The Economics of Social Capital: Considering the Fiscal Value of Social Networks

Max Crowley and Lawrie C. Green

A growing body of literature is recognizing the fundamental role that social capital plays within the economy—both as a facilitator of productive environments and as key route to development of *human* and *intellectual capital* (Akçomak & ter Weel, 2012; Coleman, 1988; Lesser, 2000). Researchers continue to document the role connections among individuals can play in supporting economic productivity or placing a tremendous burden on the social safety net (Currie, 2006; McNeal, 1999; Osgood et al., 2013). This chapter considers the growing efforts to understand not only the relationship between social capital and economic outcomes, but the economic value of cultivating meaningful connections between individuals within families, schools, and communities (Belfield, Nores, Barnett, & Scheweinhart, 2006; Bowles & Gintis, 2002; Hummel-Rossi & Ashdown, 2002; Kuklinski, Briney, Hawkins, & Catalano, 2012). Broadly, this chapter is organized around a review of what is currently known regarding the economics of social capital. In particular, it focuses on the potential economic and fiscal benefits of social capital as opposed to simply the consideration of social capital within economic theory or econometric analysis. It explores Social capital's relationship with education, labor, health, and criminal outcomes. Further, it identifies promising areas for future research. Finally, this chapter also considers the potential benefits of the SERVE HERE CT implementation.

The history of social capital research has generally included considerations of the individual benefits of obtaining social capital—often in a transactional context—where investments are made in relationships to obtain social capital, which in turn increases access to resources, power, and opportunity (Coleman, 1988; Portes, 2000). More recent efforts have focused on the value of social capital to groups of

M. Crowley, Ph.D. (✉) • L.C. Green, B.S.
Department of Human Development and Family Studies, Pennsylvania State University, State College, PA, USA
e-mail: dmc397@psu.edu

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individuals—where families, communities, and societies with greater social capital are more healthy and successful as measured by a variety of metrics (e.g., Putnam, 2001; Putnam, Feldstein, & Cohen, 2004). I begin by considering the economic benefits to the individual and then consider what is known in the context of groups more broadly.

The fundamental mechanisms through which social capital cultivates human and *intellectual capital* are key to understanding the economic impact of social capital (Adler & Kwon, 2002; Coleman, 1988). Human capital is generally considered to be the acquired knowledge, skills, and capabilities that enable a person to act (Coleman, 1988, 2000). Intellectual capital is the knowledge and knowing capability of a social group (Nahapiet & Ghosal, 1998). Social capital plays a key role in how and to what degree these forms of capital develop and the economic impact of social capital is largely measured through these mediational processes (Akçomak & ter Weel, 2012; Kawachi, Kennedy, & Glass, 1999; Lesser, 2000). Further, the social networks within which people live are recognized have an impact on our behavior and physical health in numerous ways (Finkelstein, Fiebelkorn, & Wang, 2003; Fowler & Christakis, 2008). This includes fundamental activities like eating, exercise, substance use, deviant behavior, and educational attainment (Buonanno, Montolio, & Vanin, 2009; Coleman, 1988; Rosenquist, Fowler, & Christakis, 2011). In the next three sections, the relationship between social capital and (1) educational attainment and labor market outcomes, (2) health and (3) crime are discussed.

Social Capital, Education, and Labor Market Outcomes

Research on the relationship between social and *human capital* has led to a substantial body of work considering how social capital influences educational outcomes (Dika & Singh, 2002). James Coleman's, 1988 paper on *Social Capital in the Creation of Human Capital* remains one of the best known. Despite substantive and methodological critique of the work, it serves a useful point to begin considering efforts to understand the relationship between social and *human capital* as well as social capital's ultimate impact on the economy (Coleman, 1988). Within the paper, Coleman presents an analysis of how low social capital is related to high school dropout. Coleman identified a 9 % difference in the dropout rates between students with low and high social capital. While these findings were largely correlational in nature they primed the field to think deeper about the role of social capital in human capital development—particularly in formal educational contexts. In the US, a high school dropout earns on average $260,000 less across their lifetime compared to a student that graduates (Levin, Belfield, Muennig, & Rouse, 2006; Levin & McEwan, 2000; Rouse, Bellfield, & Levin, 2007). This translates into $1.8 billion each year in lower tax revenue from all US dropouts (Cairns, Cairns, & Neckerman, 1989; Catterall, 1987).

More recent work has also found lower social capital to be significantly related to lower levels of educational attainment. One study found that social capital within both families and communities were linked to test scores in math and reading, grades as well as high school dropout (Israel, Beaulieu, & Hartless, 2009). Family social capital indicators were more highly related to educational success then community social capital. In particular, the structure of the community was a key moderator for the relationship between family social capital and education outcomes. Further, students can accumulate not only human, but also social capital within the educational context. Using data from the *National Educational Longitudinal Study*, Croninger and Lee found that teachers cultivated their students' social capital and that this capital was related to a lower likelihood of dropout (Croninger & Lee, 2001).

There is also meaningful evidence that population-level indicators of social capital are related to educational and labor market success of groups (e.g., *intellectual capital*). In particular, Knack and Keefer (1997) found aggregated measures of trust and civic norms for a sample of 29 market economies demonstrated a significant relationship between school enrolment, investment rates, income dispersion, and per capita growth in income (Knack & Keefer, 1997). In particular, a 10 % rise in trust was correlated with a four-fifths percentage point increase in per capita growth. A 4 % increase in civic engagement was related to more than 1 % point increase in GDP growth for the country. In their 1999 study, Narayan and Pritchett examined the relationship between social capital in Tanzania and household income (Narayan & Pritchett, 1999). They found that one standard deviation increase in a village's social capital was related to an increase in estimated household income by 20–30 %. A 1998 study by Temple and Johnson found that social capability—in the context of ethnic diversity, social mobility, and social network density—in a multi-country analysis could explain significant variation in economic development (Temple & Johnson, 1998).

Evidence of Causal Impact: The preceding discussion considered largely correlational findings leveraging observational data. One approach to better understanding the causal mechanism social capital can play in improving educational attainment is considering interventions that seek to build social capital. One example is the Experience Corps® program (Fried et al., 2004). This multigenerational intervention brings school-aged children and retired adults together to boost social capital by leveraging the experience of adults. Specifically, by harnessing the human and social capital of older adults the program seeks to enhance the capital of youth. In a randomized trial of 1194 children, intervention participants had significantly higher scores on standardized reading tests, and an over 40 % reduction in office referrals for disciplinary problems (Rebok et al., 2004). Further, older adults who worked with youth in the programs had significantly increased physical activity, numbers of people they could turn to for help, and cognitive activity 8 months after program implementation compared to the control group (Fried et al., 2004). A cost-effectiveness analysis of Experience Corps® found the program cost about $49,000 to save a year of life (adjusting for quality-of-life and assuming improvements in reading led to increased graduation; Frick et al., 2004).

Social Capital and Health

Increasingly, social capital is being considered in the context of health behaviors that are known to have substantial economic costs to public and private payors (Kawachi et al., 1999; Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997; Laverack, 2001). The role of trust, social support, and social participation has long been known as important predictors of health (Cattell, 2001; Morrow, 1999; Szreter, 2004). Increasingly rigorous efforts are quantifying the relationship between social capital and various health behaviors (Harpham, 2002; Hawe & Shiell, 2000; Lomas, 1998).

An analysis of the Centers for Disease Control and Prevention's *Behavioral Risk Factor Surveillance System's* data found that low social trust, reciprocity, and membership were each significantly related to poor health (Kawachi et al., 1999). More recent findings, using data from the Health 2000 survey of over 8000 adults in Finland, modeled the relationship between key elements of social capital to an array of health behaviors (Nieminen et al., 2013). Moderate and high social participation and trust were significantly related to lower rates of smoking and drinking as well as increased physical activity, vegetable consumption, and sleep. High levels of social support were also related to these health behaviors, but at a much lower rate. In contrast, an individual's perception of trust and reciprocity had the strongest relationship with all health behaviors—in some cases with nearly twice the strength of the relationship with social support. In this study, someone with high social trust was two times more likely to be a nonsmoker than someone with low trust. Estimates of the cost of smoking in Finland estimate that a Finnish smoker costs the country about €70,000 when considering impacts on healthcare, pension and tax revenue (Tiihonen, Ronkainen, Kangasharju, & Kauhanen, 2012). From this perspective, the greater likelihood of individuals with low social trust to smoke translates into substantial public costs.

A particularly valuable study that has shed much light on how the structure of social networks influence health has come from the Framingham Heart Study. This study followed a densely interconnected social network of over 12,000 people from 1971 to 2003 (Benjamin, 1994). Analyses of these data have highlighted not only the role of an individual's perceived social capital, but how their orientation within the larger social web influences their individual behavior as well as the collective health of a population (Christakis & Fowler, 2007). One finding from this study discovered how a person's chances of becoming obese increased by 57 % if he or she had a friend who became obese. In particular, the link between network orientation and health was not a factor of geography, but instead a product of social relationships. Obesity is estimated to cost North America over $300 billion a year in additional healthcare and lost productivity costs (Finkelstein et al., 2003). The idea that such health behaviors and subsequent health costs may be greatly influenced by those around us continues to motivate interventions that take social context into account.

Another study using data from Framingham found a link between depression and social relationships within a network. In particular, one study found that being the

friend, of a friend, of a friend with depression (3° of separation) increased the likelihood that person would become depressed (Rosenquist et al., 2011). The total economic burden of depression in the US has continued to grow and is currently estimated to be above $210 billion annually (Greenberg, Fournier, Sisitsky, Pike, & Kessler, 2015). This translates into over $14,000 a year per individual with depression. In contrast, clusters of "happy" individuals are also visible within social networks and that being friends with "happy" individuals can increase the likelihood of being "happy" oneself. An individual who became happy during the study was likely to increase the probability that a connected person became happy by 25 % (Fowler & Christakis, 2008). Further, the position within a network is predictive of an individual's influence. Specifically, an individual who is central to the network (a proxy for high social capital) is more likely to influence the mood of the network then an individual who is more peripheral to the network. Such work highlights not only the role that social networks can play in supporting healthy behaviors, but also facilitating negative health behaviors.

Evidence of Causal Impact: To understand the causal impact on health, researchers can consider interventions that aim to build key elements of social capital. Social capital intervention strategies appear particularly successful in efforts to prevent sexually transmitted infections. Meta-analytic work found that social capital interventions, which seek to empower sex workers, resulted in participants being 3.27 times more likely to use condoms with clients and 0.68 times less likely to contract HIV (Research to Prevention, 2013). The average annual lifetime costs of treating HIV domestically are currently estimates at over $370,000 (Schackman et al., 2006).

The randomized trial of the IMAGE (Intervention with Micro Finance for Aids and Gender Equality) project for women sought to build social capital by expanding their social networks and building community trust. Within the trial, the IMAGE project was found to reduce intimate partner violence by 55 %. Across the world, intimate partner violence is recognized to carry a very high human and economic cost. In the US, intimate partner violence is estimated to cost society almost $8.3 billion a year (Max, Rice, Finkelstein, Bardwell, & Leadbetter, 2004).

Social Capital and Crime

The relationship between social capital and criminal behavior has long been considered important (Adler & Kwon, 2002; Buonanno et al., 2009; Coleman, 2000; Kennedy, Kawachi, Prothrow-Stith, Lochner, & Gupta, 1998; Lederman, Loayza, & Menendez, 2002; Portes, 2000). In particular, how civic norms and individual resources interact to prevent or promote rule-governed actions is a consideration of law enforcement, judicial systems, and detention centers around the world.

Studies of the relationship between a population's social capital and crime have illuminated the importance between norms, participation, and trust in safe environments. Using data from the *US General Social Survey*, found that lack of social trust was significantly related to firearm homicide ($r = 0.83$) and group membership was

negatively related to firearm homicide ($r=0.49$; Kennedy et al., 1998). A 2011 study of 99 geographic units in the US considered the relationship between social capital and violence (Rosenfeld, Baumer, & Messner, 2001). Also using data from the *General Social Survey*, assessments of trust, fairness, and helpfulness for each geographic area were used to develop an aggregated score of social capital. These data were then linked with homicide rates for each area. The researchers found that a one-standard deviation increase in social capital for a population was related to a 54 % decrease in homicide rates for that area. The public cost of homicide is often highly debated, but many estimates fall between $12 and $17 million per homicide committed (Cohen, 2005; DeLisi et al., 2010; McCollister, French, & Fang, 2010). In an international study of 24 nations using the World Values Survey (WVS), an 1 % increase in the number of individuals who believe most people can be trusted is associated with a 1.21 % decline in the national homicide rate (Lederman et al., 2002).

The relationship between social capital and violent crime has been extended to other types of crime. One study conducted an analysis of key indicators of social capital in 103 Italian provinces in relation to crime statistics. They found a one-standard deviation increase in blood donation (as a measure of altruistic social participation) was related to a significant decrease of theft by 13 % and robbery by 15 % (Buonanno et al., 2009).

Evidence of Causal Impact: Moving towards causal estimates of the relationship between social capital and crime, an instrumental variable analysis assessed indicators of social capital and crime rates in a survey of 142 municipalities of more than 30,000 inhabitants in the Netherlands (Akçomak & ter Weel, 2012). Population heterogeneity in the past was used as an instrument for current social capital. Specifically, this study found that population diversity in the past is likely to impact current social capital, but is unlikely to influence current crime. This analysis revealed that a one-standard deviation increase in social capital would reduce total crime rates (violent and nonviolent) by about 2 % points on average. Thus, researchers witnessed a still significant, but smaller relationship between social capital and crime when applying more rigorous analytic tools.

The Costs of Building Social Capital

When considering the economics of social capital, the resources needed to achieve changes in capital development should be considered. Specifically, what does it cost to increase social trust or participation? What resources must be deployed under what circumstance to reduce social isolation? These dynamics can be understood by considering the costs of existing efforts to build social capital. There are two general categories of interventions for building social capital. Bottom-up interventions include the everyday activities that individuals can engage in collectively to build social capital. Top-down interventions involve coordinated programs and curricula aimed at improving social capital within a group.

Robert Putnam and Lewis Feldstein discuss many of these bottom-up activities that an individual can engage in to cultivate social capital. They have identified over 140 different activities which they endorse in their work *Better Together* (Putnam et al., 2004). An analysis of the resource needs of these activities can begin to elucidate the costs of building social capital. Generally, these costs are primarily the time it takes an individual to complete the activity. Broadly, most activities can be completed in under an hour. A smaller proportion would require an ongoing (weekly or monthly) investment that requires multiple hours of time. A few are activities that encourage the absence of behavior (e.g., gossiping) or changing the way one thinks about an issue. These activities are difficult to quantify in terms of time costs. Relatively few activities also have a monetary component. Specifically, only a few would require the individual to spend some other resource in addition to time. Barring these examples (e.g., start a community garden), such costs are unlikely to exceed $100. While the cost of completing any individual activity is small, the larger cost driver is the importance of engaging in not only one activity and not only one time. In this context, individuals can consider the cost of a community engaging in these daily activities as a way of building capital.

Assuming an average US county population of 100,550 individuals and assuming 10 % of the county engaged in an average of two activities per week, the cost to the community in terms of time would be a little over 4000 h a week collectively. Over the course of a year, that would be about 2 million hours dedicated to increasing local social capital. There are different ways to estimate the value of those hours. One approach would value this time based on the value to the labor market. The US median hourly wage across occupations is currently $17.09. Valuing the communities time at this rate, a community effort to build social capital would cost over $35 million for the year or $1700 a person. Of course, the majority of this time would occur outside a person's normal employment during what is considered to be "leisure time." The value of that leisure time is not fixed and is known to vary across cultures and individuals. Assuming, that leisure time is worth less to people then the time they give up for employment, the cost of the overall effort can be lowered. This imprecise exercise is not meant to highlight the expense of building social capital, but instead the importance of making sure that members of a community know its importance. Few individuals are going to be willing to freely give up $1700 of their time to build something they do not value. More specifically, if they do not see building social capital as connected to valuable outcomes—improved education, lower crime, and better health, they are unlikely to participate. Such efforts to change beliefs and value around social capital's importance can increase individual's willingness-to-pay to obtain social capital. This can make such time costs seem reasonable.

Another approach to understanding the cost of influencing social capital can be seen through research studying interventions capable of changing social networks. For instance, in an effort to understand the capacity to transform these networks to prevent substance abuse, the National Institutes of Health has funded a decade-long multisite randomized-controlled trial of universal substance abuse prevention programs delivered in rural communities known as PROSPER. Over 100,000 youth

have received these programs with community implementers maintaining the highest levels of fidelity (Spoth, Guyll, Redmond, Greenberg, & Feinberg, 2011). These programs aim to reshape the social norms within adolescent social networks in order to protect youth from network influences that promote substance abuse. Specifically, these programs are known to successfully transform what behavior youth within the network view as acceptable for themselves and their peers (i.e., increasing a belief substance use is unacceptable; Spoth et al., 2013). On average, each network included between 52 and 78 youth. Each of the youth received the school program at an average cost of $12 a student ($9–27). On average, 17.5 % of the families within the network also participated in a family-based program at a cost of between $278 and $348 a family (Crowley, Jones, Greenberg, Feinberg, & Spoth, 2012). Thus, it costs between $2998 and $6856 to deliver the prevention effort to each social network. Based on previously reported estimates, these prevention efforts were able to achieve a 1 SD reduction in a network's substance abuse influence for between $1009 and $2308 (Osgood et al., 2013).

The evaluation of network changes within the PROSPER trial highlights potential mechanisms through which network transformation may occur. In particular, two processes are likely responsible for the reductions in the networks' antisocial influence compared to the control group's networks. One possibility is that members of the network engaged in substance abuse are being shifted away from the center of the network (i.e., becoming less popular). The other is that the most popular (central) network members are receiving the greatest benefit. The former cultivates a more prosocial network by removing the influence of substance using youth, while the latter develops a larger pool of prosocial youth at the center of the network who are more likely to be befriended by others (i.e., have greater influence). These processes and the resources required to change social networks necessitate economic evaluations to be overlaid onto network analyses of intervention trials. With careful study, social scientists may learn how to effectively and efficiently transform networks to broadly improve the health and welfare of society.

Evaluating the Economic Impact of Improving Social Capital: Research Priorities

Current understanding of the economic impact of social capital is largely inadequate to inform current policy and practice. While the important role social capital plays in developing human and intellectual capital is clear, causal models of social capital's role are relatively gross and lack the specificity needed for strategic investment. In this context, there are a number of key research priorities that would benefit current understanding of the economic value of social capital. These include: (1) efforts to link changes in social capital to economic outcomes, (2) increased efforts to test social capital interventions within experimental designs, and (3) increased attention to the cost of building social capital.

Improving Causal Estimates of Social Capital's Impact

Review of the social capital literature highlights that our understanding around the economics of social capital still is largely based on observation studies (Coleman, 2000; Nieminen et al., 2013). Such studies are particularly useful for highlighting the relationship between social capital and a variety of important domains (Hawe & Shiell, 2000). Limited experimental work has successfully demonstrated the impact of social capital, much less estimated to economic value (Buonanno et al., 2009; Research to Prevention, 2013). Future research should consider increasing the use of experimental methods to evaluate the impact of interventions to build social capital. This includes the use of randomized control trials as well as instrumental analyses that support drawing causal inferences. This is particularly important, because while observational analyses highlight the strong relationship between education, health, and crime, existing experimental research indicates significant yet smaller impact. This may be due to a variety of factors (e.g., low intervention potency, poor implementation quality, or issue in measurement).

Beyond what methods to use, a particularly important goal for increasing our understanding of social capital's impact is to consider impact of groups with social capital as opposed to individuals (e.g., Nieminen et al., 2013). Specifically, randomization within evaluation trials should occur at the group level as opposed to the individual level. Arguably, the value of social capital is to improve the outcomes of populations as opposed to simply providing an individual's access to resources that only benefit themselves (Cattell, 2001). As a variety of decision makers increasingly focus on issues of equity and population health, social capital interventions hold great promise for broad impact (Kawachi et al., 1997). In this context, the unit of analysis is more appropriately the group—both for intervention process and impact analyses.

Further, network analyses of peer and family groups can be valuable for understanding how a community's social structure may influence the development of social capital (Fowler & Christakis, 2008; Valente, Chou, & Pentz, 2007). The above example of the PROSPER program considers one example of how intervention can change networks, which in turn can change the influence of the social structure (Osgood et al., 2013). Further analyses of how changes in social networks influence education, health and crime are needed.

Understanding the Cost of Build Social Capital

While some work has considered program cost-effectiveness of interventions that include social capital development, few analyses of the cost of building social capital actually exist (Frick et al., 2004; Kuklinski et al., 2012). To successfully install large-scale social capital interventions within current policy and practice will first require being able to describe the resource needs to build social capital (Crowley et al., 2012). Understanding such costs will then allow decision makers to effectively plan for and allocate resources a new social capital initiative (Table 1).

Table 1 Activities to Build Social Capital (Subset of activities adapted from Putnam et al., 2004)

Social capital activity*	Low-cost estimate	High-cost estimate
Organize a social gathering to welcome a new neighbor	$13	$17
Register to vote and vote	$4	$17
Donate blood (with a friend!)	$4	$17
Start a community garden	$34	$51
Mentor someone of a different ethnic or religious group	$4	$17
Surprise a new neighbor by making a favorite dinner	$4	$17
Tape record your parents' earliest recollections	$34	$51
Give your park a weatherproof chess/checkers board	$4	$17
Form a local outdoor activity group	$4	$17
Participate in political campaigns	$17	$34
Attend a local budget committee meeting	$4	$17
Form a computer group for local senior citizens	$17	$34
Help coach Little League or other youth sports	$4	$17
Help run the snack bar at the Little League field	$4	$17
Form a tool lending library with neighbors	$17	$34
Start a lunch gathering or a discussion group with coworkers	$17	$34
Offer to rake a neighbor's yard or shovel his/her walk	$34	$103
Start or join a carpool	$9	$17
Plan a "Walking Tour" of a local historic area	$17	$34
Eat breakfast at a local gathering spot on Saturdays and mingle	$17	$34
Have family dinners and read to your children	$9	$34
Stop and make sure the person on the side of the highway is OK	$17	$103
Host a block party or a holiday open house	$34	$205
Start a fix-it group: friends willing to help each other clean, paint	$17	$34
Offer to serve on a town committee	$34	$205
Join the volunteer fire department	$103	$239
Go to church…or temple…or walk outside with your children	$4	$17
If you grow tomatoes, plant extra for a lonely elder neighbor	$9	$34
Ask a single diner to share your table for lunch	$9	$17
Stand at a major intersection holding a sign for your favorite	$17	$34
Persuade a local restaurant to have a designated "meet people"	$4	$17

(continued)

Table 1 (continued)

Social capital activity*	Low-cost estimate	High-cost estimate
Host a potluck supper before your Town Meeting	$4	$17
Take dance lessons with a friend	$34	$91
Say "thanks" to public servants—police, firefighters, town clerk…	$4	$9
Fight to keep essential local services in the downtown area	$91	$17
Join a nonprofit board of directors	$34	$103
Gather a group to clean up a local park or cemetery	$34	$137
When somebody says "government stinks," Suggest they get involved	$0	$0

*Created by authors, M. Crowley & L. Green (2015)

Such analyses will require qualitative and quantitative cost analyses that first better operationalize discrete activities known to build social capital (Harpham, 2002). Then the resources needed to engage in each activity should be quantified. Next, the market price for each resource (labor, space, supplies) needs to be estimated (Levin & Belfield, 2013). The product of the quantity of resources by the resource-specific price can then be used to arrive at the total cost (Crowley et al., 2012). Importantly, not only should the resources needed to directly support an intervention activity be valued, but resources needed to support programming infrastructure must also be considered. For instance, the above effort that seeks to engage 10 % of the community in activities suggested by Putnam and Feldstein would likely need coordination and management—not to mention education and recruitment (Putnam et al., 2004). These costs should be included in the total estimate in order to understand the full cost of an effort. By knowing such costs, decision makers can weigh different intervention strategies against each other. Such "cost minimization analyses" can be particularly useful for choosing between two interventions that both increase social capital. The intervention with lower cost that has the *same incremental impact* would be a more efficient use of resources. Such decision analysis can support effective use of public resources and allow for a greater impact. There are a variety of guides and tools available to help facilitate cost analysis of programs and policies (e.g., Crowley et al., 2012; Levin & Belfield, 2013).

Valuing Social Capital

Once the impact and cost of social capital interventions are better understood, evaluators should prioritize efforts to value the impacts of social capital in fiscal or monetary terms (Crowley, Hill, Kuklinski, & Jones, 2013). This includes linking impacts on individual or population metrics to monetizable outcomes (Karoly, 2008). In education, this may be special education utilization, school dropout or

matriculation of higher education (Levin & McEwan, 2000). For the labor market, this may be employment, earnings, and tax burden (Allgood & Snow, 1998). For health outcomes, this may include healthcare utilization, public insurance reimbursement, or quality-adjusted life years (Drummond, 2005). For crime, this may be arrest, court costs, utilization of diversion programs, and sentencing to detention centers (Cohen & Piquero, 2008).

These outcomes may be measured directly from individuals or from administrative records (Crowley et al., 2013). Advances in short-cycle-randomized control trials have demonstrated the opportunity to randomize communities and assess impact without the need for direct measurement of individuals using existing administrative data systems (Baron & Haskins, 2011). Such efforts generally require partnership with government agencies to access and analyze data. This approach can reduce the costs of evaluation and accelerate economic evaluations of social capital programs.

Case Study: Serve Here CT

Serve Here CT is deploying a new initiative to help Connecticut's youth successfully transition into the workforce, remain in the state and become leaders in their communities. Serve Here combines science-based approaches from workforce development, behavioral economics, and social finance to achieve these goals. This includes (1) building Connecticut's workforce, (2) helping leaders emerge, as well as (3) providing innovative approaches to local economic development.

Building Connecticut's Workforce

Serve Here will employ an apprenticeship-based workforce development strategy to improve youth success. Over the last two decades, apprenticeship models have undergone substantial study and represent one of the most cost-effective workforce development approaches available.

A study of 11 types workforce development programs administered in Washington state highlight opportunities to increase employment and earnings as well as reduce utilization of public programs (e.g., Medicaid, TANF, Food Stamps). These programs included Workforce Investment Act (WIA) Title I-B Adult programs, WIA Title I-B Dislocated Worker programs, Community and Technical College Job Preparatory Training, Community and Technical College Worker Retraining, Private Career Schools, and Apprenticeships, Community and Technical College Adult Basic Skills Education, Division of Vocational Rehabilitation programs, Department of Services for the Blind programs, WIA Title I-B Youth programs as well as Secondary Career and Technical Education. In the short-term, nine of the program models found positive impacts on employment. Longer-term follow-up found ten program models had positive impacts on employment. Some of these

models were able to realize a public return-on-investment of $4.90 for every dollar spent (Hollenbeck & Huang, 2006; US Census Bureau, 2008).

Helping Leaders Emerge

At over $1 Trillion, US student debt has more than tripled since 2003. Researchers have found that education debt reduces household spending (Hiltonsmith, 2014). Specifically, a $53,000 education debt leads to a wealth loss of over $200,000. Further, those with student debt experience delays home- and auto-purchase and leads to decreased entrepreneurship (Ambrose, Cordell, & Shuwei, 2004; Brown & Caldwell, 2013; Donghoon, 2013). Potentially more troubling is that studies have found that every additional $10,000 in student debt decreases a person's likelihood of taking a public-interest job by over a quarter (nonprofit, public service; Minicoszzi, 2005; Monks, 2014; Rothstein & Rouse, 2007). Further, those with high debt are more likely to seek out higher initial wages instead of opportunities for job growth when selecting jobs out of college. Serve Here aims to reduce the student loan debt of participants who complete the program by $10,000. Further, Serve Here will provide high-quality training to build participants' capacity to take leadership roles within their employer organizations and the community.

Innovative Approaches to Economic Development

Key to Connecticut's success is the availability of jobs for those entering the workforce. Serve Here will employ a $10,000 incentive per participant to facilitate employer job creation. These positions must be a permanent part of the employers' organization adding jobs to the labor market. This amount is comparable to other economic development approaches and mirrors successful financing strategies to maximize potential return to the state (Monks, 2014).

Projected Benefit to Connecticut

Serve Here draws on existing best practices for investing in young adults to promote productive, engaged members of society. Based on existing evaluations of the above strategies, projections of the potential benefits of Serve Here can be made. In the figure below, I consider only the additional tax revenue that a program like Serve Here could bring to Connecticut from increased job creation and employment. Within less than 4 years, the revenue from increased income, property, sales, and excise taxes will offset the State's investment. This is achieved not only by increasing participant income, but also by keeping participants in the state through the

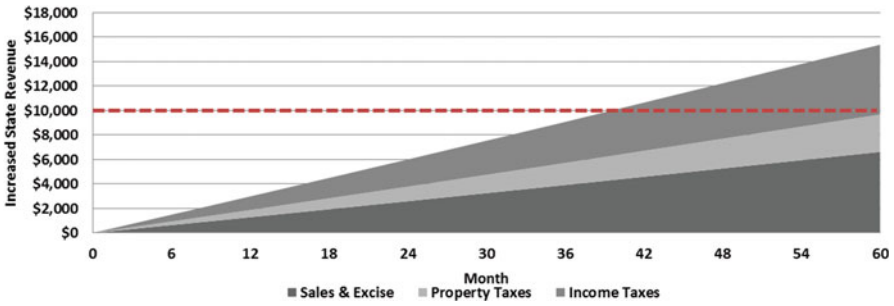

Fig. 1 Projected benefit to Connecticut from Serve Here. Created by author, M. Crowley (2015)

incentives and training described above. Importantly, this does not include additional savings that could occur from reduced use of government services and does not include benefits to the Federal government (only Connecticut; Fig. 1).

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