



Research on and Evidence for the Developmental Assets Model

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This Appendix provides the research background and general application of the Developmental Assets model and also describes the current evidence base for it, showing that assessing the cumulative benefits of Developmental Assets for individual youth can help to:

- Explain the prevention of and protection from high-risk behaviors;
- Explain the expression of thriving behaviors; and
- Explain academic achievement and commitment to learning.

You will find it helpful as background for asset-building efforts, as well as for sharing with program and initiative leaders and funders. In addition, you will find useful information here, as you develop your targeted program(s) and project(s), to support your focus on asset building and your use of measures of Developmental Assets in your evaluation.

The Developmental Assets Model

Search Institute's Developmental Assets (or asset) model is based on a set of theoretical hypotheses and empirical evidence that helping youth experience healthy developmental resources and opportunities, and helping them to successfully achieve developmental tasks is one of the best ways to prevent negative behaviors and outcomes and to promote positive behaviors and outcomes. The asset model is based on a synthesis of multiple lines of inquiry aimed at

identifying the “building blocks” of development that contribute to three types of healthy outcomes:

- The prevention of high-risk behaviors (e.g., substance use, violence, early sexual intercourse, school failure);
- The enhancement of thriving behaviors (e.g., school success, affirmation of diversity, the proactive approach to nutrition and exercise); and
- Resilience, or the capacity to function adequately in the face of adversity.

The asset model identifies factors (40 Developmental Assets) that are empirically predictive of these healthy outcomes consistently across sex, race/ethnicity, and family income (Benson, Scales, Leffert, & Roehlkepartain, 1999; Leffert et al., 1998). All 40 Developmental Assets comprising the asset model are supported by empirical literature (Scales & Leffert, 2004).

The asset model also weaves together core themes from developmental systems and developmental dynamic systems theories that point to the developmental significance of positive relationships between young people and adults, among young people and their peers, and between young people and the various community and social settings that touch their lives. It draws support from research and evaluation studies that show that programmatic approaches that are narrowly focused on reducing or preventing risks are less effective than more comprehensive approaches that focus on meeting young people’s broad developmental needs (e.g., Schorr, 1993; Roth, Brooks-Gunn, Murray, & Foster, 1998; Roeser, 2001; Seligman & Csikszentmihalyi, 2000).

The Asset Model’s Theoretical and Research Roots

The asset model is conceptually aligned with a number of recent syntheses of research on adolescent development, including the National Research Council and Institute of Medicine (Eccles & Gootman, 2002); the working group on positive youth development within the Society for Research in Adolescence (Roth et al., 1998), and the American Academy of Political and Social Science (Damon, 2004). It represents an integrative and applied framework of strength-based theories and research that constitute the field of “positive youth development” (Benson, Scales, Hamilton, & Sesma, 2004). It is also consistent with one of the core dynamics of positive youth development that involves the active interplay of ecological and individual factors in moving youth toward health-promoting actions and behaviors. The asset model reflects an exceptional bal-

ance of ecological influences (the external assets) and individual-level engagement (internal assets).

The asset model also has an important lifespan relevance by virtue of offering a theoretical basis for understanding positive development across multiple age groups. Empirically based Developmental Assets frameworks have been crafted for middle childhood or upper elementary school years (Scales, Sesma, & Bolstrom, 2004) and early childhood or preschool years (see www.search-institute.org).

In addition to incorporating the application of knowledge associated with strength-based development, the asset model is also based on the theory and research that shows a number of discrete qualities and features minimize the influence of risk factors and enhance the likelihood of successful development.

For example, attributes related to resilience and competence are central to developmental strengths. Resilience refers to “the emergence of good adaptation in the context of high-risk exposure or significant threats to development” (Masten & Curtis, 2000, p. 530). Garmezy (1985), for example, noted that resilient children seem to have three broad categories of factors operating to protect them: 1) individual dispositions, such as an easy-going temperament and high intelligence, 2) cohesive families, including a close relationships with a parent, and 3) the ability to attract and use sources of social support, including relationships with nonparental adults and positive school experiences. Masten and Curtis (2000) defined “competence” as “adaptational success in the developmental tasks expected of individuals of a given age in a particular cultural and historical context” (p. 533). Research has suggested that competence exhibits a coherent structure in children and adolescents, being comprised of academic, conduct, and social success throughout childhood and adolescence (Masten et al., 1995).

Numerous elements, defined as protective factors, have also been identified as playing an important role in protecting children from risk and encouraging successful adaptation. Protective factors include a high commitment to school, high self-efficacy, and an external support system that encourages coping and positive values (Hawkins, Catalano & Miller, 1992). For Benard (2004), resilience for young people is defined as the presence of caring relationships, high expectations, and opportunities to participate and contribute in family, school, and community life.

In Jessor, Turbin, and Costa’s (1998) longitudinal study of urban high school students, risk and protective factors each accounted for relatively similar proportions of variance in school success and delinquency prevention, both concurrently and across time. The most important predictors among the risk factors were low expectations for success, low self-esteem, hopelessness, and having friends as models for problem behavior. In contrast, the key protective factors were attitudinal intolerance of deviance, positive orientation to health, and

having friends as models for conventional behavior. The findings also suggested that risk was moderated by protection, such that young people with higher levels of risk factors were more likely to have successful outcomes if they also had higher levels of protection.

The concept of “connectedness” to others, derived from positive relationships, is also central to strength-based development. By “connectedness” we mean the quality and stability of the emotional bonds of support and caring that exist between children and caregivers, children and peers, and among the adults in young people’s worlds. Scores of studies have reported that positive connections to parents and other adults contribute to better well being across a variety of behavioral and psychological outcomes at specific moments in time, as well as across time (reviewed in Scales & Leffert, 1999). Especially for children and adolescents of color, relationships with adults in the extended family may be particularly important supplemental or compensatory sources of connectedness (Scales & Gibbons, 1996).

Pettit, Bates, and Dodge’s (1997) longitudinal study of more than 500 Tennessee and Indiana families with kindergartners showed that the quality of supportive parenting children received as kindergartners (e.g., parental warmth and involvement, proactive teaching, calm discussion) contributed a small (1–3 percent) but unique variance to the prediction of their functioning in both kindergarten and grade 6, including whether they exhibited problem behaviors, were socially skillful, and performed well in school. This study was notable for showing that the presence of positive parenting, not only the absence of harsh parenting, plays an important role in contributing to child well-being in both the short and longer term.

Relationships with adults in school and community settings also provide valuable sources of connection. In the National Longitudinal Study on Adolescent Health, Resnick and colleagues (1997) reported that young people who experienced closer connections to their families and schools were significantly less likely than other adolescents to engage in a variety of risk-taking behaviors. Each of the contexts (family and school) by itself explained relatively modest portions (5 percent–18 percent) of the variance across outcomes such as emotional distress, violence, and substance use. However, analyses showed that the emotional connectedness variables (such as feeling loved and wanted at home, feeling close to people at school, and feeling that teachers treated them fairly) were more important contributors than other variables such as simple parent presence, the activities parents and adolescents did together, feelings about student prejudice at school, or the school’s attendance or dropout rates. Even for age at first sexual intercourse, an outcome where other variables did make a contribution, emotional connectedness still played a critical role. Young people with high levels of parent/family connectedness were 15 percent less likely than those with low levels ever to have had sexual intercourse. Those with high levels

of school connectedness were even more positively affected: They were 23 percent less likely ever to have had sexual intercourse.

Community Application of the Asset Model

In addition to being well grounded in scientific theory and research, the asset model has demonstrated widespread practical application. This is in part a natural outgrowth of the asset model's deliberateness in calling attention to the many and varied community sources of developmental strengths and a consequence of the availability of Search Institute resources and products describing strategies and practices those sources can employ to support the positive development of young people. The asset model not only considers the more obvious venue of youth programs, some of which are designed to fill the "gap periods" when youth are not engaged in more formal socializing systems (Benson & Pittman, 2001), but uniquely emphasizes the connections between and transactions across other community settings and contexts that are too often overlooked or underappreciated (Bronfenbrenner, 1979; Scales & Leffert, 1999). The asset model serves as a point of departure from, and a counterpoint to, most research as well as policy, program, and practice efforts that tend to only focus on a single source, or "delivery system," for developmental well-being such as families, schools, neighborhoods, youth organizations, or religious communities.

The asset model stimulates mobilization, planning, and implementation processes in hundreds and hundreds of communities throughout America that are striving to become "developmentally attentive" places for young people. Communities that focus on asset building use the developmental assets to establish a language of the common good, secure a working consensus on core values that undergird healthy development, and then take concrete steps to raise good kids. The common language the asset model introduces to community conversations enhances the prospects of reaching a consensus that can help shape incentives for adult engagement with children and youth. The consensus also serves to stimulate and influence the formation of developmentally supportive social norms, and leads to the provision of opportunities and resources that can bring developmental well-being to fruition.

A developmentally attentive community acts to see that youth experience multiple developmentally rich life settings, and that all youth, not just those deemed to be at-risk and/or served by standard prevention or risk-reduction programs, are beneficiaries. The developmentally attentive community works to activate the strength-building capacity of its residents of all ages, promote collective action that seeks to recreate community infrastructure more conducive to positive development, and delineate pathways for a more equitable access to all facets of its revitalized infrastructure.

The asset model also appears to hold global applicability. Asset-building implementation is occurring in Canada, Brazil, Singapore, and Australia, as interested parties see the relevance and utility of the model in serving the youth of these nations.

Many communities make use of the Search Institute survey entitled *Profiles of Student Life: Attitudes and Behaviors* (A&B) to initiate their asset-building endeavors. Search Institute began using the A&B in 1989, and since that time has been conducting studies of 6th to 12th grade students in public and private schools throughout the United States that complete the instrument. The A&B was revised in 1996 to measure each of the 40 Developmental Assets, gather data on a set of items defined as developmental deficits, and measure a collection of high-risk behaviors drawn from federally funded research studies. Finally, the survey tries to identify the degree to which young people manifest what are referred to as thriving indicators, representing optimal expressions of healthy and responsible behavior. The A&B is administered anonymously in a classroom setting with standardized instructions.

The completed surveys are mailed back to Search Institute, where the data are processed and an aggregate report is produced and sent back to the community. The aggregate report provides a developmental profile of community youth, and also paints a portrait of the human development community system for young people. Through 2004 more than 3,000 communities have had their youth complete the A&B one or more times, and about 2 million adolescents have completed the instrument at least once.

Analyses of aggregate national samples of adolescents completing the survey during a particular school year have been conducted for 1989–1990, 1996–1997, 1999–2000, and 2003–2004. Aggregate national reports have been formally published in 1990, 1999, and 2005 [check this date at page proofs]. The data collected from administering the A&B are the foundation for analysis and establishment of the evidence base documenting the benefits of using the asset model.

Evidence Supporting the Developmental Benefits of Using the Asset Model

There is a consistent and growing body of evidence based on correlational and regression statistical analyses that point to the cumulative influence, importance, and power of the Developmental Assets in relation to significant dimensions of young people's lives. Analysis of various data collected by Search Institute, along with the evaluation of various initiatives conducted by third-party evaluators, makes the case that assessing the cumulative benefits of Developmental Assets for individual youth can help to:

- Increase an understanding of what constitutes risk;
- Explain the prevention of high-risk behaviors;
- Explain protection from high-risk behaviors;
- Explain the expression of thriving behaviors;
- Better understand relationships between asset categories and risk and thriving developmental outcomes; and,
- Explain academic achievement and commitment to learning.

In addition, Search Institute research and third-party evaluations are helping to make the case that there are cumulative benefits of a programmatic, community-based, and statewide application of the asset model, including:

- Positive developmental impacts on youth in areas such as: grade point average; stronger sense of belonging, self-confidence, and self-efficacy; possessing a more positive view of the future, a stronger degree of empathy for others, and a higher valuing of community service; a greater number of interactions with a wider circle of adults; and having strengthened relationships with significant adults in their lives;
- Decreases in alcohol, tobacco, and other drug use by youth;
- Decreases in academic failure;
- Increased commitment to school as demonstrated by improved attendance of students;
- Expressions of adult leadership for asset building;
- Successful community mobilization around asset building;
- Positive results for youth from redundancy and reinforcement of asset building across community settings;
- Changes in the behaviors of agencies serving youth;
- Youth and adults having more positive interactions with one another; and
- An increase in asset levels for youth over time.

The Cumulative Benefits of Assets for Individual Youth

Various studies generate a greater understanding regarding the developmental robustness of assets for individual young people. The evidence suggests that the more Developmental Assets young people experience and possess in their lives, the less likely they are to succumb to risks, the healthier, more caring, and

more responsible they are likely to be, the more inclined they are to manifest markers of optimal development, and the more likely they are to be successful in school.

Helping to Deepen an Understanding of What Constitutes Risk

Low levels of Developmental Assets appear to be a better predictor of engaging in risk behaviors than many of the more widely used sociodemographic risk factors, such as living in poverty, being from a single-parent family, and dropping out of school. An analysis of data from students in a Minnesota community was conducted to ascertain the relationship between high-risk behaviors and a more traditional risk measure: poverty (which, in this case, is measured by eligibility for free or reduced-price lunches).

The study indicated that experiencing fewer than 10 assets is two to five times as powerful in predicting risk as poverty. For example, young people (regardless of their levels of assets) who live in low-income families are twice as likely as other youth to engage in antisocial behavior. In contrast, low-asset girls (regardless of their family economic status) are nine times as likely as other girls to engage in antisocial behavior as other girls, and low-asset boys are four times as likely as other boys to engage in antisocial behavior. These findings suggest that using asset levels as a primary means of identifying youth at risk may be better than relying on more standard demographic measures.

A comparison was also made between young people who reported low levels of assets (0–10) with those who reported 11 or more assets, and their relative risk for various negative behaviors. Results showed youth with few assets as many times more at risk of engaging in all of the negative behaviors than those with more assets. This relationship holds true for both females and males. For example, females reporting few assets are six times as likely as other females to report school problems (including lower grades and skipping school). Males with few assets are five times as likely as other males to be at risk for using drugs.

Helping to Explain the Prevention of High-Risk Behaviors

In their study of nearly 100,000 6th–12th graders, Benson and colleagues (1999) noted that the higher the number of assets students reported they have, the less likely they were to report engaging in a variety of high-risk behavior patterns. For example, 53 percent of young people who are viewed as asset-poor and report 0–10 assets have used alcohol three or more times in the past month or have gotten drunk at least once in the last two weeks, but only 3 percent of students viewed as asset rich, with 31–40 assets, report such problem alcohol use. The

30 percent of students with average levels of assets (11–20) are 10 times more likely to have problems with alcohol use than asset-rich students.

Similar correlational patterns are evident with other common risky behaviors for youth, including tobacco use, drug use, sexual intercourse, depression and/or attempted suicide, antisocial behavior, violence, school problems, driving and alcohol, and gambling. Asset-rich students are many times less likely to engage in these behaviors than even asset-average youth, much less asset-poor youth.

Using regression techniques on the same sample, Leffert and colleagues (1998) reported that certain clusters of Developmental Assets explained a considerable proportion of the variance associated with those high-risk behavior patterns. All of the 40 assets were introduced into stepwise regressions as predictor variables, after first entering gender, grade, racial/ethnic background, family composition, and maternal education (as a proxy for socioeconomic status). A predictor variable was considered meaningful if it added at least 1 percent to the variance of the risk behavior patterns. Although slightly different clusters of assets were meaningful in explaining different outcomes, the total model (with demographic variables) accounted for 21–41 percent of the variance, and the assets themselves contributed 16–35 percent. Developmental Assets were most meaningful in predicting depression and/or suicide attempts, school problems, violence, and alcohol use, and had somewhat less explanatory power for tobacco use, sexual intercourse, and gambling.

An overall risk index of 24 different high-risk behaviors also was created. The total regression models (assets plus demographics) explained 66 percent of the variance of the risk index, and assets alone explained 57 percent. Across the risk index and various risk-behavior patterns, the Developmental Assets that most often were retained as meaningful predictors were positive peer influence, the value of restraint, peaceful conflict resolution, school engagement, resistance skills, and time at home. Achievement motivation was a unique predictor of school problems, and a sense of purpose and self-esteem uniquely explained depression and/or suicide attempts.

Moreover, consistent with the studies of other researchers (e.g., Jessor & Jessor, 1977; Ketterlinus, Lamb, Nitz, & Elster, 1992), Benson and colleagues (1999) show that risk behaviors tend to co-occur. That is, young people who engage in one high-risk behavior pattern are several times more likely to engage in other patterns of risky behavior. For example, 71 percent of the young people who regularly use tobacco also have problems with alcohol use, whereas among those who don't use tobacco only 17 percent have a problem with alcohol use. Similarly, 69 percent of those who engage in antisocial behavior also engage in violence, versus only 22 percent who engage in violence but not antisocial behavior. The risk behaviors Search Institute has found to be the most likely to

co-occur with other patterns of risk are problem alcohol use, tobacco use, and other illicit drug use, as well as antisocial behavior. Students who engage in any of those risk patterns are more than four times as likely as other students to engage in at least three additional risk behavior patterns.

In addition, for both middle and high school students, there are certain patterns of risk that, when students engage in them, mark those students as developmentally out of step with the majority of their peers. For example, middle school students who engage in problem alcohol use or who have had sexual intercourse three or more times are not so different from high school students in those risk patterns, but are distinctly different from most other middle school students, their peers. Similarly, high school students who engage in violence are less like their high school-age peers, and more like middle school students, who actually report more violent behavior than older adolescents. At each grade level, young people who engage in risk patterns that are developmentally out-of-sync with those engaged in by their peers appear to be at an especially heightened risk of engaging in other risk patterns. As Benson and colleagues (1999) wrote, the existence of these differences “isolates them from the majority of their peers, places them in contact with more negative influences, and increases the probability that their behavior will become more and more dangerous and destructive” (p. 68).

Helping to Explain Protection from High-Risk Behaviors

In addition to providing a preventive function, the Developmental Assets demonstrate their viability as protective factors in the sense that they mitigate against youth engagement in risk behaviors. The protective value of the Developmental Assets is best illustrated by findings that show how the number of risky behavioral patterns co-occur as a function of asset levels. The average number of 10 high-risk behavior patterns reported by young people drops sharply, by half or more, with each successive increase in the level of assets they report. Asset-poor young people with 0–10 assets report 4.4 high-risk behavior patterns. Youth with 11–20 assets report 2.4 risk patterns, while those with 21–30 assets report just 1 high risk behavior pattern. Asset-rich youth, with 31–40 assets, report just .3 risk patterns.

It is important to note that these findings are also consistent among youth of color. The same pattern of asset-rich multiracial, African American, Latino/Latina, Asian American, and American Indian youth being less likely to engage in these high-risk behaviors than their asset-poor counterparts is evident from an analysis of the data. Asset-average youth of color (those experiencing on average 23 or 24 Developmental Assets) tend to engage in no high-risk behaviors, whereas asset-poor youth of color (experiencing only 6–9 assets) engage in 9 or 10 high-risk behaviors (Search Institute, 2003).

Developmental Assets and Risk Behavior Patterns by Asset Levels*

High-Risk Behavior Pattern		Percent Reporting Behavior Pattern			
Category	Definition	Assets			
		0–11	11–20	21–30	31–40
Alcohol	Has used alcohol three or more times in the past month or got drunk once in the past two weeks.	49	27	11	3
Tobacco	Smokes one or more cigarettes every day or uses chewing tobacco frequently.	31	14	4	1
Illicit Drugs	Used illicit drugs three or more times in the past year.	39	18	6	1
Sexual Intercourse	Has had sexual intercourse three or more times in lifetime	32	21	11	3
Depression/Suicide	Is frequently depressed and/or has attempted suicide.	42	27	14	5
Anti-Social Behavior	Has been involved in three or more incidents of shoplifting, trouble with police or vandalism in the past year.	48	22	7	2
Violence	Has engaged in three or more acts of fighting, hitting, injuring a person, carrying or using a weapon, or threatening physical harm in the past year.	61	38	19	7
School Problems	Has skipped school two or more days in the past month and/or has below a C average	45	24	11	4
Driving and Alcohol	Has driven after drinking or ridden with a drinking driver three or more times in the past year.	35	19	9	3
Gambling	Has gambled three or more times in the past year.	30	19	11	4

*Based on studies of 6th–12th grader public school students during the 1999–2000 school year. Sample includes 217,277 students in 318 cities.

Helping to Explain the Expression of Thriving Behaviors

The concept of thriving encompasses something very different than the relative absence of pathology. Instead, it seeks to articulate the conceptual elements of thriving along with more explicit indicators of highly successful and even

Developmental Assets and Thriving Indicators, by Asset Level*

Thriving Indicators		Percent Reporting Behavior			
Category	Definition	Assets			
		0–11	11–20	21–30	31–40
School Success	Students grades are A- or higher.	8	17	30	47
Prosocial Behavior	Student provides help to others 1 hour or more per week.	64	80	89	96
Affirmation of Diversity	Student places high value on interacting with people of other racial and ethnic backgrounds.	36	57	74	88
Leadership	Student reports being a leader in a group or organization in the last 12 months.	26	47	69	89
Danger Avoidance	Student reports avoiding behaviors that are dangerous.	50	65	77	85
Health Promotion	Student reports an active interest in nutrition and exercise.	8	19	31	44
Delay of Gratification	Student “saves money for something special rather than spending it all right away.”	27	41	54	70
Resilience	Student reports he/she “does not give up when things get difficult.”	57	68	78	85

*Based on studies of 6th–12th grader public school students during the 1999–2000 school year. Sample includes 217,277 students in 318 cities.

optimal development. Search Institute’s set thriving indicators are school success, helping others, valuing diversity, maintaining physical health, exhibiting leadership, resisting danger, delaying gratification, and overcoming adversity.

There is some conceptual similarity between the notion of Developmental Assets and that of thriving indicators, in that both concepts focus on the presence of strengths in young people’s lives. However, assets are conceptualized as the building blocks of developmental success, whereas thriving indicators are seen as signs or markers of highly successful development. In other words, Developmental Assets are seen as predictors of the outcomes represented by thriving indicators. Experiencing and possessing assets defines conditions under which the attainment of those thriving outcomes is made more likely.

Benson and colleagues (1999) reported that Developmental Assets show

similar patterns of relations with thriving indicators as they do with high-risk behavior patterns. The promotional function of the Developmental Assets that fosters highly successful development is best illustrated by findings that show how thriving patterns co-occur as a function of asset levels. The proportion of young people who enjoy the co-occurrence of at least six of the eight thriving behaviors studied by Benson and colleagues (1999) is dramatically greater among asset-rich youth than among youth with just average levels of assets or those youth that are asset-poor. For all eight thriving indicators studied, the proportion of students saying they experience them increases with each rise in asset level. For example, only 7 percent of asset-poor students with 0–10 assets say they get mostly A's at school, whereas 53 percent of asset-rich young people with 31–40 assets report such thriving. Although the patterns typically are not as dramatic as the relation of assets to risk behaviors, the trends are the same.

The difference is especially striking as a function of how vulnerable young people are. For example, among young people who experience none of five developmental deficits (alone at home, TV overexposure, physical abuse, victim of violence, attending drinking parties) and who experience 31–40 assets, 79 percent report at least six of the eight thriving indicators. But, among those who report 11–20 assets, yet also experience none of the deficits, just 14 percent have six of the eight thriving indicators. In other words, asset-rich youth are six times more likely to experience these indicators of thriving.

Among the most vulnerable youth, those with all five deficits, the level of assets makes a profound difference: Nearly 60 percent of those highly vulnerable youth with high assets have six of the eight thriving indicators, but just 11 percent of highly vulnerable youth with only average levels of assets indicate they manifest the indicators of thriving.

Similar patterns are also evident among youth of color. Youth from all racial/ethnic groups are more likely to exhibit multiple thriving behaviors if they experience more developmental assets. Youth of color exhibiting all eight thriving behaviors have, on average, 29–32 of the 40 assets, whereas youth exhibiting none of the thriving behaviors have, on average, 7 or 8 developmental assets (Search Institute, 2003). Findings from a study conducted among economically poor Latino/Latina and African American urban high school students showed that the average number of thriving behaviors increased by 24 percent among students experiencing 21–30 assets versus students with 11–20 assets. Also, among these students the ones experiencing 11–20 assets had a 52 percent increase in thriving behaviors over their counterparts with only 0–10 assets (Scales et al., 2005).

In order to better understand the role Developmental Assets may play in explaining thriving indicators among youth of color, Scales, Benson, Leffert, and Blyth (2000) drew from the Benson and colleagues (1999) sample of nearly 100,000 6th–12th graders a subsample of 1,000 students in each of six racial/ethnic groups (African American, Asian American, Hispanic/Latino, Native

American, multiracial, and white youth). As in Leffert and colleagues (1998), the 40 assets were entered into stepwise regressions after the demographic variables had first been entered as a block, and those that were retained as meaningful predictors explained at least 1 percent of the variance in a thriving indicator.

Scales and colleagues (2000) reported that clusters of the assets explained 47–54 percent of a thriving index (comprised of all the indicators) across racial/ethnic groups, and 10–43 percent of seven specific thriving outcomes across racial/ethnic groups, over and above demographic variables. With demographic variables included, the total models explained 48–57 percent of the variance of the thriving index, and 11–48 percent of the individual thriving indicators. The asset clusters best explained valuing diversity, school success, physical health, helping others, leadership, and delay of gratification, and, likely due to measurement issues, were less strong as an explanation for overcoming adversity.

In both the Leffert and colleagues (1998) and Scales and colleagues (2000) analyses of assets and risk behaviors, and assets and thriving indicators, respectively, the amounts of variance explained by Developmental Assets was much greater than that explained by demographic variables and comparable to that found in other studies using different predictor variables.

These findings suggest that the explanatory power of the asset model is at least as compelling as, even somewhat greater than, that of traditional demographic variables such as gender, race, and socioeconomic status.

More importantly, clusters of Developmental Assets explained a proportion of variance comparable to that reported in other studies of similar phenomena. For example, Resnick and colleagues (1997) used numerous demographic, individual, family, and school variables to explain 7–30 percent of most of the risk-behavior outcomes among middle and high school students in the National Longitudinal Study on Adolescent Health (violence was the exception, with about 50 percent being explained). Similarly, Roeser and Eccles (1998) were able to explain about 11–30 percent of middle school effects on various academic motivation and achievement outcomes.

Garmezy (1991) observed that risk factors may have a more direct influence on youth than protective factors, since the latter, like assets, may interact with and modify risk factors. If this were true, the unique contribution of strength-based variables would be more difficult to establish. Moreover, assets may interact not only with risk factors, but also with each other. In both Leffert and colleagues (1998) and Scales and colleagues (2000), numerous assets other than the ones cited, including many that theoretically could have been meaningful contributors to specific outcomes, contributed small amounts to variance, but did not reach the 1 percent cutoff.

The evidence suggests that a “considerable amount of unexplained indirect influence connects many of the developmental assets” and various outcomes (Scales et al., 2000, p. 44). Given that possibility, the proportion of variance

that the Developmental Assets can explain must be considered consequential, and underscores the utility of strength-based approaches for understanding the developmental trajectories of young people.

Helping to Better Understand Relationships Between Asset Categories and Risk and Thriving Developmental Outcomes

Analyses of the relationships between each of the eight categories of assets and a range of positive and negative outcomes were analyzed and based on 700 high school students in one community who completed the A&B in 2001. Findings show that three categories of assets—boundaries and expectations, constructive use of time, and commitment to learning—are most strongly associated with reductions in several high-risk behaviors that include alcohol, drugs and tobacco use; drinking and driving; and school problems. Similar analyses were also conducted to examine relationships between asset categories and indicators of thriving behavior. The external categories of support and boundaries and expectations along with the internal categories of social competencies and positive identity, are most associated with the maintaining health outcome, whereas social competencies and positive identity are most associated with valuing diversity.

Helping to Explain Academic Achievement and Commitment to Learning

Research reviewed in Scales and Leffert (2004), and Starkman, Scales, and Roberts (1999) shows that Developmental Assets are related to, and may well contribute to, students' academic success through their collective effects on:

- Promoting supportive and caring relationships among students, teachers, and others;
- Increasing student motivation and engagement;
- Increasing the value that students attach to education;
- Increasing the effectiveness of students' study habits;
- Strengthening social norms and expectations that promote achievement; and
- Increasing parent involvement and student attendance.

In an analysis of nearly 100,000 6th–12th grade students, Benson and colleagues (1999) found that asset-rich students who report experiencing 31–40 of the assets that encompass the above factors are 2.8 times more likely (53 percent vs. 19 percent) to report getting mostly A's in school than students who indicate they only have an average level (11–20) of the assets.

From an analysis of 6,000 6th–12th graders, equally divided across six major racial/ethnic groups (African American, Asian American, Hispanic/Latino, Native American, white, and multiracial students), Scales and colleagues (2000) reported that several Developmental Assets (including school engagement, achievement motivation, time in youth programs, time at home, and personal power) together predicted or explained from moderate to substantial proportions of the variance (19–31 percent, depending on student race/ethnicity) in student-reported grades (over and above demographic variables). The clusters of Developmental Assets were especially good predictors for white, Asian American, and multiracial youth.

The analyses cited above used student self-reported grades as the primary dependent variable. Although student self-reports of grades have been shown to have a high correlation with actual grades (Crockett, Schulenberg, & Petersen, 1987), they still are subject to errors of recall or intentional bias. In a study of more than 1,000 middle and high school students, Search Institute researchers used actual grades and class rank as indicators, in addition to self-reported student grades. They found that students experiencing higher levels of Developmental Assets generally had higher actual grades in English, science, social studies, and mathematics, as well as higher cumulative GPAs. Those students also had higher class ranks.

In cross-sectional studies of students living in St. Louis Park, Minnesota, asset levels were strongly associated with their actual grade point average, class rank, risk behaviors, and thriving at the same time. In terms of GPA, the total number of assets is correlated with GPA at a level of .35 for females and .45 for males, indicating that between one-third and one-half of differences in GPAs among students can be accounted for by the level of assets they report. Similarly with regard to class rank, the correlations are .33 for females and .40 for males.

In addition, possessing high levels of assets seemed to be related to narrowing of traditional equity gaps in achievement. Boys with higher levels of assets had higher GPAs, closer to those of girls, than did boys with lower levels of assets. Girls with higher levels of assets had higher grades in math, closer to those of boys, than did girls with lower levels of assets (Leffert, Scales, Vraa, Libbey, & Benson, 2001).

In terms of assessing the relationship between academic achievement and Developmental Assets, the amount of variance the assets explain is greater than that of demographics, and comparable to that found in other studies using different predictor variables. In Leffert and colleagues' (2001) study of assets and academic achievement, demographics explained about 10–12 percent and asset clusters 12–24 percent of the variance in outcomes such as actual grades, GPA, and class rank.

The Academic and Prevention Inseparable Study (API) conducted by the Orange County Department of Education in California sought to identify spe-

cific factors and promising practices that simultaneously enhance youth development and increase student achievement. The intent of the study was to understand how prevention and youth development activities correlate with academic achievement. The asset model was used as the youth development tool for implementing academic and prevention activities. The program focused on the Commitment to Learning category of the asset model. That category is composed of five assets: achievement motivation, school engagement, homework, bonding to school, and reading for pleasure. The study was conducted in four schools in Orange County between May 2000 and May 2002.

An experimental group (one elementary and one middle school) and a control group (one elementary and one middle school) were formed. The schools in both groups had similar characteristics in terms of basic demographics, geographic area, test scores, number of English as second language learners, and socioeconomic background. Data was collected from students and adults in both the experimental and control groups using a pre- and post-test instrument. Analysis of the data revealed the following findings significant at the .05 level:

- Elementary and middle school students not exposed to consistent prevention and youth development activities showed a significant decrease in their commitment to learning;
- Elementary and middle school students exposed to consistent prevention and youth development activities showed a significant increase in their test scores and commitment to learning;
- Elementary and middle school students exposed to consistent prevention and youth development activities reported they were more connected to teachers, school, and community;
- Elementary and middle school students exposed to consistent prevention and youth development activities reported feeling safer in school; and
- Teacher's attitudes toward their work environment and level of involvement with youth showed improvement when promoting a "positive school culture" and empowering students at their school.

The Cumulative Benefits of a Community and Statewide Focus on Assets for Youth

The ecological orientation and community emphasis of the asset model argues that the greater the degree of positive developmental redundancy in family life and across community settings that shape and influence the lives of young people, the greater the contributions to their health, success, and developmental

well-being. Here the focus is on the simultaneous reinforcing experiences of assets across the different contexts of a young person's total ecology, such as family, peers, school, neighborhood, and community, that allows young people to perceive and feel safe, supported, and capable. Young people who experience such cumulative redundancy ought to be even more likely to enjoy protection from risk and to thrive than young people who do not. Data analysis supports these assumptions.

In an early Search Institute study of more than 47,000 6th–12th graders, Benson (1990) reported that to be the case. Adolescents engaged in four developmentally rich settings (family, school, structured youth activity, and faith community) evidenced six times fewer risk behaviors than adolescents without similar contextual redundancy. Research conducted by others provides additional supporting evidence. In a longitudinal study of nearly 1,000 New Zealand 16-year-olds who had been studied since birth, Ferguson and Lynskey (1996) reported that adolescents who were resilient in the face of family adversity experienced strengths in several domains. Logistic regression showed the resilient adolescents had stronger personal characteristics such as a higher IQ. They also had fewer friendships with delinquent peers (analogous to the Search Institute asset of positive peer influence) and lower rates of novelty seeking (analogous to the asset of resistance skills and the thriving indicator of resisting danger).

Sanders's (1998) study of more than 800 urban African American students in grade 8 lends further support to the hypothesis that strengths piling up within families and across certain community settings magnify the protective and thriving effects of positive experiences in single contexts. In Sanders's study, parent and teacher support significantly predicted school conduct and achievement ideology; parent support and church involvement significantly predicted academic self-concept; and teacher support and church involvement significantly predicted student GPA, over and above the influence of demographic variables. When school conduct, academic self-concept, and achievement ideology were added to the prediction of GPA, the contribution of support across the three contexts of family, school, and community (church) diminished. This finding suggests that support affected academic achievement through its impact on promoting positive conduct behavior at school and positive self-perceptions of academic ability. This study also suggests that the interactions among constructs variously labeled strengths, protective factors, or assets can be complex. Therefore, caution is advised when trying to conclude that any single asset, or small number of assets, reflects the "most important" influence for a given outcome.

Additionally, Sanders reported that when all three support contexts—family, school, and church—were combined, the effect on academic self-concept (which most strongly predicted actual achievement) and achievement ideology were stronger than the unique effects of any of the individual contexts. (The combined effect on school conduct was comparable to the individual effect from

teacher support.) This finding suggested that “when students receive support from the family, church, and school simultaneously, the effects on their attitudes about self and the importance of schooling are magnified” (p. 402).

In the National Longitudinal Study of Adolescent Health (Resnick et al., 1997), evidence of the cumulative community effects on risky behaviors also can be observed. For example, family context variables alone explained just 8.5 percent of middle school students’ alcohol use, and 6 percent of high school students’ use. But when demographics, the school context, and individual characteristics such as self-esteem, religious connectedness, and GPA were entered, the final regression model could explain about 13 percent of alcohol use variance for middle and high school youth. Although the total variance explained does not appear to be impressive, the increase in explanatory power achieved by considering strengths across various contexts was more than 50 percent for middle school students and more than double for high school students.

Clarifying the Benefits of an Asset-Building Community Initiative

The Children First initiative in St. Louis Park, Minnesota, was the first Healthy Communities • Healthy Youth initiative and is the longest running community-wide asset-building initiative in the country. Cross-sectional research findings in St. Louis Park have been consistent with data discussed earlier. Hence, the asset model performs a prevention function in the sense that the more assets young people have and/or experience, the less likely they are to engage in a wide range of high-risk behaviors. The asset model also assumes a promotion function in terms of the more assets young people have and/or experience, the more likely they are to engage in a wide range of thriving behaviors. Finally, the asset model fosters resilience for young people because the more assets youth tell us they have in their lives, the more likely they are to manifest resilience and overcome challenges or obstacles in life.

An Increase in Asset Levels over Time

When the overall findings from an administration of the A&B to a 2001 St. Louis Park cohort are compared with the results from the first time the survey was administered to a 1997 cohort, two historical changes in assets are evident. First, for all grades 6 through 12, students report significantly higher average levels of assets in 2001 compared to 1997. Thus, on the whole, youth in St. Louis Park reported having about two more assets in 2001 than the youth reported in 1997. Second, in 2001, it appears that young people were experiencing, on average, less of a decline in assets in early adolescence, were bottoming out earlier,

and were showing a more substantial rebound in assets by grade 12. All of these changes are factors indicative of a more successful adolescence and transition to adulthood. While these changes cannot be directly attributed solely to asset-building efforts in St. Louis Park, the data are encouraging, and it is reasonable to assume that St. Louis Park's children and youth have benefited a great deal from the community's innovative asset-building efforts.

A Decrease in High-Risk Behaviors over Time

Similar trends are evident when examining changes in high-risk behavior patterns between the 1999 and 2001 cohorts. Youth in St. Louis Park reported less involvement in risk-behavior patterns on average in 2001 when compared to 1997.

The Influence of Assets over Time

A recent longitudinal study [add the MIPH citation here] based on the St. Louis Park initiative and completed in 2003 adds important new insights regarding the relationships between Developmental Assets and youth outcomes. Analyses show that assets are significantly related to youth outcomes three years later. That is, the level of assets young people report in grade 8 gives an indication of how they will be doing three years later. The specific correlations between number of assets identified in 1998 and their relationship to grade point average, high-risk behaviors, and thriving three years later in 2001 for both boys and girls are all significant ($p < .01$). Moreover, the average magnitude of more than .30 for the correlations indicates moderate predictive power over three years.

Clarifying the Benefits of an Asset-Building Statewide Initiative

Between 1997 and 2002, The Colorado Trust funded a statewide initiative dedicated to promoting the use of the Asset model. The Trust contracted OMNI Research and Training, Inc. (a social science research firm based in Denver) to assess the initiative's impact as a catalyst for:

1. Adult asset champions intent on fostering the spread and reach of the developmental assets;
2. Mobilizing communities statewide for asset-building efforts;
3. Transforming the work of youth serving organizations; and
4. Youth themselves.

Employing multiple methods including key informant interviews, focus groups, site visits and other participant observation techniques, document reviews, and surveys, OMNI uncovered a range of impacts.

Expression of Adult Leadership

Asset champions took active steps to encourage, inspire, and coach others around the value of asset building, kept the assets in the forefront of people's thought and action, and sought to move the asset model agenda forward within their respective organizations and among colleagues through professional networks. In terms of asset champion diffusion of the asset model, OMNI determined that the use of personal stories and experiential learning activities were key communication mechanisms that helped convey the asset message to new audiences. A closely related, and apparently successful, strategy entailed ensuring that youth themselves learned about the Developmental Assets and had opportunities to think about and actually employ them in their daily lives. Finally, it was important to expand the number of asset champions by stoking the involvement and commitment of increasing numbers of adults.

Community Mobilization

The OMNI evaluation study determined that mobilization of communities throughout Colorado was spearheaded by a statewide organization (Assets for Colorado Youth) whose mission was to build organizational competencies in areas such as resource development, interorganizational networking, and acquisition of specialized knowledge of specific sectors and Spanish-language communities. Several of the lessons that emerged from the OMNI assessment of mobilization included supporting the transition from individual awareness and interest to community and organizationally-based action; being highly strategic about how to disseminate the asset model; and regularly convening asset builders and celebrating successes and accomplishments. OMNI found that by promoting new collaborations among diverse community sectors, more than 600 entities reported using, or supporting the use of, the asset model within the first five years of the statewide initiative.

Changing Agencies That Serve Youth

The transformation of youth-serving organizations encompassed infusing the Developmental Assets into organizational culture and operations, along with fostering meaningful youth engagement. According to the OMNI evaluation

report, staff working in organizations striving to become asset builders experienced changes in terms of staff development, youth involvement, community outreach, stakeholder involvement, and partnerships with other organizations in the community on shared goals. OMNI also noted evidence of these asset-building organizations enhancing the effectiveness of the service infrastructure in their communities across the state. Finally, organizations appeared to make more progress when they applied the nine core elements of youth engagement.

Results for Youth

OMNI study findings also demonstrated how a statewide and community-wide initiative can make positive impacts in the lives of young people. Youth reported gains in their sense of belonging, self-confidence, and self-efficacy, possessing a more positive view of the future, a stronger degree of empathy for others, and a higher valuing of community service (Leahy et al., 2003). Youth also reported having a greater number of interactions with a wider circle of adults and having strengthened relationships with significant adults in their lives. Both youth and adults found their interactions with one another were more positive.

Clarifying the Benefits of an Asset-Building Program

The 9th Grade Program at St. Louis Park High School was not integrally linked to the longitudinal study of St. Louis Park youth discussed earlier, but the findings from the evaluation of this program begin to document how a programmatic asset-building effort can make a difference. The 9th Grade Program was conceived when a high school counselor sought to address a wide range of ongoing concerns in the 9th grade. In the fall of 1999, the school district received a Center for Substance Abuse Prevention (CSAP) State Incentive Grant from the Minnesota Department of Children, Families, and Learning to implement the full new program through spring 2003. The 9th Grade Program was based on asset-building research, principles, and practices. All program elements were selected based on their connection to specific Developmental Assets that had been previously shown to be associated with reductions in the specific problems that were raising concerns regarding 9th-grade students. An independent evaluation of the 9th Grade Program by the Minnesota Institute of Public Health (MIPH) concluded that “this multi-faceted program has promise to reduce the likelihood that illegal substance abuse and other risk behaviors interfere with students’ ability to be successful in school. . . . Initial findings are promising, and it appears that the 9th grade program has successfully met program developers’ expectations to decrease illegal alcohol, tobacco and other drug use, decrease

academic failure, and increase commitment to school as demonstrated by improved attendance of 9th-grade students.”

The evaluation found that academic failure rates have noticeably declined over the course of this project. The percentage of students receiving either one or two (or more) Fs decreased to half by in fall 2002. Truancy rates show a less dramatic, but nonetheless downward trend as well. Student rates of alcohol, tobacco, and marijuana usage declined from 1998 to 2001. Use rates are lower compared to overall Minnesota rates, and rates for males are lower than males in a neighboring district.

Conclusion

In summary, analysis of various data collected by Search Institute, along with the evaluation of various initiatives conducted by third-party evaluators, makes the case that assessing the cumulative benefits of Developmental Assets for individual youth can help to:

- Explain the prevention of and protection from high-risk behaviors;
- Explain the expression of thriving behaviors; and
- Explain academic achievement and commitment to learning.

Search Institute plans on continuing to conduct research and evaluation to build the evidence base for the asset model and encourages external parties to conduct inquiries that will further explain and deepen an understanding of the positive consequences of utilizing Developmental Assets to improve the lives of youth and the community environments that touch those lives.

References

- Benard, B. (2004). *Resiliency: What we have learned*. San Francisco, CA: WestEd.
- Benson, P.L. (1990). *The troubled journey: A portrait of 6th–12th grade youth*. Minneapolis, MN: Search Institute.
- Benson, P. L., & Pittman, K. (2001). *Trends in youth development: visions, realities, and challenges*. Norwell, MA: Kluwer Academic Publishers.
- Benson, P. L., Leffert, N., Scales, P. C., & Blyth, D. A. (1998). Beyond the ‘village’ rhetoric: creating healthy communities for children and adolescents. *Applied Developmental Science*, 2(3), 138–159.
- Benson, P. L., Scales, P., Leffert, N., & Roehlkepartain, E. (1999). *The fragile foundation: The state of developmental assets among American youth*. Minneapolis: Search Institute.

- Benson, P.L., Scales, P.C., Hamilton, S.F., & Sesma, A. Jr. (in press). Positive youth development: Theory, research, and application. In W.W. Damon & R.M. Lerner (Eds.), *Handbook of child psychology, volume 1, theoretical models of human development*. New York: John Wiley.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.
- Crockett, L.J., Schulenberg, J.E., & Petersen, A. C. (1987). Congruence between objective and self-report data in a sample of young adolescents. *Journal of Adolescent Research, 2*(4), 383–392.
- Damon, W. (2004). What is positive youth development? *The Annals of the American Academy of Political and Social Science, 591*(1), 13–24.
- Eccles, J. S., & Gootman, J. A. (2002). *Community programs to promote youth development*. Washington, DC: National Academy Press.
- Ferguson, D.M., & Lynskey, M.T. (1996). Adolescent resiliency to family adversity. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37*(3), 281–292.
- Garnezy, N. (1991). Resilience and vulnerability to adverse developmental outcomes associated with poverty. *American Behavioral Scientist, 34*(4), 416–430.
- Garnezy, N. (1985). Stress-resistant children: The search for protective factors. In J. E. Stevenson (Ed.), *Recent research in developmental psychopathology* (213–233). New York: Elsevier Science.
- Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin, 112*, 64–105.
- Jessor, R., & Jessor, S.L. (1977). *Problem behaviour and psychosocial development: A Longitudinal Study of Youth*. NY: Academic Press.
- Jessor, R., Turbin, M. S., & Costa, F. M. (1998). Risk and protection in successful outcomes among disadvantaged adolescents. *Applied Developmental Science, 2*(4), 194–208.
- Ketterlinus, R. D., Lamb, M.E., Nitz, K., & Elster, A. B. (1992). Adolescent nonsexual and sex-related problem behaviors. *Journal of Adolescent Research, 7*, 431–456.
- Leahy, S. K., Nearing, K.J., Acosta, D.W., Erickson, G.W., & Lechuga, C. (2003). *Creating social change: The growth of a statewide movement*. Denver, CO: The Colorado Trust.
- Leffert, N., Benson, P. L., Scales, P. C., Sharma, A. R., Drake, D. R., & Blyth, D. A. (1998). Developmental assets: Measurement and prediction of risk behaviors among adolescents. *Applied Developmental Science, 2*(4), 209–230.
- Masten, A. S., Coatsworth, J.D., Neemann, J., Gest, S.D., A. Tellegen, A., & Garnezy, N. (1995). The structure and coherence of competence from childhood through adolescence. *Child Development, 66*, 1635–1659.
- Masten, A.S. & Curtis, W.J. (2000). Integrating competence and psychopathology: Pathways toward a comprehensive science of adaptation in development. *Development & Psychopathology, 12*, 529–550.
- Pettit, G.S., Bates, J.E., & Dodge, K.A. (1997). Supportive parenting, ecological context, and children's adjustment. *Child Development, 68*, 908–923.
- Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., & Jones, J.

- (1997). Protecting adolescents from harm: findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*, 278(10), 823–832 .
- Roeser, R. W., & Eccles, J. S. (1998). Adolescents' perceptions of middle school: Relation to longitudinal changes in academic and psychological adjustment. *Journal of Research on Adolescence*, 8(1), 123–158.
- Roth, J., Brooks-Gunn, J., Murray, L., & Foster, W. (1998). Promoting healthy adolescents: Synthesis of youth development program evaluations. *Journal of Research on Adolescence*, 8(4), 423–459.
- Sanders, M.G. (1998). The effects of school, family, and community support on the academic achievement of African-American adolescents. *Urban Education*, 33(3), 395–409.
- Scales, P.C., & Gibbons, J. L. (1996). Extended family members and unrelated adults in the lives of young adolescents: A research agenda. *Journal of Early Adolescence*, 16 (4), 365–389.
- Scales, P. C., & Leffert, N. (2004). *Developmental assets: A synthesis of the scientific research on adolescent development*, 2nd ed. Minneapolis, MN: Search Institute.
- Scales, P. C., & Leffert, N. (1999). *Developmental assets: A synthesis of the scientific research on adolescent development*. Minneapolis, MN: Search Institute.
- Scales, P. C., Benson, P. L., Leffert, N., & Blyth, D. A. (2000). Contribution of developmental assets to the prediction of thriving among adolescents. *Applied Developmental Science*, 4(1), 27–46.
- Scales, P.C., Foster, K., Mannes, M., Horst, M., Pinto, & Rutherford, A. (2005). School-business partnerships, developmental assets, and positive outcomes among urban high school students: A mixed-methods study. *Urban Education*, 40(2), 144–189.
- Scales, P.C., Sesma, A., & Bolstrom, B. (2004). *Coming into their own: How developmental assets promote positive growth in middle childhood*. Minneapolis, MN: Search Institute.
- Schorr, L. (1993). Applying what we already know about successful social policy. *The American Prospect*, 4(13), 43–54.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5–14.
- Starkman, N., Scales, P.C., & Roberts, C. (1999). *Great places to learn: How asset-building schools help students succeed*. Minneapolis, MN: Search Institute.