ Resultantly, four dichotomously coded genotype variables were created.
Truancy Variable

Research literature (Gardner et al., 2000; McNeal, 1999b; Marsh, 1992) suggests that school truancy can be reduced by adolescent participation in extracurricular activities and the utilization of various social capital resources. The outcome variable of interest in this study is adolescent truant behavior, which is understood as unexcused absence from school. The incidence of truancy is assumed to be underreported. The presence of social desirability bias suggests that adolescents are more likely to minimize their truancy than to claim they are truant when they are not. Underreporting is suggested in Duckworth’s (1988) claim that if 10% of students are absent for a day, it is likely that at least 30% also skipped one class that day. Furthermore, the large sample size tends to mitigate against the effects of possible response error.

Truancy will be measured using an item that asks how often the student has skipped school in the last 12 months without an excuse. The adolescent responses range from ‘never (0)’ to ‘nearly everyday (6).’ This variable will be re-coded into ‘never truant (0)’ and ‘truant (1).’

Missing data

Add Health included data collected both from adolescents and their parents. The In-home adolescent questionnaire, that formed the main source of items selected for this study, had few problems with missing data. It may have been because the surveys were personally administered by trained researchers. Another reason for the ‘good data’ may
be that, for sensitive questions, interviewees entered data directly into laptop computers, thus minimizing other external influences. Table 4 displays the variables with information on missing data.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Missing data</th>
<th>Missing data %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Gender</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>School Level</td>
<td>18</td>
<td>0.5</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>10</td>
<td>0.3</td>
</tr>
<tr>
<td>Parental Education</td>
<td>53</td>
<td>1.5</td>
</tr>
<tr>
<td>Poverty Status</td>
<td>110</td>
<td>3.2</td>
</tr>
<tr>
<td>Family Structure</td>
<td>130</td>
<td>3.7</td>
</tr>
<tr>
<td>Adolescent closeness to family</td>
<td>15</td>
<td>0.4</td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>6</td>
<td>0.2</td>
</tr>
<tr>
<td>Parental involvement with adolescent</td>
<td>7</td>
<td>0.2</td>
</tr>
<tr>
<td>Parental expectations</td>
<td>24</td>
<td>0.7</td>
</tr>
<tr>
<td>Adolescent connection to school</td>
<td>195</td>
<td>5.6</td>
</tr>
<tr>
<td>Parental connection to school</td>
<td>70</td>
<td>2.0</td>
</tr>
<tr>
<td>Neighborhood social cohesion</td>
<td>6</td>
<td>0.2</td>
</tr>
<tr>
<td>Intergenerational closure</td>
<td>32</td>
<td>0.9</td>
</tr>
<tr>
<td>Parental involvement in community activities</td>
<td>98</td>
<td>2.8</td>
</tr>
<tr>
<td>Extracurricular activities participation</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4: Independent and control variables with missing data

In order to ensure that missing data does not bias the conclusions of the study, the researcher ascertained that adolescents for whom data was missing on independent variables did not differ significantly on the dependent variable from others for whom data
was available. The researcher employed several chi square tests of independence to check whether the missingness of the data is random or nonrandom. Unlike data that is missing at random (MAR), data that is missing in a nonrandom or systematic fashion (non-ignorable) does impede the generalizability of the study. For non-ignorable missing data, cases with missing values have different observed values on the dependent variable than those without missing values (Hair et al., 1998).

In order to diagnose whether missing data in this study is non-ignorable or MAR, the researcher grouped cases with missing data, and those without missing data for those independent variables that had at least 1% missing data. The variables used in the study have missing data ranging from 0.2% to 5.6% (see Table 4). Kline (1998, p.75) suggests that missing data should not exceed 10%. Accordingly, the researcher selected six variables with missing data in the range of 1.5% to 5.6% for chi-squared tests of independence. The null hypotheses are not rejected (p > .05) (see Table 5) indicating that missing data is ignorable (MAR) in all cases.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Chi-square value</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent connection to school</td>
<td>0.012</td>
<td>0.443</td>
</tr>
<tr>
<td>Parent involve in community acts</td>
<td>0.017</td>
<td>0.284</td>
</tr>
<tr>
<td>Parental connection to school</td>
<td>0.006</td>
<td>0.701</td>
</tr>
<tr>
<td>Parental education</td>
<td>0.002</td>
<td>0.928</td>
</tr>
<tr>
<td>Poverty status</td>
<td>0.002</td>
<td>0.927</td>
</tr>
<tr>
<td>Family structure</td>
<td>0.61</td>
<td>0.559</td>
</tr>
</tbody>
</table>

Table 5: Testing for MAR: Independent variables
Methods of Analyses

Descriptive research is used to summarize the data and present the characteristics of the study sample. Information on the range of variables, the means, standard deviations, and frequency distributions is presented. Bivariate analyses were conducted to examine the associations among the variables of interest. The results are presented in the first section of the next chapter.

In order to control for the influence of certain background characteristics such as age, gender, school level, race/ethnicity, parental education, poverty status, and family structure, they were introduced into the equation at the first step of every analysis. These control variables were retained throughout every analysis. Independent variables of interest, namely, social capital variables were introduced into the regression equations later to understand their role as predictors.

All the models of the study were tested using the hierarchical logistic regression procedure. Hierarchical logistic regression enables the researcher to evaluate whether the addition of a variable or a group(s) of variables (such as school variables, family variables, and neighborhood variables) improve the fit of the prediction model. This procedure also provides information on the unique contribution of each variable or groups of variables to the full model. It also supports the sequential entry of variables into the equation according to a theoretical criterion (Menard, 1995).

This study tests four models:

Model 1: Social capital resources predicting the probability of adolescent participation in extracurricular activities
Model 2: Social capital resources predicting the probability of truancy

Model 3: Participation in extracurricular activities predicting the probability of truancy

Model 4: Social capital and participation in extracurricular activities predicting the probability of truancy

The first model (Model 1) was tested using five binary logistic regression equations. The first equation tests whether social capital resources in the school, in the family, and in the neighborhood can predict the probability of adolescent participation in activities. Four other logistic regression equations test whether the presence of social capital resources can predict the probability of participation in academic, arts and music, sports, and other extracurricular activities.

Model 2 tests whether the availability and access to social capital resources in schools, families, and neighborhoods can predict the probability of the absence of truancy among adolescents. Model 3 tests whether adolescent participation in extracurricular activities can predict the probability of the absence of truancy. Model 4 tests whether social capital and participation in extracurricular activities, together, can predict the probability of truancy. Several logistic regression equations are employed to examine the ‘main effects’, and the ‘interaction effects’ of independent variables and their potential moderators on truancy. After identifying significant independent variables and product terms, the full model employs these variables to predict truancy.

Whenever independent variables were entered hierarchically (in blocks) into an equation, they were entered in this order: school social capital variables, family social capital variables, and finally, neighborhood social capital variables. School variables are
entered first into every logistic regression equation because both the dependent variables of interest, EAP, and truancy, are school-related, and the school context is suggested (Corville-Smith, 1995) to be more important than other contexts such as the family and the neighborhood in explaining such outcomes.

Logistic regression procedures are appropriate for these data analyses because the dependent variables are nonmetric and dichotomous, thus enabling the researcher to predict the outcome from a set of predictors. The independent variables in the study are either continuous or categorical, making them suitable for logistic regression. The dependent variable which measures whether an adolescent is truant or not is coded as ‘0’ if he/she is not truant, and as ‘1’ if she/he is truant. Since the dependent variable has values in the (0,1) range, we cannot use ordinary least squares regression because the linear probability model is heteroskedastic and may predict probability values beyond the (0,1) range. Therefore, the logistic regression model is appropriate to estimate the factors that influence truant behavior (Menard, 1995).

Additionally, the data was checked for multicollinearity of independent variables, nonlinearity in the logit, and certain diagnostic measures were employed for the detection of outliers, influential observations, and high leverage points. The results of these analyses are presented in the following chapter.
CHAPTER 4

RESULTS

This study attempts to identify social capital resources that can predict adolescent participation in extracurricular activities, and school truancy. This chapter will present the results of descriptive, diagnostic, and logistic regression procedures that are employed in this study. The first section consists of a descriptive summary of all the variables in the study, followed by a detailed presentation of the results of the several logistic regression procedures in the second section. The third section of this chapter details the diagnostic procedures employed to check whether any of the major assumptions have been violated.

Descriptive Summary of the Data

The analyses described here are based on a subset of Wave 1 of the Add Health public-use data, with a sample size of 3,470 adolescents. The researcher has re-coded several variables, and constructed scale-variables to measure various social capital resources using relevant variables from the data set. Table 6 presents a summary of the control variables selected for the study.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Number of Cases by Category</th>
<th>Percent of Cases by Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Mean</td>
<td>15.52</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Median</td>
<td>15.57</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mode</td>
<td>16.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.D</td>
<td>1.455</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skewness</td>
<td>-1.123</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>130</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>534</td>
<td>15.4</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>664</td>
<td>19.1</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>721</td>
<td>20.8</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>742</td>
<td>21.4</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>679</td>
<td>19.6</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>1855</td>
<td>53.5</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>1615</td>
<td>46.5</td>
</tr>
<tr>
<td>School Level</td>
<td>Middle school (7 &amp; 8)</td>
<td>1245</td>
<td>35.9</td>
</tr>
<tr>
<td></td>
<td>High school (9 to 12)</td>
<td>2207</td>
<td>63.6</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Hispanic</td>
<td>302</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>Black, non-Hispanic</td>
<td>761</td>
<td>21.9</td>
</tr>
<tr>
<td></td>
<td>Other, non-Hispanic</td>
<td>170</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>White, non-Hispanic</td>
<td>2227</td>
<td>64.2</td>
</tr>
<tr>
<td>Parental Education</td>
<td>&lt; High School</td>
<td>286</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>High School/G.E.D./Voc. school</td>
<td>850</td>
<td>24.5</td>
</tr>
<tr>
<td></td>
<td>&gt;= College education</td>
<td>1264</td>
<td>36.4</td>
</tr>
<tr>
<td>Poverty Status</td>
<td>Parent(s) receive welfare benefits</td>
<td>276</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>Parent(s) do not receive welfare benefits</td>
<td>3084</td>
<td>88.9</td>
</tr>
<tr>
<td>Family Structure</td>
<td>Both parents biological</td>
<td>1865</td>
<td>53.7</td>
</tr>
<tr>
<td></td>
<td>Net both-biological parents</td>
<td>631</td>
<td>18.8</td>
</tr>
<tr>
<td></td>
<td>Single parent</td>
<td>722</td>
<td>20.8</td>
</tr>
<tr>
<td></td>
<td>Other arrangements</td>
<td>102</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Table 6: Sample distribution by control variables

The adolescents who formed the sample ranged from 12 to 17 years, with the mean age being 15.5 years. The majority of the sample (81%) consisted of adolescents in the 14 to 17 age group. Gender was evenly distributed between females (53.5%) and
males (46.5%). A third (35.9%) of the sample was middle school children and the remaining two-thirds (63.6%) were in high school.

Majority of the adolescents in the sample (64.2%) responded to being white, non-Hispanic. Black, non-Hispanic subgroup formed the next largest group, comprising 21.9% of the sample. Adolescents of Hispanic ethnicity, irrespective of their racial grouping, made up only 302 (8.7%) of the 3,470 students. Native Americans, Asian Americans and others comprised the smallest group (4.9%).

Parental education is indicative of the educational achievement of the parent (or parent’s partner) with the higher level of education. There were only 286 (8.2%) families with parent(s) who had not completed high school or equivalent. The largest group (36.4%) had at least a college education. Poverty status of the family was determined by checking whether any of the parent(s) or the parent’s partner received public assistance. There was a minority of 276 (8%) families where either parent or parent’s partner received public assistance. The vast majority of families (88.9%) were not beneficiaries of any public assistance programs.

The majority of adolescents (53.7%) lived with both their biological parents. There were 651 (18.8%) adolescents who lived with one biological and one non-biological parent, or in adoptive, step, or foster families. 722 (20.8%) children lived with a single parent, and a small minority of 102 (2.9%) children lived in other types of family arrangements such as with a grandparent, an aunt and/or an uncle, or another relative.
Frequency distributions: truancy, and EAP

Table 7 presents frequency distributions of adolescents by truancy and by participation in extracurricular activities.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Truant Number (%)</th>
<th>Not truant Number (%)</th>
<th>Participation Number (%)</th>
<th>Non-participation Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truancy</td>
<td>833 (24%)</td>
<td>2637 (76%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAP</td>
<td>2856 (82.3%)</td>
<td>614 (17.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAP- academic</td>
<td>696 (20.1%)</td>
<td>2774 (79.95%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAP- arts &amp; music</td>
<td>1258 (36.3%)</td>
<td>2212 (63.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAP- sports</td>
<td>2072 (59.7%)</td>
<td>1398 (40.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAP- other</td>
<td>1241 (35.8%)</td>
<td>2229 (64.2%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7: Sample distribution by truancy, by EAP

The frequency distribution suggests that one of every four adolescents in the sample have reported to be truant.

Most of the adolescents in the sample participate in extracurricular activities. Whereas 82.3% of the student sample participates in at least one activity, there is a small percentage (17.7%) that does not participate in any activity. Participation in academic activities is the lowest; only one of every five students participates in at least one academic activity. As expected, sports activities seem to be most popular among
students. The majority (59.7%) of the sample participates in at least one sports activity. One of every three adolescents participates in arts and music, and ‘other’ activities.

**Bivariate Associations Between Control Variables And Extracurricular Activities Participation**

The results of bivariate associations between the background variables and extracurricular activities participation are presented in Table 8. These preliminary analyses indicate that there are statistically significant associations between each of the background variables and EAP. The significance of these associations is that it justifies the necessity of their inclusion in this study as control variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of valid cases</th>
<th>Coefficient value</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>3470</td>
<td>0.04</td>
<td>.019</td>
</tr>
<tr>
<td>Age</td>
<td>3470</td>
<td>-0.037</td>
<td>.012</td>
</tr>
<tr>
<td>School Level</td>
<td>3452</td>
<td>-0.034</td>
<td>.043</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>3460</td>
<td>0.072</td>
<td>.001</td>
</tr>
<tr>
<td>Parental Education</td>
<td>3417</td>
<td>0.131</td>
<td>.001</td>
</tr>
<tr>
<td>Poverty Status</td>
<td>3360</td>
<td>0.081</td>
<td>.001</td>
</tr>
<tr>
<td>Family Structure</td>
<td>3340</td>
<td>0.076</td>
<td>.001</td>
</tr>
</tbody>
</table>

Table 8: Bivariate associations: Control variables by EAP
Although all the control variables are significantly ($p < .05$) associated with EAP, low values of the coefficients, ranging from .034 to .131, suggest that the associations are weak.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Number in EAP by category</th>
<th>Percent in EAP by category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>12</td>
<td>105</td>
<td>80.8</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>463</td>
<td>86.7</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>554</td>
<td>83.4</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>588</td>
<td>81.6</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>596</td>
<td>80.3</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>550</td>
<td>81.0</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>1553</td>
<td>84.0</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>1303</td>
<td>81.0</td>
</tr>
<tr>
<td>School Level</td>
<td>Middle school (7 &amp; 8)</td>
<td>1046</td>
<td>84.0</td>
</tr>
<tr>
<td></td>
<td>High school (9 to 12)</td>
<td>1795</td>
<td>81.0</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Hispanic</td>
<td>225</td>
<td>74.5</td>
</tr>
<tr>
<td></td>
<td>Black, non-Hispanic</td>
<td>633</td>
<td>83.2</td>
</tr>
<tr>
<td></td>
<td>Other, non-Hispanic</td>
<td>132</td>
<td>77.6</td>
</tr>
<tr>
<td></td>
<td>White, non-Hispanic</td>
<td>1860</td>
<td>83.5</td>
</tr>
<tr>
<td>Parental Education</td>
<td>&lt; High School</td>
<td>196</td>
<td>68.5</td>
</tr>
<tr>
<td></td>
<td>H.S./G.E.D./Vocational school</td>
<td>657</td>
<td>77.3</td>
</tr>
<tr>
<td></td>
<td>High School &amp; beyond</td>
<td>842</td>
<td>82.3</td>
</tr>
<tr>
<td></td>
<td>&gt;= College education</td>
<td>1122</td>
<td>88.7</td>
</tr>
<tr>
<td>Poverty Status</td>
<td>Parent(s) on welfare</td>
<td>199</td>
<td>72.0</td>
</tr>
<tr>
<td></td>
<td>Parent(s) not on welfare</td>
<td>2569</td>
<td>83.3</td>
</tr>
<tr>
<td>Family Structure</td>
<td>Both parents biological</td>
<td>1583</td>
<td>84.8</td>
</tr>
<tr>
<td></td>
<td>Not both-biological parents</td>
<td>521</td>
<td>80.0</td>
</tr>
<tr>
<td></td>
<td>Single parent</td>
<td>569</td>
<td>78.8</td>
</tr>
<tr>
<td></td>
<td>Other arrangements</td>
<td>78</td>
<td>76.5</td>
</tr>
</tbody>
</table>

Table 9: Sample distribution: Control variables by EAP

Participation in extracurricular activities is above 80% for children of all age groups, with 13 year olds indicating the highest percentage (86.7%). For gender, data
indicates that a slightly higher percentage of females were engaged in extracurricular activities than were males. Whereas 84% (1553) of the females were involved in extracurricular activities, only 81% (1303) of males were involved in similar activities.

The relationship between school level and extracurricular activities is negative (Kendall’s Tau = -.034, p< .05), suggesting that there are fewer children in high school (81%) who are involved in extracurricular activities than in middle school (84%).

EAP among adolescents also tend to vary with racial/ethnic groupings (Cramer’s V = 0.072, p< .05). There were more adolescents among the White (83.5%) and Black (83.2%) racial groups who participate in extracurricular activities than those of Hispanic ethnicity (74.5%) and ‘other’ racial category (77.6%).

Parental education and EAP was positively associated (Kendall’s Tau = .131, p< .05), suggesting that a higher percentage of adolescents who live with educated parents participate in activities than their counterparts from less educated families. Percentage of adolescents who were engaged in extracurricular activities ranged from 88.7% in families with college-educated parents, to 68.5% in families with parents with less than a high school education.

Among adolescents from families that received welfare benefits, only 72% (199) participated in extracurricular activities. In contrast, 83.3% (2569) of adolescents from families that did not receive welfare benefits were engaged in extracurricular activities.

Family structure and EAP are significantly associated (Cramer’s V = .076, p< .05). More adolescents (84.8%) who live with both biological parents are involved in extracurricular activities than adolescents from other family types. Whereas 80% of
adolescents from 'both not-biological parents' families participated in extracurricular activities, the percentages for single parent and 'other' families were 78.8 and 76.5 respectively. 

**Bivariate Associations Between Control Variables and Truancy**

The results of bivariate relationships between the background variables (or controls) and truancy are presented in Table 10. These preliminary analyses indicate that there are statistically significant associations between each of the background variables and truancy. The significance of these associations is that it justifies the necessity of their inclusion in this study as control variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of valid cases</th>
<th>Coefficient value</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>3470</td>
<td>0.057</td>
<td>.001</td>
</tr>
<tr>
<td>Age</td>
<td>3470</td>
<td>0.216</td>
<td>.001</td>
</tr>
<tr>
<td>School Level</td>
<td>3452</td>
<td>0.175</td>
<td>.001</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>3460</td>
<td>0.077</td>
<td>.001</td>
</tr>
<tr>
<td>Parental Education</td>
<td>3417</td>
<td>-0.070</td>
<td>.001</td>
</tr>
<tr>
<td>Poverty Status</td>
<td>3360</td>
<td>-0.050</td>
<td>.008</td>
</tr>
<tr>
<td>Family Structure</td>
<td>3340</td>
<td>0.076</td>
<td>.001</td>
</tr>
</tbody>
</table>

Table 10: Bivariate associations: Control variables by truancy

The results of the tests of associations suggest that all the control variables are significantly (p<.05) related with the dependent variable, truancy. However, low values of the coefficients, ranging from .05 to .216, suggest that the associations are weak.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Number truant by category</th>
<th>Percent truant by category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>12</td>
<td>11</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>61</td>
<td>11.4</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>114</td>
<td>17.2</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>171</td>
<td>23.7</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>207</td>
<td>27.9</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>269</td>
<td>39.6</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>403</td>
<td>21.7</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>430</td>
<td>26.6</td>
</tr>
<tr>
<td>School Level</td>
<td>Middle school (7 &amp; 8)</td>
<td>175</td>
<td>14.0</td>
</tr>
<tr>
<td></td>
<td>High school (9 to 12)</td>
<td>654</td>
<td>29.6</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Hispanic</td>
<td>98</td>
<td>32.5</td>
</tr>
<tr>
<td></td>
<td>Black, non-Hispanic</td>
<td>150</td>
<td>19.7</td>
</tr>
<tr>
<td></td>
<td>Other, non-Hispanic</td>
<td>46</td>
<td>27.0</td>
</tr>
<tr>
<td></td>
<td>White, non-Hispanic</td>
<td>538</td>
<td>24.0</td>
</tr>
<tr>
<td>Parental Education</td>
<td>&lt; High School</td>
<td>96</td>
<td>33.6</td>
</tr>
<tr>
<td></td>
<td>H.S./G.E.D./Voc. school</td>
<td>216</td>
<td>25.4</td>
</tr>
<tr>
<td></td>
<td>High School &amp; beyond</td>
<td>248</td>
<td>24.4</td>
</tr>
<tr>
<td></td>
<td>&gt;= College education</td>
<td>260</td>
<td>20.6</td>
</tr>
<tr>
<td>Poverty Status</td>
<td>Parent(s) on welfare</td>
<td>86</td>
<td>31.2</td>
</tr>
<tr>
<td></td>
<td>Parent(s) not on welfare</td>
<td>721</td>
<td>23.4</td>
</tr>
<tr>
<td>Family Structure</td>
<td>Both parents biological</td>
<td>398</td>
<td>21.3</td>
</tr>
<tr>
<td></td>
<td>Not both-biological parents</td>
<td>161</td>
<td>24.7</td>
</tr>
<tr>
<td></td>
<td>Single parent</td>
<td>209</td>
<td>28.9</td>
</tr>
<tr>
<td></td>
<td>Other arrangements</td>
<td>31</td>
<td>30.4</td>
</tr>
</tbody>
</table>

Table 11: Sample distribution: Control variables by truancy

Data suggests that age of the adolescent is significantly associated (Kendall's Tau = .216, p < .05) with truant behavior. A higher percentage of older adolescents are truant than younger adolescents. Whereas 39.6% of all 17 year olds, and 27.9% of all 16 year olds are truant, only 8.5% of all 12 year olds and 11.4% of all 13 year olds are truant. One of every three truant children is 17 years old. In contrast, of all truant children in the sample only 11 (1.3%) are 12 years old.
A higher percentage of males (26.6%) are truant than females (21.7%). The relationship between school level and truancy is positive (Kendall’s Tau = .175, p< .05), suggesting that there are more children in high school (29.6%) who are truant than in middle school (14%). For every middle school student who is truant, there are at least two high school students who are truant.

Race/ethnicity of the adolescent is also associated with truancy (Cramer’s coefficient = .077, p< .05). The highest percent of truant adolescents were of Hispanic ethnicity (32.5%). Percentage of truant adolescents for the Black racial group was 19.7%, for the Whites was 24%, and for the ‘other’ category was 27%.

Parental education and truancy was negatively associated (Kendall’s Tau = -.070, p< .05), suggesting that adolescents who live with educated parents tend to be less truant than their counterparts from less educated families. Percentage of adolescents who were truant ranged from 20.6% in families with college-educated parents, to 33.6% in families with parents with less than a high school education. One out of every four adolescents in families where parents had a high school education (or equivalent) (25.4%) or where parents had some education beyond high school (but did not complete college) (24.4%) were truant from school.

Among adolescents from families that received welfare benefits, 31.2% were truant from school. In contrast, only 23.4% of adolescents from families that did not receive welfare benefits were truant. That is, whereas one out of three children from families that received welfare benefits were truant, only one out of four children from families that did not receive welfare benefits were truant.
Family structure and truancy are significantly associated (Cramer's coefficient = .076, p< .05). More adolescents (30.4%) who live in 'other' family arrangements are truant than adolescents from other family types. Whereas 28.9% of adolescents from single parent homes are truant from school, only 24.7% of adolescents from 'both not-biological parents' families are truant. Truancy was lowest (21.3%) for adolescents who live with both biological parents.

Results of Logistic Regression Analyses

This section will present the results of several logistic regression procedures that were conducted to test the four models of the study. Model 1 examines whether social capital resources predict adolescent participation in extracurricular activities. Model 2 tests whether the presence of social capital can predict truancy among adolescents. Model 3 investigates whether lack of participation in extracurricular activities can predict truancy. Model 4 examines the role of social capital resources and extracurricular activities participation in predicting truancy. Each model is tested using several logistic regression equations, controlling for background variables.
Model 1 tests whether social capital resources can predict participation in extracurricular activities. The hypothesis tests whether school social capital, family social capital, and neighborhood social capital can predict EAP. The researcher is interested in identifying those social capital variables that are useful in explaining why some adolescents participate in extracurricular activities while some others do not. Four additional hypotheses test whether social capital resources can predict participation in the EAP components: academic, arts and music, sports, and ‘other’ activities. All logistic
regression hypotheses test the probability of being engaged in EAP (coded ‘1’) rather than not being engaged in EAP (coded ‘0’). The significance level for all statistical tests is set at p< .05.

School social capital resources are operationalized as ‘adolescent connection to school,’ and ‘parental connection to school.’ Family social capital resources are measured using four variables, namely, ‘adolescent closeness to family,’ ‘parent adolescent communication,’ ‘parental involvement with adolescent,’ and ‘parental expectations.’ Neighborhood social capital resources are measured employing three variables: ‘intergenerational closure,’ ‘parental involvement in community activities,’ and ‘neighborhood social cohesion.’

After the control variables were introduced into the equation, the researcher entered social capital variables hierarchically in order to identify the unique contributions of each set of social capital variables. The school social capital variables were entered first (Model A), followed by the family (Model B) and the neighborhood variables (Model C). Summary logistic regression results are presented in Table 12.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Model A</th>
<th>Model B</th>
<th>Model C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Wald</td>
<td>B</td>
</tr>
<tr>
<td>Constant</td>
<td>1.236</td>
<td>1.457</td>
<td>.847</td>
</tr>
<tr>
<td>Adolescent connection to school</td>
<td>.061***</td>
<td>57.282</td>
<td>.059***</td>
</tr>
<tr>
<td>Parental connection to school</td>
<td>.723***</td>
<td>1.457</td>
<td>.68***</td>
</tr>
<tr>
<td>Adolescent closeness to family</td>
<td></td>
<td></td>
<td>-.023**</td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>.058*</td>
<td>5.22</td>
<td>.058*</td>
</tr>
<tr>
<td>Parent involvement with adolescent</td>
<td>.208***</td>
<td>19.236</td>
<td>.194***</td>
</tr>
<tr>
<td>Parental expectations</td>
<td>.057</td>
<td>3.589</td>
<td>.056</td>
</tr>
<tr>
<td>Intergen closure</td>
<td></td>
<td></td>
<td>.205***</td>
</tr>
<tr>
<td>Neighborhood social cohesion</td>
<td>.20</td>
<td>1.007</td>
<td>1.02</td>
</tr>
<tr>
<td>Parent involvement in community activities</td>
<td>.204</td>
<td>1.444</td>
<td>1.226</td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>214.269*** (15)</td>
<td>250.451*** (19)</td>
<td>266.719*** (22)</td>
</tr>
<tr>
<td>Block Chi-sq (df)</td>
<td>96.954*** (2)</td>
<td>36.182*** (4)</td>
<td>16.268*** (3)</td>
</tr>
<tr>
<td>Hosmer-Lemeshow</td>
<td>22.818*</td>
<td>8.157</td>
<td>13.967</td>
</tr>
</tbody>
</table>

* p < 0.05.  ** p < 0.01.  *** p < 0.001.
* Number of valid cases in the analysis = 2937

Table 12: Logistic regression: Social capital resources predicting EAP
Hierarchical logistic procedure examines models in order of the simplest to the most complex. In this analysis, after entering the control variables, we entered the school variables in the second step, the family variables in the third step, and the neighborhood variables in the final step. This allows us to observe the change in the magnitude of coefficients as a result of the addition of theoretically grouped variables. In the first step we examine the relationship between truancy and two school social capital variables. The log odds of EAP are regressed on these two variables. The results are presented in Model A in Table 12.

In order to determine whether the set of predictors as a group is significant, logistic regression uses a test statistic, that is, \(-2 \log (L_0) - [-2 \log (L_1)]\), where \(L_0\) is the likelihood function for a model with only an intercept, and \(L_1\) is the likelihood function for the model with the predictors. The difference between \(-2LL\) for the best-fitting model and \(-2LL\) for the null hypothesis model (in which all the \(b\) values are set to zero) has a chi-square distribution, with degrees of freedom equal to the number of predictors. This difference is indicated by the Model Chi-square value (SPSS output). The difference between \(-2LL\) values for models with successive groups of variables added also has a chi-squared distribution, so that using chi-squared tests we can determine whether adding more predictors (or groups of predictors) improves the fit of the model. If the Model chi-square value is significant, as is the case here, it indicates that the model provides a reasonable description of the data. Hierarchical logistic
regression allows the researcher to use competing models and compare them (using the chi-square statistic) to find a model that fits the data, is parsimonious and is conceptually meaningful.

As seen in table 12, the model chi-square value increases from 214.269 to 266.719 suggesting a greater improvement in fit to the data from model A to model C. That is, the social capital model fits the data reasonably well. Therefore, social capital resources are significant predictors of the event occurring (participation in extracurricular activities). Each social capital context, namely, school (Block chi-sq = 96.954, df =2, p< .05), family (Block chi-sq = 36.182, df =4, p< .05), and neighborhood (Block chi-sq = 16.268, df =3, p< .05), contributes uniquely to the prediction model.

Additionally, we also use the Hosmer and Lemeshow's goodness of fit test to determine if the model's estimates fit the data at an acceptable level. This test divides subjects into deciles based on predicted probabilities, and compares a chi-square from observed and expected frequencies. If the Hosmer and Lemeshow's goodness of fit test statistic is <= 0.05, we reject the null hypothesis that there is no difference between the observed and predicted values of the dependent. Conversely, if the p value is >0.05, we fail to reject the null hypothesis and conclude that the model's estimates fit the data. The p-value is computed from the chi-square distribution with 8 degrees of freedom. For the full model in our analysis, p = 0.083, indicating goodness of fit.

The significance of the model chi-square is suggestive of the overall fit of the model, and that at least one of the newly added predictors is important. However, it does not inform us whether each of the predictors in the model is significantly related to the
likelihood of EAP. The statistical significance of each coefficient is tested using the Wald statistic (a t test). In our final model, six of the nine variables are statistically significant predictors of EAP. The exp(Bk) is the estimated odds ratio for those who are a unit apart on Xk, net of other predictors in the model. That is, each unit increase in Xk multiplies the odds of EAP by exp(Bk). In this analysis, exp(B) indicates the impact on the odds of EAP for a unit increase in each significant predictor, controlling for all others.

This analysis reveals these six significant predictors of EAP:

- Adolescent connection to school,
- Parental connection to school,
- Adolescent closeness to family,
- Parent adolescent communication,
- Parent involvement with the adolescent, and
- Intergenerational closure.

Variables that were not statistically significant predictors include parental expectations, neighborhood social cohesion, and parental involvement in community activities.

**Relative Importance of Predictors**

In linear regression, 'b' is the standardized coefficient, that is the standard deviation change in the mean of Y for a standard deviation increase in X, when other variables are held constant. In logistic regression, the coefficient 'B' indicates change in Y* (the propensity for the event to occur) for a unit increase in X, the predictor. The coefficient 'B' is not a standardized coefficient, making it difficult to compare coefficient
values to identify which of the predictors has the largest impact on the log odds of EAP. DeMaris (1995, p.961) suggests that by partially standardizing the coefficients by the factor of \((S/\sigma)\) where \(S\) is the standard deviation of the predictor, and \(\sigma\) is the standard deviation of the errors \(= \pi / 3\). Although the product of the coefficient and the standard deviation of the corresponding variable will not give 'beta' values, the results can be used to compare the relative magnitude of each predictor's effect in the equation. That is, the ranking of these values will reflect relative importance of the regressors in the same way as beta values do. Significant predictors of EAP with their values that indicate relative importance are presented in table 13.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>Standard Deviation</th>
<th>B x S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental connection to school</td>
<td>0.634</td>
<td>0.002362</td>
<td>0.0014975</td>
</tr>
<tr>
<td>Intergenerational Closure</td>
<td>0.205</td>
<td>0.0010334</td>
<td>0.0002118</td>
</tr>
<tr>
<td>Parental involvement with adolescent</td>
<td>0.194</td>
<td>0.0008857</td>
<td>0.0001718</td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>0.058</td>
<td>0.0004613</td>
<td>0.0000267</td>
</tr>
<tr>
<td>Adolescent Con to school</td>
<td>0.058</td>
<td>0.000166</td>
<td>0.0000096</td>
</tr>
<tr>
<td>Adolescent closeness to Family</td>
<td>0.024</td>
<td>0.000166</td>
<td>0.0000039</td>
</tr>
</tbody>
</table>

- Number of valid cases in the analysis = 2937

Table 13: Relative importance of predictors of EAP
A comparison of the values in the last column (see Table 13) indicates that among the significant predictors of EAP, 'parental connection to school' has the largest impact on the log odds of EAP. This is followed by 'intergenerational closure,' and 'parental involvement with the adolescent' as next in order of importance. The less important predictors in the equation are 'parent adolescent communication' and 'adolescent connection to school.' Specifically,

- Holding all other independent variables constant, for every unit of increase in 'parental connection to school,' the odds of EAP increases by 88.5%.
- Holding all other independent variables constant, for every unit of increase in 'intergenerational closure,' the odds of EAP increases by 22.8%.
- Holding all other independent variables constant, for every unit of increase in 'parental involvement with adolescent,' the odds of EAP increases by 21.4%.

The 'odds ratio' for the 'adolescent closeness to family,' however, is less than 1, suggesting that an increase in 'adolescent closeness to family,' decreases the odds of EAP (although, this is only by 2.4%).

Social Capital Resources Predicting the Probability of Adolescent Participation in Various Types of Extracurricular Activities

Having confirmed that social capital resources can predict adolescent participation in activities, the researcher employed four more logistic regression procedures to test whether social capital resources can predict adolescent participation in
activity genotypes. In this study, the various extracurricular activities have been grouped into four categories: academic, arts and music, sports, and other (honor society, student council, etc.). Table 14 presents the odds ratios for coefficients corresponding to statistically significant predictors of participation in the four activity genotypes.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Academic activities</th>
<th>Arts/music activities</th>
<th>Sports activities</th>
<th>'Other' activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exp(B)</td>
<td>Exp(B)</td>
<td>Exp(B)</td>
<td>Exp(B)</td>
</tr>
<tr>
<td>Adolescent connection to school</td>
<td>1.028***</td>
<td>1.039***</td>
<td>1.035***</td>
<td></td>
</tr>
<tr>
<td>Parental connection to school</td>
<td></td>
<td>1.326**</td>
<td></td>
<td>1.354**</td>
</tr>
<tr>
<td>Adolescent closeness to family</td>
<td>.977**</td>
<td>.978**</td>
<td>.982**</td>
<td></td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>1.086***</td>
<td>1.042*</td>
<td></td>
<td>1.073***</td>
</tr>
<tr>
<td>Parent involvement with adolescent</td>
<td>1.103*</td>
<td>1.888*</td>
<td>1.269***</td>
<td>1.108**</td>
</tr>
<tr>
<td>Parental expectations</td>
<td>1.148***</td>
<td></td>
<td></td>
<td>1.102**</td>
</tr>
<tr>
<td>Intergenerational closure</td>
<td>1.133*</td>
<td>1.109*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighborhood social cohesion</td>
<td></td>
<td></td>
<td>1.032*</td>
<td></td>
</tr>
<tr>
<td>Parent involvement in community activities</td>
<td>1.428**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>92.41***(22)</td>
<td>412.72***(22)</td>
<td>287.09***(22)</td>
<td>314.34***(22)</td>
</tr>
<tr>
<td>Hosmer-Lemeshow</td>
<td>1.951</td>
<td>8.32</td>
<td>5.028</td>
<td>8.697</td>
</tr>
</tbody>
</table>

* p < 0.05. ** p < 0.01. *** p < 0.001.
* Number of valid cases in the analysis = 2937

Table 14: Odds ratios for significant predictor variables by type of activity

112
The statistical significance of model chi-squareds suggests that all the four models fit the data. The Hosmer and Lemeshow goodness-of-fit tests also indicate that the model’s estimates fit the data at an acceptable level in all the four cases. That is, social capital resources can predict the probability of participation in various types of activities. The statistical significance of various predictors (only odds ratios corresponding to statistically significant predictors are displayed in Table 14) are useful in identifying which variables contribute to the prediction of participation in various types of activities.

The results of the analyses indicate that family social capital variables alone predict the probability of participation in academic activities. Three variables, adolescent connection to school, parental involvement with the adolescent, and intergenerational closure are significant predictors of participation in arts and music, and sports activities. The odds ratios indicate that, holding all other independent variables constant, for every unit of increase in ‘parental involvement with the adolescent,’ the odds of participation in academic activities increases by 10.3 %, arts and music activities increases by 8.8 %, sports activities increases by 26.9 %, and ‘other’ activities increases by 10.8 %. Also, holding all other independent variables constant, for every unit of increase in ‘intergenerational closure’ the odds of participation in arts and music activities increases by 13.3 %, and sports activities increases by 10.9 %.

‘Parental connection to school’ is a significant predictor of the probability of adolescent participation in sports, and ‘other’ activities. Holding all other independent variables constant, for every unit of increase in ‘parental connection to school’ the odds
of participation in sports activities increases by 32.6%, and 'other' activities increases by 35.4%. Similarly, for every unit of increase in 'parental involvement in community activities' the odds of participation in 'other' activities increases by 42.8%.

Model 2: Social Capital Resources Predicting the Probability of Truancy

![Diagram of Model 2](image)

Figure 4: Social capital resources predicting truancy

Model 2 tests whether social capital resources can decrease the probability of adolescent truancy. The researcher is also interested in identifying social capital variables that play a role in predicting the probability of truancy. The logistic regression hypothesis tests the probability of being truant (coded '1') rather than not being truant (coded '0'). The significance level for all statistical tests is set at $p < .05$. 

114
After the control variables were introduced into the equation, the researcher entered social capital variables hierarchically in order to identify the unique contributions of each set of social capital variables. Summary logistic regression results are presented in Table 15.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model A</th>
<th></th>
<th>Model B</th>
<th></th>
<th>Model C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Wald</td>
<td>B</td>
<td>Wald</td>
<td>B</td>
<td>Wald</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.76*</td>
<td>27.545</td>
<td>-2.52*</td>
<td>6.344</td>
<td>-2.0*</td>
<td>3.85</td>
</tr>
<tr>
<td>Adolescent connection to school</td>
<td>-.07***</td>
<td>101.85</td>
<td>-.06***</td>
<td>62.74</td>
<td>-.06***</td>
<td>59.44</td>
</tr>
<tr>
<td>Parental connection to school</td>
<td>-.016</td>
<td>.024</td>
<td>.034</td>
<td>.107</td>
<td>.051</td>
<td>.239</td>
</tr>
<tr>
<td>Adolescent closeness to family</td>
<td></td>
<td></td>
<td>-.04***</td>
<td>28.62</td>
<td>-.04***</td>
<td>26.99</td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>.067**</td>
<td>8.629</td>
<td>.068**</td>
<td>8.746</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent involvement with adolescent</td>
<td>-.18***</td>
<td>18.73</td>
<td>-.17***</td>
<td>16.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental expectations</td>
<td>.014</td>
<td>.211</td>
<td>.015</td>
<td>.236</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intergenerational closure</td>
<td>-.14*</td>
<td>6.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighborhood social cohesion</td>
<td>-.019</td>
<td></td>
<td>.114</td>
<td></td>
<td>.981</td>
<td></td>
</tr>
<tr>
<td>Parent involvement in community activities</td>
<td>.025</td>
<td></td>
<td>.036</td>
<td></td>
<td>1.026</td>
<td></td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>317.642*** (15)</td>
<td></td>
<td>378.397*** (19)</td>
<td></td>
<td>386.183*** (22)</td>
<td></td>
</tr>
<tr>
<td>Block Chi-sq (df)</td>
<td>106.173*** (2)</td>
<td></td>
<td>60.755* (4)</td>
<td></td>
<td>7.786* (3)</td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow</td>
<td>24.102* (8)</td>
<td></td>
<td>14.923 (8)</td>
<td></td>
<td>14.519 (8)</td>
<td></td>
</tr>
<tr>
<td>Pseudo R-sq (Nagelkerke)</td>
<td>.153</td>
<td></td>
<td>.181</td>
<td></td>
<td>.184</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05. ** p < 0.01. *** p < 0.001.

Number of valid cases in the analysis = 2937

Table 15: Logistic regression: Social capital resources predicting truancy
The analysis indicates (see Table 15) that the social capital model fits the data (chi-sq = 386.183, df = 22, p < .05). The Hosmer and Lemeshow’s goodness-of-fit test also support that the model’s estimates fit the data at an acceptable level. That is, social capital resources are significant predictors of the event occurring (truancy). Each social capital context, namely, school (Block chi-sq = 106.173, df = 2, p < .05), family (Block chi-sq = 60.755, df = 4, p < .05), and neighborhood (Block chi-sq = 7.786, df = 3, p < .05), contributes uniquely to the prediction model. Five of the nine social capital variables have coefficients (B) that are statistically significant. The significant predictors of truancy are:

- Adolescent connection to school,
- Adolescent closeness to family,
- Parent adolescent communication,
- Parent involvement with the adolescent, and
- Intergenerational closure.

Variables that were not statistically significant predictors include parental connection to school, parental expectations, neighborhood social cohesion, and parental involvement in community activities. Specifically,

- Holding all other independent variables constant, for every unit of increase in ‘parental involvement with the adolescent,’ the odds of truancy decreases by 16%.
- Holding all other independent variables constant, for every unit of increase in ‘intergenerational closure,’ the odds of truancy decreases by 13.1%.
It must be noted that the 'odds ratio' for the 'parent adolescent communication' is greater than 1, suggesting that an increase in 'parent adolescent communication,' increases the odds of truancy by 7%.

**Model 3: Participation in Extracurricular Activities Predicting the Probability of Truancy**

![Diagram showing Extracurricular Activities influencing Truancy]

Figure 5: Extracurricular activities predicting truancy

The researcher hypothesizes that the lack of participation in extracurricular activities can increase the probability of adolescent truancy. EAP was recoded as '1' indicating non-participation, and '0' indicating participation in extracurricular activities. The logistic regression hypothesis tests the probability of being truant (coded '1') rather than not being truant (coded '0'). The significance level for all statistical tests is set at p< .05. Summary logistic regression results are presented in Table 16.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Model A</th>
<th></th>
<th>Model B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Wald</td>
<td>B</td>
<td>Wald</td>
</tr>
<tr>
<td>Constant</td>
<td>-7.334*</td>
<td>81.29</td>
<td>-7.29*</td>
<td>79.753</td>
</tr>
<tr>
<td>Participation in extracurricular activities</td>
<td></td>
<td></td>
<td>.451***</td>
<td>17.957</td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>227.401*** (13)</td>
<td></td>
<td>244.883*** (14)</td>
<td></td>
</tr>
<tr>
<td>Block Chi-sq (df)</td>
<td></td>
<td></td>
<td>17.483*** (1)</td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow test (df)</td>
<td>12.266 (3)</td>
<td></td>
<td>9.414 (8)</td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05. ** p < 0.01. *** p< 0.001.
* Number of valid cases in the analysis = 3208

Table 16: Logistic regression: EAP predicting truancy

The results of the analysis suggest that, after controlling for background variables, ‘participation in extracurricular activities’ is a significant predictor (p =0.001) of the event occurring (truancy). Model chi-squared statistic (244.883, df =14, p = 0.001) is statistically significant indicating that the model fits the data. The Hosmer and Lemeshow’s test (chi-sq = 9.414, p = 0.309) also suggests that the model’s estimates fit the data at an acceptable level. The significance of the block chi-squared (17.483, df =1, p = 0.001) also indicates that EAP contributes uniquely to the prediction of truancy.

The odds ratio for the EAP coefficient is 1.57 suggesting that those who are not engaged in extracurricular activities are more likely to be truant than their counterparts. Holding all other independent variables constant, for every unit of increase in ‘adolescent participation in extracurricular activities,’ the odds of truancy decreases by 57%.
Model 4: Social Capital and EAP Predicting the Probability of Truancy

![Diagram](image)

Figure 6: Social capital and extracurricular activities participation predicting truancy

The test of model 1 indicates that the social capital model can predict adolescent participation in extracurricular activities. Similarly, the logistic regression results also indicate that the social capital model can predict truancy (model 2). The test of model 3 suggests that adolescent participation in extracurricular activities is predictive of truancy. Model 4 tests whether EAP can make any additional contribution (over and above what is contributed by social capital resources) to the probability of predicting truancy.

Separate logistic regression equations will also test whether the probability of truancy is different for participants of different types of extracurricular activities. The potential moderating/mediating effects of the control variables in the prediction of
truant will be tested using product terms. Finally, the full model, employing potentially useful variables and their interactions, will test whether this model predicts the probability of truancy.

Social capital and extracurricular activities participation predicting truancy

After entering the control variables into the equation, independent variables are entered in this order: school social capital variables, family social capital variables, neighborhood social capital variables (model A in Table 17 indicates the social capital model), and finally, the EAP variable (model B in Table 17). The regression hypothesis tests the probability of being truant (coded ‘1’) rather than not being truant (coded ‘0’). EAP was coded as ‘1’ indicating non-participation, and ‘0’ indicating participation in extracurricular activities. The significance level for all statistical tests is set at p< .05. Summary logistic regression results are presented in Table 17.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Model A</th>
<th></th>
<th>Model B</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Wald</td>
<td>B</td>
<td>Wald</td>
<td>Exp(B)</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.009*</td>
<td>3.853</td>
<td>-2.143*</td>
<td>4.362</td>
<td></td>
</tr>
<tr>
<td>Adolescent connection to school</td>
<td>-.061***</td>
<td>59.448</td>
<td>-.05***</td>
<td>54.688</td>
<td>.943</td>
</tr>
<tr>
<td>Parental connection to school</td>
<td>.051</td>
<td>.239</td>
<td>.877</td>
<td>.533</td>
<td>1.081</td>
</tr>
<tr>
<td>Adolescent closeness to family</td>
<td>-.041***</td>
<td>26.994</td>
<td>-.04***</td>
<td>28.432</td>
<td>.959</td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>.068**</td>
<td>8.746</td>
<td>.071**</td>
<td>9.56</td>
<td>1.073</td>
</tr>
<tr>
<td>Parent involvement with adolescent</td>
<td>-.174***</td>
<td>16.879</td>
<td>-.16***</td>
<td>15.371</td>
<td>.847</td>
</tr>
<tr>
<td>Parental expectations</td>
<td>.015</td>
<td>.236</td>
<td>.017</td>
<td>.322</td>
<td>1.017</td>
</tr>
<tr>
<td>Intergenerational closure</td>
<td>-.14*</td>
<td>6.598</td>
<td>-.131*</td>
<td>5.744</td>
<td>.877</td>
</tr>
<tr>
<td>Neighborhood social cohesion</td>
<td>-.019</td>
<td>1.147</td>
<td>.018</td>
<td>1.045</td>
<td>.982</td>
</tr>
<tr>
<td>Parent involvement in community activities</td>
<td>.025</td>
<td>.036</td>
<td>.029</td>
<td>.048</td>
<td>1.03</td>
</tr>
<tr>
<td>EAP</td>
<td></td>
<td>.286*</td>
<td>5.761</td>
<td>1.331</td>
<td></td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>386.183***(22)</td>
<td></td>
<td>391.859*** (23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block Chi-sq (df)</td>
<td>7.786* (3)</td>
<td></td>
<td>5.677* (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow test (df)</td>
<td>14.519(8)</td>
<td></td>
<td>18.525* (8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05. ** p < 0.01. *** p < 0.001.
* Number of valid cases in the analysis = 2937

Table 17: Logistic regression: Social capital and EAP predicting truancy

The results of the analysis suggest that, after controlling for background variables, ‘participation in extracurricular activities’ is a significant predictor of truancy. Although the Hosmer-Lemeshow test is not indicative of goodness of fit (p = 0.018), the model chi-
squared statistic (391.859, df = 23) is significant, indicating goodness of fit.

Additionally, the significance of the block chi-squared (5.677, df = 1) also indicates that EAP contributes additionally and uniquely to predicting the probability of truancy.

EAP is a significant predictor of truancy, as is evident from the statistical significance of the coefficient (B). The odds ratio for the EAP coefficient is 1.331 suggesting that, holding all other independent variables constant, for every unit of increase in ‘adolescent participation in extracurricular activities,’ the odds of truancy decreases by 33.1%.

**Social Capital and Types of Activities Predicting Truancy**

The researcher also tested whether participation in different types of activities (academic, arts and music, sports, and ‘other’) adds uniquely (over and above what is contributed by social capital variables) to the probability of predicting truancy. Four hypotheses were tested. Results of the hypotheses indicate that except for participation in arts and music activities, the other three activity variables do not contribute to predicting truancy (see Table 18).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Model A</th>
<th>Model B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Wald</td>
</tr>
<tr>
<td>Art and Music activities</td>
<td>0.223*</td>
<td>4.413</td>
</tr>
<tr>
<td>Academic activities</td>
<td>0.11</td>
<td>0.84</td>
</tr>
<tr>
<td>Sports activities</td>
<td>-0.64</td>
<td>3.759</td>
</tr>
<tr>
<td>Other activities</td>
<td>0.167</td>
<td>2.633</td>
</tr>
<tr>
<td>Art and Music activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>386.183*** (22)</td>
<td>390.632*** (23)</td>
</tr>
<tr>
<td>Block Chi-sq (df)</td>
<td>4.45(1)*</td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow test (df)</td>
<td>14.519(8)</td>
<td>8.509(8)</td>
</tr>
<tr>
<td>Academic activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>386.183*** (22)</td>
<td>387.031*** (23)</td>
</tr>
<tr>
<td>Block Chi-sq (df)</td>
<td>0.848(1)</td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow test (df)</td>
<td>14.519(8)</td>
<td>12.968(8)</td>
</tr>
<tr>
<td>Sports activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>386.183*** (22)</td>
<td>386.599*** (23)</td>
</tr>
<tr>
<td>Block Chi-sq (df)</td>
<td>0.416(1)</td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow test (df)</td>
<td>14.519(8)</td>
<td>11.75(8)</td>
</tr>
<tr>
<td>Other activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Chi-sq (df)</td>
<td>386.183*** (22)</td>
<td>388.832*** (23)</td>
</tr>
<tr>
<td>Block Chi-sq (df)</td>
<td>2.649(1)</td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow test (df)</td>
<td>14.519(8)</td>
<td>9.572(8)</td>
</tr>
</tbody>
</table>

* p < 0.05. ** p < 0.01. *** p < 0.001.
* Number of valid cases in the analysis = 2937

Table 18: Logistic regression: Types of extracurricular activities predicting truancy

As indicated by the results (see Table 18), participation in academic activities, sports and ‘other’ activities are not statistically significant (p > .05) predictors of truancy. The block chi-squared values also suggest that participation in these activities do not
contribute significantly (p > .05) to the fit of the model. The model chi-squared values are almost unchanged from model A (social capital model) to model B (social capital model and the participation variable). That is, participation in academic, sports, and ‘other’ activities do not contribute additionally to the social capital model in predicting truancy.

The model chi-squared (390.632, df = 23) after adding participation in arts and music activities to social capital variables was significant at the .001 level. The block chi-squared (4.45, df = 1) was also significant at the .001 level, indicating that arts and music participation does contribute additionally to the prediction of adolescent truancy. The odds ratio for the ‘arts and music participation’ coefficient is 1.249 (B = .223, Wald = 4.413, p < .001). This suggests that, holding all other independent variables constant, for every unit of increase in ‘adolescent participation in arts and music activities,’ the odds of truancy decreases by 24.9%.

These results indicate that only participation in arts and music activities contributes to the probability of predicting truancy. The participation variable, EAP, indicates whether or not the adolescent is engaged in at least one extracurricular activity. Similarly, the variable participation in arts and music activities indicates whether or not the adolescent participates in at least one arts and music activity. It may be that, in addition to participating in arts and music activities, the adolescent is also involved in other types of activities. However, the results of the logistic regression analyses indicate that truancy is associated only with lack of participation in arts and music activities. It must be noted that this conclusion does not negate the potential contribution of other types of activities in generating social capital, and indirectly affecting truancy.
Significant Predictors of EAP, Truancy

The analyses presented so far suggest that the social capital model is useful in predicting EAP and truancy. Whereas certain social capital variables play a significant role in predicting both EAP and truancy, others are not useful predictors. Table 19 is a summary of significant predictors as they relate to EAP, and truancy.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Academic</th>
<th>Arts &amp; music</th>
<th>Sports</th>
<th>‘Other’</th>
<th>EAP</th>
<th>Truancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent school connection</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Parent school connection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adolescent family closeness</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Parent-adolescent communication</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Parent-adolescent involvement</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Parental expectations</td>
<td>Yes</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intergen closure</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Neighborhood social cohesion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Parental involvement in comm activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Table 19: Significant predictors of EAP, truancy
Relative Importance of Predictors

Employing the strategy suggested by DeMaris (1995, p.961) of partially standardizing the coefficients by the factor of (S/ sigma) where S is the standard deviation of the predictor, and sigma is the standard deviation of the errors (= pi / 3), we have calculated values (=B x S.D.) that can be used to compare the relative magnitude of each predictor’s effect in the equation. That is, although these calculated values are not ‘betas,’ the ranking of these values will reflect relative importance of the regressors in the same way as beta values do. Significant predictors of truancy with their values that indicate relative importance are presented in table 20.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>Standard Deviation</th>
<th>B x S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extracurricular activities participation</td>
<td>.286</td>
<td>.002195</td>
<td>.0006279</td>
</tr>
<tr>
<td>Intergenerational Closure</td>
<td>.131</td>
<td>.001014</td>
<td>.0001329</td>
</tr>
<tr>
<td>Parental involvement with adolescent</td>
<td>.166</td>
<td>.000774</td>
<td>.0001286</td>
</tr>
<tr>
<td>Parent adolescent communication</td>
<td>.071</td>
<td>.000424</td>
<td>.0000301</td>
</tr>
<tr>
<td>Adolescent connection to School</td>
<td>.059</td>
<td>.000147</td>
<td>.0000087</td>
</tr>
<tr>
<td>Adolescent closeness to family</td>
<td>.042</td>
<td>.000147</td>
<td>.0000061</td>
</tr>
</tbody>
</table>

- Number of valid cases in the analysis = 2937

Table 20: Relative importance of predictors of truancy
A comparison of the values in the last column (see Table 20) indicates that among the significant predictors of truancy, ‘adolescent participation in extracurricular activities’ has the largest impact on the log odds of truancy. This is followed by ‘intergenerational closure,’ and ‘parental involvement with the adolescent,’ and ‘parent adolescent communication’ as next in order of importance. The less important predictors in the equation are ‘adolescent closeness to family’ and ‘adolescent connection to school.’

**Testing for Interaction Effects**

After having identified those social capital variables that are useful in explaining the occurrence of truancy among adolescents, the researcher investigated whether the effects of these predictors is moderated by any of the control variables used in the study. An interaction effect is said to exist when the effect of the predictor variable on the outcome variable differs according to the value of a third variable. The third variable is called the ‘moderator’ variable because it moderates the effect of the independent variable on the dependent variable (Jaccard, 2001).

In logistic regression the interaction effect is tested by adding product terms to the regression equation. For example, in order to test whether ‘school level’ moderates the relationship between the social capital variables and truancy, the researcher added the product of the ‘school level’ variable with every other social capital variable to the equation. The statistical significance of each of the product terms ($p < .05$) indicates whether the adolescent’s school level moderates the effect of that independent variable on the probability of predicting the dependent variable, truancy.
Seven logistic regressions were run to test whether any of the control variables, namely, 'age,' 'school level,' 'gender,' 'racial status,' 'parental education,' 'poverty status,' 'family structure' moderate the effects of social capital variables and EAP on truancy. Of these seven potential moderator variables, only age, school level, and poverty status were found to produce statistically significant and interpretable interactions. The results of these conceptually meaningful two-way interactions (interaction between one independent and one moderator variable) are presented here.

**Age as a moderator variable**

In order to test whether the age of the adolescent moderates the effect of any of the social capital variables or EAP on truancy, product terms of age with every other independent variable were added to the full model. The results of three interactions that were statistically significant are displayed in table 21.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Logistic Coefficient</th>
<th>Exponent of Coefficient</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent connection to school by Age</td>
<td>.025</td>
<td>1.025</td>
<td>.001</td>
</tr>
<tr>
<td>Adolescent closeness to family by Age</td>
<td>-.012</td>
<td>.988</td>
<td>.043</td>
</tr>
<tr>
<td>Parental involvement in community activities by Age</td>
<td>-.208</td>
<td>.812</td>
<td>.032</td>
</tr>
</tbody>
</table>

Table 21: Logistic regression coefficients: Age as moderator: Two-way interaction
Given that all three p values (see Table 21) are <0.05, we conclude that all three interactions are statistically significant. That is, the effects of ‘adolescent connection to school,’ ‘adolescent closeness to family,’ and ‘parental involvement in community activities’ is moderated by the age of the adolescent.

**School level as a moderator variable**

The test of the interaction effects with school level as the moderator variable produced four statistically significant interactions. The results are displayed in table 22.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Logistic Coefficient</th>
<th>Exponent of Coefficient</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent connection to school by School Level</td>
<td>-.048</td>
<td>.953</td>
<td>.009</td>
</tr>
<tr>
<td>Parent connection to school by School Level</td>
<td>-.610</td>
<td>.543</td>
<td>.017</td>
</tr>
<tr>
<td>Adolescent closeness to family by School Level</td>
<td>.052</td>
<td>1.053</td>
<td>.005</td>
</tr>
<tr>
<td>EAP by School Level</td>
<td>-.569</td>
<td>.566</td>
<td>.051</td>
</tr>
</tbody>
</table>

Table 22: Logistic regression coefficients: School level as moderator. Two-way interaction

Three variables, ‘adolescent connection to school,’ ‘parent connection to school,’ and ‘adolescent closeness to family’ demonstrated statistical significance at the 0.05
level. The fourth variable ‘EAP’ achieved near statistical significance. Therefore, the effect of these four variables in predicting truancy is moderated by whether the adolescent is in middle school or in high school.

**Poverty status as a moderator variable**

In order to test whether poverty status moderates the effect of the social capital variables and the EAP variable on truancy, product terms of poverty status with every other independent variable were added to the full model. Only interaction was statistically significant (see Table 23).

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Logistic Coefficient</th>
<th>Exponent of Coefficient</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental involvement in community activities by poverty status</td>
<td>-2.419</td>
<td>.089</td>
<td>.030</td>
</tr>
</tbody>
</table>

Table 23: Logistic regression coefficients: Poverty status as moderator: Two-way interaction

Clearly ‘poverty status’ moderates the effect of ‘parental involvement in community activities’ on predicting truancy.

Having identified moderator variables and their interactions with social capital variables and the EAP variable, the researcher decided to include these product terms to
the full model. Following Jaccard’s (2001) line of argument, when interaction terms improve the model fit, it is suggested that these interaction terms be added to the model.

<table>
<thead>
<tr>
<th></th>
<th>Model chi-sq (df)</th>
<th>Sig.</th>
<th>Hosmer-Lemeshow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full model without</td>
<td>394.345(21)</td>
<td>0.001</td>
<td>17.445*</td>
</tr>
<tr>
<td>interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full model with</td>
<td>436.395(27)</td>
<td>0.001</td>
<td>10.161</td>
</tr>
<tr>
<td>interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi-square change</td>
<td>42.05(6)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 24: Coefficient values showing improvement in fit of model

The chi-square change between the two models is 42.05 (see Table 24) for 6 degrees of freedom, which is greater the chi-square table value of 12.59 (p=.05), indicating that the model with interactions is a better fit.

Two variables, ‘neighborhood social cohesion’ and ‘parental expectations’ that were statistically nonsignificant (in the earlier tests) in predicting truancy were excluded from this model. Although excluding these variables from the model does not improve the fit of the model, the need for parsimony suggests their exclusion.

The model with interactions included all control variables, 7 social capital variables, one EAP variable, and the eight product terms identified earlier. However, the
results of the logistic regression procedure indicated that two of the product terms were not statistically significant (see Table 25). These two interaction terms were excluded from the final model predicting truancy.

<table>
<thead>
<tr>
<th>Product terms</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent closeness to family by Age</td>
<td>0.002</td>
<td>0.008</td>
<td>0.045</td>
<td>0.831</td>
</tr>
<tr>
<td>Adolescent connection to school by school level</td>
<td>0.019</td>
<td>0.027</td>
<td>0.491</td>
<td>0.484</td>
</tr>
</tbody>
</table>

Table 25: Excluded interactions

The Full Model: Social Capital and EAP Predicting Truancy

The full model with main effects and interactions includes all control variables, 7 social capital variables, one EAP variable, and six product terms. The hypothesis tests the probability of being truant (coded 1) rather than not being truant (coded 0). Summary results are presented in Table 26.
<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Wald</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>10.525</td>
<td>11.713</td>
<td></td>
</tr>
<tr>
<td>Adolescent -school connection</td>
<td>-.459***</td>
<td>25.123</td>
<td>.632</td>
</tr>
<tr>
<td>Parent-school connection</td>
<td>.240*</td>
<td>4.046</td>
<td>1.271</td>
</tr>
<tr>
<td>Adolescent close to family</td>
<td>-.054***</td>
<td>36.536</td>
<td>.948</td>
</tr>
<tr>
<td>Parent-adolescent communication</td>
<td>.071**</td>
<td>9.547</td>
<td>1.074</td>
</tr>
<tr>
<td>Parent - adolescent involvement</td>
<td>-.176***</td>
<td>17.048</td>
<td>.839</td>
</tr>
<tr>
<td>Intergenerational closure</td>
<td>-.131*</td>
<td>5.67</td>
<td>.877</td>
</tr>
<tr>
<td>Parent involve community acts</td>
<td>3.259*</td>
<td>4.367</td>
<td>26.012</td>
</tr>
<tr>
<td>EAP</td>
<td>.411**</td>
<td>9.128</td>
<td>1.508</td>
</tr>
<tr>
<td>Adolescent-school connection by Age</td>
<td>.025***</td>
<td>19.157</td>
<td>1.025</td>
</tr>
<tr>
<td>Parent involve in community acts by Age</td>
<td>-.196*</td>
<td>4.092</td>
<td>.822</td>
</tr>
<tr>
<td>Parent-school connection by school level</td>
<td>-.627*</td>
<td>6.271</td>
<td>.534</td>
</tr>
<tr>
<td>Adolescent close to family by school level</td>
<td>.048**</td>
<td>8.102</td>
<td>1.049</td>
</tr>
<tr>
<td>EAP by school level</td>
<td>-.568*</td>
<td>3.881</td>
<td>.567</td>
</tr>
<tr>
<td>Parent involvement in community activities by poverty</td>
<td>-.272*</td>
<td>4.418</td>
<td>.103</td>
</tr>
<tr>
<td>Model Chi-square (df)</td>
<td>436.39*** (27)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow test (df)</td>
<td>10.161 (8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05.  ** p < 0.01.  *** p< 0.001.

Number of valid cases in the analysis = 2937

Table 26: Logistic regression: Social capital and EAP predicting truancy: Main effects and interactions

The results of the analysis (see Table 26), as indicated by the statistical significance of the model chi-square, suggest that the model achieves goodness of fit.
For the Hosmer-Lemeshow test, the p value of 0.254 also indicates that the model’s estimates fit the data at an acceptable level. The results also indicate that each of the independent variables in the equation is a statistically significant predictor of truancy.

Three of the eight predictors, parent adolescent communication, parental involvement with the adolescent, and intergenerational closure have only main effects in the traditional sense. For the remaining five variables, their effects on truancy is moderated by age, school level or poverty status. When interaction terms are introduced into the equation, these “reflect an amalgamation of main effects and interactions” (Jaccard, 2001).

The odds ratio for the ‘parental involvement with the adolescent’ coefficient is 0.839 (B = -.176, Wald = 17.048, p<.001). This suggests that, holding all other independent variables constant, for every unit of increase in ‘parental involvement with the adolescent,’ the odds of the adolescent being truant decreases by a factor of 0.839. Similarly, the odds ratio for the ‘intergenerational closure’ coefficient is 0.877 (B = -.131, Wald = 5.67, p<.05). This indicates that, holding all other independent variables constant, for every unit of increase in ‘intergenerational closure,’ the odds of the adolescent being truant decreases by a factor of 0.877. The odds ratio for the ‘parent adolescent communication’ coefficient is 1.074 (B = 0.071, Wald = 9.547, p<.01). This suggests that, holding all other independent variables constant, for every unit of increase in ‘parent adolescent communication,’ the odds of the adolescent being truant increases by a factor of 1.074. Surprisingly, this association between parent adolescent communication and truancy is not in the expected direction.
Interaction: Adolescent Connection to School by Age

For this product term, both the focal independent variable (adolescent connection to school) and the moderator variable (age) are continuous. Given the p value of .001, we conclude that the interaction is statistically significant. The exponent of the coefficient for the product term (adolescent connection to school by age) is 1.025. This implies that when the product term increases by 1, the log odds of predicting truancy increases by a factor of 1.025.

Although this interaction is statistically significant, it has little or no practical significance because the effect of the interaction factor on the log odds of predicting truancy is minimal. Secondly, the interaction effect suggests that as the adolescent’s connection to school increases, there is a higher probability of truant behavior, which does not make conceptual sense. Therefore, it may be more meaningful to interpret the main effect of adolescent connection to school in predicting truancy, rather than the interaction effect. The exponent of the coefficient for adolescent connection to school is 0.632 suggesting that, holding all other variables constant, for every unit of increase in ‘adolescent connection to school,’ the odds of truancy decreases by 36.8%.

Interaction: Parental Involvement in Community Activities by Age

The product term (parental involvement in community activities by age) is statistically significant (p <.05), indicating that the effect of parental involvement in community activities in predicting truancy is moderated by the age of the adolescent.
The focal independent variable for this interaction, parental involvement in community activities, is categorical, and is dummy coded as ‘1’ indicating ‘participation’ and ‘0’ indicating ‘no participation (the reference group).’ The moderator variable, age, is continuous.

When the parent is not involved in community activities, the product term has a value of 0. If, instead, the parent is involved in community activities, for every one-year increase in age of the adolescent, the probability of predicting truancy reduces by a factor of 0.822. The exponent of the coefficient for the product term (parental involvement in community activities by age) is 0.822. Therefore, for older adolescents whose parents are involved in community activities, the probability of predicting truancy is less than that for younger adolescents. That is, parental involvement may be more useful in the predicting truancy among younger adolescents.

**Interaction: Adolescent Closeness to Family by School Level**

The focal independent variable, ‘adolescent closeness to family’ is continuous, and the moderator variable, school level, is categorical variable. School level is coded with ‘1’ indicating ‘middle school’ and ‘0’ indicating ‘high school (reference group).’ The question of interest is: does school level moderate the relationship between adolescent closeness to family and truancy? If yes, how does it moderate this relationship?

Given the p value of .004, we conclude that the interaction between adolescent closeness to family and school level is statistically significant. The exponent of the
coefficient for the product term (adolescent closeness to family by school level) is 1.049. The exponent value indicates by what factor the multiplying factor (exponent of the coefficient for the variable) of adolescent closeness to family changes for a change from high school to middle school. This is because 1.049 is the ratio of the multiplicative factors of the two dummy variables for school level [ratio of exp(β)s]. Here the multiplicative factor for those in middle school is about 105% the magnitude of that for those in high school. If the two multiplicative factors were equal (there is no interaction), the ratio would be 1 (instead of 1.049). Therefore, being in middle school (versus being in high school) increases minimally the effect of ‘adolescent closeness to family’ on ‘truant.’ That is, if an adolescent is in middle school (instead of being in high school), the probability of truancy will be increased by a factor of 1.049 as closeness to family increases.

The moderating effect of school level on adolescent closeness to family is minimal. Although, it is possible to explain this interaction effect, it is more meaningful to interpret the main effect of adolescent closeness to family on truancy. The exponent of the coefficient for adolescent closeness to family is 0.948 suggesting that, holding all other variables constant, for every unit of increase in ‘adolescent closeness to family,’ the odds of truancy decreases by 5.2%.

Interaction: Parental Involvement in Community Activities by Poverty Status

The focal independent variable, parental involvement in community activities, is categorical. This variable is coded as ‘1’ indicating ‘participation’ and ‘0’ indicating ‘no
participation (reference group).’ The moderator variable is ‘poverty status,’ coded as ‘1’ indicating ‘receiving welfare benefits’ and ‘0’ indicating ‘not receiving welfare benefits.’ The researcher is interested in examining if and how poverty status moderates the effect of parental involvement in community activities on truancy.

The interaction is significant (p <.05) indicating that ‘poverty level’ moderates the effect of ‘parental involvement in community activities’ in reducing truancy. The exponent of the coefficient for the product term (parental involvement in community activities by poverty status) is 0.103. Either if a parent is uninvolved in community activities or the adolescent is not poor, or both, then the product term is 0. Instead, if a parent is involved in community activities, it reduces the probability of truancy for adolescents in poverty by a factor of 0.103.

Interaction: Parental Connection to School by School Level

The focal independent variable for this statistically significant (p <.05) interaction is ‘parental connection to school.’ It is a categorical variable, coded ‘1’ if the parent is involved in school, and ‘0’ if the parent is not involved. The researcher is interested in knowing if and how the school level influences the effect of parental participation in reducing the probability of their children being truant.

The exponent of the coefficient for the product term (parental connection to school by school level) is 0.534. This indicates that if an adolescent is in middle school (instead of being in high school), the parent being involved in school activities decreases the probability of truancy by a factor of 0.543.
Interaction: EAP by School Level

This significant interaction (p < .01) suggests that school level moderates the effect of EAP in reducing truancy. EAP is a categorical variable, with '0' indicating 'participation in extracurricular activities (reference group),' and '1' indicating 'lack of participation.' The reference category for EAP is 'those who participate' because the researcher is interested in knowing whether lack of participation in extracurricular activities increases the probability of being truant. The moderator variable is school level.

The exponent of the coefficient for the product term (EAP by school level) is 0.567. This suggests that if an adolescent is not involved in EAP, and is in middle school, the probability of being truant is reduced by a factor of 0.567.

In summary, the results of logistic regression analyses reported in this chapter indicate that:

- The social capital model does predict adolescent participation in extracurricular activities,
- The social capital model does predict adolescent truancy,
- Non participation in arts and music activities does predict adolescent truancy,
- Participation in extracurricular activities and access to social capital do decrease the probability of adolescent truancy.
Multicollinearity, Linearity in the Logit, and Analysis of Residuals

In order to ensure that the results of the logistic regression analyses are valid, the researcher employed appropriate procedures to check for multicollinearity, nonlinearity in the logit, and the analysis of residuals. The results of these procedures are presented in this section.

Multicollinearity

High multicollinearity (correlations among independent variables are very strong) results in biased calculation of the regression model and leads to inappropriate interpretation of the results. Detection of multicollinearity was done employing the linear regression procedure as suggested by Hair et al. (1998). This strategy involves a two-step procedure. The results are displayed in table 27.
<table>
<thead>
<tr>
<th>Condition index</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>V4</th>
<th>V5</th>
<th>V6</th>
<th>V7</th>
<th>V8</th>
<th>V9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000</td>
<td>.00</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.91</td>
<td>.00</td>
</tr>
<tr>
<td>2.854</td>
<td>.00</td>
<td>.07</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.01</td>
<td>.78</td>
</tr>
<tr>
<td>3.576</td>
<td>.00</td>
<td>.88</td>
<td>.00</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.02</td>
<td>.20</td>
</tr>
<tr>
<td>4.498</td>
<td>.00</td>
<td>.01</td>
<td>.00</td>
<td>.13</td>
<td>.02</td>
<td>.00</td>
<td>.00</td>
<td>.80</td>
<td>.00</td>
</tr>
<tr>
<td>5.729</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.55</td>
<td>.10</td>
<td>.02</td>
<td>.03</td>
<td>.14</td>
<td>.00</td>
</tr>
<tr>
<td>6.010</td>
<td>.00</td>
<td>.02</td>
<td>.00</td>
<td>.29</td>
<td>.84</td>
<td>.00</td>
<td>.00</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>12.097</td>
<td>.08</td>
<td>.00</td>
<td>.02</td>
<td>.01</td>
<td>.00</td>
<td>.11</td>
<td>.94</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>15.199</td>
<td>.47</td>
<td>.00</td>
<td>.02</td>
<td>.00</td>
<td>.01</td>
<td>.73</td>
<td>.00</td>
<td>.92</td>
<td>.00</td>
</tr>
<tr>
<td>20.228</td>
<td>.44</td>
<td>.01</td>
<td>.95</td>
<td>.00</td>
<td>.02</td>
<td>.14</td>
<td>.02</td>
<td>.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

- V1 to V9 include these variables: adolescent-school connection, parent-school connection, adolescent-family closeness, parent-adolescent communication, parental expectations, intergenerational closure, neighborhood cohesion, and parent involvement in community activities.

Table 27: Coefficient variance-decomposition analysis with condition indices

Using the condition index and the regression coefficient variance-decomposition matrix, the researcher identified all condition indices above the threshold value of 15 (the lower threshold value). There are two condition indices with values of 15.199 and 20.228 (see Table 27). Of these two indices, only the second index has a variable with variance proportion of 95%. According to the criterion suggested by Hair et al. (1998), a multicollinearity problem exists only when there are three variables with variance proportion above 90% that correspond to the condition index exceeding 15. Therefore, there is no multicollinearity among the variables in the study.
Nonlinearity in the logit

When the relationship between the independent variable (X) and the dependent variable [logit(Y) in logistic regression] is nonlinear, the conclusion that a one-unit change in X changes the odds of the event occurring does not hold. For such a conclusion to be valid, we need to assume that the relationship between each of the independent variables and the logit(Y) is linear.

In order to test for linearity, the researcher introduced the quadratic and the cubic form of each of the five independent variables into the logistic regression equation. Since nonlinearity exists for variables with a large number of categories, the researcher used the quadratic and cubic forms for only five of the independent variables (variables V1 to V5, see Table 27). If either the quadratic or the cubic form is statistically significant, it implies that the variable is non-linearly related to the logit(Y). Suppose the cubic form of a variable is found to be statistically significant, it is included in the logistic regression equation. The results (see Table 28) indicate that none of these effects are significant, suggesting linearity in the logit (Menard, 1995).
<table>
<thead>
<tr>
<th>Quadratic, Cubic terms</th>
<th>B</th>
<th>Wald</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1 Quadratic</td>
<td>.003</td>
<td>.117</td>
<td>.733</td>
</tr>
<tr>
<td>V1 Cubic</td>
<td>.000</td>
<td>.266</td>
<td>.606</td>
</tr>
<tr>
<td>V2 Quadratic</td>
<td>-.010</td>
<td>.495</td>
<td>.482</td>
</tr>
<tr>
<td>V2 Cubic</td>
<td>.000</td>
<td>.326</td>
<td>.568</td>
</tr>
<tr>
<td>V3 Quadratic</td>
<td>.008</td>
<td>1.257</td>
<td>.262</td>
</tr>
<tr>
<td>V3 Cubic</td>
<td>.000</td>
<td>2.283</td>
<td>.131</td>
</tr>
<tr>
<td>V4 Quadratic</td>
<td>.003</td>
<td>.169</td>
<td>.681</td>
</tr>
<tr>
<td>V4 Cubic</td>
<td>.001</td>
<td>.222</td>
<td>.638</td>
</tr>
<tr>
<td>V5 Quadratic</td>
<td>-.003</td>
<td>1.378</td>
<td>.241</td>
</tr>
<tr>
<td>V5 Cubic</td>
<td>.007</td>
<td>.207</td>
<td>.649</td>
</tr>
</tbody>
</table>

- V1 to V5 indicate variables adolescent closeness to family, parent-adolescent involvement, adolescent school connection, neighborhood social cohesion, and intergenerational closure respectively.
- ‘V1 Quadratic’ indicates the quadratic form of variable V1, and ‘V1 Cubic’ indicates the cubic form.

Table 28: Tests of linearity: Selected independent variables

### Analysis of Residuals

Menard (1995, p.79) suggests that regression analyses must be supported by a minimal set of diagnostics such as testing for normality of residuals, and influence analyses in order to guard against miscoded data and diagnose unusual cases that may unduly influence the results. Results of these analyses are presented here.
Normality of residuals.

Outliers (extreme values on a variable or a combination of variables) can distort statistical analyses by unduly influencing the regression model. Although when the sample size is large, as is the case in this study, the violation of the normality assumption is less problematic (Allison, 1999), examination of the distribution of normalized residuals (ZResid) indicates an approximately normal distribution.

Influence analysis.

Outliers do not always bias the results of a regression analysis. Those cases that do impact the outcome of a regression analysis are termed ‘influential cases’ (Miles & Shevlin, 2001). Influence analysis enables the researcher to identify those cases that have an undue effect on the regression results. The researcher has used two measures, namely, Leverage values and DFBETAS (standardized) to identify influential observations.

High values on the leverage statistic enable the researcher to identify cases that have an undue influence on the parameters of the logistic regression model (Menard, 1995, p.73). Leverage values are considered large if they exceed 2p/n (p = number of model parameters including the intercept, n = number of cases) (Hutcheson & Sofroniou, 1999). For this study, p = 23, and n = 3121, resulting in a threshold leverage value of 0.01473. The leverage values for the data is below this value, except for a very small number of cases that exceed this value. When the sample size is large, as is the case here, a few cases that have larger leverage values do not distort the analyses.
DFBETAS is a measure of the change in the intercept and the regression coefficient(s) as a result of the deletion of a subject. Following the Neter, Wasserman, and Kutner's (1989, p.403, cited in Pedhazur 1997) recommendation of $\sqrt{n}$ (n = number of cases) for large data sets, the DFBETAS cutoff value is 0.0357. The minimum value of DFBETAS for our sample is .0007 and the maximum value is .015, indicating that the DFBETAS are within the recommended range.

In summary, the results of the regression diagnostics suggest that the procedures that are used in this study do not violate any of the major assumptions of logistic regression. There is sufficient evidence to support the claim that the results of the study are valid.
CHAPTER 5

DISCUSSION AND CONCLUSIONS

Based on the comprehensive literature review of the relevant, substantive research on adolescent participation in extracurricular activities and truancy, this study assumes that access to social capital can encourage adolescent participation in extracurricular activities, and furthermore, reduce truancy. Based on social capital constructs that have a sound supportive basis in the theoretical work of Coleman (1990) and others (Portes, 1998; Serageldin & Grootaert, 2000) and empirical literature, the researcher has used the logistic regression procedure to identify those social capital variables that are useful in predicting adolescent truancy. A discussion of the findings based on the analyses reported in chapter four is presented in the following sections.

The first section will discuss the contribution of family-based, school-based, and neighborhood-based social capital in encouraging adolescent participation in school-sponsored extracurricular activities. The next section is a discussion of the role of social capital and adolescent participation in extracurricular activities in reducing school truancy. The limitations of this study, and the main conclusions and their implications for social work theory and practice will be explored in the final two sections.
Social Capital and Adolescent Participation in Extracurricular Activities

We have hypothesized that access to high levels of social capital can encourage adolescent participation in after-school activities. The empirical results reported in this study support this hypothesis. Adolescent participation in extracurricular activities has been found to be associated with measures of family, school, and one measure of neighborhood social capital.

O’Brien and Rollefon (1995) report although extracurricular activities are available to virtually all students in U.S. schools, only about 70 to 80 percent of all students are involved in some form of activity. Empirical literature on extracurricular activities has identified several antecedent factors that influence adolescent participation. In addition to personal factors (interest, skill, and other individual characteristics), some of the factors that have been found to influence participation are age, gender, racial/ethnic identity, socioeconomic status, school size and location, type of activities available, peer participation, and career goals of students. These factors have been found to be valid explanations for why some students participate and others do not. However, these factors only suggest the forms or structures that support adolescent participation. Much of the empirical literature has focused on these and other structural aspects of social capital to the extent of neglecting the interactional processes that encourage adolescents to actually participate in structured, normative activities (Brown, 1999; Holland & Andre, 1987).

The social capital explanation that is supported by the findings of this study suggests that social capital generation and its effects do influence adolescent participation.
in extracurricular activities. Although not explicitly formulated as social capital, this explanation has been proposed by previous research (Brown, 1999; Holland & Andre, 1987; Snyder, 1975; Hanks & Eckland, 1976; Otto & Alwin, 1977). Together these studies suggest that there is a common mechanism or process that links all extracurricular activities and produce positive outcomes for participants. The present study emphasizes that in addition to structural factors that support EAP, there are also processes that influence participation and additionally produce positive benefits such as reduction of school truancy. The results support this claim, without attributing causality to the association between EAP and social capital.

In general, based on the logistic regression results, the present study attributes the involvement of adolescents in extracurricular programs, in part, to the social capital available to these participants. The social capital structures and processes that exist in families, schools, and to a lesser degree, in neighborhoods influence participation, and furthermore, they sustain the interest in these activities by the generation of social capital connections. This claim has support in previous research (Eccles, & Barber, 1999; Marsh, 1992; Gerber, 1996; Finn, 1989) that suggests that extracurricular activity contexts provide opportunities for building social networks with peers and adults. They suggest that these activity contexts support the adolescent’s need for social connections and play a role in maintaining their interest and involvement in these normative activities. That is, these contexts support the generation of social capital that in turn influences participation. This study found that adolescent connection to peers and adults in school, and the
network of relationships with friends and their parents is associated with EAP. It may be precisely this web of relationships that influence and sustain interest in extracurricular activities.

This study employed nine variables that capture the presence of social capital in the family, in the school, and in the neighborhood, six of which were found to be significant predictors of EAP. Consistent with previous studies (Fletcher, Elder, & Mekos, 2000; Csikszentmihalyi, Rathunde, & Whalen, 1993), two family social capital measures, parental involvement with the adolescent, and parent adolescent communication were found to be associated with EAP. Conversely, previous research (Hultsman, 1992) has also identified lack of parental support as one of the several reasons for adolescents dropping out of an activity or refraining from participation. The regression coefficient corresponding to the ‘parental involvement’ variable indicates that with increased parental involvement in the life and activities of the adolescent, the probability of EAP also increases. This variable is among the three variables that are the important predictors of EAP.

Parent adolescent communication is another variable that has beneficial effects for adolescent participation in extracurricular activities. Although the effect of this variable is not as strong as that of parental involvement, it is positively associated. Increased communication between the parent and the adolescent has been found to influence participation in activities. This confirms the findings of a recent study (Mahoney & Stattin, 2000) that suggests a similar relationship between involvement in structured activities and parent-adolescent connection.
When a parent is involved in the life of the adolescent, he/she encourages him/her to be actively engaged in normative activities. The inverse is also true, when an adolescent recognizes parental attention as an indicator of genuine interest and caring, he/she is influenced to engage in prosocial activities. There is an expectation that is communicated to the child and the obligation is for the child to respond with active engagement in normative activities. The results of this study support this explanation. When the parent invests time and attention in his/her child, and this relationship is sustained with frequent and effective communication between them, the adolescent is supported in his involvement in extracurricular activities. Although the data does not posit social capital as the 'cause' and EAP as the 'effect,' it is reasonable to conclude that parental involvement and communication may play a role in supporting adolescent involvement in extracurricular activities.

The importance of the school context in encouraging EAP is reflected in the significant positive association between the two school social capital variables and EAP. The logistic regression results point to the importance of adolescent connection to school and parental involvement in school activities. When an adolescent experiences a sense of acceptance and belongingness in the school as a result of positive interactions with students, teachers and other adults, he/she is more likely to participate in activities. This finding is congruent with previous research (Mahoney & Cairns, 1997) that suggests EAP as providing opportunities for building relationships with other students and adults. Mahoney and Stattin (2000) point out that those adolescents who are involved in school activities have positive relationships with their activity leaders. The lack of positive
relationships with activity leaders was reported as one of the reasons for students dropping out of activities or not enrolling in them (Hultsman, 1992). Therefore, while EAP provides opportunities for building relations with students and adults, existing social capital connections may influence participation, and furthermore, prevent dropping out of them.

Although the statistical relationship is weak, this study reflects the generally positive association between adolescent relationships in school and involvement in activities. This finding supports previous investigations (McNeal, 1995; Karweit, 1983; Finn, 1989; Patrick et al., 1999; Davalos, Chavez, & Guardiola, 1999) that argue in favor of participation in activities to support the formation of positive peer friendships. The participation-identification hypothesis proposed by Finn (1989) is consistent with the social capital explanation that is supported by the findings of this study. Active engagement in school activities that leads to bonding with others creates a sense of acceptance, belongingness and identification with the school (Davalos et al., 1999; Cooper, Valentine, Nye, & Lindsay, 1999). This study makes no claim regarding the causal direction of this relationship. The results suggest that whereas social capital in the school may be the trigger that promotes EAP, that participation provides the opportunities to forge new friendships, and thus, to maintain and to increase social capital.

This study has found a strong association between adolescent participation and parental involvement in the PTA. In fact, this is the most important predictor of EAP. The odds ratio indicates that parental involvement increases the probability of adolescent
participation by about 90%, that is, parental involvement virtually insures adolescent participation in extracurricular activities. This finding is congruent with previous research (Fletcher et al., 2000) that suggests a positive association between these two variables. While an alternative explanation is that this may be the result of parental modeling, this construct has not been explored in social capital literature. The social capital explanation is that parental involvement generates connections with other parents and their children, creating a supportive network that encourages or pressures participation. Adolescents whose parents initiate such network relationships are thereby encouraged to join in activities that other children are engaged in.

The generation of networks among parents and teachers also enable the establishment of consistent norms and sanctions that influence participation in normative activities. Parental involvement in the school was also found to be a significant predictor of participation in sports activities and other (student council, honor society) activities. Adolescents who are talented in sports or take on leadership roles in schools are more visible than others and this may naturally encourage greater parental involvement.

In addition to the linkages in the school, social capital theory also proposes that 'intergenerational closure' will promote adolescent engagement in constructive activities. This variable, an indicator of neighborhood social capital, was found to be a significant predictor of EAP and is strongly associated with participation in extracurricular activities. When a parent is connected with the adolescent's friends and their parents, and reciprocally, they are also connected to the adolescent and his/her parents, the resulting web of relationships may encourage EAP among the adolescents in the group. An
alternative explanation for this relationship between intergenerational closure and EAP may be that participating adolescents and their parents know one another in the context of common activities they are engaged in, thus facilitating intergenerational closure.

Intergenerational closure and parental involvement in the school may suggest increased monitoring of adolescent activity by parents, teachers, and other adults in the community. When adolescents are aware that they are being monitored, they may tend to engage in positive activities. Mahoney and Stattin's (2000) study also revealed a direct relationship between adolescent participation in structured activities and parental monitoring. Intergenerational closure was also found to predict participation in sports, and arts and music activities. This may be because adolescents who are involved in these types of activities may tend to engage in non-normative behaviors (Eccles & Barber, 1999), and therefore, receive more monitoring by parents and other adults.

Although 'adolescent closeness to the family' is a statistically significant predictor, the relationship is a weak one. The odds ratio indicates that for every unit increase in closeness to the family, the probability of participation decreases by 2.4%. This has no practical significance and may suggest that this variable, as measured in this study, is not useful in explaining the role of social capital as a predictor of EAP. Similar weak, negative relationships were found between this variable and participation in the four activity domains.

'Parental expectations,' another indicator of family-based social capital, was not significantly related to EAP. This may be because this variable indicates parental expectations regarding educational success, and may not directly influence EAP. Not
surprisingly, it was positively related to participation in academic activities and other activities such as involvement in student council and honor society. Parents of adolescents who engage in academic-related activities may be expressing higher expectations about educational achievement. In turn, higher parental expectations are associated with those adolescents who perform well in school. This explanation is supported by other findings (McNeal, 1995; Marsh, 1992) that relate engagement in academic activities with superior performance in school.

Two neighborhood variables, 'parental involvement in community activities,' and 'neighborhood social cohesion' were not significant predictors of EAP. These results indicate that EAP may involve more proximate influences that are related to the school rather than the neighborhood. We can speculate that if the outcome variable was participation in community-based after-school programs, community-based social capital indicators such as parental involvement in community activities, and neighborhood social cohesion may have been influential in predicting participation. Future research can address the question of whether proximity is an associated or necessary condition for social capital indicators of EAP.

It is interesting to note that adolescent participation in academic activities was associated only with family-based social capital variables. A possible explanation is that adolescents who are engaged in academic activities have high family-based human capital that supports their participation. Also, as other research (Eder & Kinney, 1995; Melnick et al., 1992; Morgan & Alwin, 1980) points out, academic activity participation does not carry 'high status' with other students, accounting for, at least in part, the lack of
association between the school connections and this activity participation. Also, adolescents who are academically oriented tend to associate with others who have similar interests (Eccles & Barber, 1999). In contrast, adolescent connection to school was found to be positively associated with participation in the other three types of activities. There is some support in previous research (Eccles & Barber, 1999) that participation in these activities is associated with greater association with peers and attachment to school.

In summary, the results of the study support the role of social capital in explaining adolescent participation in extracurricular activities. The social capital model is found to explain at least, in part, the reason why some adolescents engage in school-sponsored activities while others do not. The generation of social capital in the school context, and to a lesser degree in the family and in the neighborhood can encourage adolescent involvement in such normative activities. Conversely, the study also contends that adolescents who lack access to supportive social capital networks in these contexts are less likely to engage in extracurricular activities.

The Effects of Social Capital and Participation in Extracurricular Activities on Truancy

In this study, participation in extracurricular activities represents an important intermediate outcome of interest. We have discussed the findings of this study that provide reasonable grounds to associate social capital and participation in extracurricular activities. The central question being investigated is whether the social capital hypothesis can explain school truancy among adolescents. The researcher is also interested in
understanding the additive role of EAP in reducing school truancy. The results of the logistic regression analyses provide sufficient empirical evidence to answer both these questions in the affirmative. That is, the social capital model and the identified predictors are useful in understanding the phenomenon of adolescent truancy.

The limited research evidence available (Davalos et al., 1999; O’Brien & Rollefson, 1995; Helm, 1991; Castle, 1988) associates the benefits of adolescent participation in extracurricular activities with truancy. The findings of this empirical analysis are concordant with much of previous research that links EAP, social capital, and truancy. Even within the real limitations of the research methodologies utilized, the researcher contends that there is adequate evidence to support the hypothesis that access to sufficient social capital and participation in extracurricular activities can reduce truancy among adolescents. The results demonstrate that there are a wide range of family, school and neighborhood-based social capital factors associated with truancy. Consistent with previous studies (McNeal, 1999b), the observed differences between truant and non-truant adolescents can be explained, in part, by the differences in the amount of social capital available to them.

The role of EAP in improving attendance rates of students has some support in empirical research (Mahoney & Cairns, 1997; O’Brien & Rollefson, 1995; McNeal, 1995; Kleese, 1994). The findings of this study add further confirmation to the earlier findings. However, the findings of this study also highlight an important distinction: participation in various activities may not be equally beneficial to all participants. Whereas participation in arts and music activities was found to be associated with a
reduction in truant behavior, there was no significant relationship between truancy and participation in the other types of activities. That is, EAP is protective against truancy only for those who participate in at least one arts and music activity, with or without participation in other activities.

Additionally, it was sufficient for an adolescent to be involved in only one activity to be protected from the likelihood of truant behavior, provided this was an activity in the arts and music domain. A modicum of support for this is found in a study by Eccles and Barber (1999) who found that among males who were involved in arts and music activities, there was a decreased tendency to skip school. Although there are suggestions (Straub, 1994; Grover, 1994; Wright, 1994) that indicate positive benefits for those who participate in arts and music activities, this finding needs to be empirically supported by additional research to explain its unique role in reducing truancy. It may be because, as Wright (1994) suggests, arts and music activities instill discipline and encourage perseverance in participants. Another potential reason may be that arts and music participation is associated with engagement in academic work and connection to school (Rombakas, 1995). The contribution that arts and music participation makes to understanding truancy reduction is a particularly interesting and promising finding that requires additional research to explicate. Should future research explicate this finding and identify any related conditions, the implications could support both the expansion of arts and music curricula in EAP and possibly the school curricula as well. Truancy prevention programs might be designed to target those adolescents who would most benefit from this approach.
The interaction model also found that the relationship between EAP and truancy is moderated by school level. The odds ratio indicates that among adolescents who are not engaged in EAP, the association between lack of participation and truancy is weaker for those in middle school. That is, EAP is more protective for those in middle school, as compared to those in high school. The importance of having high school students engaged in EAP has been supported by other researchers (McNeal, 1999a). Participation in activities may be more critical for high school students because the social, intellectual, and educational transitions involved in adjusting from middle school to high school can be complicated by a variety of family context and school context variables as well as maturational and developmental vulnerabilities of young adolescence. Social capital variables and EAP may mitigate against the effects of these vulnerabilities and context-related issues by supporting this transition and facilitating new connections and greater engagement with the school.

The principal hypothesis of this study is to test whether truancy can be explained using the social capital model. Based on the goodness of fit of the full model, this study argues that adolescents who have access to sufficient social capital resources based on their network of relationships with other adolescents and adults are less likely to be truant than others who have little access to these social capital resources. From a social capital perspective, the absence of positive social capital environments denies students the resources that would help them remain engaged in school, thereby leading to the increased likelihood of truant behavior. The empirical support in this study is sufficient to suggest that this explanation is a probable and valid one.
The social capital model that predicted truancy employed two school variables, three family variables, and two neighborhood variables. The results of the regression analyses provide data on the relationship of each of these variables and the probability of truancy. Whereas some of these variables yielded main effects only, the effects of other variables on truancy were attenuated by age, school level, or poverty status.

The results of these analyses suggest that parental involvement with the adolescent is likely to decrease the likelihood of truancy. This finding is supported by previous empirical research (Furstenberg & Hughes, 1995; Barnes & Farrell, 1992) that point to the protective role of parental involvement in reducing truancy. Coleman (1990) and other social capital theorists (Teachman et al., 1997; Parcel & Menaghan, 1993) contend that parental involvement with the adolescent creates social capital that can facilitate the transfer of norms and values to them. Parental engagement with their children facilitates the establishment of a structure of norms and sanctions that, in turn, reduces the likelihood of negative behaviors such as truancy. Social capital theory explains this investment of time and attention by parents as one of the mechanisms that encourage positive adolescent behaviors. Parental involvement may be perceived by the adolescent as support and interest in her/his well being that can motivate the adolescent to meet parental expectations, and thereby, to reduce truancy.

Convergent with the existing body of empirical literature (Levine et al., 1986; Reid, 1999), this study finds that closer bonding with family members can protect adolescents from truant behavior. The results of this study find support for Coleman’s (1988) assertion that family relationships based on mutual expectations and obligations
can lead to the healthy socialization and adjustment of children, and the avoidance of negative behaviors like truancy. Parental investment in their children is accompanied by mutual expectations and obligations; parents expect their children to attend school and not to be truant and children feel obligated to fulfill those expectations. Truancy, as indicated by the study results, is associated with adolescents who reside in families with low social capital; where parents and other adults may not invest time and attention to their children. As social capital research (Teachman et al., 1997; Astone & McLanahan, 1991; Coleman, 1990) suggests, positive relationships in the family, especially between parents and children, facilitate the transfer of human capital from parents to their children. Adolescent truancy may imply that in these families there is little transfer of human capital from parents and other adults to children. This position is supported by previous research (McCall, 1995; DeSantis et al., 1990) that found truancy more frequent among children whose parents did not have a college education and/or did not assist them with schoolwork:

A third family variable that was found to be a significant predictor of truancy is parent adolescent communication. Although a statistically weak relationship, the odds ratio suggests that increased parent adolescent communication is related to increased truancy. The effect of parent adolescent communication in predicting truancy is not in the expected direction, that is, increased parent adolescent communication is associated with increased likelihood of truancy. The explanation may reside in the construction of the variable itself. The items that constitute the variable merely measure whether the parent and the adolescent discuss issues concerning schoolwork, grades, and other
aspects of adolescent life, indicating that the lines of communication are open; it does not
capture whether the communication was a positive interaction or a negative interaction.
Therefore, one plausible explanation for the finding of an association between parent
adolescent communication and truancy is that children who tend to be truant may ‘get
talked to’ and consequently engage in intense and perhaps unproductive discussions with
their parents. Barnes and Farrell (1992) found that parents of truant children are
frequently called to school due to their children’s discipline problems. This suggests that
in constructing variables that measure social capital in the future, it may be very
important to distinguish between positive, social capital building communication and its
variants. This finding also has an important implication for social capital theory building.
The distinction of whether a social capital variable like communication has a positive or
negative valence, that is, one that either builds or destroys social capital, may prove to be
an important distinction for the clarification, interpretation, and application of future
research results.

The present study employed two school-based variables, adolescent connection to
school and parental involvement in the PTA to measure social capital in the school. The
logistic regression results show that the effect of ‘adolescent connection to school’ on
truancy is moderated by age. However the attenuation is so minimal that it has little or
no practical significance. The main effect suggests that as the ‘adolescent connection to
school’ increases, the probability of truancy decreases. This finding is convergent with
previous literature (Parcel & Dufur, 2001; Croninger & Lee, 2001; McNeal, 1999b;
Clark, 1995) that underscores the role of school processes in promoting adolescent
engagement in school. Truancy may be a sign of disengagement from school (Reid, 1999; Jordan et al., 1996) that often culminates in dropping out of school. Students who feel alienated are found to be truant and engage in negative behaviors. In support of social capital theory, the findings of this study indicate that the structures and processes that facilitate the creation of social capital for children can increase their attachment to school and reduce truancy.

Positive adolescent relationships with other students and teachers increase the connection to school. The data suggests that when students feel connected to their peers and accepted by their teachers, there is a decreased probability of truancy. Teacher-student relationships have been the focus of much research in the past (Catterall, 1998; Bryk & Thum, 1989). This study supports Bryk and Thum’s (1989) finding that lack of closeness with teachers and peers may be one of the reasons for truancy. Students need to be provided increased opportunities to have direct and informal interactions with school personnel to establish positive relationships with them. The implication for school administrators and planners is that the school needs to be structured to provide for the natural and ample occurrence of these opportunities. Whereas it may be important to have effective curricula, competent teachers, more physical resources and better schools, this study indicates that it may be crucial to also facilitate the processes that generate social capital in the school. By implication, it is suggested that when schools become communities where students have access to social capital resources, then truancy and related behavior problems may be reduced.
Parental involvement in the school was not a significant predictor in the main effects model, but surfaced as a significant predictor in conjunction with school level. The analysis suggests that if a parent is involved in the PTA, it reduces the probability of truancy for middle school children by 47%. Therefore, parental connection to the school may be more protective for middle school children than those in high school. This result supports the growing research evidence (Li et al., 2000; McNeal, 1999b; Duckworth & deJung, 1989) that links parental involvement in the school, increased monitoring and reduced truancy. Parental involvement in the school enables parents to network with other parents and teachers to generate social capital that can support increased monitoring of children. Parent-teacher networks can be potential sources of information that parents can utilize to detect adolescent disengagement from school. The differential effect of parental involvement between middle school and high school children may be related to the normal development shift in the adolescent’s primary focus from the family to the peer group that occurs at this stage, and the related adjustment required in parenting style and shared activities.

Based on the inverse relationship between intergenerational closure and truancy, this study suggests that neighborhood social capital can reduce truancy among adolescents. This is supportive of Coleman’s (1990) thesis that when there is an interlocking network of relations between persons in a neighborhood, the social capital so generated can lead to a collective monitoring of behavior. Parents, adolescents, their friends and their parents, neighbors, and other adults in the community can provide support and information to discourage truancy among children. In summary, the
presence of social capital in the community provides a plausible explanation for the reduction of truancy. This study provides additional support to previous findings (Elliott et al., 1996; Brooks-Gunn et al., 1993; Barnes & Farrell, 1992) that highlight the positive role of intergenerational closure in preventing non-normative behavior.

Parental involvement in community activities has been associated with benefits for children (Buchel & Duncan, 1998; Runyan et al., 1998; Furstenberg & Hughes, 1995). This study offers a similar argument that when parents establish linkages with other adults in the community through participation in activities, it can influence their adolescents to be truant less. The statistical model found that the influence of parental participation on truancy is mediated by the age of the adolescent. Parental involvement was found to protect younger adolescents from truancy. This differential effect may be due to the increased freedom and consequent decreased monitoring in the neighborhood that older children are given over younger children. Consequently, older children may benefit less from parental network connections in the community.

Parental involvement in the community was also found to effect truancy differentially for adolescents from different socioeconomic classes. Compared to children from nonpoor families, children from poor families were found to benefit from parental involvement in the community. The results of the present study suggest that if a parent has social capital connections in the community, it reduces the probability of their children's truancy by 90%. That is, parental involvement in the community almost assures that the adolescent will not be truant if he is also poor. The implication is that for adolescents from disadvantaged backgrounds, parental involvement is critical in reducing
the likelihood of truant behavior. Poor parents may need to rely on the social capital resources of the community to monitor their children, and prevent truancy.

In addition to illuminating some of the relationships between social capital constructs and truancy, this study also investigated whether EAP can contribute to the reduction of truancy. The full model suggests that the relationship between EAP and truancy is moderated by school level. For those in middle school who do not participate in extracurricular activities, the risk of being truant is lower than for those in high school who don’t participate, that suggests that EAP is probably less critical for adolescents in middle school. The finding of this study that EAP is useful in reducing truancy reiterates previous findings (Gardner et al., 2000; Mahoney & Stattin, 2000) that call for greater efforts to involve adolescents in constructive, structured activities.

In summary, the findings of this investigation have found support for the social capital model in explaining adolescent participation in extracurricular activities, and in reducing truancy among adolescents. Most of the measures of social capital have been useful in explaining these relationships. Increasing the adolescent’s access to social capital resources in the various loci of adolescent life appears to be a critical intervention in reducing the likelihood of adolescent truancy.
Limitations of the Study

This study has demonstrated that a number of family, school and neighborhood related factors are associated with adolescent participation in extracurricular activities, and furthermore, that these factors also influence adolescent truancy. While this study contributes to the repository of research on EAP and truancy, the findings that are presented here must be accepted with caution. There are a number of limitations, both methodological and conceptual, in this study and its analyses.

The study data is based on self-reports of adolescents suggesting the probable presence of social desirability bias, response error and other shortcomings associated with such large-scale studies. The dependent variable in this study, truancy, may be underreported by the subjects of the study leading to inaccurate estimates of unexcused absenteeism. Additionally, truancy was measured using a single item, providing grounds for questioning the reliability of the data. Because the researcher was interested primarily in examining the usefulness of the social capital model in explaining truancy, any underreporting of truancy frequency may not influence the findings enough to cause serious concern. The validation of the social capital model provides sufficient grounds to use this study approach to initiate future research with data that lends itself to cross-validation of several types of outcome measures.

The Add Health Study collected data from selected students of a sample of U.S. schools. The sample selection of both students and schools were not based on equal probabilities requiring certain statistical procedures to correct for these design effects (Chantala, 2001). Population estimates based on analysis of this data require correction
for design effects. However, the purpose of this analysis was to predict truancy using the social capital model and this does not strictly necessitate the use of weighting for accurate prediction results. Generalization of the findings of this study to adolescents who possess similar characteristics is consistent with inferential statistics (W. Notz, personal communication, June 6, 2002).

Caution must be exercised in making any claims to the benefits associated with participation in activities. These findings provide only a part of the explanation. Selection effects are always associated with voluntary activities and this could confound the results of the study. It is possible that the vast majority of adolescents who participate in extracurricular activities already have access to high levels of social capital.

The results of this study represent associations between variables employed to measure social capital and truancy. There is no claim to causality in these models. Logistic regression analysis consists of associations that can be interpreted in either direction. Despite these limitations, the usefulness of the social capital model in contributing to the explication of the phenomenon of adolescent truancy also paves the way toward new avenues of inquiry about adolescent truancy in the future.

Implications for Social Work

The usefulness of the social capital framework in understanding school truancy is supported by the findings of this study and suggest several key implications for social work. The study indicates the strategic importance of the generation of social capital in contexts that influence adolescent truancy. Programmatic initiatives that create social
capital among persons in the identified contexts are not only likely to reduce truancy, but may also contribute to other desirable outcomes such as school completion. Furthermore, the findings also suggest that social work interventions in truancy prevention must target all possible loci of adolescent life, and involve all the stakeholders including parents, teachers, school staff, community leaders, and the students themselves.

Coleman and Hoffer (1987) suggest that extra-familial contexts can serve as surrogate sources of social capital for children. The findings indicate that school contexts that create social capital for children can protect them from the risk of truancy. Therefore, the structures and processes in the schools are legitimate targets for school social work interventions in order to support those adolescents who tend to be truant. Implicitly, the validity of the social capital thesis also points to the necessity of building effective partnerships between families, schools and neighborhoods in reducing truant behavior among adolescents. Family-school-neighborhood partnerships may enhance intergenerational closure and also lead to a reduction of truancy. Therefore, the importance of sharing and exchange of resources, information, and communication among these social systems becomes a strategic priority.

Some truancy intervention programs (U.S. Department of Education, 1996) employ punitive legalistic approaches to hold parents accountable for their children’s truant behavior. From a social capital perspective, it seems that the effectiveness of these measures may in fact undermine the production of social capital in families, that is, consequentially be counterproductive in reducing truancy. Short-term solutions that induce fear in parents may eventually disrupt family harmony and lead to negative
behavioral consequences. A social capital approach might be to use therapeutic
treatments with individual families that focus on resolving conflicts and enhancing the
positive interactions among family members because this strategy is more likely to
generate social capital and its benefits. This strategy also provides a rationale congruent
with the findings in the educational and psychological literature that positive approaches
to behavioral change are more conducive to change than punitive approaches.

This study highlights the critical role of intergenerational closure in the reduction
of truancy. This finding implies that parental embeddedness in their friendships and in
their community is insufficient to buffer against the risk of adolescent truancy, but that
parent relationships must necessarily include friendships specifically with the parents of
their children’s friends. Social workers can use this knowledge to suggest potentially
effective strategies for parents who have truant adolescents to use to regain behavioral
control.

Findings from this study suggest that parental involvement in community
activities may be particularly beneficial for poor children. Social workers who work with
disadvantaged groups may garner this advantage by encouraging and facilitating greater
participation by economically challenged parents in activities of their communities. The
building of positive network relationships with others in the community may also enable
economically disadvantaged parents to solicit community support in the process of
reducing adolescent truancy.

There are implications also for those social workers who work in school contexts.
School social workers can draw attention to the necessity of creating social capital
conditions in the school that increase the students’ sense of belonging and improve the relationships among and between students, teachers and parents. Initiatives that increase the informal interactions among teachers and students may also prevent conflicts in the school context that sometimes could escalate into violence. Social capital generating activities may inoculate children, both individually and as members of school groups, against aggressive behaviors. Increasing awareness among teachers of the vital importance of building relationships with disengaged students may play an important role in reducing truancy and potentially reducing other negative behaviors as well.

School-based social workers may need to pay particular attention to adolescents who exhibit a lack of interest in extracurricular activities and to provide appropriate alternative services to prevent truancy. Family intervention approaches might include facilitating the involvement of the family in encouraging extracurricular participation and in monitoring adolescent activity via intergenerational closure. Social workers involved in community organizations have a role in marshalling community resources to provide opportunities for appropriate structured after-school activities for adolescents. The promotion of these social capital generating activities in communities can support the type of initiatives that encourage adolescent participation in normative activities.

Clinicians who provide services to individuals in various contexts can intervene at different levels and with different family members to foster involvement in EAP. For example, while some parents may not be ready or willing to engage with their children directly in the therapeutic process, encouraging the children’s participation in EAP may provide an indirect way of intervening in the family system for the increased benefit of
the child, while also protecting the child from becoming a family scapegoat. Conceiving of interventions as social capital building conditions provides a potentially useful conceptual tool for focusing on the desired relational outcomes.

Directions for Future Research

This study was concerned with identifying individual-level social capital variables that predict the likelihood of school truancy. It may also be important to identify social capital factors from an institutional perspective, that is, to identify those variables that can predict the difference between schools in their truancy rates. Similarly, future research may utilize the social capital framework to identify the family-level and the neighborhood-level variables that influence school truancy. Greater understanding of the levels of social organization and each level’s potential contribution to truancy prevention and the circumstances in which these interact, would encourage each level to focus their prevention and intervention resources to where it would likely have the greatest impact.

This study, like much of the research on truancy, is correlational in basic design. The possibility of employing a longitudinal design to test this model in explaining truancy is worth further exploration in future research. Adolescents in families that are rich in social capital, who attend social capital-rich schools and reside in neighborhoods with high levels of social capital may be tracked over time to determine whether there are changes in the amounts of social capital. If so, then what are the structural and process changes in their families that have occurred? For example, family conflict and the consequent destruction of social capital has been associated with different rates of
trucancy. Similarly, changes in school and neighborhood social capital that is available to the adolescent as a result of residential mobility may additionally account for differential rates of trucancy. Supportive findings that are based on the use of such a longitudinal design would both strengthen the findings of this study and contribute to the theory building of social capital.

The limitations imposed by the available variables in the data set did not permit the inquiry into other questions such as: Does the intensity of adolescent involvement in extracurricular activities influence trucancy? Does adolescent level of commitment to a particular activity play a role in influence trucancy? How do adolescent relationships with activity leaders, coaches, and mentors influence trucancy? Future investigations that seek answers to these questions may enhance our understanding of the role of extracurricular activities in building social capital and reducing trucancy.

Furthermore, a more in-depth examination of arts and music activities in their role in reducing trucancy is suggested. A qualitative approach may be beneficial to explore the intricacies of this relationship. A deeper understanding of arts and music activities and those features that influence the reduction of trucancy could enhance and improve program the designs of other activity programs. The possible transfer of learning or the replication of relevant features may benefit other adolescents who are interested in non-arts and music activities. However, the effect of arts and music activities on the reduction of trucancy must be treated with caution because personality traits and talents of individual adolescents that could potentially account for this effect has not been controlled in this study.
Although this study points to the importance of social capital in multiple contexts, it does not test the interactive effects of these contexts on truancy. Based on the findings of this study, it seems that the school is the primary context that influences truancy. Additional research is needed to test how these contexts interact to influence adolescent truancy and may lead to a deeper understanding of this phenomenon and intervention strategies to reduce its occurrence. It may be useful to understand whether and, if so, which of these contexts mediate or moderate the influence(s) of other context(s) in the reduction of truancy.
LIST OF REFERENCES


194


