

FACTORS INFLUENCING THE VARIABILITY IN SOCIAL CAPITAL

by

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## ABSTRACT

This research provides insights into three aspects of social capital: the factors that influence its variability; its two-dimensional nature; and the relationship between social capital and membership in a YMCA. These insights have implications for social capital theory, for public policy, for organizational management and for individual well-being. Most social capital research treats the construct as a causal variable and analyzes the implications of different levels of social capital for certain aspects of individual and community well-being. This treatment implies that levels of social capital vary. Little research has been done to analyze the factors that cause social capital variability and therefore the understanding of social capital variability lacks insight. Before social capital variability can be explored, an intermediate issue must be addressed. Social capital is usually conceived of as a single-dimension construct. In fact social capital has two dimensions: the attitudes of social capital and the behaviors of social capital. Unidimensionality is sufficient when social capital is used exogenously but it is insufficiently nuanced when used for the purpose of recommending policies to increase it. This research analyzes the two-dimensional nature of social capital. Finally, a number of social capital behaviors have been studied but membership in the YMCA is not one of them. This research examines the relationship, *ceteris paribus*, between membership in the Central Florida YMCA and individual social capital.

A survey questionnaire was mailed to 10,000 YMCA members in Central Florida and 21,000 residents who were demographically similar. There were 1,881 completed responses. The results were analyzed using structural equation modeling and were guided by social capital theory and the theory of reasoned action.

The results of the study indicate that the two most influential factors of social capital variability are personal educational attainment and the average educational attainment of the community. The study also confirms that social capital is a two-dimensional construct and the two dimensions are iterative. The study results also revealed that members of the Central Florida YMCA had higher levels of social capital *ceteris paribus*.

This study is significant in four areas: social capital theory, public policy, management of social capital-generating organizations and for individuals. At the theoretical level, insight has been gained into both the causes of social capital variability and the two-dimensional nature of social capital. Regarding public policy, this research provides clear evidence that education provides a greater role in building a community than simply creating human capital; it also creates social capital. Both educational institutions and those organizations that create social capital should be supported. Furthermore, social capital promulgation through public policy should target both dimensions of social capital to be most effective. For managers of social capital-generating organizations social capital can be used as a metric for measuring organizational effectiveness and community impact. For individuals, there is now an evidence-based approach for developing a life plan for creating personal social capital. This research is unique because it simultaneously brings insights into four distinct spheres of social capital.

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## **CHAPTER ONE: BACKGROUND, ISSUES, RESEARCH QUESTIONS, AND IMPORTANCE OF RESEARCH**

### Background

Social theorists have conceptualized social capital as a multilevel latent construct to explain intangible qualities of the human experience that underlie community well-being and personal happiness. Bourdieu, (1986), Putnam (1995), Coleman, (1988), Cusack, (1999), and Halpern, (2005) are among the foundational thinkers in this field. Although consensus on the definition of social capital has not been fully achieved, one of the more commonly used definitions is “social connections and the attendant norms and trust” (Putnam, 1995 p. 665). The theory of social capital characterizes individuals with higher levels of social capital as those who are more educated, affluent and healthy.

However, social capital is not conceptualized simply as an individual construct. It is a multilevel construct, and individual social capital resides in a community context. Halpern (2005) devised a typology of social capital that includes a micro level (the individual), a meso level (the community) and a macro level (a nation). This multilevel typology, or mapping, of social capital is important because an analysis of the individual’s social capital is incomplete without an understanding of its social context. By its nature social capital has meaning only in a social setting, since it is the analysis of the interconnections and networks in a community that bring a full understanding of it.

The various research approaches by social capital theorists validate Halpern’s typology and its conceptualization as a multilevel construct. Some researchers focus on the individual level (e. g., Moir, 2004; Podolny & Baron, 1997; Sampson, 1993), others focus on the community level (e. g., Evans & Syrett, 2007; Ferguson and Mindell, 2007) and still others on the national level (e. g., Craig, 1993; Putnam, 1993, 2000; Wuthnow, 1994). Just as the theory

propounds that individuals with higher levels of social capital have certain positive characteristics, it also propounds that communities and nations with greater aggregations of social capital have less poverty, less crime, higher average educational attainment and greater collective health.

The theory of social capital makes broad and important claims about individuals and the communities and nations in which they reside. But it can be extended to, or at least associated with an even greater human goal. Social capital has direct links with reported life satisfaction, well-being and happiness. Putnam (2001 p. 13), comparing individuals' self-assessments of happiness, "discovered that happiness increases with both their own and their state's measure of social capital." Bartolini, Bilancini and Pugno (2009) directly link the decline in social capital in America with a decline there in happiness. Helliwell (2006 p. C34) found that "measures of social capital, including especially the corollary measures of specific and general trust, have substantial effects on (individual) well-being beyond those flowing through economic channels." Other research (Lelkes, 2005; Powdthaven, 2007) shows a positive relationship between social relationships and life satisfaction. The interconnection of social capital, happiness and life satisfaction is significant. Social capital is a tool to measure the degree to which individuals achieve happiness and thus is a metric for public policy makers to gauge policies and programs designed to foster individual and community well-being.

Implicit in the definition of social capital, its use as a tool of social science and its underlying theory, is the concept social capital varies. That is to say, it has levels and the levels rise and fall. Most researchers (e. g., Coleman, 1988; Field, 2005; Knack, 2002; Putnam, 2000; Rosenfeld, Messner, & Baumer, 2001) use social capital as an exogenous or causal variable to analyze the implications of different levels of social capital for certain aspects of individual and

community well-being. On the other hand, if social capital itself rises and falls, something must cause that variability, consequently, social capital can also be conceived of as an endogenous variable whose variability is caused or influenced by certain factors.

Because social capital is conceptualized as a multilevel construct that is a personal, a community and a national asset, its extent can rise and fall at all levels. Individuals obtain more of it by associating with other people and building trust in them through a variety of social activities. A loss of social capital results from isolation and/or a loss of trust. A community's social capital, which is the aggregation of individual social capital, rises and falls as communities prosper or decline. Individual, community and national social capital can vary in two ways:

1. A given individual or community can have different levels of social capital at different times, and
2. Levels of social capital can and do vary between different individuals and different communities.

Before social capital variability can be analyzed, an intermediate issue must be addressed. Not only is social capital most often utilized as an exogenous variable, it is usually conceived of as a single-dimension construct. That is to say, social capital is viewed as a second-order construct with several elements, for example trust, social involvement and/or reciprocity as first-order constructs. In fact, social capital has at least two dimensions. These are the “psychological predisposition, or an attitude, for associative behaviors” and then “the behaviors of association” themselves. The definition of social capital cited above, “social connections and the attendant norms and trust” (Putnam, 1995 p. 665) explicitly identifies two dimensions to the construct. Unidimensionality is sufficient when social capital is used exogenously, but it is insufficiently nuanced when used endogenously for the ultimate purpose of recommending

policies to increase it. Other than an early study by Brehm and Rahn (1997), very little research has been done that analyzes social capital as a multidimensional construct. Consequently little is known about the relationship of the attitudinal dimension with the behavioral dimension of social capital.

The attitudes of social capital are those psychological predispositions that are associated with, interact with, and perhaps even cause associative behaviors, the behaviors of social capital. This research will ultimately describe the exact relationship between the attitudes of social capital and its associative behaviors but *a priori* an individual is unlikely to associate with another unless there is a modicum of preexisting trust and a belief that the association will be beneficial. Hence, attitudes are likely to influence behaviors. Wright (2000), while not directly referring to social capital per se, characterizes these attitudes in the context of game theory as the belief in nonzero-sum outcomes. In other words, whether it is a gene, a human being, or any organism in between, two individuals will interact if they believe that the association will benefit both parties. Another theorist, McIntosh (2007), refers to the attitudes of social capital as the intersubjective system. Because this system operates at the subconscious level, it is unobservable but he argues that it is nonetheless related to behaviors of association. Wright and McIntosh operate at a more conceptual level than that of social capital theory, but the attitudes of social capital also have been explored within the context of social capital theory.

In the social capital literature, Brehm and Rahn (1997) were among the earliest researchers to discuss the attitudes of social capital. One of their hypotheses, subsequently borne out, was that “variation in social capital can be explained by citizens’ psychological involvement with their communities” (p. 999). Many researchers, for example Putnam (1995), Beckman & Kawachi ((2000), and Sabatini (2006), see only “trust” as an attitude of social capital. However,



Brewer (2003) sees trust, altruism, a sense of equality, tolerance and humanitarianism as all being attitudinal attributes of social capital. Furthermore, Wan and Lin (2003) cite three beliefs as integral to social capital: (1) a stated belief that people or public programs are helpful, (2) a belief that one shares a common interest with the community; and (3) a belief by an individual that he or she benefits from participation in public activities and/or programs. As with many other aspects of the theory of social capital consensus has not been achieved about the specific attitudes of social capital and their relationships to each other or to the behaviors of social capital. Yet theorists and researchers write and speak about social capital as if it were two dimensional, even though it has not been explicitly shown to be so.

Behaviors of social capital are those observable actions and interactions that exhibit association with others. These can be behaviors of cooperation with others and/or altruism toward others, or simply beneficial casual interactions. Such behaviors are numerous and diverse. Membership and participation in any of the following very different groups could be considered a behavior of social capital: in a book club, a service, civic or neighborhood association, a church, a political group, a PTA or a sewing circle. Such are the “social connections” that Putnam refers to in his definition cited above (1995, p. 665). Even a solitary activity like voting indicates a connection to the community and an interest in making it better, which is an indication of social capital (Kusack, 1999; Knack, 2002). From that partial list of social capital behaviors it is apparent that they can occur in very formal, structured settings or in loosely structured, informal ones.

Of the two types of social settings, formal groups are more interesting for our purpose because their structures and social capital delivery techniques can be analyzed and measured. Broadly speaking, formal groups can be divided into two types: those that create social capital as

a byproduct of people coming together for another stated purpose and those whose mission or purpose focuses specifically on building social capital. Examples of the former are service clubs like Rotary, Elks, Kiwanis, etc; book clubs; running clubs; card and bingo clubs; bowling leagues and so forth. Perhaps the best example of the latter is the YMCA (Y).

The mission of the Y varies somewhat from area to area but the mission statement of the Central Florida YMCA is representative: “The purpose of this Association is to improve the lives of all in Central Florida by connecting individuals, families and communities with opportunities based on Christian values that strengthen Spirit, Mind and Body.” Absent the conceptualization of social capital, a theoretical framework within which to analyze it, and the statistical and technological tools to measure it, there would be no way to determine whether or not the Y was achieving its mission. Anecdotal affirmation abounds, but no rigorous technique is available for comparing different Y’s across the country or for longitudinal comparisons of the same association over time. Consequently no research has been done to examine whether the Y actually creates social capital.

This section has discussed several areas of background. Social capital is a multilevel, latent construct conceptualized to explain individual happiness and community well-being. Definitions vary, but Putnam’s definition of “social connections and the attendant norms and trust” (1995 p. 665) is commonly accepted. The corpus of social capital research supports the theory’s argument that individuals with greater social capital are generally more educated, more affluent and healthier. Research also shows that higher levels of social capital are associated with greater reported happiness, life satisfaction and personal well-being. By its nature social capital varies, therefore the variation is influenced by identifiable factors. Furthermore, it is a two-dimensional construct comprising the attitudinal dimension of social capital and the

behavioral dimension of social capital. Finally, certain organizations purport to build social capital, and the Y is one. Acquiring social capital is the process for realizing happiness and life satisfaction. That is why the construct is significant. A number of issues that have been raised will now be discussed more fully.

### The Issues

The nature of social capital is such that it rises and falls. Because it is a multilevel construct that exists in a social context it can and does vary at the individual level, the community level and the national level. It varies over time in given individuals and communities and between similar individuals and communities at a given time. The causes of this variability have not been well researched; the effort to identify them is the first issue here.

Examining the causes of social capital variability requires that the construct be treated as an endogenous variable, a treatment that diverges from most social capital research. Most social capital research treats social capital as an exogenous variable and traces its effects in individuals and communities, but ignores the causes of social capital itself. Using social capital endogenously, and ultimately to make policy recommendations, is based on a reductive conceptualization. It is clear from its definition that social capital has two dimensions: the attitudes of social capital and the behaviors of social capital. Other than some early work by Brehm and Rahn (1997), little research has examined the multidimensionality of social capital. Hence, testing whether social capital is indeed multidimensional is the second issue addressed here. If social capital is two dimensional, then what is the relationship between those dimensions? This is the third issue to be addressed.

Beyond the issues of the nature and relationship of the two dimensions of social capital, each can be reduced to more fundamental elements. For example, among the attitudes of social

capital are trust, altruism, and beliefs that participation in groups is beneficial and that other people and social institutions are helpful. Among the behaviors of social capital are voting, an interest in and participation in political affairs, and membership and participation in groups, whether formal or informal. Formal groups can be divided into groups that build social capital as a byproduct of association to achieve other goals, and groups that specifically state a mission or purpose to build social capital. Although the Y is one of the latter, no research has been conducted to test whether the Y is actually achieving its mission or not. That inquiry is the fourth issue here. For this research groups and organizations will be considered communities and group-level social capital, organizational-level social capital and community-level social capital will be considered synonymous.

#### Research Questions

Four research questions emerge from the issues discussed above. The first two research questions are both related to the multidimensionality of social capital. At the individual level, social capital can be characterized as having two dimensions: attitudes, or psychological predispositions, that are related to social capital and behaviors related to social capital. Since no research has been done that examines whether social capital is in fact a two-dimensional construct, the first research question is: Is social capital a two-dimensional construct?

Second, given the demonstration that social capital is a multi-dimensional construct, there is a relationship between attitudes and behaviors. However, no research has been done in the social capital context that shows this relationship. The second research question is: What is the relationship between the attitudinal dimension of social capital and the behavioral dimension of social capital?

The third research question addresses the variability in social capital. Given that social capital rises and falls, then there must be factors that influence this variability. The third research question is: What factors influence the variability in social capital?

The fourth research question concerns a specific behavior of social capital; membership and participation in the Y. Among the behaviors of social capital that will be studied in this research is participation in formal groups. Some of these formal groups have a mission or purpose to increase social capital. The Y is such a group. The fourth research question is: Do Y members have more social capital, *ceteris paribus*, than non-Y members?

#### Why Is This Research Important?

The research questions may appear to be unrelated or even disjointed. However, social capital is a complex construct that touches on a wide range of the human experience. It is therefore necessary to recognize that since numerous interconnections comprise the construct, a holistic approach is appropriate for this research which is concerned with those interconnections. The research questions reflect the interconnections.

A better understanding of these interconnections will not only enrich the theory of social capital, but also enable social capital to be used more effectively as a tool of public policy. A number of gaps in such understanding which have been identified and are discussed above, are addressed by this research with the aim of advancing our understanding of social capital and its use as a policy tool.

There are thus four specific reasons why this research is important. First, from a theoretical perspective it will deepen the understanding of the construct of social capital. Although expanding the theoretical understanding of the social capital construct is important *per se*, greater understanding also manifests itself pragmatically. This research is also important

because it will provide a basis for the development of a public policy optimization model to allocate public resources more effectively for strengthening communities. Once the relationships of the factors that influence social capital are better understood individuals and communities can better decide how to invest time and money to create and increase social capital. Third, this research will provide the basis for a management tool to accurately evaluate the performance of organizations whose mission it is to generate social capital. Fourth, it will help individuals understand the various ways to build personal social capital within the framework of a particular lifestyle, a particular belief system, a particular worldview and established life goals. In summary, this research is important because it will provide insight into social capital at the theoretical level, the community level, the organizational level and the individual level. Each of those will now be discussed further.

At the theoretical level, this research, by using social capital as a multi-dimensional endogenous variable, brings a new approach to conceptualizing and using it. Although historically the conceptualization of social capital has incorporated both attitudes and behaviors into its definition, the research to confirm this multidimensionality or to analyze the relationship between the dimensions has been sparse. The present analysis will bring that theoretical insight. Additionally, because this research will isolate the relationships between the factors thought to influence social capital variability, it will clarify those relationships. Finally, previous research has clearly established that behaviors of association such as membership in organizations and civic volunteerism reap benefits for individuals in terms of their social capital. Previous research has examined such behaviors, but not in the context of organizations whose specific purpose is to build social capital. Doing so here will contribute to the theoretical understanding of social capital.

This research will identify those activities and those organizations that are most effective in building social capital. At the community level, policy makers can encourage and support such activities and organizations. The purpose of public policy is to promote individual happiness through enhanced community well-being. The relationship between community well-being and social capital has been discussed above. Specific policies -- the identification of which is not a primary purpose of this research -- can be informed and partially guided by an understanding of the factors that influence the variability in social capital. This research will also analyze the iterative relationship between attitudes and behaviors in the creation of social capital, an analysis that can enable policy makers to implement policies for building social capital more effectively.

There is another reason why this research is important at the community level. By identifying those organizations and those activities that are most effective in building social capital, this research will provide a beginning point for the ultimate development of a model for best allocating community resources to enhance social capital and improve community well-being. Now most public policy is reactive to problems in the community, approaching them in a “silo” fashion. For example, crime is dealt with by hiring more police officers, judges and court administrators; poverty by food stamps; poor health by free clinics and Medicaid. Social capital theory argues that those issues are related and could all be improved simultaneously by applying resources to organizations and programs that build social capital. The contrast between applying community resources in a “silo” fashion and applying them in a holistic fashion is a key insight for improving policies to strengthen community well-being. Once the benefits of higher levels of social capital can be measured and priced, a model for more effective allocation of resources

can be developed in which proactively building social capital addresses community problems that are related to a shortage of social capital.

A model for community wellness optimization will require a means for evaluating organizations that purport to build social capital. The third reason that this research is important is that it begins the process of building an evaluation instrument. At present there is no social capital-based management tool for organizations whose mission or purpose it is to build social capital, for example the Y or local service clubs to assess their impact and more effectively manage their missions. Because this research is cross sectional it will only provide data comparing different organizations at a single point in time. However, for future longitudinal research this framework can enable comparisons both between *different organizations at a given point in time* and between *a specific organization at different times*. This is key information for monitoring management performance. Identifying which organizations in a community contribute the most to building social capital will be an important element in developing a model for the best allocation of community resources.

Finally, this research is important because of its implications for personal happiness. Once those behaviors are identified as the keys to accumulating social capital, an individual can develop a “life plan” to build his or her individual social capital. Those social capital-building behaviors and activities that resonate with an individual’s lifestyle preferences and belief system can be included in that person’s plan for maximizing happiness. Aside from financial considerations, should one buy or rent a home? Should one join a church or a service club? Or both? Should one volunteer, and if so at what? What are the benefits of one set of activities versus others that compete for time and resources? In addition, to the extent that attitudes can be self-influenced, individuals can seek to create the proper mindset for success in terms of social



capital. Such an approach to life planning and career building, transcending the workplace encompasses all aspects of a person's life. A successful career or life is often thought to be based on a combination of human capital, i. e. "what one knows" and social capital, i. e. "who one knows" (Wilson & Musick, 1998). The theory of social capital and, in part, this research can be useful organizing the "who one knows" part of career and life planning.

This research is important because it will provide insight and guidance in several areas and in several ways. Theoretical understanding will be deepened, especially by the use of social capital as an endogenous variable and by its dissection into two dimensions. This enhanced understanding can guide practical implementation of policies, programs and plans for accumulating social capital at the community level, the organizational level and the individual level.

### Summary of Chapter One

Social capital is a multilevel, latent construct conceptualized to explain those intangible qualities of the human experience that underlie personal happiness and community well-being. One of the more commonly used definitions is "social connections and the attendant norms and trust" (Putnam, 1995 p. 665). The theory of social capital holds that individuals with higher levels of social capital are generally more educated, more affluent and healthier. Higher levels of social capital are also associated with higher levels of reported happiness.

By its nature, social capital varies. It varies between individuals and in a given individual over time. It also varies between communities, and in a specific community over time. Because of its connection with happiness and community well-being, it is important to understand the factors that cause social capital's variability so that public policy and individual life plans can be formulated that foster its formation and growth.

In the body of social capital research, social capital has usually been treated as a single-dimension, exogenous variable. However, for our research purposes social capital will be treated as a two-dimensional, endogenous variable. The two dimensions are the attitudes of social capital and the behaviors of social capital. Attitudes of social capital are the psychological predispositions related to social capital, and the behaviors of social capital are those observable behaviors of association.

There are many behaviors of social capital, many of which have been researched. One behavior that has not been researched is membership and participation in the Y. The Y's stated mission is to connect individuals, families and the community. This study examines the extent to which that mission is being accomplished in Central Florida. If it is shown that Y membership and participation are associated with higher levels of social capital, the community should support a greater role for the Y in community affairs.

Four research questions have been identified. The first two are: is social capital a two-dimensional construct, and if so, what is the relationship between these dimensions? Third, what are the factors that influence social capital variability? Fourth, do members of the Y have higher levels of social capital, *ceteris paribus*?

This research is important for four principal reasons: 1) From a theoretical perspective it will deepen the understanding of the construct of social capital; 2) At the community level it can guide public policy and the development of a model for the optimal allocation of public resources for fostering personal happiness and well-functioning communities; 3) It will provide the basis for a management instrument to evaluate organizations whose mission is to generate social capital; 4) It will give individuals insights about the most appropriate ways to build personal social capital, given a certain lifestyle, a certain belief system and certain life goals.

Thus, this research will provide insight about social capital at the theoretical level, the community level, the organizational level and the individual level.

The issues have been identified and the research questions formulated. The next step is to conduct a literature review and present the theoretical model that guided the research.

## CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL MODEL

### Introduction

Conceptualization of the construct of social capital is relatively recent and has achieved popularity in research literature only in the last 20 years or so. Halpern (2005) notes before 1984 there was virtually no research conducted on social capital per se, and that even up to 1995 there were fewer than 10,000 articles per year published on social capital research. However, by 2003 such research had exploded with almost 300,000 articles per year published, a rate of growth has continued. The study of social capital is a young but fertile field. Although proliferation of research has brought many insights, the newness of the field has meant unresolved debates and lack of consensus about a number of points concerning social capital. The areas where consensus remains elusive are pointed out in this literature review and discussed.

The methods for social capital research are evolving. Generally social capital research uses a combination of at least two of the following three elements:

1. Some behavior or behaviors of association that are either indicators of, or caused by social capital
2. Some attitude or attitudes that are either indicators of or caused by social capital
3. Some community or individual outcome that is caused by or associated with social capital

Most of the research to date has been structured to show the relationship between 3 by using 1 and/or 2 as indicators of social capital. Examples of such research abound and include: social capital and self-reported health (Kim & Kawachi, 2006; Baron-Epel, Weinstein, Haviv-Mesika, Garty-Sandalon, & Green, 2008; social capital and health service use (Wan & Lin, 2003); social capital and crime (Sampson, Raudebush, & Earls, 1997; Rosenfeld, et al, 2001);

social capital and fear of crime (Ferguson & Mindel 2007); social capital and income (Caspi, Entner-Wright, Moffit, & Silva, 1998; Podolny & Baron, 1997); and social capital and educational attainment (Boxman, de Graaf & Flap, 1991; Israel, Beaulieu, & Hartless, 2001). These studies used social capital as an exogenous variable.

Little research, however, has explored factors influencing social capital variability in context of the community: in other words, using social capital as an endogenous variable. Moreover, little research has examined the relationship of 1 and 2 above. The case for such an approach to social capital research is built through this study's review of the literature. Review of the literature also guided development of the theoretical model that guides this study's analysis.

The literature review section is divided into eight subsections. The first section explores the definitions and conceptualizations of social capital and shows how the conceptualization used in this research is consistent with that being used in the field. The second section discusses the current notion of social capital as capital. The third section discusses social capital variability. The fourth section discusses the Fishbein-Ajzen theory of reasoned action, which is applied in examining the attitudes and behaviors of social capital. The fifth and sixth sections discuss behaviors of association and the attitudes of social capital, respectively. The seventh section discusses the community context of social capital, and the last section summarizes the literature review and clarifies this research in the context of previous studies. The chapter concludes with the development of the theoretical model.

### What Is Social Capital?

Few concepts in social science have burst onto the scene and been disseminated more rapidly and widely than has the concept of social capital. Although the broad notion of human association in communities has a long history, the concept of social capital in sociological usage

has its roots in the post-World War II era and began to flower in the 1980's with the writings of Bourdieu (1986), Wacquant (Bourdieu and Wacquant, 1992) and Coleman (1988). Putnam expanded the concept in the social science community in the 1990's (1993, 1995) and then for the general public with his book *Bowling Alone: The Collapse and Revival of American Community* (2000).

Social capital has been defined in various though similar ways. Table 1 displays a sample of these definitions in chronological order.

Table 1: Definitions of Social Capital

Author	Definition
Coleman	"A variety of different entities, with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors . . . within that structure" (1988, p. 96)
Bourdieu and Wacquant	"The sum of the resources, actual and virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutional relationships of mutual acquaintance and recognition" (1992, p. 119)
Loury	"Naturally occurring social relationships among persons which promote or assist the acquisition of skills and traits valued in the marketplace" (1992, p. 100)
Putnam	"Social connections and the attendant norms and trust" (1995, p. 664-5)
Fukuyama	The instantiation of norms that permit people to cooperate in groups (1995)
Woolcock	"A broad term encompassing the norms and networks facilitating collective action for mutual benefit" (1998, p. 155)
Schuller, Baron, and Field	"Social networks, the reciprocities that arise from them, and the value of these for achieving mutual goals" (2000, p. 1)
Beckman and Kawachi	"Levels of trust and norms of reciprocity" (2000, p. 175)
Paldam	"In the language of game theory . . . the excess propensity to play cooperative solutions in prisoner's dilemma games" (2000, p. 629)
Halpern	"Those everyday networks, including many of the social customs and bonds that define them and keep them together" (2006, p. 2)
Sabatini	"The set of trust, institutions, social norms, social networks, and organizations that shape the interactions of actors within a society" (2006)

These definitions make it clear that there are two broad views of social capital, sometimes resident in the same definition, e. g., Putnam (1995) and Sabatini (2006), that are summarized by Whitham (2007, p.4): “One is the rational view, which identifies social capital as a resource for individuals created by the rational actions of individuals. The other is the embeddedness perspective, which focuses on outcomes of social capital for collectivities and the creation of social capital by collectivities.” Although in some respects these views are two sides of the same coin, for this research it is the rational view that is more useful.

There are two reasons that the rational view is more useful here. First, the impetus for this research is the possibility of using its results to develop a policy tool that could improve the lives of individuals by increasing social capital. The framework for such policy would have to assume that individuals are rational and will respond to policy stimuli like tax breaks and social marketing cues to alter their behaviors in ways that build social capital for their own good. Second, it is the variability of individual social capital that is of interest, and its variability implies that individuals have *already* made rational decisions about behaviors of association that build social capital. If such decisions are simply random, or worse, irrational, then very little could be said of them. Therefore, an underlying assumption of this research is that the rational individual functions within a community and is influenced by factors there.

### Is Social Capital Really Capital and Does it Rise and Fall?

Social theorists debate the nature of social capital regardless of its use and context. Capital is defined as the source of benefit or assistance. Is social capital really capital, and does it rise and fall? Halpern (2005, p. 29), cogently summarizing the debate concludes “that people do indeed ‘invest’ in their social capital just as theory predicts (Glaeser, Laibson & Sacerdote, 2002).” Putnam (2000) also sees social capital as an asset to be invested in: “just as a

screwdriver (physical capital) or a college degree (human capital) can increase productivity . . . so too social contacts affect the productivity of individuals and groups” (p. 19). Finally, Lin (2007) writes that “Social capital can also be envisioned as investment by individuals in interpersonal relationships useful in the market” (p. 27). Evans and Syrett (2007) conclude that “while there is considerable dissent over the view that there are different types of capital (see Fine, 2001), the view that human, cultural and social capital are forms of capital which share the characteristics of being productive resources has much support” (p. 58). So, while it is not indisputable that social capital is capital, for example, see Arrow and Solow (in Dasgupta & Stiglitz, 2000), the preponderance of theorists view it as an asset like economic capital and human capital.

Given that social capital is an asset like other forms of capital, it must, by its nature, rise and fall. The nature of capital is a store of value that is ultimately useful for achieving some end. Niemen et al. (2007) say that “this . . . investment could generate better job <sic>, better economy, better health, etc.” (p. 407). In fact, the construct would have little research interest or practical value if it lacked variability. Munasib (2005) concluded that social capital is accumulated when one is young and depreciates over one’s lifetime. The rate of depreciation varies based primarily on education (being slower for educated individuals) even though educated individuals typically have higher opportunity costs of social capital investment. Even if the construct is conceptualized as a lubricant to facilitate transaction costs rather than capital ((Paldam & Svendsen, 2000), its level would still vary, much like the oil in ones car. The title of Putnam’s book, *Bowling Alone: The Collapse and Revival of American Community* (2000) clearly represents social capital as ebbing and flowing.



### How has Social Capital's Variability been Studied?

Considerable research has been conducted on social capital's variability in diverse areas and disciplines. Three of the most studied areas are healthcare, career advancement/personal income and crime. Social capital's variability has been studied at both the community level and the individual level, but since the focus of this research is at the individual level, the literature review will cover examples of each area at the individual level.

In healthcare at the individual level, Baron-Epel, Weinstein, Haviv-Mesika, Garty-Sandalon and Green (2008) compared social capital and self-rated health for Arabs and Jews living in two communities in Israel. Their broadest conclusion was that Jews living in Israel had higher social capital scores and higher levels of self-rated health than did Arabs living in Israel. The authors attributed these differences to a not unexpected lower level of institutional trust among the Arabs. Kim and Kawachi (2006) measured social capital variability at both the community level and the individual level relative to self-rated health. They compared eight groupings of individual-level social capital indicators with self-rated health and found "as anticipated, the majority of individual-level social capital measures were inversely associated with fair/poor health" (p. 823). Wan and Lin (2003) compared social capital, health status and healthcare use of individuals in three ethnic groups in Kazakhstan. Among other findings, they found that "social capital is directly linked with health status" (p. 163). According to Putnam (2000, p. 326) "of all the domains in which I have traced the consequences of social capital, in none is the importance of social connectedness so well established as in the case of health and well-being." All these studies found that high levels of individual social capital result in better health and well-being.

Research has also linked the variability of individual social capital to career advancement and personal income. Trust is a fundamental component of social capital, and both trusting and

being trustworthy are manifested in networking which is closely related to career advancement and personal income. Podolny and Baron (1997) related career advancement to the number of contacts an employee has: the more contacts, the more career advancement. It's not only internal company networking that pays dividends, establishing networks outside an employee's company also is related to career advancement (Boxman, de Graaf & Flap, 1991). Just being acquainted with a large number of people, however, is not enough to spur career growth; the ability to garner their trust is also needed (Burrough & Helyar, 1991). For entrepreneurs, research has shown that a company obtains more attractive financing from its bank if the directors know the bank's managers (Uzzi, 1999). Similarly, founders of technology companies have greater success in raising venture capital if they have established relationships of trust with venture capitalists (Shane & Stuart, 2002). It is clear that individuals with more social capital, whether they are building a career in a large organization or their own organization, will have more success. To reiterate, this research doesn't distinguish between a group, an organization and a community.

Much of the early work into the relationship between crime and social capital was done by Sampson and colleagues (Sampson & Laub, 1993; Sampson, Raudebush & Earls, 1997). Sampson and Laub (1993) studied 1000 young men, some of whom had committed crimes but had subsequently desisted, some of whom had committed crimes and were leading a life of crime, and some of whom who had never committed a crime. This landmark study concluded that informal social control and societal norm internalization are far more influential factors in keeping young men from committing crime than is the threat of imprisonment or other legal sanctions. They also found that the youth offenders who subsequently established social ties were much more likely to desist from crime. D. J. Smith (1995, p. 430 as quoted in Halpern,

2005, p. 115), supported those conclusions, finding that “the formation of social bonds may turn out to be the central explanation for desistance from crime after adolescence.” This body of research makes it clear that young people who have more social capital are less likely to commit crimes, and those who have committed crimes but then increased their social capital, either on their own or through intervention, are less likely to commit additional crimes.

### The Fishbein-Ajzen Model of Attitude and Behavior

Social capital is conceptualized in this research as a two-dimensional construct consisting of interacting attitudes and behaviors. The basis for this conceptualization is twofold. It is based in part on the grouping of the components of social capital as used by Kim and Kawachi (2006) in the Social Capital Community Benchmark Survey, and also on the Fishbein-Ajzen (1975, 1980) theory of reasoned action. Kim and Kawachi’s work was discussed above.

The theory of reasoned action originated in the field of mass communications, especially persuasive communications, as an attempt to better explain and then to affect consumer behavior. Fishbein and Ajzen argued that the traditional theories of attitude and behavior have two fundamental flaws. The first problem is that the psychological predisposition or attitude to behave has been insufficiently parsed to allow for a thorough explanation of the connection between attitude and behaviors. According to Bright, Manfredo and Bath, (1993) Fishbein and Ajzen addressed that problem by “making a clear distinction between beliefs, attitude, subjective norms, behavioral intention and behavior” (p. 265). The importance of their distinctions for public policy affecting social capital is that it may be more expedient to try to change the public attitudes that result in behaviors than to try to address behaviors only. By conceptualizing social capital as two-dimensional the results of this research will provide guidance in this area.

The second problem with traditional behavior models addressed by the theory of reasoned action is that traditional theories viewed the receiver simply as a passive listener to messages whereas Fishbein and Ajzen argue that the receiver is a rational interpreter of messages. They assumed “that individuals process information in a systematic manner rather than as passive receivers” (Bright et al. 1993, p. 265). The Fishbein-Ajzen theory of reasoned action assumes that an individual’s behavior is driven by three interacting components of his or her attitude: beliefs and knowledge about a certain behavior and its consequences, norms, and behavioral intention. As discussed in the definitions section, social capital is viewed as a rational activity that incorporates beliefs, norms and intentions.

To a great extent the theory of social capital remains in the “traditional” conceptualization: attitudes and behaviors are treated indiscriminately and little research has been done on the factors that cause social capital to vary. This traditional, one-dimensional conceptualization is adequate for a causal or exogenous variable, but is inadequate when social capital is used as an endogenous variable. Viewing social capital in the context of the Fishbein-Ajzen theory of reasoned action refines the construct so that it can provide guidance for maintaining and increasing individual social capital, enabling separate examinations of the attitudes of social capital and the behaviors of social capital. It is the connection between attitudes and behaviors in social capital that this research seeks to clarify.

The theory of reasoned action has been shown to predict behavior in a wide range of activities, including behaviors of social capital, albeit with a certain set of caveats. Sheppard, Hartwick, and Warshaw (1988) state that such a theory “will predict the performance of *any voluntary act, unless intent changes prior to performance or unless the intention measure does not correspond to the behavioral criterion in terms of action, target, context, time-frame and/or*

*specificity* (p. 325, italics theirs). Sheppard et al. (1988) found that the theory of reasoned action does not predict very well in certain circumstances, for example when the behavior “is not completely under the subject’s control” (p. 325) or when the subject is assessed before having all the necessary information to form an intention. However, for a wide range of voluntary behaviors for which an actor has sufficient knowledge to act, the theory has proven valid. Among the behaviors that have been researched using the theory of reasoned action are: marijuana use among adolescents (Zhao, Sayeed, Hornik, Fishbein, & Ahern, 2006); condom use and HIV prevention (Rhodes, Stein, Fishbein, Goldstein, & Rotheram-Borus, 2007; Ewald & Roberts, 1985) and consumer behavior (Brinberg & Durand, 1983; Miniard, Obermiller, & Page, 1982).

Social capital behaviors of association fall within the parameters outlined by Sheppard et al (1988), the theory of reasoned action framework has been used as the framework for predicting them. Warshaw and Davis (1984, 1985) used the theory to predict such activities as going to a campus or dormitory pub, going out with friends, conversing with a stranger and going to a party. Ajzen, Timken and White (1982) used the theory to predict voting in a presidential election, and Brinberg (1979) used it to predict church attendance.

A more recent application of the theory of reasoned action to social capital explored the relationship between the attitudinal factors of trust and reciprocity, and behavior in the Trust and Dictator Game (Farina, O’Higgins, & Sbriglia, 2008). These authors found that in this setting the theory was more useful in explaining behavior after it occurred than in predicting behavior. It is difficult to ascertain how applicable this study’s findings are to a less controlled and contrived setting. The important point is that other researchers are now conceptualizing social capital, in both a field and laboratory settings, with the same approach as this research.

To summarize, the connection between the theory of reasoned action and the theory of social capital is as follows. The theory of reasoned action was originally developed to explain consumer behavior in the field of mass communication and consumer attitudes and behaviors. Subsequent research has shown that social capital attitudes and behaviors are no different than consumer attitudes and behaviors when analyzed using the theory of reasoned action. The underlying assumption of this research is therefore that social behavior is no different than consumer behavior, and hence social marketing can be as effective as consumer marketing in altering behavior. The theory of reasoned action is appropriate for this research.

#### Social Capital and Behaviors of Association (Participation)

The necessary condition for social capital is human association, whether it is called social interaction, civic engagement, formal or informal group involvement, networks or voluntary association. People need other people to be fulfilled. The opportunities for association are almost unlimited, ranging from large, formal organizations like governments and churches to small, informal groups like book clubs and poker clubs.

As discussed above, Kim and Kawachi (2006), using the Social Capital Benchmark Survey as a guide, has grouped behaviors of association into seven categories: informal social interaction, formal group involvement, religious group involvement, giving and volunteering, diversity of friendships, electoral political participation and non-electoral political participation. This research examines formal group involvement, religious group involvement, volunteering and donating money, and participation in political affairs. Each of these groups of behaviors is discussed below.

### *Formal Group Involvement*

Studies have examined the relationships between social capital and various kinds of civic, professional, service and political associations. In the area of industry associations, what Putnam (2000) would call professional associations, Petrusевич (2005) concluded that the new media industry association in Vancouver generated social capital in its industry and by extension in the Vancouver community. Neighborhood associations have also been shown to generate social capital. Smith (2006) has shown not that neighborhood associations do build social capital, but that certain association structures and better leadership skills are more effective than certain other structures and then weak leadership. Regarding political associations, Dolence (2006) concluded that, in mobilizing people to ward off despotism, political associations are more effective than social associations, in contrast to Putnam's findings (2000). While that finding isn't evidence of social capital generation per se, nevertheless cooperatively achieving goals is evidence of social capital. Finally, Moir (2004) researched the effects on women business leaders of belonging to the Rotary Club and concluded that the Rotary is a powerful vehicle to build and sustain social capital for women. Rotary had traditionally not included women; by accepting them the organization became a more effective generator of social capital. From just these few examples it is clear that a number of different kinds of associations build social capital which supports the overall social capital theory.

Kim and Kawachi subdivide formal group involvement into professional, trade, farm or business associations, and neighborhood associations. Putnam (2000) argues that the evidence for the decline in social capital is the decline in membership in civic and professional associations, thus applying slightly different subdivisions of formal group involvement. He identifies 41 such organizations (p. 438-439). Although membership in every one has declined, precipitously in some cases, many still are fertile ground for social capital. Nevertheless, a new

model for civic association is clearly needed. As discussed above, the Y is attempting to re-engineer itself into such an entity.

As it is structured and managed in Central Florida, with an emphasis on networking, volunteerism, health, families and communities, the Y takes on many of the aspects of Kim and Kawachi's and Putnam's formal groups. This is a relatively new role for the Y. Consequently the entire corpus of research on the YMCA across America has consisted of program evaluation. The YMCA's wide range of programs that includes after-school programs, child and adult fitness and nutrition programs, character development programs and youth development and leadership programs. The programs probably benefit participants to a greater or lesser extent; furthermore, many probably also build their social capital. What is germane to this study, however, is that no research has been done to show the relationship between Y membership or participation in Y programs and building social capital. Because the Y brings opportunities for association, volunteerism and improved health, which are all elements of social capital, it is reasonable to expect that members of the Y will have greater social capital.

### *Religious Group Involvement*

In America, by far the most prevalent of Kim and Kawachi's behaviors of association is religious group membership in churches, synagogues, mosques or other houses of worship. Such groups have two roles in society: they provide a means for people to worship, seek understanding of, commune with, and seek guidance in serving a deity; and they build social capital by providing opportunities for association. In addition to the opportunities to gather for worship services, there are opportunities to join with others in service projects, choir practice, Bible, Torah or Koran study, and so forth. Research has confirmed the role of churches as a factor in social capital.



Putnam (2000) says that “American churches over the centuries have been incredibly robust social institutions” (p. 65). The DDB Needham Life Style surveys consistently show that “religious importance” is the most important predictor of people joining clubs and entertaining at home. The Roper Social and Political Trends survey confirms the importance of religious affiliation for civic engagement. The European Values Studies, which include the US and Canada, conclude that religious participation is associated with volunteering at twice the rate of those who rarely participate in religious activities (Greeley, 1997; Halman & Petterson, 2001). Two other studies have also confirmed the connection between religious participation and volunteering (Becker & Edgell, 2001; Lam, 2000). It is clear that religious participation is a significant contributor both to social capital and to other behaviors of association.

### *Giving and Volunteering*

Donating time and money has been shown to be related to levels of social capital. As noted above, Kim and Kawachi (2006) identify giving and volunteering as one of the seven behaviors of social capital, not surprisingly since in many ways that is an extension of membership in clubs and religious organizations. In other words, people form groups and then support them with time and money. In fact, Bekkers (2001) found that those who gave the most time to charitable causes also donated the most money, in contradiction of some expectations that one donation would compensate for the other.

The connection between social capital and volunteering is well documented. Lofland (1996) found that volunteers differed from those who didn't volunteer by virtue of their extensive networks. McPherson, Popielarz and Drobnic (1992) found a direct correlation between the size of a person's social network and that person's likelihood of joining a volunteer association. Research has also inquired as to why people with more social contacts volunteer;

Pearce (1993) argues that a combination of becoming aware of such opportunities through social interaction combines with a degree of norm internalization. Laumann (1973) found that people with more friends conform to group norms, and that one of the norms of people with numerous friends is volunteerism. Wilson and Musick (1998) concluded that when human capital and social capital are separated out for people who volunteer, that social capital is the stronger impetus.

### *Electoral and Non-electoral Political Participation*

Political participation is a factor in social capital variability that comes in several forms. Since the manifestation of social capital is the mobilization of individuals to achieve common ends, it is consistent with social capital theory that high social capital is related to political participation and good governance. Putnam's early work (1993), which examined social capital and government efficacy in Italy, ties social capital or patterns of trust with voting, political participation and efficient government. Subsequent research that tested the applicability of Putnam's findings have shown them to be duplicated in Germany (Cusack, 1999), the US (Knack, 2002) and India (Rossel, 2002) among others.

### Attitudes of Social Capital

#### *Trust*

Kim and Kawachi (2006) denote trust as the fundamental attitudinal or psychological component of social capital. Every definition of social capital includes trust, either explicitly or implicitly, i. e. networks and shared norms that can exist only in an environment of trust. When Putnam (2000) argues that the American community is declining, he is implying that the trust

Americans have in each other and in American institutions is declining. Among other things, he cites the proliferation of lawyers to formalize interactions to demonstrate that decline (p. 145).

Webster's dictionary (1984) defines trust as "a firm belief or confidence in the honesty, integrity, reliability, justice, etc of another person or thing." Ostrom and Ahn (2003), drawing on Gambetta (2000), define trust as "a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular task" (p. xvi).

Reduced to its component parts, trust is: 1) a psychological disposition or attitude of a belief holder 2) about another entity that 3) can be either a person or a thing. The "thing" could be an institution, an organization or government. The intertwined nature of trust, faith and belief is shown by the fact that there is only one Hebrew word, *emuna*, for all three concepts. The connotation, then, of trust has a benign element: to trust someone is to believe in them and to have faith in them to do right. Thus, the composite definition of trust is:

1. A psychological disposition or attitude of a belief holder
2. About another entity
3. That can be a person, institution, or government
4. That will cooperate or reciprocate with the belief holder to their mutual benefit

The research literature debates the relationship between trust and social capital.

Although a full treatment of trust is inappropriate for this research, the debate can be briefly summarized: Some theorists believe that trust is the bedrock of social capital. Paldam and Svendsen (2000) define social capital as "the density of trust existing within a group" (p. 342). Kawachi and Kim (2006), as noted above, include trust as the only non-behavioral indicator of social capital. Subramanian, Kim and Kawachi (2002), by isolating trust and reported health status, found a direct relationship between individuals with high levels of trust and those who

reported better health. Reeskens and Hooghe (2008) contend that “generalized trust features as the most prominent attitudinal element of social capital” (p. 515). On the other hand, some theorists believe that trust is an outcome of social capital (Woolcock, 2001) viewing social capital more in behavioral terms as a density of networks. Field (2003, p. 64) argues that “trust is not a necessary consequence of shared norms and strong networks and that it is best treated as a consequence rather than an integral component of social capital” (p. 65). Finally, Cote and Healy (2001) see trust as both a fundamental component of social capital and its consequence. The theoretical model for this research treats social capital as both a component and consequence and should shed light on the relationship.

#### *Other Attitudes of Social Capital*

Although many theorists argue that trust is a sufficient indicator of social capital from an attitudinal standpoint, a number of components of the attitude of social capital are related to trust but distinct from it. Wan and Lin (2003) note three: 1) a stated belief that people or public programs are helpful; 2) sharing a common interest with the community; and 3) a belief that participation in public activities or programs is beneficial. Field (2003) also sees a stated willingness to cooperate with others as yet another indicator of social capital.

#### Community Social Capital

Halpern (2005), Putnam (2000) and others have argued persuasively that social capital is a multilevel construct that resides at the individual level, the community level and the national level. This multilevel characteristic underlies all social capital research, but each researcher focuses on the levels appropriate to the research questions. This research examines the forces and interactions of social capital at the individual level within the context of the community.

According to Helliwell and Putnam (1995, p. 295), “education is usually the most important predictor of political and social engagement.” “It is a well-established fact that each additional year of education increases the propensity of an individual to become involved in community affairs” (Hall, 2002, p. 35). Coleman (1988), in his study of Catholic schools in America, was the first to show that community social capital is instrumental in a child’s education. He postulated a notion he called “closure,” which he defined as parent-to-parent connectivity. He found that children’s education outcomes were related to more closure in the community. Coleman’s findings were supported by Bryk, Lee & Holland (1993) and Langbein & Bess (2002). Teachman, Paasch & Carver (1996, 1997) determined that dropout rates were lower in Catholic schools than in public schools *ceteris paribus*. The author’s give two reasons for this: greater parent-school connectivity and low residential mobility among families whose children attend Catholic schools. The relationship between education and neighborhood social capital was further demonstrated by Ainsworth (2002) and Sun (1998). The research confirms a strong association between education and community social capital.

Considerable research has focused on community-level social capital, well-being and self-reported health. A landmark series of studies concluded that higher mortality rates, lower self-reported health and poorer health are all related to living in areas of income inequality (i. e. low income) and low social capital (Kawachi, Kennedy, Lochner & Prothrow-Smith, 1997; Kawachi, Kennedy & Glass, 1999; Subramanian, Kim & Kawachi, 2002). The latter research team also found that the “community” could be extended to a US state and that community-level differences in social capital affected individual social capital and well-being (Subramanian, Kawachi & Kennedy, 2001). Ellaway and Macintyre (2000) found that “an individual’s level of health is not associated with whether or not he or she belongs to a local association, but it is

associated with aggregate levels of participation” (p. 988). In short, when it comes to health and wellness, community-level factors play a significant role. It does matter where you live.

Home ownership and income have also been shown to be related to the development of social capital. DiPasquale and Glaeser (1998) found that home ownership contributed to social capital in two ways: home owners tended to invest more in social capital, and home ownership reduced mobility. In other words, duration of residence plays a role in social capital, and home ownership encourages stability. Income has been shown to be a factor of social capital as well. In addition to the obvious fact that personal income enables the material comfort, healthcare and sustenance for well-being, income also enables association and cooperation (Marmot, 2002). Costa and Kahn (2001), researching the decline of social capital in America, found that the major source of its decline outside the home is the rise in income inequality. Even in rural Tanzania, household incomes depend on community social capital to a greater extent than on household social capital (Narayan and Pritchett, 1997).

It is clear from previous research that social capital at the community level has a powerful influence on social capital at the individual level, and in some cases being more in terms of an individual’s well-being. Exploring and analyzing the relationships between the factors of community social capital and individual social capital is the aim of this analysis.

### Summary of the Literature Review

This literature review has served three purposes. First, it has identified three neglected areas in the corpus of social capital research: 1) the causes of social capital variability, 2) the conceptualization of social capital as a two-dimensional construct, and 3) the impact of Y membership on social capital. Second, the review has placed this research in the context of previous research. Third, it has provided a guide for the development of a theoretical model to

guide the analysis. Because most social capital research has studied the effects of social capital rather than social capital per se, this research differs structurally from most previous research. Nevertheless the literature review has shown ample support for both this approach and its structure.

Social capital is a multilevel, latent construct conceptualized to explain certain intangible qualities of human social experience. The term “social capital” to describe this construct is an attempt by modern social theorists to capture several of its characteristics simultaneously. First, it is an asset, much like economic capital, financial capital, cultural capital and human capital. Second, as an asset it is beneficial in facilitating group actions that its possessor deems useful or valuable. Third, social capital is not static; its level can increase or decrease. The contemporary construct rests on a solid historical and philosophical foundation tracing to ancient Greece but it has been refined by modern theorists and research techniques to enable its use in social policy.

Because the study of social capital, a complex and somewhat ambiguous construct, is relatively young, debate about it continues among researchers. This review has elucidated the contending points of view in the disputed areas and has presented and defended the positions taken in this research. The review began by exploring the definitions and conceptualizations of social capital and then showed how the conceptualization used in this research is based on sound, albeit not fully agreed upon precedent. Current views of social capital as capital were presented. Then, given the precedent for viewing social capital as capital, research into its variability was discussed. With the stage set for presenting the nature and structure of this research, the theoretical model was introduced in the context of previous research. Included in that discussion was the rationale for using a two-dimensional conceptualization of social capital; both behavioral and attitudinal dimensions. Finally, the previous research on community-level social capital was

discussed, and the factors that comprise it at the community level were introduced. In summary, while consensus is lacking in many areas of social capital, the literature supports and informs this study's research approach. The theoretical framework to guide this research will now be presented.

### The Theoretical Framework

A theoretical model guides this research. The model is based on the issues raised in Chapter One, on research questions formulated to address those issues and on the literature review that puts this research in context. The model has three components: the attitudinal dimension of social capital and the behavioral dimension of social capital, which are used as indicators of social capital, and the factors that influence social capital's variability. Much of the research on social capital, including this research, uses structural equation modeling (SEM) as its analytical tool; all the models in this study will use SEM structure and notation. The model was constructed step by step. First sub-models of the attitudes and behaviors of social capital were constructed, and then these were positioned in the overall theoretical model that includes the influencing factors of social capital.

#### *Social Capital as a Multi-Dimensional Construct at the Individual Level*

The most widely used survey instrument of social capital is the Social Capital Community Benchmark Survey (SCBS) (<http://www.ropercenter.uconn.edu/>). It has been used in 40 US states and a number of European countries to generate books and articles showing the relationship between social capital and a wide range of social phenomena. (For an extensive though undoubtedly incomplete list see



<http://www.hks.harvard.edu/saguaro/pdfs/SCBSpapers0108>.) The SCBS and the body of work it has generated use social capital as a monolithic, single-dimension, exogenous variable.

Figure 1 is a pictorial representation of social capital as a single-dimension construct with Y1, Y2, Y3, Y4, Y5 and Y6 each representing either an attitude of social capital or a behavior of social capital. For example, attitudes of social capital could be represented by Y1, trust in one's neighbors, Y2, a belief that participating in a neighborhood association benefits oneself and Y3, a belief that other people are helpful. Examples of behaviors of social capital could be Y4, belonging to a church, Y5 voting regularly and Y6 belonging to a service club. These are all behaviors of social capital.

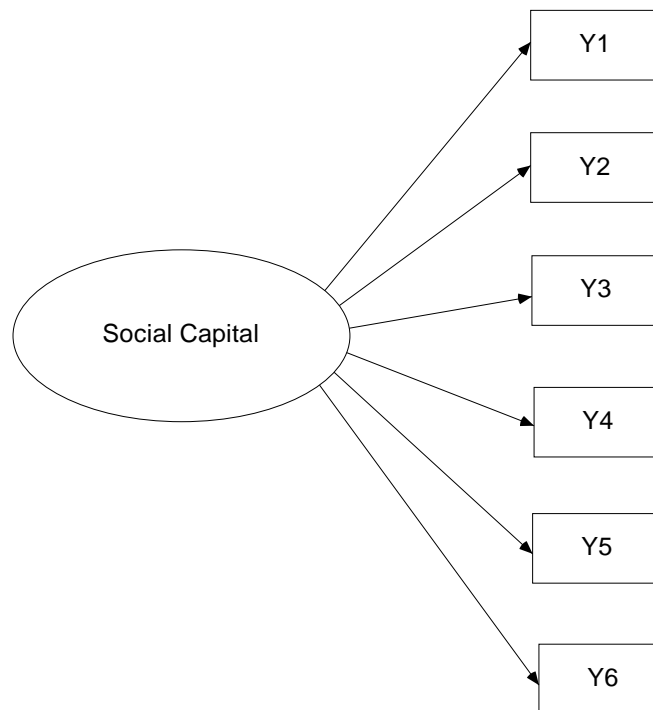


Figure 1: Pictorial Representation of Single-Dimension Social Capital Model

However, when social capital is used as an endogenous variable for the purposes of understanding the causes of its variability and proposing policies to increase it, its single-

dimension conceptualization is inadequate. Informed by the Fishbein-Ajzen theory of reasoned action (Fishbein & Ajzen 1975, 1980), a two-dimensional conceptualization of social capital is more appropriate and useful for our purposes. Figure 2 is a pictorial representation of social capital as a two-dimensional construct, based on the Fishbein-Ajzen theory of reasoned action.

Portrayal of social capital in this fashion begs two questions. First, does this represent the complete construct of social capital? In other words do the parts of the whole equal the whole? Second, when social capital is disaggregated do the parts act in the same way as the whole? As for the first question, assuming that the variables Y1 through Y6 represent the complete construct then grouping them in two dimensions should not alter that representation. Regarding the second question, this is a theoretical representation. The analytical model, of which this is a part, is constructed to minimize any difference in behavior between the one-dimension and two-dimensional models of social capital. While there is a risk that there still might be a difference between the two models, that risk is outweighed by the benefits of disaggregation for the purpose of more careful analysis of the components of social capital. This research assumes that the two methods of modeling social capital will yield the same results and appropriate analysis has been done to minimize the risk.

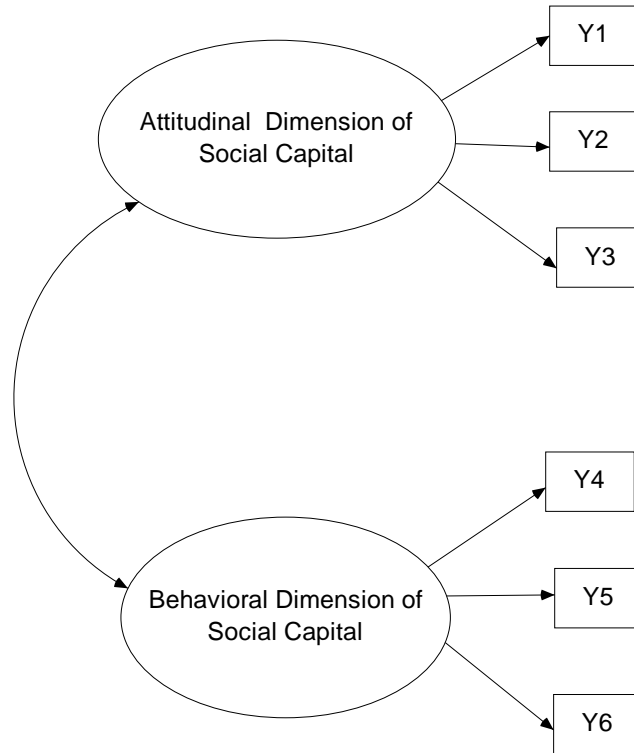


Figure 2: Pictorial Representation of Two-Dimensional Social Capital Model

The two dimensions of social capital are the Attitudinal Dimension and the Behavioral Dimension. Each of the indicators, Y1 through Y6, still represents the same attitudes and behaviors as it does in the single-dimension theoretical model but now they are more appropriately grouped. This grouping enables a more granular analysis of the social capital construct which could facilitate more specific public policy directions for fostering social capital. It is also assumed that the two dimensions are iterative, i. e. that attitudes influence behaviors and that behaviors influence attitudes. Each dimension is now discussed in greater detail.

#### *Behaviors of Social Capital*

At the individual level, social capital is indicated by a number of behaviors. The theoretical model, for example purposes only, shows three behaviors. Kim and Kawachi (2006),

using the Social Capital Benchmark Survey as their guide, provide insights about reducing social capital to its fundamental elements. They group behaviors of social capital into seven broad categories:

1. Informal social interactions
2. Formal group involvement
3. Religious group involvement
4. Giving and volunteering
5. Diversity of friendships
6. Electoral political participation
7. Non- electoral participation

Although each of these behavior groups comprises numerous specific behaviors, the common thread running through all of them is association with other people. That is the fundamental element of the behaviors that indicate social capital. Examples of specific behaviors of social capital are “socializing in friends’ homes,” “membership in professional, trade or business associations,” “church attendance,” “volunteering and donating money,” “voting” and “participation in a labor union.” These behaviors can be called personal behaviors that both indicate and build social capital.

Of all the behaviors that clearly are associational, e. g., church membership, club membership, etc, one has not been studied: membership and participation in the Y. The Y sees its role as a catalyst for improving the lives of citizens in its market area. It is one of those community organizations that, as discussed above exist solely to build social capital. It does so through physical fitness programs, volunteer opportunities, youth programs and fellowship.

The mission of the Y reflects its focus on building social capital. Although the mission varies somewhat from community to community, the mission of the Central Florida Y is representative. “The purpose of this Association is to improve the lives of all in Central Florida by connecting individuals, families and communities with opportunities based on Christian values that strengthen Spirit, Mind and Body.” The word “connecting” is the operative word for building social capital. The mission also reflects the multilevel nature of social capital. While bold and far-reaching, even audacious, the mission has two fundamental problems. The first problem is the definition of what it means to “improve lives,” and the second problem is how to measure that. Social capital theory and this research can address both issues.

The influence of Y’s varies across America but in the relatively small geographic footprint of Central Florida it is substantial, with twenty five family centers, dozens of after-school programs and numerous other programs for youth, families and senior citizens. Central Florida comprises the city of Orlando as the hub and includes Orange, Seminole, Osceola, Brevard, Lake and Marion Counties. Approximately two million people live there. The density of the Y presence in Central Florida makes it an ideal place to research the Y’s impact on social capital. One could expect the impact on individuals to be about the same in every community that the Y serves, but its greater density in Central Florida may allow for inferences about social capital at the community level as well.

To summarize this section: the behaviors of social capital, which are numerous and diverse, have been grouped into seven categories by Kim and Kawachi (2006). Although diverse, such behaviors have the common characteristic of organized association with other people. Although many of these behaviors have been studied, one that has not been is membership and participation in the Y. Yet this particular behavior meets the criterion of

association, and the Y's mission is to promote social capital-building behavior. The other dimension of social capital at the individual level is the attitudes of social capital.

### *Attitudes of Social Capital*

Attitudes are the psychological predispositions that impel individuals to behave in certain ways. The Fishbein and Ajzen (1975, 1980) theory of reasoned action argues that actions are always preceded by attitudes. The actions then interact with attitudes and modify them through learning, which then modifies behavior. This iterative pattern continues.

In the context of social capital the theory of reasoned action would operate as follows. Wright (2000) argues that people have an innate belief that trusting other people can be beneficial. This modicum of trust causes people to associate. Social capital theory argues that more often than not this associative behavior does indeed benefit people, and the benefit affirms the attitude of trust. This higher level of trust leads to more associative behavior, and thus the process of building social capital continues. Loss of social capital works in the opposite fashion. Confirmation of this theoretical description of the relationship between the attitudes of social capital and the behaviors of social capital is one of the purposes of this research.

Just as the behaviors of social capital were grouped, the attitudes of social capital can also be grouped. In addition to the seven groups of behaviors of social capital, Kim and Kawachi (2006) describe an attitude of social capital they call Social Trust, which they subdivide into two broad types of trust: general interpersonal trust, i. e. trust in people in general, and specific trust, which is related to specific individuals or to classes of individuals, e. g., trust in fellow church members, co-workers, etc.

Another dimension of trust, sometimes considered an aspect of general interpersonal trust but which is not specifically noted by Kim and Kawachi, is institutional trust. Institutional trust

is trust in “the system,” i. e. the trust in political or government institutions, the military, the media, organized religion, the education system and so forth (Cook and Gronke, 2001). Trust, then, can be conceptualized as having at least three different levels: institutional trust, trust in people in general and trust in specific people or specific classes of people.

Although trust is the bedrock of social capital, other attitudes also have been theorized to be related to it. Wan & Lin (2003) have shown that social capital is indicated by a stated belief that people or public programs are helpful and by a belief that participation in public activities or programs is beneficial. In addition, Field (2003) sees a stated willingness to cooperate with others as an attitude of social capital.

The theory of reasoned action informs us that attitudes influence behavior and then, in an iterative fashion, behaviors influence attitudes. The iterations continue as knowledge and experience interact to affect attitudes and behaviors. Similarly, the attitudes of social capital influence behaviors of social capital and conversely these behaviors influence the attitudes of social capital. Attitudes of social capital are those psychological predispositions that are related to and probably initially cause the behaviors of social capital. These attitudes are complex and nuanced, but can be broadly grouped into three interrelated clusters. The first cluster is trust which is the bedrock of social capital and which can be subdivided into three different but related concepts. The second cluster is beliefs about the helpfulness of association and participation in groups. The third cluster is a belief that certain kinds of associative behaviors are beneficial. Together these clusters comprise the attitudinal dimension of social capital.

In the context of structural equation modeling, behaviors and attitudes of social capital are the indicators of individual social capital. The level of individual social capital varies, both over the life of an individual and between individuals. Some of the variation is probably

connected to the interplay of attitudes and behavior, but most of the variation, as hypothesized in this research, is caused by community levels of social capital. Regardless of the relationship of attitudes and behaviors of social capital, individual social capital is embedded in a community. That is where we turn next.

### *Social Capital at the Community Level*

Social capital is a multilevel construct that resides at the individual level, the community level and the national level. Social capital research must always contemplate this multilevel characteristic though the research will focus only on those levels that address the research questions and hypotheses. This study examines the forces and interactions of social capital at the individual level and at the community level.

At the community level, the factors of social capital can be clustered into two groups: contextual and ecological. Contextual factors establish the background within which social capital thrives or declines. Examples of contextual factors are the average household income in a community, the average educational attainment in a community and the rate of home ownership in a community. Ecological factors are the aggregated individual characteristics of those who reside in the same ecological community. Duration of residence, self-reported health status and home ownership are examples of ecological characteristics.

There are several reasons that it is useful to cluster community-level social capital into two groups. First, the theory of social capital is deepened with a reductionist approach to the community-level factors. Second, because these are the factors that influence social capital variability, it is important from a policy standpoint to recognize and understand how they interact. Social policy is formulated for implementation at the community level and then cascades to the individual level. This policy must be guided by understanding community-level



social capital in the most granular way possible. Finally, from a purely pragmatic standpoint, data are available from different sources for each cluster. The contextual variables are available from the US Census Bureau; the ecological variables are available from surveying the residents of a certain community. This clustering and description of the community-level factors of social capital completes our discussion of the elements for the theoretical model that guided the research.

Table 2 is a summary of the components of social capital that have been identified, defined and categorized. Y1 through Y6 are examples of contextual and ecological factors of community-level social capital. X1 through X6 are examples of behaviors and attitudes of social capital at the individual level.

The components of the theoretical model have now been identified, defined and categorized. Table 2 is a summary of that discussion.

Table 2: Theoretical Overview of Social Capital

Individual Level Social Capital	
<i>Attitudes</i>	
	Y1, Generalized trust
	Y2, Stated belief that club membership is beneficial
	Y3, Belief that government is helpful
<i>Behaviors</i>	
	Y4, Club membership
	Y5, Church membership
	Y6, Political participation
Community Level Social Capital	
<i>Contextual</i>	
	X1, Average community income
	X2, Rate of community home ownership
	X3, Average community education attainment
<i>Ecological</i>	
	X4, Duration of residence
	X5, Self-reported health
	X6, Personal education attainment

It is not sufficient, however, simply to identify the components. A theoretical statistical model must be developed that shows how the components of social capital interact. Figure 3 is this model. Carrying forward the nomenclature from the previous section, the “Y” variables are examples of indicators of individual social capital. Y1, Y2 and Y3 are examples of indicators of the attitudinal dimension of social capital. Y4, Y5 and Y6 are examples of indicators of the behavioral dimension of social capital. X1, X2 and X3 are examples of community contextual factors, and X4, X5 and X6 are examples of community ecological factors. This theoretical model was pruned and further specified with exploratory and confirmatory factor analysis later in the research.

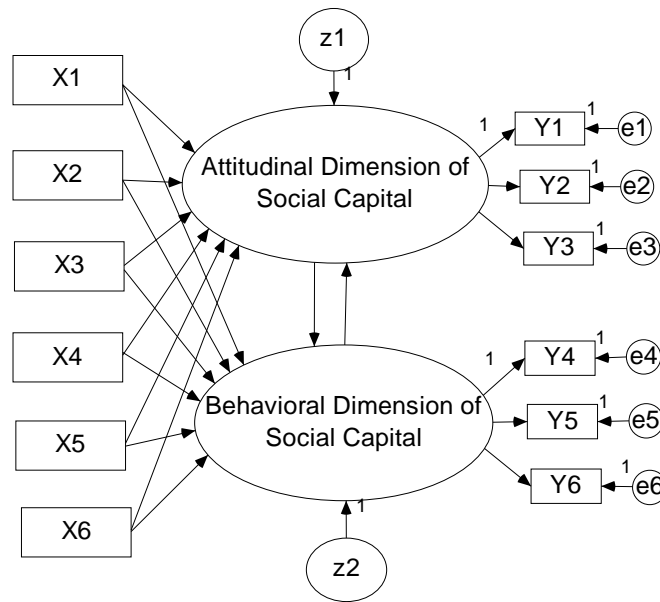


Figure 3: Theoretical Model, Factors Influencing Social Capital Variability

## CHAPTER THREE: RESEARCH METHODOLOGY

The purpose of this study is to analyze individual social capital as an endogenous, multidimensional construct in the context of the community. Using the literature as a guide, four research questions were developed with four related hypotheses. A theoretical framework has been developed. This chapter discusses the variables in the study and shows the power analysis, the sample size estimation process and the data collection technique employed. After describing the technique for collecting the data, the chapter discusses the survey instrument and concludes with a discussion of how the variables were analyzed and how the hypotheses were tested.

### Research Questions and Hypotheses

There are four research questions:

1. Is social capital a two-dimensional construct?
2. What is the relationship between the attitudinal dimension of social capital and the behavioral dimension of social capital?
3. What factors influence the variability in social capital?
4. Do members of the Y have more social capital, *ceteris paribus*, than non-members of the Y?

The hypotheses are:

H1: Social capital is a two-dimensional construct.

H2: The two dimensions of social capital are iterative and the attitudinal dimension of social capital more greatly influences the behavioral dimension.

H3: Social capital variability can be explained by six factors: average community income; rate of community home ownership; average community educational attainment;

duration of residence in a community; self-reported health; and personal educational attainment.

H4: Members of the Y have more social capital, *ceteris paribus*, than non-members of the Y.

### The Variables of the Research and Sources of Data

The literature review has guided the selection of the variables in this study. There are six exogenous variables, two endogenous variables, eight indicator variables and four demographic variables. The data to populate these variables comes from two sources: a survey questionnaire and census block data from the Economic and Social Research Institute (<http://www.esri.com>). This section discusses the variables and the data sources and concludes with a summary table showing the data sources for each variable.

#### *Characteristics of the Community: Exogenous Variables*

The exogenous variables reside in the community and consist of contextual variables and ecological variables. This research uses six such variables: average household income of the census block (PI); the rate of home ownership in the census block (HO); average education attainment of the census block (AEA); the average duration of residence in the census block of the sample frame (DUR); individual self-rated health (SRH); and personal educational attainment (PEA).

#### *Attitudes and Behaviors of Social Capital: Endogenous and Indicator Variables*

Kim and Kawachi (2006) and Wan and Lin (2003) have been the primary guides for structuring the measurement instrument. These researchers have shown us that social capital at the individual level is a combination of a level of trust and other attitudinal components, and the

number and intensity of associations. Although Kim and Kawachi (2006) distinguish seven social capital behaviors, in this study the behavior dimension has four variables. Because the ultimate purpose of this study's models and conclusions is to guide public policy, the informal behaviors of social capital are not addressed.

Each of the dimensions of social capital has specific indicators. The psychological predisposition or attitude dimension of social capital has three indicator variables: trust, including specific personal trust, generalized interpersonal trust and institutional trust; a belief that participation in associations is personally beneficial; and a belief that people or public programs are generally helpful. The behavioral indicators of social capital in this research are: membership in a civic or professional association; membership in a church, synagogue or mosque; volunteering and monetary donations; and participation in the political process and organizations. In addition to mere membership in specific organizations, the survey is designed to gauge intensity of participation, i. e. number of meetings attended in the last month, frequency of voting, frequency of church attendance and Y participation, etc.

### *Demographic Variables*

There are four demographic variables: marital status, age, race and gender.

### Sources of the Data

#### *Survey Instrument*

The survey instrument is a questionnaire containing 29 questions, all but five of which were taken from the Social Capital Benchmark Survey (<http://www.ropercenter.uconn.edu/>). This instrument has been used in numerous research studies throughout America and has high reliability and validity. Three questions that were not taken from the SCBS pertain to

membership and participation in the Y. These questions were constructed using the same format and answer choices as similar questions in the SCBS. The target time for a respondent to complete the questionnaire is less than 15 minutes.

The questionnaire was pilot-tested on a group of fifteen business and professional people in Central Florida in order to gain understanding of how respondents answered the questions, how long it took them on average and which questions might be problematic for a mail survey. The pilot-tested questionnaire had 31 questions. Three questions were eliminated, on household income, on employment status and on trusting one's co-workers (a question that seemed to confuse respondents). One question was added: gender of the respondent. The order of the questions was also rearranged; demographic questions and questions about doctor visits were placed at the end of the questionnaire.

The structure of the instrument is as follows. There are four questions related to demographics: age, race, marital status and gender. There are two ecological questions: self-reported health and personal educational attainment. There are seven questions pertaining to social capital attitude: three on trust, two on whether the respondent views participation in social associations as beneficial and two on whether the respondent deems others to be helpful. There are fifteen questions on behaviors of association: three each on Y participation, church participation, civic/service/professional group participation, participation in electoral and non-electoral political affairs and volunteering and donating. Other than the demographics questions, the response choices are a combination of five scale Likert choices and yes/no. The typical Likert choices are: 1=Agree strongly 2= Agree, 3= Neither agree nor disagree, 4= Disagree, 5= Disagree strongly. The survey questionnaire will be the data source for all variables except the following four: average education attainment of the census block, rate of home ownership in a

census block, average duration of residence in a census block and average household income in a census block.

*SEER Analytics/Economic and Social Research Institute*

The other source of data is the Economic and Social Research Institute (ESRI). This company provides geographic information and derives its data from a variety of sources including the United States Government Bureau of the Census. SEER Analytics, LLC, a Tampa-based market research firm collected the data from ESRI and formatted it for this research. For the purposes of this research, the community is defined as a census block group. A census block group consists of approximately 400 households and roughly corresponds to a nine-digit zip code. ESRI and Seer Analytics are the sources of the following data at the census block (community) level: average education attainment in a census block; rate of home ownership in a census block; average duration of residency at the same address in a census block; and average household income in a census block. Tables 3, 4, 5, 6, and 7 summarize the variables and the data sources.

Table 3: Summary of Exogenous Variables and Data Sources

Variable Name	Attribute	Measurement	Source of Data
Household Income	Exogenous	Ordinal	ESRI
Average Education Attainment	Exogenous	Ordinal	ESRI
Home Ownership	Exogenous	Ordinal	ESRI
Duration of Residence	Exogenous	Ordinal	ESRI
Self-Reported Health	Exogenous	Ordinal	Survey: How would you describe your health when comparing yourself with others of your age?
Personal Education Attainment	Exogenous	Ordinal	Survey: What is your personal educational attainment?

Table 4: Summary of Endogenous Variables and Data Sources

Variable Name	Attribute	Measurement	Source of Data
Attitudinal Dimension of Social Capital	Endogenous	Ordinal	Survey, indicated by: <ol style="list-style-type: none"> <li>1. General trust</li> <li>2. Trusts neighbors</li> <li>3. Benefits from participation</li> <li>4. Govt is responsive</li> <li>5. People are helpful</li> </ol>
Behavioral Dimension of Social Capital	Endogenous	Ordinal	Survey, indicated by: <ol style="list-style-type: none"> <li>1. Club member</li> <li>2. Church member</li> <li>3. Votes</li> <li>4. Interested in politics</li> <li>5. Volunteers</li> <li>6. Makes nonchurch donations</li> <li>7. Attends club meetings</li> </ol>



Table 5: Summary of Indicator Variables and Data Sources for Attitudinal Dimension of Social Capital

Variable Name	Attribute	Measurement	Source of Data
General trust	Indicator	Ordinal	Survey: Generally speaking, would you say that most people can be trusted?
Trusts neighbors	Indicator	Ordinal	Survey: Generally speaking, would you say that most people in your neighborhood can be trusted?
Benefits from participation	Indicator	Ordinal	Survey: Participating in service, civic and/or trade organizations is beneficial to me.
Govt is responsive	Indicator	Ordinal	Survey: Generally speaking would you say that government and public programs are helpful to you?
People are helpful	Indicator	Ordinal	Survey: Generally speaking, would you say that people in your community are helpful to you?

Table 6: Summary of Indicator Variables and Data Sources for Behavioral Dimension of Social Capital

Variable Name	Attribute	Measurement	Source of Data
Club member	Indicator	Ordinal	Survey: Do you belong to a service, civic, or trade organization? This could include a veteran's group, a neighborhood association, a Rotary or Kiwanis Club or professional or trade association?
Church member	Indicator	Ordinal	Survey: Are you a member of a church or other house of worship?
Votes	Indicator	Ordinal	Survey: Did you vote in the last presidential election?
Interested in politics	Indicator	Ordinal	Survey: How interested are you in political and national affairs?
Volunteers	Indicator	Ordinal	Survey: Other than for religious organization or the YMCA, in the past year have you volunteered your time? This could include volunteering for a health cause or to fight a disease, a school or youth program, to help the elderly or poor, or to help a cultural or civic group?
Makes nonchurch donations	Indicator	Ordinal	Survey: In the past year have you donated money to a non-religious charitable organization including political candidates and political parties?
Attends club meetings	Indicator	Ordinal	Survey: In the past year have you attended a club, civic or social organization event?

Table 7: Summary of Demographic Variables

Variable Name	Attribute	Measurement	Source of Data
Marital Status	Demographic	Nominal	Survey: What is your marital status?
Age	Demographic	Ordinal	Survey: What is your age?
Race/Ethnicity	Demographic	Nominal	Survey: What do you consider to be your race or ethnicity?
Gender	Demographic	Nominal	Survey: What is your gender?

### Power Analysis, Sampling and Sample Size

Two key elements in the design of research studies are power and sample size. Power is the probability of rejecting the null hypothesis when the null hypothesis is false (Aberson, 2010; Kaplan, 1995; Zhang and Wang, 2009). That is called a Type II error or false negative. As power increases, the chance of making such an error decreases. However, as power increases the chance of concluding that an effect occurred when it actually did not also increases. That is a Type I error. So, given the nature of the research and the ramifications of making a Type I or a Type II error, a researcher must make a judgment as to the necessary power for a particular study. The usual probabilities for rejecting the null hypothesis ( $\alpha$ ) range from 1 in 4 (.20) to 1 in a 100 (.01). This probability is called alpha. The alpha for this study is .05. Power analysis is important because it informs the sample size that is required.

The unit of analysis in this study is the individual citizen of Central Florida. The analysis technique is structural equation modeling (SEM). Opinions differ as to the minimum sample size necessary for a structured equation model. Ding, Velicer and Harlow (1995) argued that between 100 and 150 subjects are the required minimum while Boomsma and Hoogland (2001) argued that 200 is the minimum. Bentler and Chou (1987), however, approach minimum sample size somewhat differently, taking into account the size and complexity of a particular SEM. They argued that 5 subjects per parameter estimate of the model will be sufficient. Kline (2005) has a similar view as Bentler and Chou though stipulating 10 subjects per parameter as a minimum.

The number of parameters of the most complex model that will be used in this research is 67. Free parameters are 43. The sample frame is six counties in Central Florida, with a population of approximately 2 million people. The data collection was random and the sample

frame large, therefore, following Kline (2005), the minimum sample size for this research is 670. This provides adequate power to reject the null hypothesis with 95% confidence.

### Data Collection

As discussed above, data were collected in two ways: a survey questionnaire mailed to residents of Central Florida and census block data from ESRI. Each method is described in this section.

The research questionnaire is a 29-question piece that was mailed to Central Floridians in the sample frame. The piece was tri-folded so that it could be completed by the recipient and returned anonymously. Return postage was prepaid. Respondents were asked to complete the questionnaire, tear off the address panel containing their name and address, refold the form so that the return address panel was showing and mail it back to the UCF Office of Research and Commercialization. Each piece was bar coded with the census block of the recipient so that the ESRI data can be linked to the respondent while retaining anonymity.

Because one of the research questions relates to the role of Y membership in building social capital it was important to have enough Y members in the sample frame to meet the sample size requirement. It was also important to ensure a valid comparison between Y members and non-Y members. This problem was addressed as follows. The Central Florida YMCA provided a complete list of the names and addresses of all their members who had had family memberships for at least one year. The one-year stipulation was included so that any social capital effect wouldn't be diluted by members who had only recently become members. The total number of such members was approximately 10,000. The addresses of these 10,000 members were scanned and the census block of each member was identified. The footprint of

the Central Florida YMCA includes the counties in and around Orlando, Florida: Orange, Seminole, Osceola, Brevard, Lake and Marion.

A complete sample frame now had to be constructed. The minimum sample size was 670 and the expected return rate was unknowable. Each mail campaign is different and this one lacked any incentive to respond except an appeal to civic pride. Furthermore, since respondents were anonymous, there was no feasible way to reward or thank them for their response. Marketing mailings that included incentives usually have had a responses rate of about 2%. Since this mailing appealed to civic pride and would be clearly marked as a University of Central Florida-based study, it was hoped that this mailing also could elicit a response rate of at least 2%. Assuming a response rate of 2% and a required response number of 670, it was concluded that no less than 30,000 mailers should be sent.

Given a list of slightly more than 10,000 Y members in identified census blocks and a need for about 30,000 people in the research sample frame, it was decided to mail surveys to all Y members plus two non-Y members who reside in the same census blocks as the Y members. In this way a sample frame of 31,000 people was constructed. A response rate of 2% would yield 620 responses.

### Human Subjects

This research involves human subjects and is thus subject to the approval of the Institutional Review Board. Such approval was sought and granted for both the data collection technique and the survey questionnaire. All questionnaires contained the following disclaimer:

Dear Fellow Citizen,

This survey is being conducted by the University of Central Florida to help determine certain aspects of social capital in the community. The results of the survey will be used to make recommendations to enhance the lives of all citizens of Central Florida. You must be at least 18 years of age to participate in this survey and participation is entirely voluntary. Careful consideration of your answers and **your cooperation will be greatly appreciated**. You do not need to answer any question that you do not wish to but you are encouraged to answer all of them.

Your anonymity is important to the results of this survey and you will not be contacted in any way as a result of your returning this survey form. You have been chosen randomly for this survey and there is no risk to you whether you complete the form or not. Please complete the survey to the best of your ability and mail it to the University with the self-mailer that is part of this questionnaire.

The supervising professor is Dr. Thomas Wan of the College of Health and Public Administration at the University of Central Florida. The doctoral candidate conducting the research is James R. Downing. They can be reached by mail at the above address or by phone at 407-823-0774.

Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board. Questions or concerns about research participants' rights should be directed to the UCF IRB office, University of Central Florida, Office of Research and Commercialization, 12202 Research Parkway, Suite 501, Orlando, FL 32282-3246, or by campus mail at 32816-0150. The hours of operation are 8:00 am to 5:00 pm, Monday through Friday except on University of Central Florida official holidays. The telephone numbers for the IRB office are 407-882-2276 and 407-823-2901.

Thank you very much for your cooperation.

Figure 4: Questionnaire Disclaimer

### Statistical Analysis

The statistical analysis for this research was done in three steps: 1) a descriptive analysis of the variables showed the demographic characteristics of the sample; 2) confirmatory factor analysis explained “the variation and covariation of the observed variables in terms of a set of unobserved factors” (Wan [2002, p. 79]; 3) structural equation modeling described and explained the effect and tested the hypotheses.

The descriptive analysis shows the relationship of the sample to the general population and the extent to which this research is generalizable. The research question related to the effect of Y membership on social capital which required a focus on members of the YMCA who resided disproportionately in High Attractive Block Groups. In short, Y members are more affluent than the general public. Nevertheless, the sample will be compared to both High Attractive Block Groups and the population in general.

Exploratory factor analysis followed by confirmatory factor analysis was used to validate the measurement models for the latent constructs. By definition latent constructs cannot be measured directly, hence the use of confirmatory factor analysis that simultaneously analyzes multiple observable indicators to measure latent constructs. This analytical tool can also be used to test hypotheses. In addition to helping to develop and then validate latent construct measurement models, confirmatory factor analysis, through goodness of fit statistics, demonstrates how well the models fit the data. Modification indices guide improvements of the measurement models. This research has two latent construct measurement models, Figures 5 and 6:

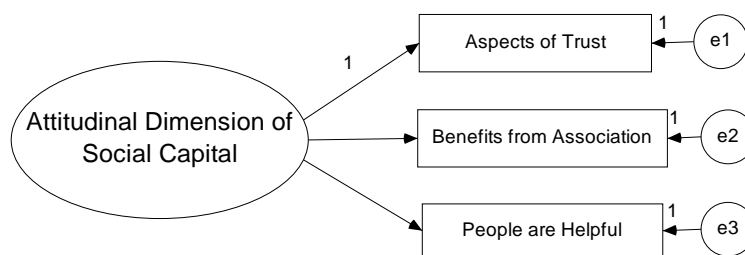


Figure 5: Latent Construct Model of the Attitudinal Dimension of Social Capital

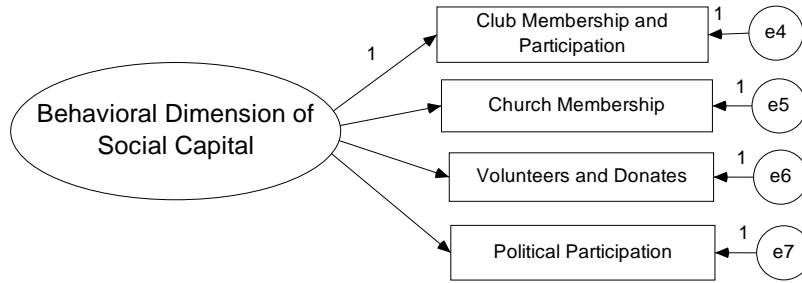


Figure 6: Latent Construct Model of the Behavioral Dimension of Social Capital

The third step in the analysis is structural equation modeling (SEM). This is the most appropriate statistical method to analyze the data because it is effective in theory testing as well as in determining the correlation strength of causal variables (DeShon, 1998; Byrne 2001). SEM has the statistical capability to simultaneously assess the relationships of the exogenous, endogenous and indicator variables. The data were analyzed using SPSS 15.0 and AMOS 7.0 statistical software.

Figure 7 is the SEM model that was used to test Hypotheses One and Two.

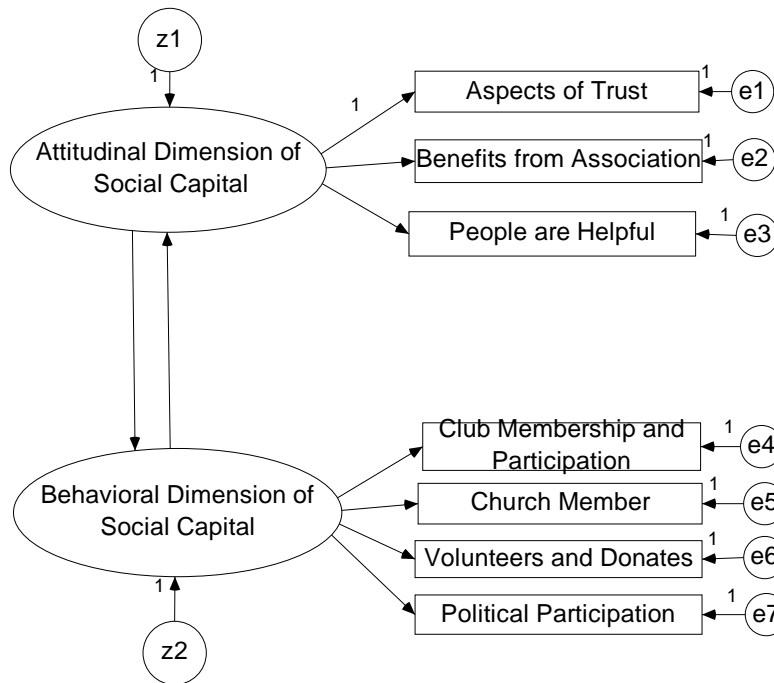


Figure 7: Two-Dimensional Social Capital Model



Figure 8 is the structural equation model for analyzing Hypothesis Three, the factors that influence social capital variability.

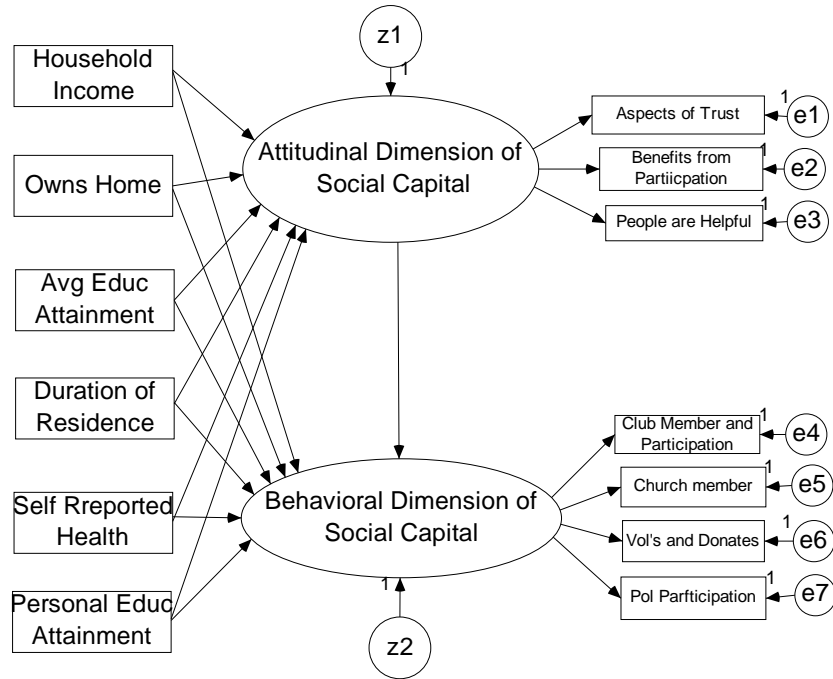


Figure 8: Factors of Social Capital Variability

The fourth research question, “Do Y members have greater social capita, ceteris paribus?” was tested using an analysis of variance, ANOVA because it compares two groups within the sample and ANOVA is the most effective method to isolate the differences between the two groups on the dimensions of social capital. The two groups that were compared are Y members and non-Y members.

### Criteria for Statistical Analysis

#### *Multicollinearity*

Multicollinearity is the extent to which two or more variables in an SEM model are correlated. Although multicollinearity does not affect the predictive power of the model as a

whole, it does affect the conclusions drawn about the individual predictors (Farrar and Glauber, 1967). Correlations between variables that are higher than .70 can indicate multicollinearity (Bachman and Paternoster, 2004; Meyers, Gamst and Guarino, 2006). The Spearman Rho test was used to detect multicollinearity. Multicollinearity can be dealt with in one of two ways: 1) leave the model as is and forego conclusions regarding individual predictors; or, 2) drop one or more variables; and obtain more data. Only the second option was suitable for this research.

### *Significance*

Statistical significance is a measure of the likelihood that the effect was caused by chance. The hypothesis that the effect is coincidental or caused by chance is the null hypothesis, and significance is the likelihood of rejecting the null hypothesis. This measure is called the critical p-value, usually denoted by the Greek letter alpha. An alpha usually ranges from .80 to .99 according to the importance of rejecting the null hypothesis, which means that the likelihood of the finding being true falls between 80% and 99%. This research uses an alpha of .05, meaning that there is at least a 95% chance that the finding is true.

### *Factor Loading*

According to Kline (2005), factor loadings are “usually interpreted as regression coefficients that may be in standardized or unstandardized form” (p. 72). When displayed in table form, factor loadings are the correlation coefficients between the variables (the rows) and the factors (the columns), which when squared indicate the percentage of variance in an indicator variable that is explained by a factor. This statistic is Pearson’s  $r$ .

Opinions differ on the Pearson scores necessary to demonstrate that independent variables are represented by a specific factor. Some argue for a score as high as .7 while others

contend that .4 is sufficient. Kline (2005) argues that .5 is acceptable, and it is appropriate for this research. Any indicator with a factor loading less than .5 was eliminated from the models.

### *Reliability*

The concept of reliability in statistics is the notion that the results will be consistent when repeated. There are several methods to determine that: this research will use two. The most common is Cronbach's alpha. George and Mallory (2003) and Kline (2005) argue that a Cronbach's alpha of .70 is acceptable. This research used a Cronbach's alpha of .70 for reliability testing. A second method to test reliability is composite reliability index described by DeShon (1998). Delmas and Toffel (2008) argue that a composite reliability index of greater than .70 is acceptable.

### *Goodness of Fit*

Goodness-of-fit indicators determine whether the model to be tested fits the data and should be accepted. Unlike the case for the statistics discussed above, theorists lack consensus on goodness-of-fit statistics. Therefore selecting the most appropriate statistic for a particular research project is more complicated. Consideration must be given to the type of data in the study, the complexity of the model and the sample size. Many goodness-of-fit measures were considered for this study: Normed Fit Index (NFI); Nonnormed Fit Index (NNFI); Relative Fit Index (RFI); Incremental Fit Index (IFI); chi-square; chi-square associated p value (p); chi-square/degree of freedom; Root Mean Square Error of Approximation (RMSEA); Root Mean Square Error of Approximation associated p value (PCLOSE); Tucker-Lewis Index (TLI); Comparative Fit Index (CFI); Standardized Root Mean Square Residual (SRMR); Hoelter's

Critical N (Hoelter Index); Akaike Information Criteria (AIC); Bayesian Information Criteria (BIC); Goodness of Fit Index (GFI) and Adjusted Goodness of Fit (AGFI).

The goal was not to test the model with every possible index, but to match this study with the most appropriate goodness-of-fit index. The literature offers numerous recommendations as to the most appropriate goodness-of-fit measures. Garson (2009) recommends three goodness-of-fit measures: chi-square, RMSEA and either NFI, RFI, TLI, IFI or CFI. On the other hand, Kline (2005) recommends chi-square, NFI or CFI, NNFI and SRMR.

For study with its relatively simple model and large sample size, the following goodness-of-fit indices were appropriately used:

1. Chi-square/Degree of Freedom with a score of less than 4 (Kline, 2005; Wan, 2002).
2. RMSEA with a score of less than .08 (Engel and Worden, 2003; Wan, 2002).
3. PCLOSE with a score greater than .05 (Garson, 2009).
4. Tucker-Lewis Index with a score greater than .90 (Hoe, 2008).
5. Comparative Fit Index with a score greater than .90 (Hu and Bentler, 1999).
6. Goodness of Fit Index with a score greater than .90 (Wan, 2002).
7. Standardized Root Mean Square Residual with a score less than .08 (Hu and Bentler, 1999)
8. Hoelter's Critical N with a score greater than 200 (Garson, 2009; Wan, 2002).

### Summary of Research Methodology

This chapter has described the research methodology that was employed to analyze the study's data. The variables were described and discussed, a power analysis was conducted, and the sampling approach and minimum sample size were discussed. The survey instrument was described and the linkage to the variables shown. Structured equation modeling was justified as

the appropriate analytical tool, and the model for this study was presented. Lastly, the methods of statistical analysis were described.

## CHAPTER FOUR: FINDINGS

This chapter presents and discusses the results of the data analysis in six sections: demographic analysis, univariate analysis, correlation analysis, confirmatory factor analysis, hypothesis testing and a discussion of the findings.

### Demographic Analysis

#### *The Data*

The demographics of six groups were compared. The groups are the total population of Central Florida, the total population of Y members who have had family memberships for more than a year, the sample frame, the sample, the Y members in the sample and the non-Y members in the sample. The demographic characteristics of annual family income, educational attainment, marital statuses and race for each group are shown in Tables 8 through 12, respectively.

Table 8: Group Definitions

Group	Definition	Approximate Number
Total Population	The Central Florida counties of Orange, Seminole, Osceola, Lake, Brevard and Marion. Orlando, Florida is the main city in this footprint.	2 million
Total Y Population	Number of Central Florida YMCA families who have been members of the Y for at least one year.	10,000 families; 25,000 people
Sample Frame	All of the Y population, above, plus twice as many families who are believed to be somewhat demographically similar.	31,000
Total Sample	Those members of the sample frame who completed and returned a survey questionnaire.	1881
Y members in Sample	Those people in the total sample who are members of the Y.	1018
Non-Y members in the sample	Those people in the total sample who are not members of the Y.	863

Table 9: Annual Income by Group

Group	Annual Family Income (000s)					
	0-25	25-35	35-50	50-75	75-100	100+
Total Population	7%	15%	35%	29%	10%	4%
Y Member Population	5%	4%	8%	19%	19%	45%
Total Sample	0	2%	8%	27%	27%	36%
Y members in sample	0	0	6%	24%	28%	42%
Non Y members in sample	0	1%	12%	31%	26%	30%

Table 10: Educational Attainment by Group

Group	Educational Attainment				
	Less than HS graduate	HS graduate	Some college	BA/BS +	MA/MS +
Total Population	17%	27%	31%	18%	9%
Total Sample	1%	6%	22%	37%	33%
Y members in sample	0	3%	17%	40%	40%
Non-Y members in sample	2%	10%	28%	35%	25%

Table 11: Marital Status by Group

Group	Marital Status			
	Married	Divorced or separated	Widowed	Never Married
Total Population	56%	12%	11%	21%
Total Sample	88%	7%	2%	3%
Y members in the sample	93%	4%	1%	2%
Non-Y members in the sample	85%	10%	2%	3%

Table 12 compares the groups by race. The survey questionnaire asked respondents to label themselves as “white,” “African American,” “Hispanic” or “Other.” Although these categories mix race and ethnicity and ignore mixed race/ethnicity, the classifications are consistent with the SCBS, census classifications and ESRI classifications. Race has socioeconomic associations in American society which is why the question was included in the questionnaire. “Hispanic” was not used as a comparison factor. The percentages in the sample comparisons do not add up to 100% because of the Hispanic choice in the survey questionnaire.

Table 12: Race by Group

Group	Race		
	White	Black	Other
Total Population	82%	12%	6%
Total Sample	84%	4%	5%
Y members in sample	90%	2%	3%
Non Y members in sample	76%	5%	7%



### Discussion of Demographic Variables

To summarize the demographic profile of the sample as well as the sample subgroups of Y members and non-Y members, sample members are wealthier, more educated, more likely to be white and more likely to be married than the general population. That was to be expected. To address the research questions on the influence of Y membership on social capital, *ceteris paribus*, it was necessary that the sample include both Y members and non-Y members of similar demographics. Since Y members with family memberships are more affluent, the non-Y sample frame was selected to mirror that affluence as closely as possible. The mean family income for the sample, both subgroups within the sample, and the Y population is approximately \$94,000. Although the Y and non-Y average family incomes are the same, among the Y members it is distributed a little differently: Y member family incomes skew to the higher end of the income scale. Nevertheless the goal of acquiring a sample of Y and non-Y members that are demographically similar was achieved. The average family income in the total population is approximately \$55,000, or just a little more than half of the sample family income.

It is also noteworthy that Y members comprise 54% of the sample even though twice as many non-Y members were in the sample frame. In other words, Y members completed and mailed back the survey questionnaire at more than twice the rate of non-Y members (10.1% versus 4.1%). There was nothing in the survey questionnaire or the IRB disclaimer that accompanied it to indicate that the research had any particular interest in Y membership. Anecdotally, social capital theory would view this as an indicator of an interest in community affairs, which would support the hypothesis that Y members have higher levels of social capital.

Although the sample does not reflect the general population, it is likely that the findings can nevertheless be generalized to it. There is no reason to believe that the factors influencing social capital or the relationship between the attitudes of social capital and the behaviors of

social capital operate any differently in communities with different socioeconomic profiles. Furthermore, since it can reasonably be assumed that in a sample with higher social capital than the general population as based on income, education and marital status indicators, it may be easier to tease out the relationships addressed in the research questions. In other words, it is possible that the higher level of social capital will make the effect that is being researched more obvious. Nevertheless, this sample is generalizable only to people who belong to the Y and demographically similar subpopulations. This limitation of the research is discussed in chapter five.

#### Univariate Analysis – Exogenous Variables

The study has three contextual exogenous variables and three ecological exogenous variables.

The three contextual exogenous variables are census block average household income, census block average rate of home ownership and census block average educational attainment. The data was extracted from the ESRI database discussed above and put into quintiles to match the data collected from the survey questionnaire.

The average household income ranges from \$23,574 to \$249,456. To enable its use in a structural equation model it has been divided into equal quintiles and coded as follows:

1 = \$122,700 to \$250,000

2 = \$97,600 to \$122,699

3 = \$78,420 to \$97,599

4 = \$60,480 to \$78,419

5 = 0 to \$60,479

The average rate of home ownership is the percentage of residents in a census block who own their homes. The range, 7% to 98%, has been divided into quintiles and coded as follows:

1 = 94.1% to 99%

2 = 89.1% to 94%

3 = 80.1% to 89%

4 = 62.1% to 80%

5 = 0 to 62%

The average educational attainment is the average educational attainment of the residents over 25 years old in a given census block. The data were calculated to five decimal places for use later in the statistical analysis. However, for comparative purposes the data has been coded into the same five categories as for “personal education attainment” in the survey questionnaire. The range is 1.759 to 4.240, or, somewhat above a bachelor’s degree to somewhat below a high school graduate. The average is 2.93233, or, just below a bachelor’s degree. The distribution is as follows:

- |   |                             |       |
|---|-----------------------------|-------|
| 1 | Master’s degree or higher = | 0%    |
| 2 | Bachelor’s degree =         | 12.3% |
| 3 | Some college =              | 76.8% |
| 4 | HS Graduate =               | 10.9% |
| 5 | Less than HS diploma =      | 0%    |

Average education attainment was further transformed into five equal quintiles, which gives it a normal distribution. The break quintile break points are as follows:

- |   |                             |                    |
|---|-----------------------------|--------------------|
| 1 | Master’s degree or higher = | .00001 to 2.55904  |
| 2 | Bachelor’s degree =         | 2.55905 to 2.78148 |

- 3 Some college = 2.78149 to 2.99410
- 4 HS Graduate = 2.99411 to 3.28755
- 5 Less than HS diploma = 3.28756 to 5.00000

The three ecological exogenous variables are duration of residence, self-reported health and personal education attainment. Duration of residence is the average number of years that a resident in a given census block has resided at the present address. The range in this research sample was 2.9 years to 27.6 years. The data were recoded into quintiles as follows:

- 1= 12.4 to 20 years
- 2 = 10.9 to 12.3 years
- 3 = 9.2 to 10.8 years
- 4 = 7.6 to 9.1 years
- 5 = 0 to 7.5 years

Self-reported health data were collected from the questionnaire. In response to the question “How would you describe your current state of health when comparing yourself with others of your age?”

- 1 Excellent 38.3%
- 2 Good 48.2%
- 3 Fair 10.5%
- 4 Poor 2.7%
- 5 Very Poor .3%

The results for personal education attainment are as follows:

- 1 Master’s degree or higher = 33.8%
- 2 Bachelor’s degree = 44.0%

3	Some college	=	22.0%
4	HS Graduate	=	.1%
5	Less than HS diploma	=	.2%

*Univariate Analysis – Endogenous Variables/Indicator Variables*

There are two endogenous variables, the attitudinal dimensional of social capital and the behavioral dimension of social capital. These endogenous variables are latent constructs that are indicated by combinations of indicator variables. The specific combination of indicator variables for each latent construct was determined by exploratory and confirmatory factor analysis. Table 13 displays the responses for the five variables that are for the attitudinal dimension of social capital:

Table 13: Indicators of the Attitudinal Dimension of Social Capital

Indicator	#	Response	%
Generally speaking, would you say that most people can be trusted? (General trust)	1	Agree strongly	4.9
	2	Agree	60.8
	3	Neither agree nor disagree	15.4
	4	Disagree	17.0
	5	Strongly disagree	1.9
Generally speaking, would you say that most people in your neighborhood can be trusted? (Trusts neighbors)	1	Agree strongly	13.2
	2	Agree	61.7
	3	Neither agree nor disagree	15.9
	4	Disagree	7.8
	5	Strongly disagree	1.3
Participating in service, civic, and/or trade organizations is beneficial to me. (Benefits from participation)	1	Agree strongly	16.8
	2	Agree	37.5
	3	Neither agree nor disagree	39.7
	4	Disagree	4.4
	5	Strongly disagree	1.6
Generally speaking, would you say that government is responsive to the needs of the people in your community? (Govt is responsive)	1	Agree strongly	1.4
	2	Agree	34.0
	3	Neither agree nor disagree	31.0
	4	Disagree	27.6
	5	Strongly disagree	6.0
Generally speaking, would you say that most people in your community are helpful to you? (People are helpful)	1	Agree strongly	6.6
	2	Agree	53.5
	3	Neither agree nor disagree	31.9
	4	Disagree	6.8
	5	Strongly disagree	1.2

Table 14 displays the responses for the seven variables that are indicators of the behavioral dimension of social capital.

Table 14: Indicators of the Behavioral Dimension of Social Capital

Indicator	#	Response	%
Do you belong to a service, civic, or trade association? This could include a veteran's group, a neighborhood association, a Rotary or Kiwanis Club or professional or trade association. (Club member)	1	Yes	50.4
	2	No	49.6
Are you a member of a church or other house of worship? (Church member)	1	Yes	62.3
	2	No	37.7
Did you vote in the last presidential election?	1	Yes	92.2
	2	No	7.8
How interested are you in politics and national affairs? (Interested in politics)	1	Very interested	47.2
	2	Somewhat interested	39.1
	3	Only slightly interested	10.9
	4	Not at all interested	2.8
Other than for a religious organization or the YMCA, in the past year have you volunteered your time? This could include volunteering for a health cause to fight a disease, a school program, to help the elderly or poor, or to help a cultural or civic group. (Volunteers)	1	Yes	72.6
	2	No	27.4
In the past year have you donated money to a non-religious organization including political candidates and political parties? (Makes nonchurch contributions)	1	Yes	76.9
	2	No	23.1
In the past year have you attended a club, civic, or social organization or event? (Attends club meetings)	1	Yes	68.4
	2	No	31.6

### Correlation Analysis and Correlation Matrix

The second step in the analysis is bivariate analysis to identify and better understand the correlations between variables. Table 15 is the correlation matrix for the attitudinal dimension of social capital. Table 16 is the correlation matrix for the behavioral dimension of social capital.

Table 15: Correlation Matrix for Attitudinal Dimension of Social Capital

		General Trust	Trusts Neighbors	Govt is Responsive	People Are Helpful	Benefits From Participation
General trust	Correlation	1				
	Coefficient					
Trusts neighbors	Correlation	.608(**)	1			
	Coefficient	.000				
Govt is responsive	Correlation	.278(**)	.246(**)	1		
	Coefficient	.000	.000			
People are helpful	Correlation	.249(**)	.345(**)	.248(**)	1	
	Coefficient	.000	.000	.000		
Benefits from participation	Correlation	.197(**)	.219(**)	.177(**)	.288(**)	1
	Coefficient	.000	.000	.000	.000	

\*\* Correlation is significant at the 0.01 level (2-tailed).

The Spearman rho statistic is used to test correlations of ordinal data. All correlations here are positive and significant at the .05 significance level in fact, all are significant at the .01 level although this research requires only a .05 significance level. There is no indication of multicollinearity, since all correlations are below .85. Not unexpectedly, the highest correlation is between general trust and trust in one’s neighbors. The lowest correlation is between the belief that participation in civic and professional groups is beneficial and the belief that government is responsive to the needs of the people. That low correlation suggests that people in civic and professional organizations look to the non-government sector to solve community problems. Nevertheless the relationship is positive and significant. There is no indication that any variable should be eliminated from the model.



Table 16: Correlation Matrix for Behavioral Dimension of Social Capital

		Club member	Church member	Votes	Interested in politics	Volunteers	Makes nonchurch donations	Attends club meetings
Club member	Correlation Coefficient	1						
	Sig. (2-tailed)	.						
Church member	Correlation Coefficient	.091(**)	1					
	Sig. (2-tailed)	.000						
Votes	Correlation Coefficient	.167(**)	.095(**)	1				
	Sig. (2-tailed)	.000	.000					
Interested in politics	Correlation Coefficient	.206(**)	.031	.228(**)	1			
	Sig. (2-tailed)	.000	.185	.000				
Volunteers	Correlation Coefficient	.269(**)	.155(**)	.102(**)	.075(**)	1		
	Sig. (2-tailed)	.000	.000	.000	.001			
Makes nonchurch donations	Correlation Coefficient	.176(**)	-.006	.185(**)	.218(**)	.182(**)	1	
	Sig. (2-tailed)	.000	.803	.000	.000	.000		
Attends club meetings	Correlation Coefficient	.416(**)	.091(**)	.119(**)	.160(**)	.364(**)	.216(**)	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.

\*\* Correlation is significant at the 0.01 level (2-tailed).

The Table 16 matrix tells a somewhat mixed story. There are significant positive correlations between membership and attendance in civic and professional groups, voting and volunteerism. The significant positive correlation between voting and interest in politics is not surprising. The correlation between interest in politics and church membership is positive but not significant. A possibly problematic relationship could be that between non-church donations and church membership. This relationship, which is negative albeit it small and not significant, could be accounted for by the possibility that church members make most of their donations to

their church and may view non-church organizations as somewhat competitive. However, because both variables are positively and significantly correlated with all other variables in the model, because the negative correlation is small and because they are both consistent with the theory, they were retained. There is no problem with multicollinearity, as all coefficients are less than .80.

Table 17 shows the correlation matrix for the exogenous variables. These variables are normally distributed by virtue of formatting them into equal quintiles. Therefore Pearson's R is used to determine the correlation relationships between the variables. Perhaps the most surprising relationship is the negative but not significant correlations between personal education attainment, and personal income and home ownership. These correlations are also not significant. The high significant positive correlations between personal income, and home ownership and self-reported health were expected. Since all coefficients are below .85, there is minimal risk for multicollinearity.

Table 17: Correlation Matrix for Exogenous Variables

		Personal Income	Home Ownership	Avg Educ Attainment	Duration of Residency	Self-Reported Health	Personal Educ Attainment
Personal Income	Correlation Coefficient	1					
	Sig. (2-tailed)	.					
Home Ownership	Correlation Coefficient	.603(**)	1				
	Sig. (2-tailed)	.000	.				
Avg Educ Attainment	Correlation Coefficient	.072(**)	.050(*)	1			
	Sig. (2-tailed)	.002	.032	.			
Duration of Residency	Correlation Coefficient	.063(**)	.083(**)	.019	1		
	Sig. (2-tailed)	.008	.001	.421	.		
Self-Reported Health	Correlation Coefficient	.005	.005	.111(**)	.027	1	
	Sig. (2-tailed)	.847	.843	.000	.255	.	
Personal Educ Attainment	Correlation Coefficient	-.007	-.008	.129(**)	.013	.133(**)	1
	Sig. (2-tailed)	.763	.727	.000	.578	.000	.

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

The next step in the analysis is confirmatory factor analysis.

### Confirmatory Factor Analysis

Confirmatory factor analysis is the statistical technique used to test the validity of the measurement models of latent constructs (Byrne, 2010). According to Schumaer and Lomax (2004) the purpose of confirmatory factor analysis is “to determine which sets of observed variables share common variance-covariance characteristics that define theoretical constructs or factors (latent variables)” (p. 168). Given a theoretically defined latent construct, confirmatory

factor analysis can show whether the loadings of observed factor indicators conform to the defined construct (Garson, 2009).

Consistent with Wan's (2002) recommended approach, the analysis was conducted in three phases. First, the appropriateness of the indicators was assessed by use of the critical ratio of standardized regressions weights of each variable. Significance was tested at the .05 level. The second step was to assess the overall model fit using goodness-of-fit statistics. The last step was to improve the model fit through the use of modification indices (Wan, 2002; Schumaer and Lomax, 2004).

There are two latent constructs in this study: the attitudinal dimension of social capital and the behavioral dimension of social capital. Using the three-step process outlined above, measurement models were developed and validated for each construct.

#### Attitudinal Dimension of Social Capital

Figure 9 shows the latent construct model for the attitudinal dimension of social capital without correlated measurement errors (initial model). Figure 10 shows the latent construct model for the attitudinal dimension of social capital with correlated measurement errors (revised model). Non-normally distributed variables were normalized through transformation into the square root of each variable. Table 18 shows the parameter estimates for the initial and revised models and Table 19 shows the goodness-of-fit statistics for the initial and revised models.

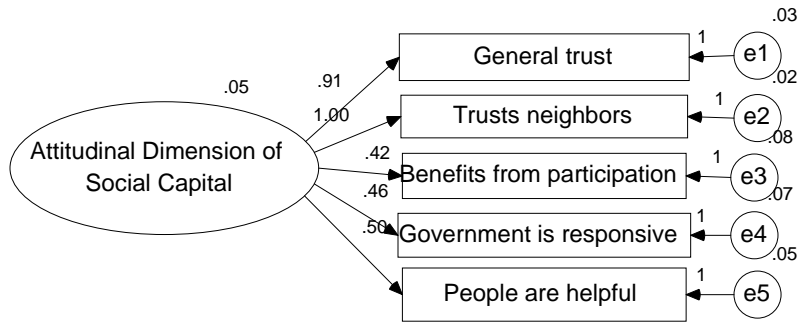


Figure 9: Attitudinal Dimension of Social Capital: Initial Model

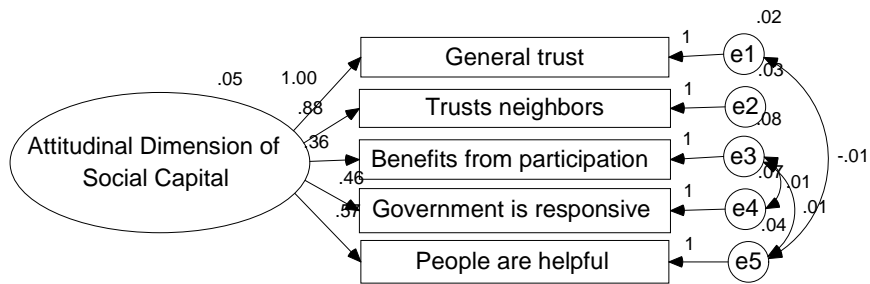


Figure 10: Attitudinal Model of Social Capital: Revised Model

Table 18: Parameter Estimates for the Initial and Revised Models

Parameter	Initial	Revised
General trust	1.00	1.00
Trusts neighbors	1.10	.88
Benefits from participation	.46	.36
Govt is responsive	.46	.50
People are helpful	.57	.55

Table 19: Goodness of Fit Statistics for Attitudinal Dimension of Social Capital

Index	Criteria	Initial	Revised
Chi square	Smaller the better	138.8	23.5
Degrees of Freedom		5	2
Probability	< .05	.000	.000
CMIN/DF	< 4	27.77	11.74
Goodness of Fit	1.0	.970	.995
RMR	0	.015	.002
RAMSEA	< .08	.120	.076
Hoelter N @ .05	> 200	148	474
Cronbach's alpha	> .70	.688	.688

### Behavioral Dimension of Social Capital

Figure 11 shows the latent construct model for the behavioral dimension of social capital without correlated measurement errors (initial model). Figure 12 shows the behavioral

dimension of social capital with correlated measurement errors (revised model). Non-normally distributed variables were transformed into either the square root of the variable or the log of the variable, depending on which transformation procedure yielded more normality.

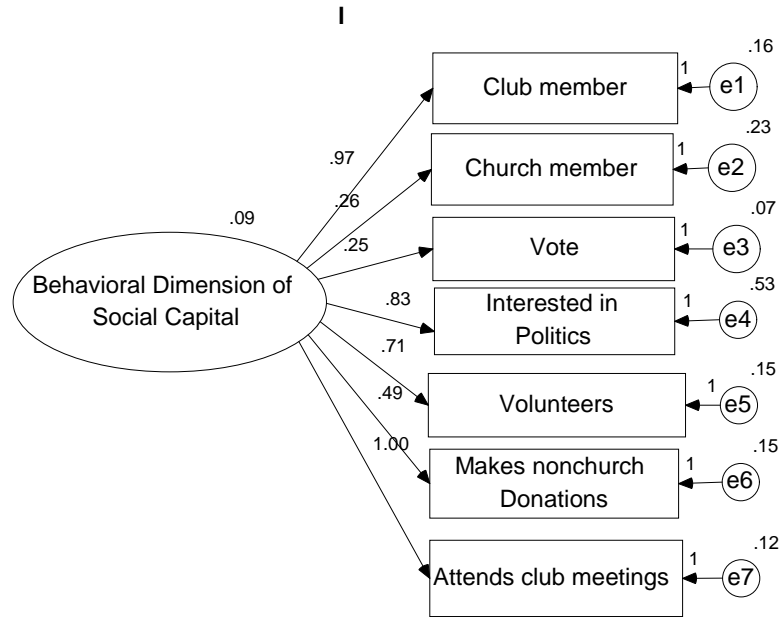


Figure 11: Behavioral Dimension of Social Capital: Initial Model

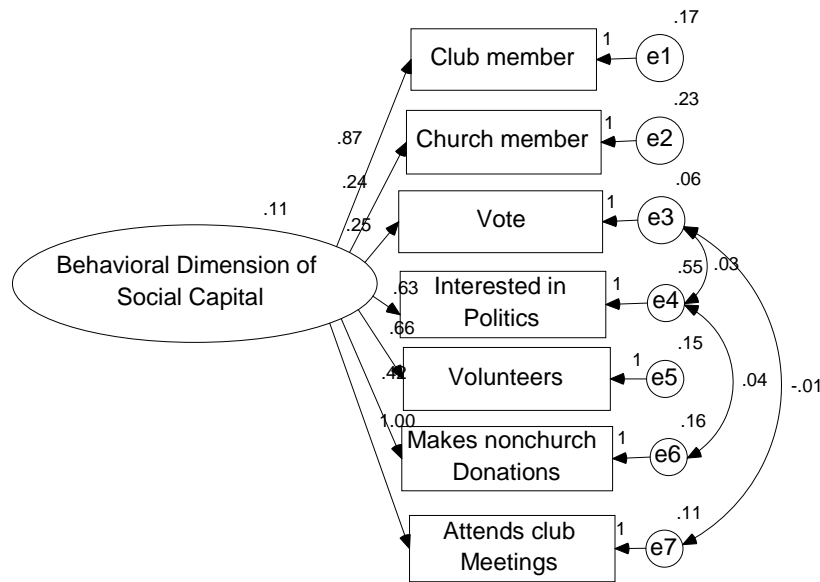


Figure 12: Behavioral Dimension of Social Capital: Revised Model

Table 20: Parameter Estimates for the Initial and Revised Models

Parameter	Initial	Revised
Club member	.97	.89
Church member	.26	.24
Votes	..24	.24
Interested in politics	.83	.62
Volunteers	.71	.68
Makes nonchurch donations	.49	.46
Attends club meetings	1.00	1.00



Table 21: Goodness of Fit Statistics for Behavioral Dimension of Social Capital

Index	Criteria	Initial	Revised
Chi square	Smaller the better	189.4	65.2
Degrees of Freedom		14	11
Probability	< .05	.000	.000
CMIN/DF	< 4	13.5	5.9
Goodness of Fit	1.0	.970	.991
RMR	0	.07	.01
RAMSEA	< .08	.082	.052
Hoelter N @ .05	> 200	232	561
Cronbach's alpha	> .70	.592	.592

With the measurement models are now complete, the next step in the analysis was hypothesis testing.

### Hypothesis Testing

The purpose of this research was to explore several characteristics of the construct of social capital. Social capital theory supported by a review of the literature led to the formulation of four related research questions and four concomitant hypotheses. As discussed in Chapter Three hypotheses one, two and three were tested using structural equation modeling.

#### *Hypotheses One and Two*

Hypotheses one and two are related and therefore were tested with the same structural equation model.

R1: The first research question: Is social capital a two-dimensional construct?

H1: Social capital is a two-dimensional construct.

R2: The second research question: What is the relationship between the attitudinal dimension of social capital and the behavioral dimension of social capital?

H2: The two dimensions are iterative and the attitudinal dimension more greatly influences the behavioral dimension.

Figure 13 is the structural equation model developed to test hypotheses one and two.

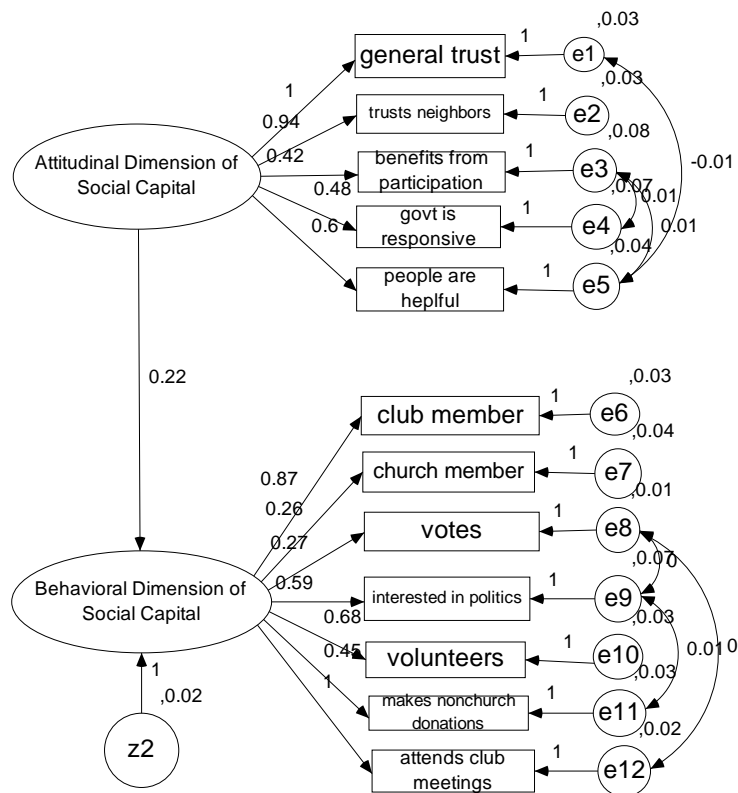


Figure 13: Two-Dimensional Social Capital Model: Attitudes Influencing Behaviors

Table 22: Goodness of Fit Statistics for Two Dimensions of Social Capital

Index	Criteria	Figure 13
Chi square	Smaller the better	463.7
Degrees of Freedom		47
Probability	< .05	.000
CMIN/DF	< 4	9.9
Goodness of Fit	1.0	.961
RMR	0	.004
RAMSEA	< .08	.069
Hoelter N @ .05	> 200	257

Because of the large sample size, the Chi Square and CMIN/DF is larger than desired; the GFI, RMR, RMSEA and Hoelter's Critical N are all acceptable. The null hypothesis is rejected. Social capital is a two-dimensional construct.

Figure 13 was also used to analyze hypothesis two, with one difference: the arrow of direction was reversed from (ATT to BEH) to (BEH to ATT). All goodness of fit statistics remained the same. Figure 14 shows this relationship.

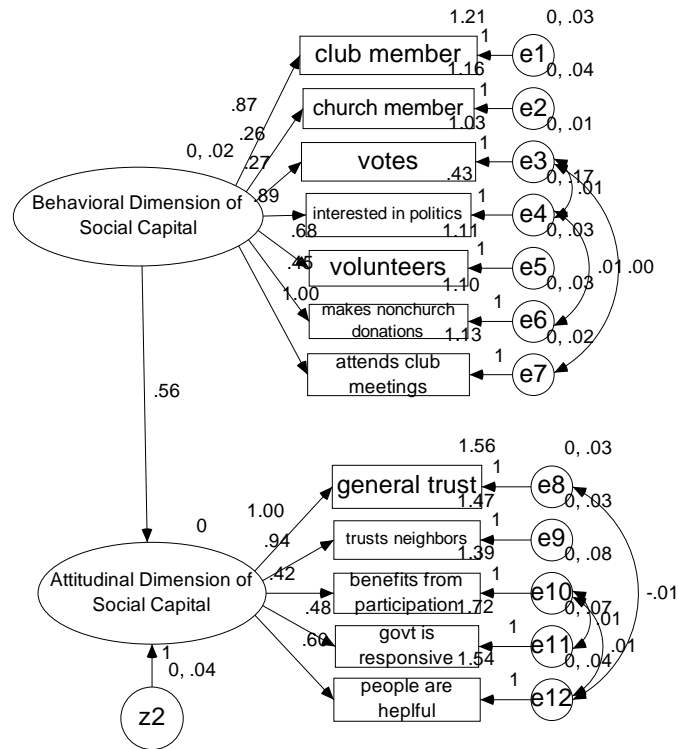


Figure 14: Two-Dimensional Social Capital Model: Behaviors Influencing Attitudes

Both regression weights were significant and are as follows:

ATT to BEH .22

BEH to ATT .56

Despite the theoretical underpinning and literature support for the assumption that attitudes are more influential in causing behaviors than vice versa, in this research the relationship was much more of an iterative one in which behaviors appear to more greatly influence attitudes.

### *Hypothesis Three*

R3: The third research question is: What Are the Factors That Cause Social Capital Variability?

H3: Social capital variability can be explained by a combination of contextual variables,

i. e. average community income, home ownership rate and average community

educational attainment, and ecological variables, i. e. duration of residence in a community, self-reported health and personal education attainment.

Figure 15, Factors That Influence Social Capital Variability, is the structural equation model to test Hypothesis Three.

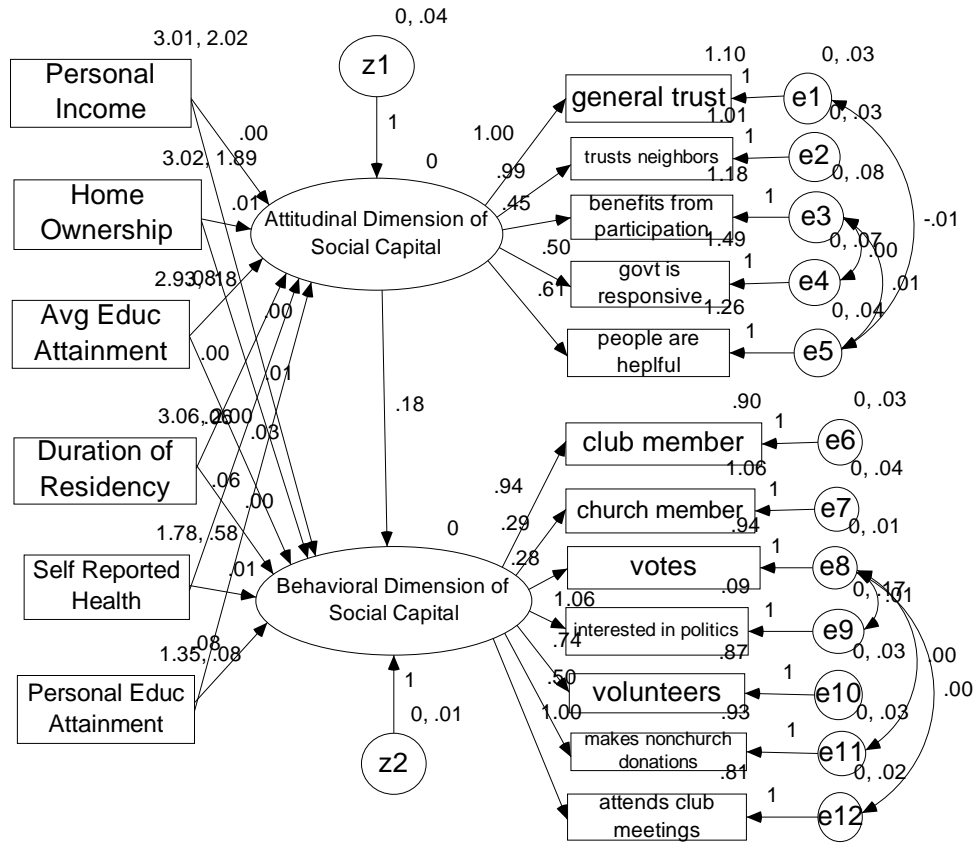


Figure 15: Factors That Influence Social Capital Variability

Table 23: Goodness of Fit Statistics for Factors That Influence Social Capital Variability

Index	Criteria	Figure 15
Chi square	Smaller the better	1539
Degrees of Freedom		122
Probability	< .05	.000
CMIN/DF	< 4	12.61
Comparative Fit Index	1.0	.681
RAMSEA	< .08	.079
Hoelter N @ .05	> 200	180

Table 24: Regression Weights: Factors That Influence Social Capital Variability

Variable	Regression Weight to Attitudes	Standardized Regression Weight to Attitudes	P Score On Attitudes	Regression Weight to Behaviors	Standardized Regression Weight to Behaviors	P Score On Behaviors
Personal Income	.003	.019	.437	.002	.018	.517
Home Ownership	.006	.040	.103	.006	.065	.016
Avg Educ Attainment	.079	.164	.000	.035	.120	.000
Duration of Residency	.002	.015	.590	-.002	-.021	.456
Self-Reported Health	.062	.229	.000	.011	.069	.014
Personal Educ Attainment	.064	.086	.000	.076	.170	.000

As can be seen from Figure 15 and Table 24, only three of the tested factors are significant: average community education attainment, self-reported health and personal education attainment. Personal income is barely significant at the .05 level for attitudes and neither community rate of home ownership nor duration of residence is a significant contributor to social capital variability.

Figure 16 confirms the three factors that influence social capital variability.

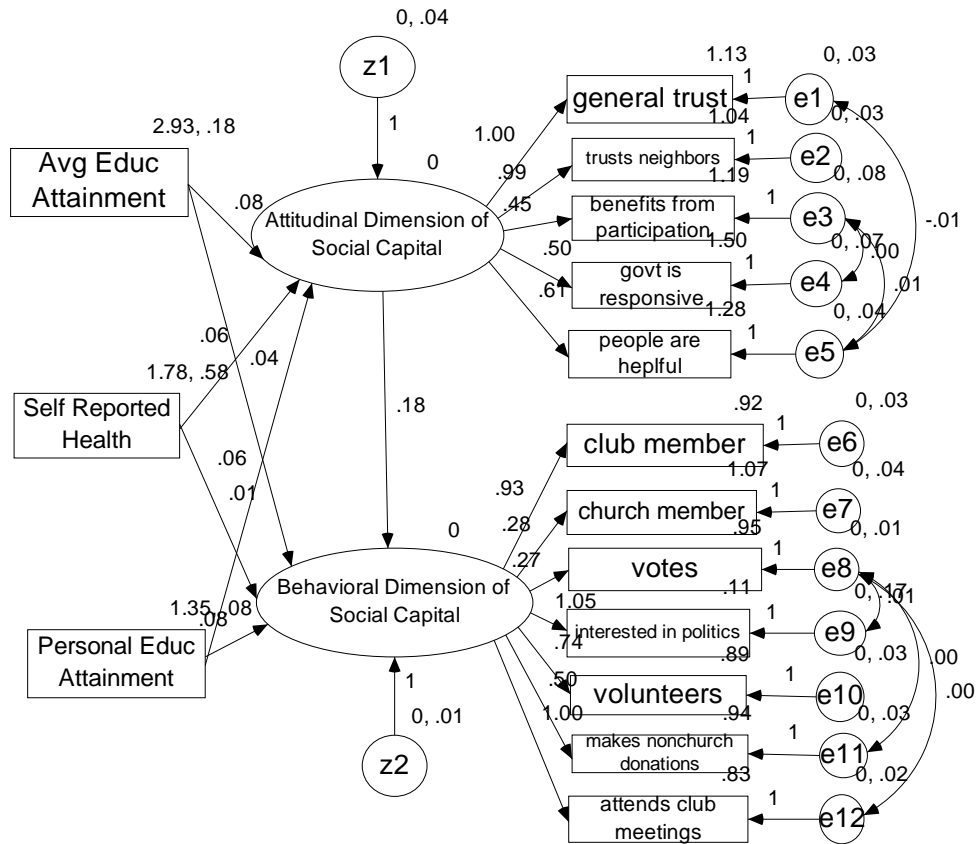


Figure 16: Factors That Influence Social Capital Variability: Revised

Table 25: Goodness of Fit Statistics for Factors of Social Capital Variability, Revised

Index	Criteria	Figure 15	Figure 16
Chi square	Smaller the better	1539	684
Degrees of Freedom		122	80
Probability	< .05	.000	.000
CMIN/DF	< 4	12.61	8.56
Comparative Fit Index	1.0	.681	.832
RAMSEA	< .08	.079	.064
Hoelter N @ .05	> 200	180	277

Regression weights and standardized regression weights of the three exogenous variables are: shown in Table 26. Average community education attainment, self-reported health and personal education attainment are statistically significant influencers of social capital variability through the attitudinal dimension of social capital.

Table 26: Regression Weights: Factors That Influence Social Capital Variability, Revised

Variable	Regression Weight to Attitudes	Standardized Regression Weight to Attitudes	P Score On Attitudes	Regression Weight to Behaviors	Standardized Regression Weight to Behaviors	P Score On Behaviors
Avg Educ Attainment	.080	.167	.000	.036	.123	.000
Self-Reported Health	.062	.229	.000	.011	.068	.016
Personal Educ Attainment	.063	.085	.000	.076	.167	.000



The conclusion is that only three of the factors that were hypothesized to influence social capital variability are statistically significant. Furthermore, the variables do not divide on the basis of ecology and context as theorized, but rather on the basis of education and health.

#### *Hypothesis Four*

The fourth research question and hypothesis concerned a specific behavior of social capital, i. e. membership and participation in the Central Florida YMCA.

R4: The fourth research question: Does the Y contribute to individual social capital?

H4: Members of the Y have more social capital, *ceteris paribus*, than non-members of the Y.

Because this hypothesis involves differences between Y members and non-Y members, structural equation modeling was not the most appropriate method for testing the hypothesis. The most appropriate way to test this hypothesis was with analysis of variance (ANOVA) between the two groups on each variable of social capital. Confirmatory factor analysis found there to be five indicators of the attitudes of social capital and seven indicators of the behaviors of social capital. The variable “Y member” is tested against all twelve of these variables.

Table 27 shows the comparisons between Y members and non-Y members on the attitudes of social capital and Table 28 shows the comparisons between Y members and non-Y members on the behaviors of social capital. These tables show that there is a difference between Y members and non-Y members but do not show the direction; consequently, a Means Plot was done for each of the twelve variables. In every case Y members had higher social capital. The difference is statistically significant at the .01 level for every variable except church membership, which is significant at the .05 level. This research considers the .05 level to be acceptable. The null hypothesis can be rejected.

Table 27: Analysis of Variance between Y Members and Non-Y members: Attitudinal Dimension of Social Capital

		Sum of Squares	df	Mean Square	F	Sig.
General trust	Between Groups	4.114	1	4.114	57.002	.000
	Within Groups	133.823	1854	.072		
	Total	137.938	1855			
Trusts neighbors	Between Groups	4.090	1	4.090	58.439	.000
	Within Groups	129.747	1854	.070		
	Total	133.837	1855			
Benefits from participation	Between Groups	3.494	1	3.494	40.765	.000
	Within Groups	158.889	1854	.086		
	Total	162.383	1855			
Govt is responsive	Between Groups	2.184	1	2.184	28.622	.000
	Within Groups	141.475	1854	.076		
	Total	143.659	1855			
People are helpful	Between Groups	2.503	1	2.503	44.288	.000
	Within Groups	104.768	1854	.057		
	Total	107.271	1855			

Table 28: Analysis of Variance between Y Members and Non-Y members: Behavioral Dimension of Social Capital

		Sum of Squares	df	Mean Square	F	Sig.
Club member	Between Groups	.939	1	.939	22.119	.000
	Within Groups	78.667	1854	.042		
	Total	79.605	1855			
Church member	Between Groups	.158	1	.158	3.929	.048
	Within Groups	74.604	1854	.040		
	Total	74.762	1855			
Votes	Between Groups	.471	1	.471	39.135	.000
	Within Groups	22.319	1854	.012		
	Total	22.790	1855			
Interested in politics	Between Groups	2.831	1	2.831	15.113	.000
	Within Groups	347.271	1854	.187		
	Total	350.101	1855			
Volunteers	Between Groups	.544	1	.544	16.055	.000
	Within Groups	62.836	1854	.034		
	Total	63.381	1855			
Makes nonchurch donations	Between Groups	1.601	1	1.601	54.070	.000
	Within Groups	54.898	1854	.030		
	Total	56.499	1855			
Attends club meetings	Between Groups	2.052	1	2.052	56.948	.000
	Within Groups	66.808	1854	.036		
	Total	68.861	1855			

### Discussion of the Findings

This research had four research questions and four accompanying hypotheses. The first two research questions are confirmed: social capital is a two-dimensional construct comprising the attitudinal dimension of social capital and the behavioral dimension of social capital. However, in contrast to the expectation suggested by the theoretical framework and the literature, this research found that behavior may influence attitudes more than attitudes influence behavior. Nevertheless the relationship is iterative and there is clear mutual influence.

The analysis has shown that while the factors that influence social capital are both ecological and contextual, it is not those characteristics that most determine their influence. The factors that most greatly influence social capital variability are education and self-reported health. One of these, average community educational attainment, is contextual. Self-reported health and personal educational attainment are ecological.

Regarding the YMCA and social capital, the members of the Central Florida Y have more social capital, *ceteris paribus*, than non-Y members. The Y has embedded in its mission statement the goal of building social capital however the existence of a mission statement does not necessarily guarantee its fulfillment. This study has shown that the Y is fulfilling its mission.

## **CHAPTER FIVE: IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH**

Chapter Five discusses the implications of this research and its limitations, recommends further research, and recaps the contributions of the research.

### Implications of This Research

Paralleling section 1.4 earlier, the implications of the findings will be discussed in four different contexts: the theoretical context, the public policy context, the managerial context and the individual context.

#### *Implications of the Research Findings for Social Capital Theory*

The theory of social capital is relatively young and somewhat controversial. This research has broadened the understanding of social capital theory in several important ways. First, it confirmed the hypothesis that social capital is not a monolithic construct but rather a clearly defined two-dimensional construct of which the attitudes and behaviors of social capital are distinct components. It also confirmed the role of personal education and the educational environment in generating social capital; this has enriched our understanding of both social capital and human capital. Like human beings themselves and the human experience, social capital is a complex. This research has brought insights to its theoretical basis.

#### *Implications of the Research Findings for Public Policy*

Policy makers have the mission of organizing public resources, including political will, to create a community in which citizens can achieve maximum well-being, in which social capital is essential. Thus, one purpose of public policy makers is to maximize social capital and this research provides several insights into the most effective ways to do so.

This research provides clear evidence that education is the key. Among policy choices to invest in home ownership programs, stable neighborhood programs, jobs and business creation programs and/or education, this research argues for giving priority to education programs. A recommendation to support education may not seem particularly novel, but this research provides a direct link between not only personal educational attainment, but also between the average educational level in a community and social capital in the community. This is a direct link to greater benefit for everyone in a community. This research demonstrates that all citizens, not just those with children in the school system, benefit from education programs.

This study's findings also have implications for public policies to build political will for social capital programs. Both attitudes and behaviors of social capital must be addressed by policy makers attempting to foster social capital. Focusing simply on one or the other dimension will not be as effective as addressing both. Because attitudes and behavior are related and iterative, a simultaneous message of "Stay in school, it's good for you" and "Support education, it's good for all of us" will be more effective than one or the other in isolation.

The third implication for public policy relates to the insight that Y members have higher social capital than non-Y members. Scarce public resources always require a careful prioritization of the organizations and programs to support. It is now clear that the Y either: a) causes social capital, b) provides a gathering place for citizens who already have greater social capital, or c) both. Policy makers should encourage the construction and expansion of Y facilities in their communities and support them.

The recognition that social capital is the bedrock of both community wellness and individual prosperity is an important insight for public policy makers. Developing and encouraging institutions, organizations and programs that build social capital will build healthier

communities in an effective and sustainable way. Targeted programs that address specific pockets of poverty, poor health and poor education will always be a part of the policy tool kit, but now a more fundamental approach can address all the ills of society simultaneously. That approach, as supported by this research, is to focus on the building of social capital.

### *Managerial Implications of the Research Findings*

The essence of management is measurement. A management axiom is that what gets measured gets accomplished. Broadly speaking, managerial measurement is of two kinds: efficiency and effectiveness. Efficiency measures the relationships between various institutional, organizational or programmatic inputs and their related outputs. Because efficiency measurement operates at the tactical level, in most cases it does not measure whether the outputs are achieving a strategic mission. It is the measure of effectiveness that reveals whether a mission is being accomplished. Managers of social service delivery organizations have applied measures of efficiency and hoped that such measures were indicative of a contribution to community and individual wellness. This research has now laid the foundation for a management tool to measure effectiveness: social capital is the metric. If an institution, organization or program builds social capital, it is building community wellness as well as individual happiness for those it serves.

The YMCA's mission of building social capital has several implications for managers of Y facilities and programs. Mission achievement can now be assessed for a geographic Y Association and/or for a specific Family Center within an Association and/or for a program within a Family Center. Managers can be measured and offered appropriate incentives, and good managers can be differentiated from weak managers. Program development, messaging, training and member service delivery can all be tailored toward building social capital and then measured

and modified as needed. Perhaps the most important implication for the Y is that more sophisticated capital development can be used to seek funding for expanding and sustaining Y services. More research is necessary to conclusively show a causal relationship between the Y and social capital. Although this research's generalizability is limited to members of the Central Florida Y who hold family memberships, and populations similar to them, nevertheless a strong and positive relationship between the Y and social capital has been demonstrated. There are undoubtedly both public and private sources of funds that would entertain an opportunity to support an organization that is an evidence-based community builder.

#### *Implications of the Research Findings for the Individual*

It would be simplistic to suggest that the implications of this research to an individual are to stay in school and join a Y. The implications for an individual go well beyond that. Direction is provided to develop an evidence-based life plan for creating personal social capital. The strongest indicators for behaviors of social capital are membership in a club or association and regular attendance. Since there are numerous types of such organizations to choose from, one or more is available to suit anyone's personal preferences. Although these preferences change over the course of one's lifetime, there are clubs available to accommodate those changed preferences. This research did not differentiate between various types of clubs and associations; the basic implication for an individual is: join a club and get involved.

The second implication is: learn to trust. It will be good for you. If necessary take a chance on "trusting the system." Obtaining an education and living in a community that values education will facilitate trust building, and being involved in a club or organization will accelerate it. Conscious efforts to build trust will be rewarded. Seek out people's help and



reciprocate by helping others. These efforts will build social capital, promote community wellness and enhance personal happiness.

### *Limitations of This Research*

There are two major limitations to this research. First, the sample was taken from a limited number of census blocks. Selecting from a limited number of census blocks was intentional because part of the research was to obtain a preliminary sense of Y membership as an indicator of social capital. Consequently the geographic scope was narrowed to where the most Y members live. However, the narrow sample decreased the likelihood that the findings unrelated to Y membership are transferable to other geographic areas. A second limitation is that the study is cross-sectional. A one-time look at social capital variability is inadequate since variability connotes time. Longitudinal research will confirm or refute the findings of this research as well as bringing deeper understanding to the factors influencing variability.

### Recommendations for Further Research

This research has laid the foundation for considerable further research. Two of the areas for future research follow directly from the limitations discussed above. Several other areas could expand on the findings of this research.

The first recommendation for future research is to expand the sample frame. As has been noted several times in this paper, the sample frame was deliberately limited to those census blocks from which Y members congregated. Since Y members are generally more affluent, more educated and healthier, they are not representative of the general population, as the demographic analysis of the survey respondents confirmed. For the findings of this research to

be generalizable to the entire population, the sample frame should be expanded to all census blocks or at least a random sampling of all census blocks.

A second recommendation for further research is to conduct longitudinal studies. The question of social capital variability inherently connotes time: things change over time. A second aspect of the time dimension is the relationship of Y membership to social capital. A strong association has been established, but causality has not. Causality has three characteristics: 1) a theoretical basis for believing that one thing may cause another, 2) a demonstrated association, and 3) precedence in time of the causing agent relative to the effect. This research established the first two but not the third. Longitudinal research can address both of these issues, and the framework and structure has been laid for doing so.

A third recommendation for further research is to conduct an analysis in other YMCA associations across the country and around the world. This research was both cross sectional and single-site, i. e. the Central Florida YMCA. For the findings herein to be generalized to the entire YMCA system, further research is necessary at other Y associations in other geographic areas.

The relationship of Y members living in communities of greater social capital raises an intriguing question; “Is there a ripple effect of a Y facility in a community to non-Y members living in that community?” To put the question in terms that an economist would use, “If the Y causes greater social capital in a community, are non-Y members free riders in the accumulation of social capital?” Further research could investigate the possibility of such a ripple effect.

A fifth area for further research is further analysis into the relationship between the characteristics of the geographic community and social capital. This research generated considerable data at the census block level, and more data is available through ESRI and other

databases for deeper investigation into relationships between social capital and community characteristics. Social capital geo-mapping will yield considerable insight into both the theory of social capital and policies to foster social capital.

This study analyzed one organization and the behaviors associated with that organization; the Central Florida YMCA and Y membership. More general behaviors in church membership, civic and professional association membership and general interest in politics were also analyzed. However, none of those areas is monolithic. Each type of organization within each group has a somewhat different mission, a different set of beliefs and a different relationship to the community. Furthermore, there is a range of behaviors of participation within these entities that have differing implications for social capital. A sixth recommendation for further research would be to study specific types of churches, specific types of civic and professional associations and specific types of political behavior as they relate to social capital.

In other words, the Y is only one aspect of an array of entities related to social capital. Other specific entities should be studied as well. A better understanding of each specific aspect of community life as it relates to social capital will bring insight into the causes and effects of social capital. Just as this research has brought insight to the theoretical, public policy, managerial and individual levels, further research into other specific areas of community life will do the same.

Finally, further research is recommended into the two dimensions of social capital, i. e. the attitudes of social capital and the behaviors of social capital. Accepted beliefs and psychological theory argue that attitudes and behaviors are iterative, but that attitudes more strongly influence behavior than vice versa. But, while this research confirmed the iterative

nature of the two dimensions, it found that behaviors are a stronger influence than attitudes. This is puzzling, and further research is recommended on this area.

### Contributions

This research has provided meaningful insights into several aspects of social capital. First, by treating social capital as an endogenous variable it has expanded the discussion of social capital into a somewhat different direction than that of most social capital research. This conceptualization positions social capital as an asset that can be identified, fostered and ultimately measured. Most previous research conceptualized social capital as an endogenous variable that was the underpinning, or cause, of certain positive aspects of human life. Positioning social capital as an exogenous variable that itself has causes leads to an investigation of what those causes are and how to encourage them through public policy and individual choices. This research grouped possible causes into ecological and contextual causes. This grouping, though somewhat instructive, is not conclusive. Education is the primary cause of social capital variability. Personal educational attainment is an ecological factor, and average community education is a contextual factor. The insight that education is a primary factor in the rise and fall of social capital has far-reaching implications at all levels of society.

Another important contribution of this research is the dissection of social capital into the dimensions of attitudes and behaviors. This follows from the question that if social capital varies, and it is clear that it does, are attitudes or behaviors more responsible? It is clear that social capital is indeed a two-dimensional construct. This research concluded that behavioral changes have the greater impact on social capital variation.

This research also contributed to our understanding of one specific possible source of social capital. The causal link, and its direction, between the YMCA and social capital remains

to be confirmed, but the association between the two is clear. At least in Central Florida the Y seems to be achieving its mission of building strong families and strong communities through connecting people. Y members are more connected to each other and to their community, connections that are the basis of social capital.

Finally, in addition to the specific contributions described above, this research has made a substantial contribution by laying the foundation for creating a proactive, evidence-based, policy-oriented approach to building stronger communities and happier citizens by sustainable, measurable increases in social capital.

## **APPENDIX A: UCF IRB LETTERS**



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Approval of Exempt Human Research

From: UCF Institutional Review Board #1  
FWA00000351, IRB00001138

To: James R. Downing

Date: November 23, 2009

Dear Researcher:

On 11/23/2009, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination  
Project Title: Factors Influencing Social Capital Variability  
Investigator: James R. Downing  
IRB Number: SBE-08-05922  
Funding Agency:  
Grant Title:  
Research ID: n/a

At the time of this Continuing Review, it was determined that your study meets Exempt Category #2. Therefore, the study no longer has an expiration date. In addition, you are not required to use an Informed Consent document, but as with all human research, you need to follow your consent process with research participants. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the [Investigator Manual](#).

On behalf of Joseph Bielitzki, DVM, UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 11/23/2009 02:53:08 PM EST

A handwritten signature in black ink that reads "Joanne Muratori".

IRB Coordinator



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Notice of Expedited Initial Review and Approval

From : UCF Institutional Review Board  
FWA00000351, Exp. 10/8/11, IRB00001138

To : James R. Downing

Date : December 01, 2008

IRB Number: SBE-08-05922

Study Title: Factors Influencing Social Capital Variability

Dear Researcher:

Your research protocol noted above was approved by expedited review by the UCF IRB Vice-chair on 11/29/2008. The expiration date is 11/28/2009. Your study was determined to be minimal risk for human subjects and expeditable per federal regulations, 45 CFR 46.110. The category for which this study qualifies as expeditable research is as follows:

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

A waiver of documentation of consent has been approved for all subjects. Participants do not have to sign a consent form, but the IRB requires that you give participants a copy of the IRB-approved consent form, letter, information sheet, or statement of voluntary consent at the top of the survey.

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Advise the IRB if you receive a subpoena for the release of this information, or if a breach of confidentiality occurs. Also report any unanticipated problems or serious adverse events (within 5 working days). Do not make changes to the protocol methodology or consent form before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form cannot be used to extend the approval period of a study. All forms may be completed and submitted online at <http://iris.research.ucf.edu>.

Failure to provide a continuing review report could lead to study suspension, a loss of funding and/or publication possibilities, or reporting of noncompliance to sponsors or funding agencies. The IRB maintains the authority under 45 CFR 46.110(e) to observe or have a third party observe the consent process and the research.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 12/01/2008 09:50:53 AM EST

IRB Coordinator



## **APPENDIX B: SURVEY QUESTIONNAIRE**

1. Generally speaking, would you say that most people can be trusted?
  1. Agree strongly
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
  
2. Generally speaking, would you say that most people in your neighborhood can be trusted?
  1. Agree strongly
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Disagree strongly
  
3. Generally speaking, would you say that government is responsive to the needs of the people in your community?
  1. Agree strongly
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Disagree strongly
  
4. How would you describe your current state of health when comparing yourself with others of your age?
  1. Excellent
  2. Good
  3. Fair
  4. Poor
  5. Very poor
  
5. How interested are you in politics and national affairs?
  1. Very interested
  2. Somewhat interested
  3. Don't know
  4. Only slightly interested
  5. Not at all interested
  
6. Did you vote in the last presidential election?
  1. Yes
  2. No
  
7. Are you a member of a local church or other house of worship?
  1. Yes
  2. No

8. Not including weddings and funerals, how often do you attend religious services?
  1. Once a week or more often
  2. Almost every week
  3. Once or twice a month
  4. Less often than twice a year
  5. I am not a member of a house of worship
  
9. In the past twelve months, how often have you participated in activities at your place of worship other than attending services? This could include teaching Sunday School, serving on a committee, attending choir practice and so forth.
  1. Once a week or more often
  2. Almost every week
  3. Once or twice a year
  4. Never
  5. I am not a member of a house of worship
  
10. Generally speaking, would you say that government and public programs are helpful to you?
  1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
  
11. Generally speaking, would you say that people in your community are helpful to you?
  1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
  
12. Are you a member of the Central Florida YMCA?
  1. Yes
  2. No
  
13. How often do you exercise at the Central Florida YMCA?
  1. Every week or more often
  2. Once or twice a month
  3. A few times a year
  4. Never
  5. I am not a member of the Central Florida YMCA
  
14. In the last twelve months, have you participated in, or helped at a YMCA event?
  1. Yes
  2. No

15. Do you belong to a service, civic or trade organization? This could include a veteran's group, a neighborhood association, a Rotary or Kiwanis Club or professional or trade association.
1. Yes
  2. No
16. Participating in service, civic and/or trade organizations is beneficial to me.
1. Strongly agree
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Disagree strongly
17. Generally speaking, would you say that the police in your local community can be trusted?
1. Agree strongly
  2. Agree
  3. Neither agree nor disagree
  4. Disagree
  5. Disagree strongly
18. In the past year have you attended a club, civic or social organization event?
1. Yes
  2. No
19. Other than for a religious organization or the YMCA, in the past year have you volunteered your time? This could include volunteering for a health cause or to fight a disease, a school or youth program, to help the elderly or poor, or to help a cultural or civic group.
1. Yes
  2. No
20. In the past year have you donated money to a church, synagogue or other religious organization?
1. Yes
  2. No
  3. I am not a member of a religious organization
21. In the past year have you donated money to a non-religious charitable organization including political candidates and political parties?
1. Yes
  2. No
22. Participating in charitable organizations is beneficial to me.
1. Strongly agree
  2. Agree

3. Neither agree nor disagree
  4. Disagree
  5. Strongly disagree
23. In the past twelve months how many times did you visit a doctor or dentist for treatment?
1. 0
  2. 1-2
  3. 3-4
  4. 5 or more
24. In the past twelve months have you visited a doctor or dentist for preventive medical or dental purposes?
1. Yes
  2. No
25. What is your personal educational attainment?
1. Less than high school diploma
  2. High school graduate
  3. Some college
  4. Bachelor's degree
  5. Master's degree or higher
26. What is your marital status?
1. Married or living with a committed partner
  2. Divorced or separated
  3. Widowed
  4. Never married
27. What is your age?
1. 18-29 years old
  2. 30-39 years old
  3. 40-49 years old
  4. 50-59 years old
  5. 60 or more years old
28. What do you consider to be your race or ethnicity?
1. White
  2. African American
  3. Hispanic
  4. Other
29. What is your gender?
1. Male
  2. Female

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