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Triangulating Social Capital Measurement for Turnover Research: Applications to the U.S. Military

Frederic W. Lunas

SOCIAL CAPITAL AND TURNOVER

TOWARDS A THEORETICALLY INFORMED MODEL FOR SOCIAL CAPITAL IN TURNOVER RESEARCH: APPLICATIONS TO THE U.S. MILITARY

THESIS

FREDERIC WARREN LUNAS, Captain, USAF

AFIT/GIR/ENV/07-M11

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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FREDERIC WARREN LUNAS, BA

Captain, USAF

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FREDERIC WARREN LUNAS, BA
Captain, USAF

Approved:

//Signed//	13 Apr 07
Michael J. Hicks, Ph.D. (Chairman)	date
//Signed//	13 Apr 07
Michael R. Grimaila, Ph.D.	date
//Signed//	13 Apr 07
Dennis D. Strouble, Ph.D.	date

Abstract

In the United States, and around the world, social capital is becoming an intriguing new focus for slowing the declining sense of community and community trust. This strengthening focus on social capital in empirical study has great potential for an important role in U.S. public policy, as policy changes focused on increasing social capital may decrease turnover.

Yet, according to researchers, not enough sufficiently tested empirical measures of social capital exist. Combining several existing measures should provide a theoretically informed measurement of social capital for turnover research with application to the U.S. Military. Within this context, this thesis incorporated survey responses into a predictive model of intent to turnover, incorporating a social capital variable, based on the several of its historical measurement studies.

This thesis used the social capital variable to add to the body of knowledge and help begin to fill the gap in the research about measuring this little-studied construct with regards to integrating it into a classic turnover model. The broader social sciences discipline has yet to expand upon the study of the social capital variable, in an empirically-sound and theoretically informed manner leading to a clearly-defined, universally-accepted definition of the social capital variable, including all its components. If universally accepted as a necessary component of employee turnover models, this social capital variable will require the beta coefficients for the classic antecedents to be reevaluated. This thesis takes the first steps toward this goal, by adding about one percent to the variance explained, above variance explained by classic turnover antecedents.

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Frederic W. “Fritz” Lunas

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I. Introduction

Background

Due to events such as 9/11, the war in Afghanistan, and the war in Iraq, there is a clear rise in the necessity for military action and the need to retain qualified personnel to carry it out. Therefore, studies focusing on military turnover and retention carry significant weight. In the scope of military interest, researchers of this population have studied the idea of turnover from the World War I Era (Crabb, 1912), and into the 1960s and 70s (Macedonia, 1969; Bluedorn, 1978), as well as similar studies in the private sector (Porter & Steers, 1973). The purpose of these early studies centered on job satisfaction. However, questions have arisen about gaps in this research and job satisfaction alone may no longer be the most dynamic key to intent to turnover. For example, recent studies of social capital have created growing support regarding its influence to manipulate employee turnover (Li, Savage, Tampubolon, Warde, & Tomlinson, 2002; Sabatini, 2006b).

Social scientists have invested considerable effort in highlighting the factor of social capital (Sabatini, 2006a, 2006b; Li et al, 2002). Ongoing studies affirm that higher

levels of positive social capital ease employment search, and combat dependence on state assistance, as Sabatini states, “Social capital, in the form of family ties, was found to mitigate labor precariousness” (Sabatini 2006a), and Stone, Gray, & Hughes state that “welfare discourse from the United States that emphasizes ghettoisation and intergenerational welfare dependence as undermining fulfillment of individuals’ responsibility to work” (Stone, Gray, & Hughes, 2003). In this same study, Stone, Gray, and Hughes have begun bridging the gap between this social science vernacular and business management tactics by showing the connection between social capital and the likelihood to employed. For instance, Stone et al state that “where individuals are embedded within networks of family, friends, community[,] and institutional ties that support the normative aspects of work, these are likely to reinforce the value of work for that individual, thereby acting to increase a person’s likelihood of being employed” (Stone et al, 2003). Social capital further relates to intent to turnover by showing it can be used to retain valuable human capital. For example, in a recent study of job embeddedness and organizational community attachment, findings demonstrated that community-based factors, such as family, friends, and relationships play an important role in a person’s turnover intentions (Fletcher, 2005), so it follows that communities with a high level of social capital lose fewer members and members tend to stay or return and continue to make contributions.

Therefore, the need to retain educated, long-term human capital has been a challenge for both the corporate and military world. As a result of increasing global interdependence brought on by the sharing of information through resources such as the

internet, globalization has become a threat as well as an asset. Now public- and private-sector organizations must compete with far more rivals than in the past, to retain valuable human capital. Very recent studies have shown monetary incentives alone are ineffective in retaining human capital "strategies such as job satisfaction were more salient" (Wahl & Singh, 2006). But what about manipulating social capital as a strategy to retain human capital?

In light of these new perspectives on turnover, social capital has been largely overlooked by military researchers. This lack of focus may be attributed, in part, to the need for more interdisciplinary research on the matter. In other words, as the world becomes more interdependent, academic disciplines must become more interdisciplinary to keep up. Researching the definitions of social capital for application in the military world should be recognized as a practical way of addressing intent to turnover, but addressing this definition poses some problems as there are several interpretations of social capital.

Since Coleman's widely accepted seminal work on social capital (Coleman, 1988), many interpretations and definitions of it have been used. Even before this work, the concept was alluded to in *The Theory of Social Structure* (Nadel, 1957), and *Social Networks in Urban Situations* (Mitchell, 1969), and in the French *Le Capital social* (Bourdieu, 1980). However, this study is based on a more recent definition, by Alejandro Portes. He defines social capital as "the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (Portes, 1998, p. 6). Within this definition lie many dimensions. Measuring these dimensions may help gather support for the posit that there is a connection between social capital and turnover.

One of these dimensions is the density (Grootaert, 2000) of associations and its effect on social capital levels; specifically, dual military households represent double membership and hence, density. For example, when both spouses are military members, they often belong to one or more of the same organizations (besides the military itself), e.g. officers clubs, aero clubs, etc., increasing the density of social capital in their household.

To better define social capital's importance in the context of its relationship to turnover, all measurable types of social capital must be addressed. There are several types of social capital. Stone et al, 2003 cites them as Bonding (trust and reciprocity in dense, closed or homogenous networks), Bridging (overlapping networks and resources), and Linking (management cooperation between networks). These types can be of particular interest in the context of intra- and inter-service relations. A robust, thoroughly tested measure of social capital can open the door to possibilities for researchers to help organizations, communities, and even nation-states retain long-term human capital. For instance, these collectives could manipulate levels of the several types to improve economic and social benefits stemming from their optimal, with the goal of improving retention. That is, to increase positive (cooperation, etc.) and decrease negative (outsider exclusion, etc.) social capital types, as "social capital is something to be optimized rather than something to be maximized" (Woolcock, 1998, p. 158). Current world demand for joint- and combined-operations requires such optimization, but social capital cannot be optimized until it can be reliably measured.

Military Retention Problem

Importance

Generally, the mission of the U.S. Military is to accomplish military tasks in support of the Strategic Objectives outlined in the National Defense Strategy. Some of the specifics of "How we Accomplish our Objectives" are: "Deter aggression and counter coercion. We will deter by maintaining capable and rapidly deployable military forces and, when necessary, demonstrating the will to resolve conflicts decisively on favorable terms. Defeat adversaries. At the direction of the President, we will defeat adversaries at the time, place, and in the manner of our choosing [,] setting the conditions for future security" (DoD, 2005).

Because they are required to accomplish missions to meet these objectives, failure to retain sufficient levels of military personnel can have a detrimental effect on national preparedness. As personnel levels decrease and the complexity of warfare increases, the value of individual skill-sets increases exponentially, making retention a critical factor in maintaining an effective military.

Finally, due to the specific nature of military tasks, it is difficult to acquire personnel trained for higher than entry-level positions, so if mid-career officer retention continues to decline, a serious experience gap could result, reducing overall military effectiveness.

Recent shortfalls in numbers of U.S. Military personnel made turnover one of the most significant issues for the Department of Defense (DoD) in recent years (Wahl & Singh, 2006). Notably, after the end of the cold war, military taskings have become more widespread and diverse in nature (O'Hanlon, 2004). The few personnel the military

employs are stretched thin, making retention progressively more challenging, in an ongoing cycle as work force numbers suffer. Turnover is costly for the U.S. Military … continuation pay is not effective … alternative strategies such as job satisfaction were more salient. (Wahl & Singh, 2006).

The Fiscal Year 2000 (FY 00) National Defense Authorization Act that increased military basic pay by 4.8 percent then, and additional increases through FY 06 has come to a close, but retention remains a concern. Mid-career officer continuation rates are still in decline (Asch, Hosek, Arkes, Fair, Sharp, & Totten, 2002). As it pertains to social capital, previous researchers admit, "The stock of social capital should somehow be measurable, even inexactly" (Fukuyama, 1995, 36). In a later article, Fukuyama outlines a possible way of measuring social capital, such as changes in market valuations of a company before and after takeover offers (Fukuyama, 2001). Rather than focusing on stock indices, this study will attempt to show that social capital is a significant consideration when predicting intent to turnover in the classic turnover model.

This study seeks to measure social capital in a manner directly applicable to the military retention problem. Social capital may be measured at the macro (Nation State to World), meso (Community or Organization), and micro (individual) levels (Grootaert, 1997; Portes, 1998; Woolcock, 1998; Narayan and Woolcock, 1999). This paper focuses on the meso level, as the data set provides aggregated individual information, not to the macro level, but at the community (military community) level. The data set also lends to study of both "vertical" and "horizontal" social capital (Coleman, 1988). That is, questions address how members related to one another on an equal basis, as well as hierarchical, e.g., workgroup vs. supervisor. Only horizontal social capital is of interest to

this study, as the population of interest is limited to the largely homogeneous Air Force Company Grade Officer Corps (paygrades O1-O3E). The heterogeneity variable does not come into play in this analysis because the population of interest falls at the same level on the heterogeneity scale (Stone, 2001), paygrade and educational levels, etc.). From this baseline, this study intends to generate a robust model, expandable to broader military applications.

However, the strengthening focus on social capital in empirical study has great potential for an important role in U.S. public policy, especially that relating to military retention. Refreshing the public sense of civil rights and responsibilities and partnerships between consumers, private and public sectors can promote understanding and add a synergy to the U.S. System, all but lost through the recent decline in social capital (Putnam, 1995).

Even though its study is far from new (Putnam, 1998), and is often studied at present, the empirical measurement of social capital leaves much to be desired (Rose, 1998). However, this study combines several existing, but little-tested measures to provide an informed approach to the measurement of social capital, grounded in theory, for turnover research with application to the U.S. Military.

Within this context, this study incorporates responses to items on the December 2004 Defense Manpower Data Center (DMDC) Status of Forces Survey (SOFS) into a specifically tailored predictive model of social capital, based on several historical studies of its measurement, and incorporates the resulting variable into a classic turnover model (adapted from Bluedorn's 1982 Unified Model). To support the theoretical validity of this variable, this thesis examines theoretical and empirical definitions of social capital

within existing measures and connections between them. Finally, this work concludes by providing a general framework of the theory behind the specific model, to allow its broader application.

Social capital lacks an abundance of reliable measures to date (Stone, 2001). This study will add to the body of knowledge to help begin to fill the gap in the research about measuring this little-studied construct and its effects on intent to turnover, based on Bluedorn's 1982 Unified Turnover Model.

Research Questions or Problem Statement

This study attempts to bridge the gap between research on employee turnover, and research on social capital, making the great influence the social capital component has on employee retention clear.

The military retention problem is closely related to intent to turnover of each service member. The classic antecedents affecting this intent are very subjective and complicated, e.g., job satisfaction, organizational commitment, etc. Therefore, the effectiveness of any measure designed to decrease intent to turnover depends to a great extent on each member's individual values. Hence, one method may be more effective for retaining some military members than others.

The specific questions this research answers are: (1) Is social capital statistically significant to turnover research with applications to the U.S. Military?, (2) Can social capital fit into a classical turnover-model?, and (3) Does social capital have a statistically

significant effect on intent to turnover, based a model adapted from Bluedorn's 1982 Unified Model?

In the context of the background and research questions outlined in this chapter, the literature in the following chapter lends support to its study by expanding on historical and contemporary U.S. military retention issues. It concludes with the methodology that will be used in this research effort in applying social capital to the military retention problem.

II. Literature Review

Preface

The following literature review explains the theoretical basis for the social capital measure used in this study. Because the premise of this research effort is to demonstrate how this social capital measure may fit into a classic turnover model, some prominent models leading up to the development of the model used in this study will be presented. After the turnover research leading up to this effort has been established, the empirics of social capital will be reviewed to support its use in answering the research questions. The hypotheses to be tested center on whether social capital may add to the incremental variance in intent to turnover explained by a classic turnover model, in addition to the variance explained by the classic turnover variables organizational commitment, job satisfaction, and job search behavior. However, it does not suffice to indicate that a variable is a determinant of turnover (or turnover intent); it is necessary to know the relative importance of the variable compared to a set of variables (Price, 1977). This will be an important consideration, when discussing the results of this study. Finally, this review will conclude with a proposed model for study, adapted from the baseline model by incorporating social capital as an antecedent to intent to turnover, and using intent to turnover to proxy actual turnover, to test the following hypotheses.

H_0: Social capital will not explain any variance in intent to turnover in addition to the variance that organizational commitment, job satisfaction, and job search behavior do.

H_a: Social capital will explain some variance in intent to turnover in addition to the variance that organizational commitment, job satisfaction, and job search behavior do.

Turnover

Although the primary focus of this thesis is not turnover, but how social capital may best fit into a turnover model, intent to turnover is closely related to turnover itself, so plays an important role (Steel & Ovalle, 1984). The dependent variable of this thesis is intent to turnover, and not turnover itself, so it is important to note that the link between the less common form of turnover (involuntary) and intent to turnover could not be measured with the available data, so this review focuses on past studies of the more common form of turnover (voluntary). Some common types of involuntary turnover, with applications to the military include force shaping (e.g. separations with severance pay, early retirements), high-year tenure retirements, medical retirements due to accidental or combat injury, and even those killed in action. Conversely, Price (1977) defines voluntary turnover as the movement across the membership boundary of an organization initiated by the individual, and states that 'quits' is probably its most common label. Military voluntary quits may have a different set of variables, due, for example, to common enlistment duration requirements for enlisted personnel. However, the Officer Corps has what is known as an 'indefinite' estimated time of separation date, making this population more salient for the study of voluntary quits. This is because, unless they incur an active duty service commitment, i.e., following a training school funded by the AF), each officer may exercise a 'seven day option' and leave active duty within 7 days. Therefore, studies of resignation or 'quit' behavior have fewer moderating variables when studying the Officer Corps. Another key reason voluntary turnover is of greater

interest to this study is that it may be more easily measured with the available data, and several previously studied management functions may have some control over it. Price and Bluedorn (1979) describe several antecedents that management has some control over, including pay (the money and fringe benefits which organizations give to employees in return for their services), integration (the extent of participation in primary and/or quasi-primary relationships), as well as the extent to which: information about role performance is transmitted to the members of an organization (Instrumental Communication), power is concentrated in an organization (Centralization), and conformity to organizational norms is rewarded by positive sanctions (Distributive Justice), members of a profession conform to its norms (Professionalism). These are just some of the antecedents to voluntary turnover supported by historical study. Several efforts, over several decades, led up to the unified model created by Bluedorn in 1982.

Although turnover has been a popular area of research since before the First World War, the first *explicit, formal*, and *systematic* analysis of the voluntary turnover process was not proposed until the mid 20th Century (March & Simon, 1958). March and Simon proposed the theory of *organizational equilibrium* (Simon, 1947; Barnard, 1938), positing organizational members participate only as long as compensation outweighs, or at least equals feasible alternatives. As the March and Simon (1958) theory focuses on desirability and ease of movement as a central theme, their model is not a preferred baseline for this social capital study. That is, this study seeks to determine the standard effects of social capital on turnover intent, regardless of desirability and ease of movement. In researching the existence of a more feasible model, several models appear over the years, until, over the years between 1972 and 1982, four identifiable clusters or

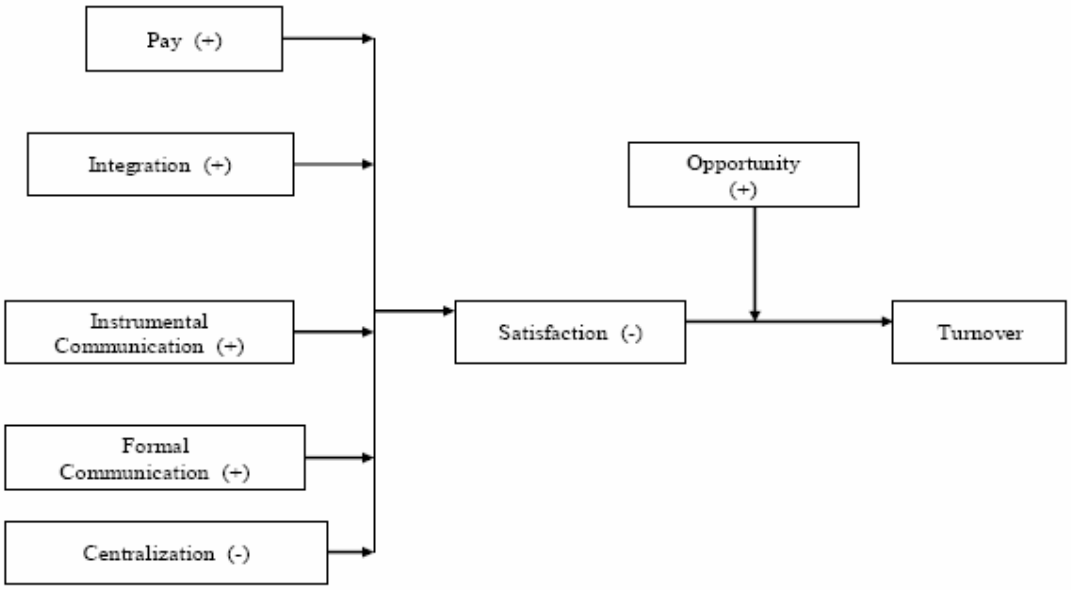
traditions of research on the causes of voluntary separations are distinguishable (Bluedorn, 1982a). Key proponents of these four will be discussed, building up to their combination into Bluedorn's Unified Model at the end of this chapter.

The theory behind Bluedorn's 1982 Unified Model is that the four collections of turnover study embodied a valuable venue for cumulative progress (Bluedorn, 1982a). What Bluedorn posited is that the four groupings of studies would not contradict, but actually complement one another, and could be partially unified, with select components from each of the four included in a single, unified model. Before introducing Bluedorn's resulting model the core component models and how they combine to evolve into the final product will be discussed.

The first two gatherings of studies on turnover research involve explicit causal models of the processes leading to voluntary separations, exemplified by the two following studies:

First, the Price 1977 model:

Figure 1: The Price 1977 Model

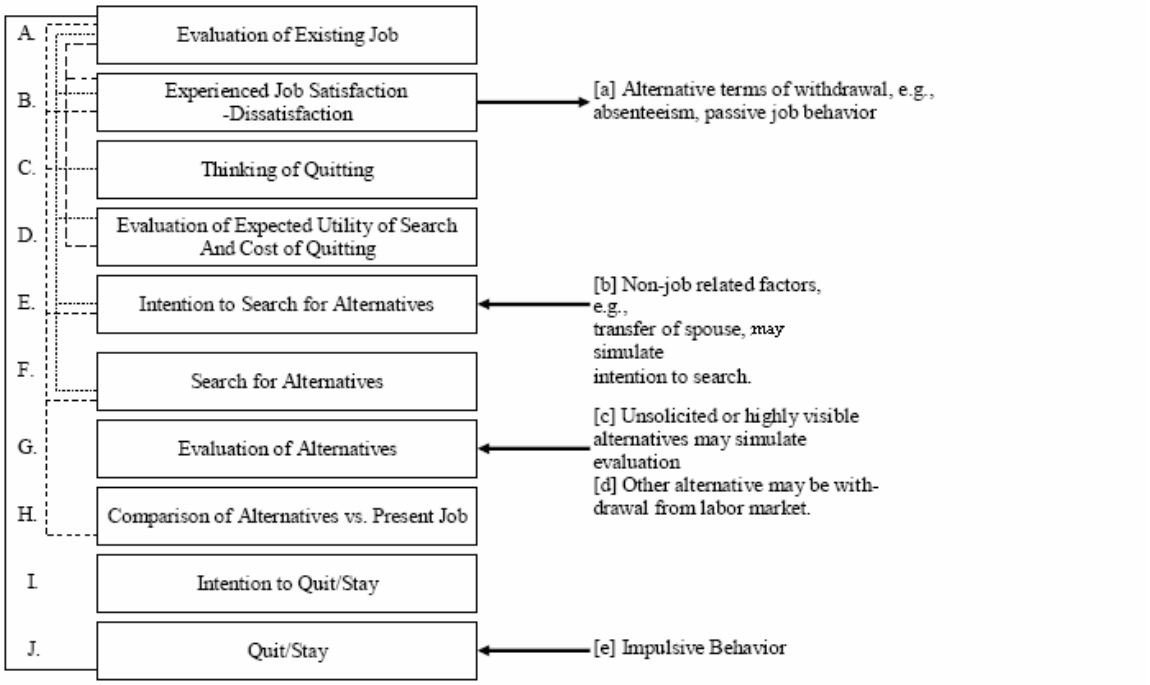


Price, J. L. (1977). *The study of turnover*. Ames; Iowa State University Press.

In his discussion of turnover theory, Price cites two sets of determinants relevant to turnover. These sets either use turnover as the dependent variable, or simply include turnover as a more general concern (Price, 1977). For this study, the set of determinants cited by Price that used turnover as the dependent variable is of interest, as the dependent variable here is intent to turnover. Some "very serious" weaknesses, per Price, are that most studies use correlates and determinants of turnover interchangeably. The development of thought in Price's study follows the recurring theme that it is necessary to indicate the linkages between the independent and dependent variables. The Price Model can be expanded on, by adding more heuristic characteristics via inclusion of more possible determinants, as will be seen in the more extensive model by Mobley, introduced below.

This Mobley Model posits that there is a consistent and significant relationship between job satisfaction and turnover, but not a strong one (Mobley, 1977). Mobley carries on with what March and Simon began, expressing the need for a heuristic model to learn more about the psychological forces affecting variation in the withdrawal decision process (March & Simon, 1958). This will be a central theme in the efficacy of the model used in this research, as it seeks to add another, little explored variable to this time honored heuristic tradition. Perhaps the most relevant characteristic of the Mobley model to this thesis is the inclusion of both Intention to Quit/Stay, and Quit/Stay variables. This is an important foundational research for this thesis to build upon, because the available data does not include actual turnover numbers, but only turnover intent.

Figure 2: The Mobley 1977 Model



Mobley, W. H. (1977). Intermediate linkages in the relationship between job satisfaction and employee turnover. *Journal of Applied Psychology* 62, 238.

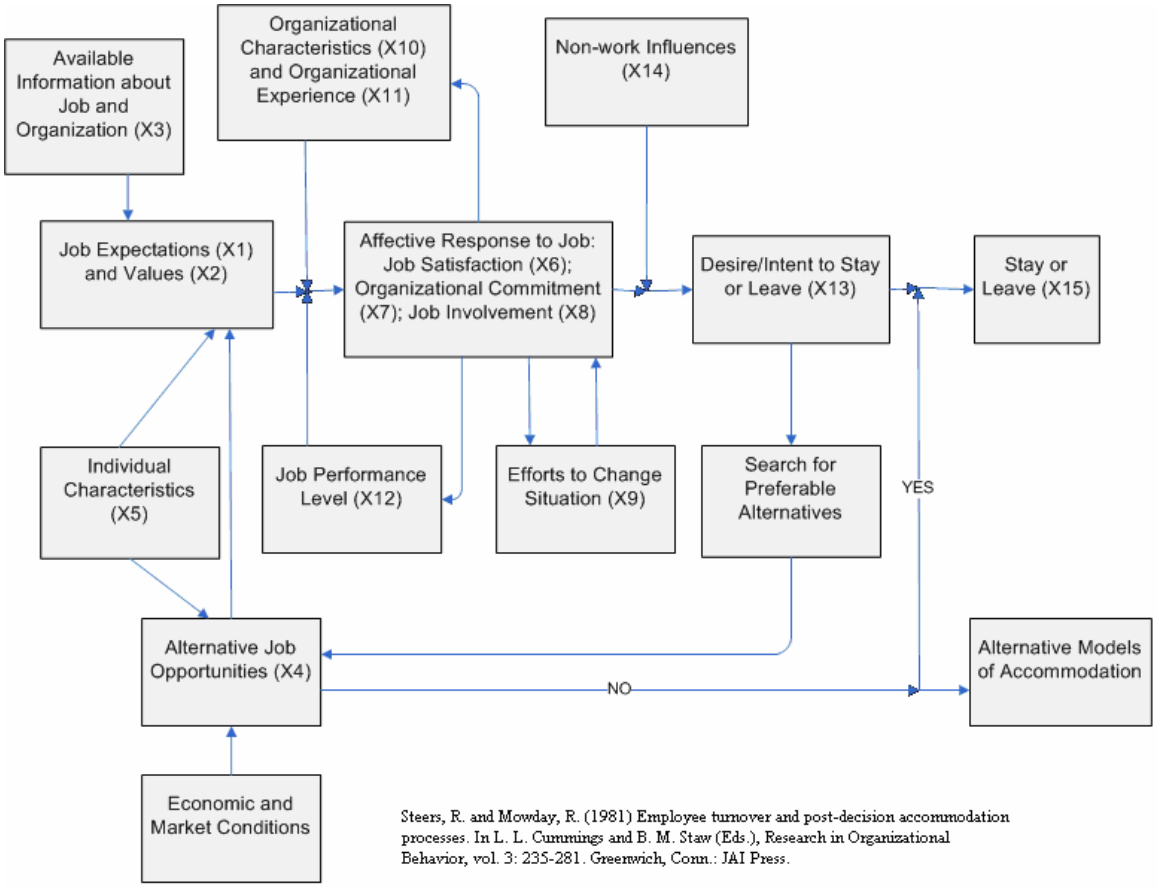
The third cluster of studies involved research on the antecedents and consequences of a single variable, organizational commitment, as in the 1974 study by Porter, Steers, Mowday, and Boulain (Porter, Steers, Mowday, & Boulian, 1974).

It may be easier to discuss this third school of thought after introducing the first two models, even though it predated them by about three years. This is because this study deals with the concept of organizational commitment, which was only implicitly, not explicitly, depicted in the two previously discussed models. One interpretation of this is that this third model is more refined, but this may have gone unnoticed, as no graphical model was presented. The findings of this study were that organizational commitment was a more important predictor of turnover than job satisfaction (Porter et al, 1974). Again, this seems to have gone unnoticed by the 1977 models presented above. However, the strengths of each model complemented those of each other, allowing a baseline which, when combined with the even older expectancy theory, would produce Bluedorn's Unified Model. Expectancy theory emerged a decade before Porter et al studied organizational commitment and job satisfaction variables in their 1974 turnover study.

As prefaced above, the last of the four clusters of studies used expectancy theory, which can be applied to a wide range of behaviors, including turnover (Vroom, 1964). Expectancy theory is similar to the classic economist approach that more is better. This theory can be applied to member motivation to remain with an organization, influenced by expectancy, instrumentality, and valence for rewards. First, expectancy is a member's estimate of the probability that expending a given amount of effort on a given task will cause an improved level of performance on some desired performance dimension. Instrumentality is the member's estimate of the probability that achieving an improved

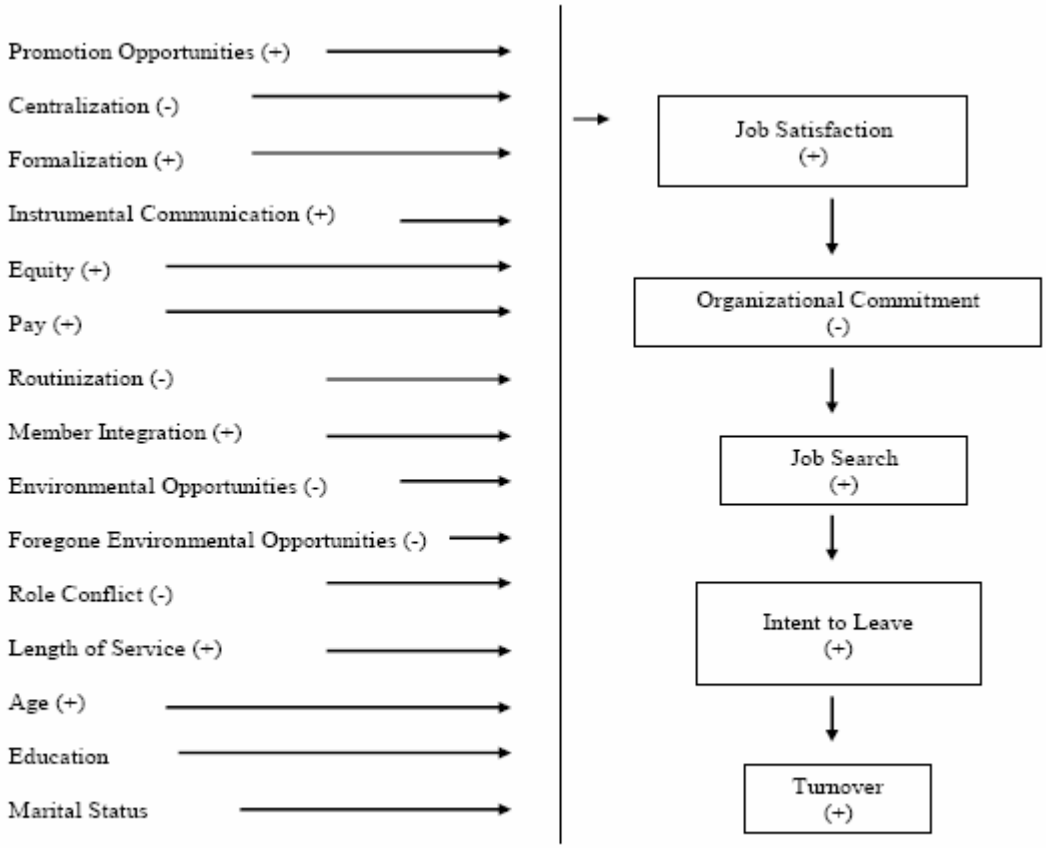
level of performance on the specified performance dimension will lead to increased attainment of a particular reward. Finally, valence for rewards is the member's perceptions of the desirability of receiving increased amounts of each kind of reward possible to obtain as a result of improved performance on the given performance dimension (Vroom, 1964; Teas, 1981). A more recent discussion of expectancy theory, with application to turnover, was accomplished in the early seventies (Porter & Steers, 1973). Porter and Steers are most strongly influenced by expectancy theory in social psychology (Price, 1977). In fact, Porter and Steers (1973) state in their abstract that their attempt centers on the role of met expectations. Although Porter and Steers' 1973 study did not include a graphical model, Steers was later first author of a study including the following diagram, with Job Expectations (X1) as its primary focus (Steers & Mowday, 1981). This thesis will not discuss this model in detail, but simply includes it to emphasize the recurring theme of expectancy theory in turnover models.

Figure 3: The Steers and Mowday 1981 Model



Bluedorn draws from the four groupings discussed above when creating his 1982 Unified Model shown in Figure 4:

Figure 4: The Bluedorn 1982 Model



Bluedorn, A. C. (1982). A unified model of turnover from organizations. *Human Relations, 35*(2), 135-153.

Not until the past thirty years have social scientists clearly defined the antecedents of job satisfaction and its predictive power on voluntary separations (Price, 1977). Bluedorn made a paradigm shift in the field of turnover theory with his unified model (Bluedorn, 1982b). Bluedorn's model is of such great importance because it combines several components of previous models into one unified model. As can be seen in the list of determinants on the left side, this heuristic model includes those in the Mobley model, and expands on them. The purpose of this research is to refine the Bluedorn model via

exploration of social capital as an antecedent to intent to turnover. Several researchers have studied military retention and its relation to similar variables, such as Job Embeddedness (Fletcher, 2005), and Community Embeddedness (Heilmann, 2005). Rather than such a broad study, this thesis focuses more specifically on a smaller component of the overall turnover model: the antecedent Social Capital to Intent to Turnover.

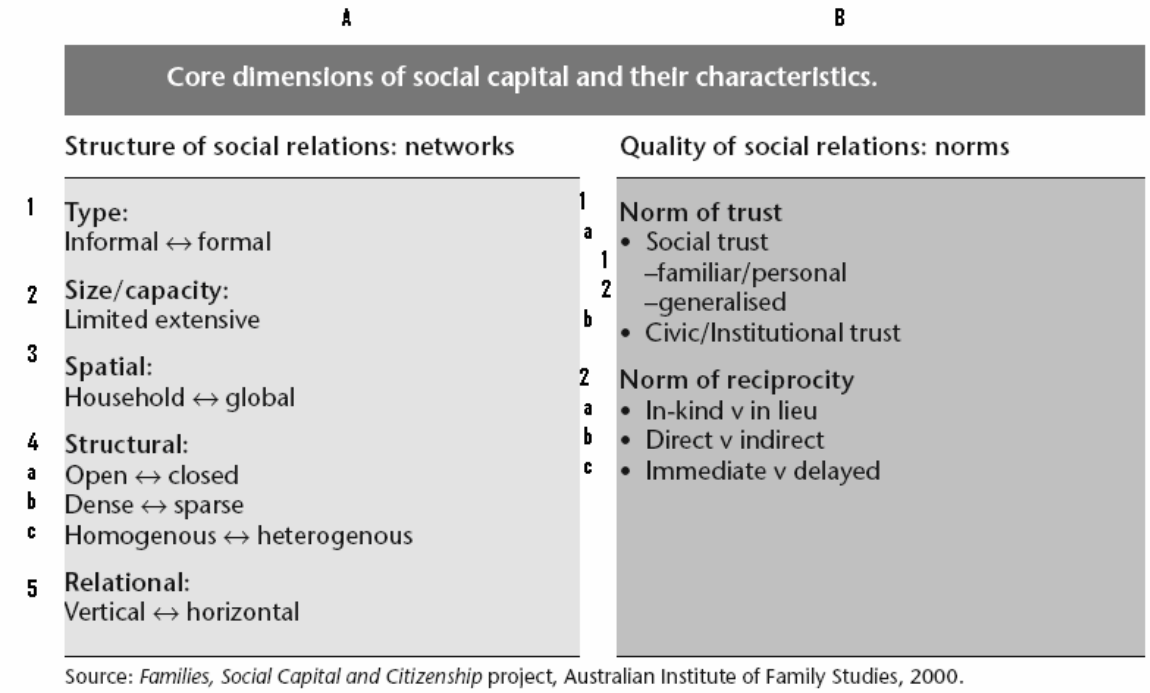
For example, Fletcher reports in his 2005 study of job embeddedness and organizational community attachment, that community-based factors, such as family, friends, and relationships play an important role in a person's turnover intentions, so it follows that communities with a high level of social capital lose fewer members and members tend to stay or return and continue to make contributions (Fletcher, 2005).

A recent publication builds on Bluedorn's 1978 model (incorrectly citing it as 1987). Choi (2006) studied a similar variable to social capital, job Embeddedness, and community attachment: relationship quality. Choi defined relationship quality as "the accumulated trust and satisfaction in interpersonal and organizational relations" (Choi, 2006). This is very similar to the definition of the social capital component known as the norm of trust.

Two of the historical turnover models cited in this paper discussed the variable of integration, or member integration (Price, 1977; Bluedorn, 1982b). Price (1977) discussed integration or member integration as the extent to which members participate in primary and/or quasi-primary relationships, characterized by relationships between close friends and co-workers in the immediate work environment. "A browse through existing studies reveals many 'gaps' when we consider the model of social capital presented in

Figure 5 on the next page [the AIFS Framework] which includes a focus upon the nature of social relations as well as their structure" (Stone, 2001). This is closely correlated to 'gaps' cited by researchers of integration. The gap in the [integration] research is found in the assumption that "participation in primary and/or quasi-primary groups is an attractive outcome to members of an organization" (Price, 1977). Price goes on to discuss that integration may have bi-directional effects on turnover, due to the possibility that highly integrated groups may not allow new members to join. This exemplifies one type of negative social capital, and illustrates why social capital is a more granular approach to turnover study than integration alone. This is because social capital can be classified as both positive and negative, whereas integration can only be high or low. This means that higher levels of integration in groups may decrease retention of individuals, due to exclusion from highly integrated groups (Price, 1977).

Figure 5: The AIFS Framework (Stone, 2001)



A review of the literature discussing the importance of social capital and its effects on intent to turnover, demonstrated in previous studies, shows its utility in predicting intent to turnover for the purposes of military retention, based on Bluedorn's 1982 Unified Turnover Model. It also expands upon the many dimensions of social capital, grouped under the core dimensions suggested by its leading proponents, outlined in Figure 5 above, and described in detail in Appendix C. The focus is on the factors significant to aggregate into a social capital measure, from questions in the source DMDC (2004) data set, based on their validity as outlined in previous research. When there are two continuous interval or ratio variables, e.g., Social Capital and Intent to Turnover, one of which can be identified as an independent variable and the other as a dependent variable, regression analysis is the appropriate technique to measure the relationship between them and assess its significance (Alreck & Settle, 2004:329). Finally, a summary of why the cited literature led up to the decision to use this method is provided.

History of Social Capital Research

After Coleman's widely regarded 1988 seminal paper on social capital there have been many studies (Putnam, 1995, Berg, Dickhaut, & McCabe, 1995, Knack & Keefer, 1997, Portes, 1998, Baum, 1999, Krishna & Shrader, 1999, Costa & Kahn, 2001), with few measures grounded in sufficient empirically tested analyses. It was not until 2001, when Dr Wendy Stone, of the Australian Institute of Family Studies published Measuring Social Capital, that a well-defined template of social capital, including its core

components and the sub-components of each was explicitly depicted in a published work. This "AIFS Framework" is depicted previously in Figure 5. Stone (2001), instead of Krishna and Shrader (1999), was chosen to build the theoretical framework for the social capital component of this thesis, not only because it is newer, but because she greatly expands upon, and heavily references this previous work.

Therefore, the structure of this thesis is based largely on that of Stone's 2001 publication; an insightful meta-study of historical social capital measures that facilitated their combination to enhanced the utility of the available data. The primary AIFS Framework dimension of social capital measurable with available data for this study is "Quality of social relations: norms". Within this overall dimension, the sub-dimensions, Norm of trust and Norm of reciprocity can be measured. The research on social capital continues by Stone and others (Stone et al, 2003), (Owen & Videras, 2006), and (Sabatini, 2006), etc. Several types of social capital exist, but only two, trust and reciprocity, in the norms category, are measurable with the available data for this study. The norm of trust is "the expectation that arises within a community of regular, honest and cooperative behavior, based on commonly shared norms, on the part of other members of that community" (Fukuyama, 1995). Reciprocity is the process of exchange within a social relationship whereby 'goods and services' (meaning exchange of any kind) given by one party are repaid to that party by the party who received the original 'goods and services'. Reciprocal relations are governed by norms, such that parties to the exchange understand the social contract they have entered into (Stone, 2001). For a complete description of the AIFS Framework, describing the dimensions and sub-dimensions of social capital, see appendix C.

Social Capital and Job Satisfaction

The link between social capital and job satisfaction predates the widespread use of the term 'social capital' itself. Burt (1997) reported levels of social capital depended primarily on network constraint, measured from the combined network of work *and* personal relationships. Social capital, in the form of family ties, was found to mitigate labor precariousness (Sabatini, 2006a). That is, job security increases, as a function of the quality and quantity of family ties and unknowns. In addition, 'bridging' and 'linking' social capital ties are positively correlated with social well-being (Sabatini, 2005). Particular forms of social capital are associated with particular dimensions of job satisfaction. That is, "different contents and structures of a network promote satisfaction with different aspects of one's job" (Flap and Völker, 2001). This reference demonstrates the causal relationship between "contents and structures" or "social capital" and the promotion of job satisfaction. Social capital levels may vary, based on where personnel fall within the structure of a network, for example, for Air Force personnel, where the population of interest includes a wide range of personnel ranks. For this study, the hypothesis of interest is how social capital affects intent to turnover of the narrow population of Air Force Company Grade Officers, in the context of Bluedorn's 1982 Unified Turnover Model.

Social Capital and Organizational Commitment

The literature shows that Organizational Commitment (OC) is also related to Social Capital (SC). According to Watson and Papamarcos (2004), trust, communication,

and employee focus have significant direct and moderate indirect affects on organizational commitment. The Norm of Trust is one component of social capital (Stone, 2001), so the literature certainly supports that these two constructs are related. Additional studies have similar findings. Ferres, Connell, and Travaglione (2004) found that "Co-worker trust was found to be a significant predictor of perceived organisational support, lowered turnover intention, and greater affective commitment." This further supports that a relationship between social capital (Norm of Trust) and organizational commitment are related. The Norm of Reciprocity is another component of social capital (Stone, 2001), that can be measured with the available data for this study. Van den Hooff, and De Ridder (2004) discussed a concept closely related to the Norm of Reciprocity. Although they did not specifically refer to it as the Norm of Reciprocity, they focused on two processes of knowledge sharing: donating and collecting, and found that those who collected more also tended to donate more. Their findings suggested that commitment to the organization was related to the donating and collecting environment (Norm of Reciprocity): "commitment to the organization positively influences knowledge donating, and is in turn positively influenced by CMC [computer-mediated communication] use. Communication climate is found to be a key variable: a constructive communication climate was found to positively influence knowledge donating, knowledge collecting and affective commitment" Van den Hooff & De Ridder (2004). In another study supporting a link between social capital and organizational commitment, Berger (2006) found that "As organizational members struggled to resolve conflicts within their own identities, they were aided by social alliances, which in turn led them to identify more with their organizations."

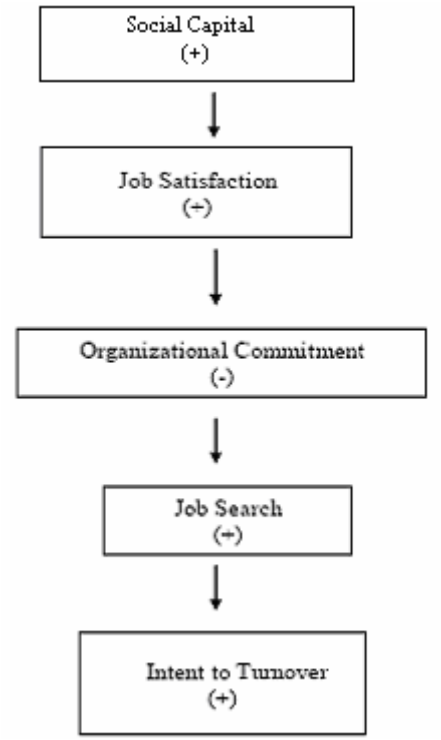
Social Capital and Intent to Turnover

While the literature review revealed little about a direct link between social capital and intent to turnover, the previous paragraphs discussed its close relationship with job satisfaction. The methodology in this study will attempt to demonstrate the strength of such a link. As several studies in the past have shown, multiple linear regression is the tool of choice to explain variance in a dependent variable, based on its antecedents. While, as stated above, this has been done in the past to show a link between Job Satisfaction and Intent to Turnover, little has analyzed the effects of Social Capital levels on Intent to Turnover. This study attempts to do just that.

Social capital is central to this study, providing the framework for understanding and empirically measuring social resources such as trust and reciprocity. These are the resources individuals may deposit and withdraw in any community or organization to contribute to or benefit from its functioning. For the purposes of scoping this study to a manageable magnitude, granularity is limited to including a simple measurement of the level of social capital possessed by each respondent, and excluding density, type, etc.

Drawing upon the reviewed literature, this thesis adds the social capital variable and proxies intent to turnover for the turnover variable as shown in Figure 6.

Figure 6: The Expanded Bluedorn Model



Summary

To expand upon and update the literature supporting that social capital is closely related to both job satisfaction and organizational commitment, this thesis seeks to determine support for the following hypotheses via its use as an antecedent to intent to turnover:

H_0: Social capital will not explain any variance in intent to turnover in addition to the variance that organizational commitment, job satisfaction, and job search behavior do.

H_a: Social capital will explain some variance in intent to turnover in addition to the variance that organizational commitment, job satisfaction, and job search behavior do.

The next two chapters focus on directly incorporating social capital as an antecedent to intent to turnover and the findings of this relating to U.S. Military retention. First, chapter three outlines the specific methodology employed to this end.

III. Methodology

Preface

The first part of this chapter describes the application of the equation derived from the AIFS Framework of the components of social capital. There is a short description of the secondary data used in this analysis and how they were originally collected, then an explanation of the main assumptions of this research. It goes on to describe the pre-analysis steps of the AIFS derived approach discussed in chapter two and concludes with details about the variables to be analyzed, e.g., Norm of Trust, etc. The internal validity and theoretical grounding information for each is included in Appendix C.

The remainder of the chapter discusses the known antecedents to intent to turnover, used in Bluedorn's 1982 Unified Model, and how they parallel sections of SOFS items, and which of these items are therefore used to represent each of Bluedorn's antecedents to intent to turnover.

Procedures

Data were collected via the 91-item December 2004 Status of Forces Survey (SOFS) of Active-Duty Members. For the SOFS, respondents received questionnaires through a Web-based application. To encourage participation and ensure the anonymity of participants, each questionnaire included a welcome page, privacy act statement, security protection advisory, and an "About This Questionnaire" section with answers to

frequently asked questions, including information so that respondents may contact the survey administrators.

Participants

The original survey population was made up of members from all active duty services, below flag officer (general/admiral) ranks (N=11,543). The population of interest, selected from the survey population, is Air Force Company Grade Officers (CGOs). That is, lieutenants and captains in paygrades O1 to O3 (n=411). The typical respondent was unmarried (n=255), white (n=340), and female (n=214).

Of the 411 CGOs surveyed, specific questions used in this study were unanswered by a wide range of personnel, from a minimum of 22, up to a maximum of 91, leaving 389 and 320 responses respectively. Even after pair-wise deletion of any items used in calculations where there were the most missing data, n remained large enough (320), to allow statistical inferences.

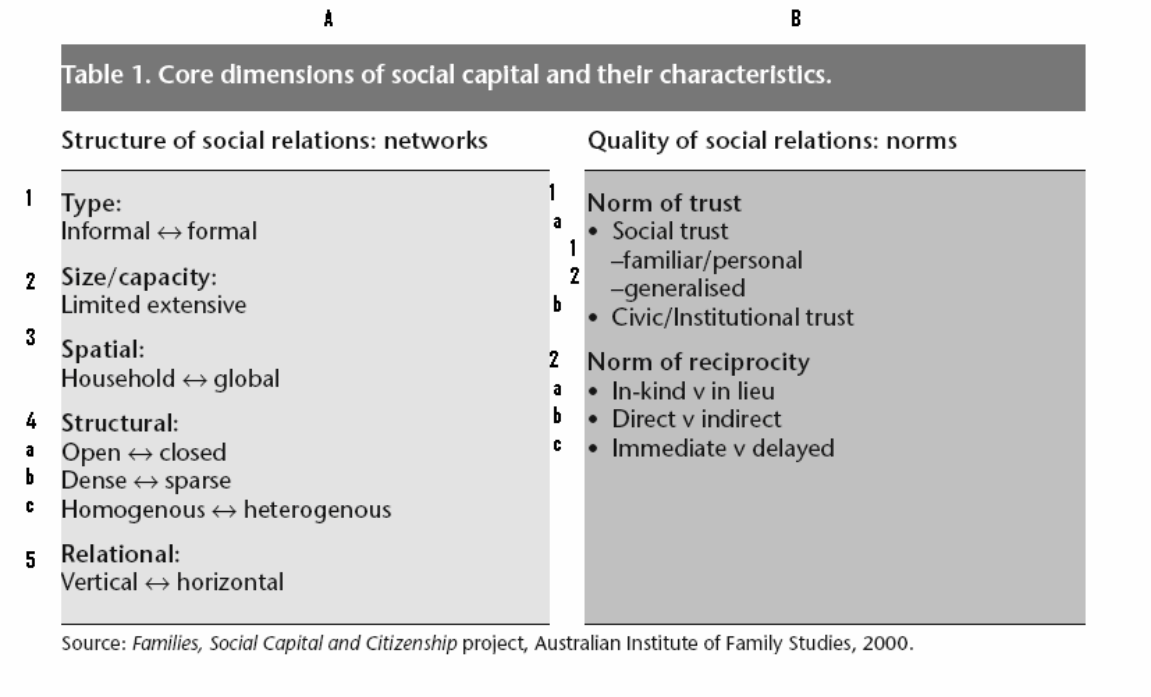
Measures

This thesis hopes to triangulate several historical measures to create accurate measurements of several dimensions of social capital, based on the available data. That is, high correlations between items used in several past studies of social capital levels with SOFS items support their validity to social capital measurement in this study. Appendix C elaborates on theoretical grounding for items used in the social capital measure for this study.

INDEPENDENT VARIABLES:

Social Capital (SC)

The Social Capital (SC) component of this equation is made up of the following two measures, based on the AIFS Framework depicted below:



	A	B
	Table 1. Core dimensions of social capital and their characteristics.	
	Structure of social relations: networks	**Quality of social relations: norms**
1	**Type:** Informal ↔ formal	1 a 1 2 b • **Norm of trust** • Social trust –familiar/personal –generalised • Civic/Institutional trust
2	**Size/capacity:** Limited extensive	
3	**Spatial:** Household ↔ global	2 a b c **Norm of reciprocity** • In-kind v in lieu • Direct v indirect • Immediate v delayed
4 a b c	**Structural:** Open ↔ closed Dense ↔ sparse Homogenous ↔ heterogenous	
5	**Relational:** Vertical ↔ horizontal	

Source: *Families, Social Capital and Citizenship* project, Australian Institute of Family Studies, 2000.

Measure One – Norm of Trust (N_oT)

The first measure (N_oT) consisted of a 14-item scale that determined the amount of trust with familiars each respondent has in the U.S Military. The data provides one component of the N_oT scale B1a1 in the AIFS Framework depicted above (Social trust: familiar/personal). Appendix C provides the theoretical grounding for this measure.

Measure Two – Norm of Reciprocity (N_oR)

The second measure (N_oR) consisted of a 5-item scale that determined the amount of reciprocity with familiars each respondent has in the U.S. Military. Data measuring the following three dimensions (2a, b, and c: In-kind v in lieu, Direct v indirect, and Immediate v delayed, respectively) of the N_oR scale are included in this study.

Social capital (SC) is measured as the average of all items included in Norm of Trust and Norm of Reciprocity. This study theorized that Structure of Networks (S_oN) has an empirically measurable effect on the level of S, but cannot be measured with the data. Therefore, this study will focus on the right column of the AIFS Framework (Quality of social relations: norms).

The internal reliability of SC also appears meritorious [Cronbach's Alpha > .8 = .93, n=371, N of Items=19 (Cronbach, 1951)].

To update Bluedorn's Unified Model (Bluedorn, 1982b), the social capital variable was added, and, due to limitations in the data, intent to turnover was used as a proxy variable for actual turnover. One of the key correlates to the social capital variable is member integration. As discussed in chapter two, member integration simply measures the extent to which members participate in primary and/or quasi-primary groups. Social capital adds the level of granularity needed to measure the positive and negative effects of integration. Because there is no directional causal relationship between social capital and integration, it was appropriate to insert social capital as a primary antecedent to turnover intent. The following two studies corroborate the paucity of research confirming the exact order of steps in the turnover process. First, Mobley (1977) stated: "There may

well be individual differences in the number and sequence of steps in the withdrawal decision process … There is a lack of research evaluating all or even most of the possible steps" Then, Steers and Mowday (1981) note that the sequence may differ across individuals.

As discussed in the previous paragraph, intent to turnover was used as a proxy variable for actual turnover. Several meta-analyses of turnover studies support this method of measurement. For example, Steel and Ovalle (1984) state: "Intentions to resign are universally regarded as the culmination of this [turnover] decision making process." However, a limitation to this measure, also cited by the same study, is that the magnitude of intent-turnover correlations varied widely across studies included in their meta-analysis, from .13 to .71. As the source data for this thesis does not include actual turnover data, this limitation is unavoidable.

Job Satisfaction (JS)

This study theorized that Job Satisfaction (JS) has a direct connection to Intent to Turnover. Job Satisfaction was calculated using the SATISFACTION portion of the SATISFACTION AND RETENTION INTENTION Measure (SOFS, 2004), items 20A to 20E, and 21.

The internal reliability of Job Satisfaction (JS) appears acceptable [Cronbach's Alpha > .7 = .71, n=400, N of Items=6 (Cronbach, 1951)].

Organizational Commitment (OC)

This study theorized that Organizational Commitment (OC) had a direct connection to Intent to Turnover (IT). Organizational Commitment was calculated using the ORGANIZATIONAL COMMITMENT Measure (SOFS, 2004), items 71A to 71O.

The internal reliability of Organizational Commitment (OC) appears acceptable [Cronbach's Alpha > .7 = .88, n=384, N of Items=15 (Cronbach, 1951)].

Job Search (JSRCH)

This study theorizes that Job Search (JSRCH) has a direct connection to Intent to Turnover (IT). Job Search was calculated using the ORGANIZATIONAL COMMITMENT Measure (SOFS, 2004), items that were directly related to employment outside the military, or related sacrifices. These items included, for example, item 71I stated "I would have difficulty finding a job if I left the military", and 71M stated "One of the problems with leaving the military would be the lack of available alternatives".

The internal reliability of Job Search (JSRCH) appears acceptable [Cronbach's Alpha > .7 = .78, n=388, N of Items=5 (Cronbach, 1951)].

DEPENDENT VARIABLE:

Intent to Turnover (IT)

Intent to Turnover is measured by the RETENTION INTENTION portion of the SATISFACTION AND RETENTION INTENTION Measure (SOFS, 2004), items 23 to 25. Item 23 states: "Suppose that you have to decide whether to stay on active duty. Assuming you could stay, how likely is it that you would choose to do so?" Item 24 states: "Does you spouse or significant other think you should stay on or leave active duty?" Item 25 states: "Does your family think that you should stay on or leave active duty?"

The internal reliability of Intent to Turnover (IT) appears acceptable [Cronbach's Alpha > .8 = .85, n=322, N of Items=3 (Cronbach, 1951)].

Factor Analyses

Before analyzing the social capital items, a preliminary qualitative analysis was accomplished to determine if social capital is made up of factors that may be represented, e.g., trust, reciprocity, structure, etc. The initial unrotated factor analysis was compared to direct oblimin and varimax rotated analyses to verify each item was attributed to the correct factor. A scree plot, together with eigenvalues, was used to verify the number of significant factors to extract. If significant cross loadings occurred, the posit that distinct factors existed was reevaluated.

Linear Regression Analysis

This study makes use of Bluedorn's 1982 Unified Model as the basis to expand upon to regress the variables organizational commitment, job satisfaction, job search behavior, and social capital. Intent to turnover was used as a proxy variable for regression rather than Bluedorn's dependent variable of turnover. This was due to the data including only intent to turnover, not actual turnover numbers. The expanded model, including the social capital variable, is depicted in Figure 6.

Figure 7: The Expanded Bluedorn Model

The following equation shows the variables from the diagram above, that will be regressed in the model in chapter four. The following two studies corroborate the paucity of research confirming the exact order or number of steps in the turnover process. First,

Mobley (1977) stated: “There may well be individual differences in the number and sequence of steps in the withdrawal decision process … There is a lack of research evaluating all or even most of the possible steps” Then, Steers and Mowday (1981) note that the sequence may differ across individuals.

Choi (2006) discusses a very similar variable to social capital, relationship quality. Choi defined relationship quality as “the accumulated trust and satisfaction in interpersonal and organizational relations” (Choi, 2006). This is very similar to the definition of the social capital component known as the norm of trust. The Choi (2006) Model places relationship quality ‘RQ’ first, as depicted below:

RQ → JS → OC → JSRCH → IT

If sufficient empirical research to support placing the social capital variable ‘SC’ in the same location in an updated model, this may be justified. However, this single study, placing only a similar variable, and not social capital itself as first in the order of precedence is insufficient.

Therefore, no precedence will be assumed in the regression model, and all variables will be entered simultaneously, via the enter method. For ease of review, the output will be configured such that the variance explained by the Job Search variable is next to last, and Social Capital last. This will ease progressive comparison of the diminishing incremental variances in intent to turnover explained by each model. That is, as the second predictor is added to create model two, the greatest increase results in variance explained. Going on to model three, a smaller increment of variance explained is added, and so on.

SC → JS → OC → JSRCH → IT

The results of regressing the above variables (Social Capital, Job Satisfaction, Organizational Commitment, and Job Search) were analyzed to determine the percentage of total explainable variance, and variance explained by the model of each variable. The primary focus was on the contribution of the social capital variable, both to predicting these variances, and to increasing the beta coefficient.

Assumptions

As the majority of social capital studies to date, this study uses secondary, not specifically collected material, to measure social capital. The primary assumption based on this fact, is that some latitude shall be required in the interpretation of this data indicating social capital levels, as well as the absence of some data to determine levels of social capital sub-dimensions, as outlined in the AIFS Framework. Appendix C includes a comprehensive theoretical grounding for why each item is acceptable for inclusion in the equation to predict each social capital component of interest to this study. Finally, this study incorporates DMDC SOFS measures as components of a classic turnover model (Bluedorn, 1982b). For example, the ORGANIZATIONAL COMMITMENT (OC) measure in the SOFS survey is used to determine the OC variable in the model adapted from Bluedorn's Unified Model.

Summary

This chapter described the application of the model adapted from Bluedorn's 1982 Unified Model and the AIFS Framework to the research problem, using linear regression. It concludes with the details of the analysis and the reliability scores for each measure of social capital, as well as the classic antecedents to turnover. The next chapter focuses on explaining the outcome of this examination of the available data through multivariate analysis based on measured values.

IV. Results

Factor Analyses

Before analyzing the social capital items, a preliminary qualitative analysis appeared to indicate two distinct factors may have been represented. The results of a principle factor analysis without rotation produced two primary factors; analysis with direct-oblimin and varimax rotation produced the same two factors, composed of the same items as the unrotated analysis. The direct-oblimin and varimax-rotated solutions also explained the same amount of variance. To verify the validity of the analyses, a scree plot was used, together with eigenvalues, to extract two factors that accounted for 64% of the total variation. The first factor included items intended to measure the norm of trust, with loadings ranging from .55 to .88 (M .80) in the unrotated solution, which demonstrated the homogeneity among the items. The second factor included items intended to measure the norm of reciprocity, with loadings from .55 to .78 (M .67) in the unrotated solution.

Most encouraging, was that, only two items produced minor cross loadings, which reinforced the posit that norm of trust was distinct from norm of reciprocity. These factors are included as the single, combined variable social capital in this study, but the distinction between them is important to note for future, more granular research studies. The resulting social capital variable appeared reliable [Cronbach's Alpha > .8 = .93, n=371, N of Items=19 (Cronbach, 1951)].

Correlation Analysis

The following table shows the correlations between variables regressed in the model in the following section. The only variable-pairs of concern for multicollinearity are where social capital pairs with job satisfaction and organizational commitment respectively. This is to be expected, as these very similar constructs are difficult to differentiate, especially without specifically-tailored survey items.

Table 1: Correlations

AF CGO Means, Standard Deviations, Reliabilities, and Intercorrelations

Intercorrelations	M	SD	OC	JS	JSRCH	SC
1. Organizational Commitment	3.2	.65	1			
2. Job Satisfaction	3.85	.63	.48**	1		
3. Job Search Behavior	3.44	.81	-.76**	-.18**	1	
4. Social Capital	3.64	.72	.51**.	.66**	-.27**	1

Cronbach alphas reliabilities in parentheses. * p < .05 , ** p < .01

Linear Regression Analysis

The following equation shows the variables regressed in the model summary below. Due to the contradictory findings in the several studies outlined in chapter two (Mobley, 1977; Steers & Mowday, 1981), no precedence is assumed in the regression model. Therefore, all variables are entered simultaneously, via the enter method. The output is configured such that the variance explained by the Job Search variable is next to last, and Social Capital last. This is to ease progressive comparison of the diminishing incremental variances in intent to turnover explained by each model.

SC → JS → OC → JSRCH → IT

Table 2: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.599 (a)	.359	.357	.87452	.359	164.729	1	294	.000	
2	.639 (b)	.408	.404	.84172	.049	24.355	1	293	.000	
3	.672 (c)	.451	.446	.81183	.043	22.974	1	292	.000	
4	.677 (d)	.458	.451	.80819	.007	3.640	1	291	.057	1.844

a. Predictors: (Constant), OC
b. Predictors: (Constant), OC, JS
c. Predictors: (Constant), OC, JS, JSRCH
d. Predictors: (Constant), OC, JS, JSRCH, SC
e. Dependent Variable: IT

While not among the strongest predictors of variance in intent to turnover, social capital was statistically significant in the regression results. As shown in the model summary above, based on the adjusted R Square, the greatest amount of variance was explained by Organizational Commitment (79% of the variance explained by Model four; 36% of the total possible variance), followed by Job Satisfaction (10% of the variance explained by Model four; 5% of the total possible variance), Job Search (9% of the variance explained by Model four; 4% of the total possible variance), and finally, Social Capital explaining (1% of the variance explained by Model four; 1% of the total possible variance). The incrementally increased Beta Coefficients as each predictor was added confirmed their contribution to predicting the total variance explained. From the baseline model including only the greatest predictor of variance, organizational commitment, adding the job satisfaction variable increased the beta coefficient by 1.1. Next, adding the job search behavior variable increased the beta coefficient by another 2.7. Finally, adding the social capital variable to create model four increased the beta coefficient by .02.

However, the significance result for the Social Capital variable is slightly above the standard .05 level for standard statistical inference, but still very promising (.057) for human subjects research; Mowday and Steers (1979) include items significant at the .10 level in their organizational commitment questionnaire. These results clearly answer the research questions listed below.

(1) Is social capital statistically significant to turnover research with applications to the U.S. Military? Yes, at the .057 level. About 1.5% of the variance in Intent to Turnover explained by Model four is explained by social capital, or about 1% of the total possible variance explained.

(2) Can social capital fit into a classical turnover-model? Yes. Social capital levels may account for 1% of the total possible variance explained in a classic turnover model.

(3) Does social capital have a statistically significant effect on intent to turnover, based on Bluedorn's 1982 Unified Model? Yes, at the .057 level. Social capital levels explain a significant amount of variance in intent to turnover explained by Model four (1.53%), or about 1% of the total possible variance explained.

Bluedorn's 1982 Unified Model, and The AIFS Framework outline the data for the following equation for empirical research on social capital and turnover, where IT=Intent to Turnover, SC=Social Capital, N_oR=Norm of Reciprocity, N_oT=Norm of

Trust, S_oN= ”Structure of social relations… Networks” (Stone, 2001), OC=Organizational Commitment, JS=Job Satisfaction, and JSRCH=Job Search.

SC → JS → OC → JSRCH → IT

The Social Capital variable in this study is made up of two primary components: Norm of Trust, and Norm of Reciprocity. Therefore, the value of the Social Capital variable may also be expressed as the average of all items included in the Norm of Reciprocity and Norm of Trust scales.

For this study, the sample population was active-duty Air Force company grade officers, so the dimensions of social capital demonstrated are limited to those measured by the survey of these personnel from which the data originated. The following paragraphs provide a short definition of the two core dimensions of social capital that relate to this thesis, solely to determine appropriate data analysis techniques. A detailed description of the items composing each measure, and its theoretical grounding are included in Appendix C. Based on the available data for this study, social capital completes the following equation:

SC → JS → OC → JSRCH → IT

Statistical Analysis

Appropriate descriptive and inferential statistics were used to analyze the data collected from the survey, with regression analysis being the primary means of answering the hypotheses. To confirm that valid items determined and differentiated between Norm of Trust and Norm of Reciprocity, exploratory factor analysis was used to determine the weight each item accounted for in predicting the variance of each factor. Results showed

that 5 items should be used to determine Norm of Reciprocity, and the remaining 14 for Norm of Trust. These two factors explained 64% of the variance, so additional factors were not indicated for use in the model. Multiple regression analysis was used to determine the correlation between the independent variables and the dependent variable. When the independent variables are analyzed together against the dependent variable, the independent variables will be ordered hierarchically based on the pair comparison results from the analysis section of this thesis.

Before statistically analyzing the data, cross tabbing was used to determine errors, missing data, etc., as well as any trends that may be evident. In addition, comparing means was used to test for significant differences between two means, to support normality of sample data (SPSS 14.0 Brief Guide, 2005: 231). The remainder of this chapter describes each measure used to interpret the results of the survey in more detail, along with information about the methodology and statistical analysis used to analyze the data and answer the hypotheses. The reliability and validity of the items comprising each measure were checked to statistically gauge how repeatable this study is and the level of random error and systematic bias in the data. The lower the measurement error, the closer the data are to the truth (Alreck & Settle, 2004:58-60). To lower the chance of detecting statistical significance in error, due only to large sample size, the sample was selected as only Air Force in the rank category from O1 to O3E. The internal consistency of the scales and sub scales was determined using Cronbach's Alpha measure (Cronbach, 1951). Besides determining a survey item's or scale's reliability, its validity (or how well it measures what it sets out to measure) must also be assessed (Alreck & Settle, 2004:58-60). One flag to this test is multicollinearity. Although there is more than moderate

multicollinearity between Social Capital and other antecedents to Intent to Turnover (especially Job Satisfaction), this is to be expected, as Social Capital alone can be employed as an antecedent to Job Satisfaction. The survey also used branching techniques that only allow personnel to answer selected questions based on their previous responses. For example, several questions are only concerned with married respondents' views.

An exploratory factor analysis was accomplished which hypothesized that a certain number of common factors would explain the variance, without regard into which set of factors the results might fall. The set produced simple structure, without rotation. That is, the factor pattern produced nonzero loadings (regression weights) on the fewest possible factors; in other words, the fewest, best questions required to predict the majority of the variance. This factor analysis indicated that the social capital variable is made up of the two primary factors Norm of Trust and Norm of Reciprocity, explaining 64% of the variance in the Social Capital variable.

This examination is accomplished via multiple linear regression, using a turnover model adapted from Bluedorn's 1982 Unified Model. Intent to Turnover is used as the proxy variable for actual Turnover, due to limitations of the available data. This study seeks to assert that social capital may be equally important to intent to turnover as is job search (a classic antecedent to turnover; Bluedorn, 1982b). To illustrate the similarity of variances explained by the social capital and job search variables, the regression models are executed in order, such that the next-to-last variable added is Job Search, and then, finally the Social Capital variable.

This paper employs a multivariate analysis technique using survey data to address how measuring social capital can be of value in improving military retention. In addition, the analysis regresses classic variables from Bluedorn's 1982 Unified Model, along with the new social capital variable.

Summary

The alternate hypothesis is supported at the .057 level of confidence, adding 1% to the total explained variance, or 1.53% to the variance explained by the model:

H_a: Social capital will explain some variance in intent to turnover in addition to the variance that organizational commitment, job satisfaction, and job search behavior do.

Because the results show that the social capital predicted a statistically significant amount of variance in intent to turnover, the validity of statistical inferences based on beta coefficients generated by analysis of turnover models without a social capital variable must be reevaluated for validity.

V. Discussion, Conclusions and Recommendations

This research explored social capital as an important antecedent to intent to turnover. Regardless of its limitations due to available data, this study shows social capital is indisputably relevant to the study of turnover. In addition, the regression analysis of social capital and intent to turnover indicated social capital had a significant effect on military retention.

Establishing consistency and validity is not without its complications, because secondary data, not initially designed to measure social capital, is used in this study. The results indicate that Social Capital accounts for about 1 percent of the variance in the overall Intent to Turnover variable (at the .057 level), making it a reasonable variable to consider, based on the more than 1 million uniformed service members of the United States. If future studies apply social capital to this whole population, resulting policy changes could reduce Intent to Turnover by about 1 percent, aggregated over more than 1 million personnel. To put this in perspective, imagine all of the more than 1 million active-duty personnel were considering leaving the services. If policy changes retained just 1 percent of these, the numbers of personnel retained would be about equal to the recent surge of 12,500 personnel deployed to Iraq. However, this study seeks to stress the qualitative value of social capital, which cannot easily be quantified.

Qualitatively, this research provides extensive literature indicating social capital as a valuable resource to improve communities, and subsequently bring community members closer to others and reduce intent to depart such communities.

One of the keys to maintaining social capital levels in the core area of "Quality of social relations: norms" (Stone, 2001) is to keep psychological contracts. This is ironic, in light of the fact that I personally observed that the AF recently separated several hundred trained Communications Officers. Breaking the psychological contract with these new accessions, who likely expected the chance to pursue a military career, may have damaged norms of both trust and reciprocity for years to come. Perhaps closing the schoolhouse operating the Aerospace Basic Course could have temporarily covered the funding shortfall, to allow reduction by attrition, instead of separating newly-trained officers? Although there are arguments both for and against force shaping decisions, in the context of social capital, funding often constrains top decision makers from their preferred choices.

Summary of Research

The conclusions are as expected. Increased social capital does decrease intent to turnover, accounting for about 1% of the total variance. Some strengths of the model are that the data set included items that very closely or exactly matched items used in previous social capital research models. The social capital component was then incorporated into an adaptation of a proven turnover model (Bluedorn, 1982b), adding to the reliability of the results. However, the model also had the common limitation that the data set was not initially designed to measure social capital. The model would have

greater empirical strength if the survey items used to determine social capital levels were specifically designed to do so, and if actual turnover data were made available.

Limitations

One limitation with the study was the level of confidence and internal consistency result (.057), above the generally accepted level of .05 for statistical inferences. However, a .057 level of confidence is still significant at the .10 level for the study of human subjects, so the results should not be discounted. The internal consistency of the Job Satisfaction measure was only marginally acceptable (.71), indicating that the items may not be truly measuring what they should be, based on a correlation of the items within a scale. Cronbach's Alpha is the most widely accepted measure of internal consistency, and was therefore used in this study (Cronbach, 1951). General statistical research guidelines for behavioral research recommend the coefficient Alpha (Cronbach's Alpha) should be at least .7 or higher to adequately show a scale is internally consistent, whereas .8 or higher is considered meritorious when making statistical inferences where valuable assets are at stake.

A second limitation in the data is the more than moderate correlation between some of the independent variables. According to Cohen and Cohen, correlations are relationships between two or more variables or sets of variables. Their fundamental dimensions are: significance, direction, and magnitude (Cohen & Cohen, 1983). There is usually some level of correlation between variables or sets of variables and this either positive or negative correlation is expressed as small if the correlation coefficient is between .1 and .3; moderate if between .3 and .5; and strong if .5 or above (Cohen & Cohen, 1983, 67-69). Such high correlations indicate, appropriately, that there is a

moderate or strong linear relationship between the two variables or variable sets and that the correlated variables or variable sets are moderately or strongly dependent upon one another. No causal relationship is indicated, but the variables may be closely related, because they are directly proportional to one another or come very close to measuring the same thing. This correlation between independent variables will cause some of the explained variance to overlap during linear regression, leading to ambiguities in its interpretation. This is because the variables are not well estimated, which can indicate that a small change in the data values would lead to large changes in coefficient estimates. This correlation between variables could result in imprecise inferences, and is identified as a potential limitation of this study.

A third limitation is that the variables did not accurately measure what they purport to measure. Each of the independent items that were the basis of the scales and subsequent variables already contained the relationship with job satisfaction within them. Each of the items making up Norm of Reciprocity (N_oR) and Norm of Trust (N_oT) on the survey asked questions that could very well be used to calculate job satisfaction. Because of this multicollinearity, the scales did not exclusively represent the conceptual idea of these independent variables, and may have resulted in several regression problems. Although the dependent variable did not have this problem, it did not measure social capital in a way that can be correlated with factors such as access to resources and opportunities for education, but the respondent's perception of reciprocity and trust, constituting the level of social capital.

A final limitation of note is that actual job search data was not available, so survey questions implying job search were used to proxy actual job search questions. For example, questions concerning availability of alternatives. This thesis posits to support using these questions to measure job search, that unless an individual observes (or searches) for alternatives, it is not likely that the individual will know whether or not such alternatives exist.

The final chapter recaps the limitations and suggests implications for policy makers, in the context of social capital as an antecedent to turnover intent, as well as providing suggestions for further study.

Suggestions for Further Study

According to Hosek, Kavanaugh, and Miller (2006), "Further research and analysis using more-recent data should be conducted to study how deployments affect the actual reenlistment of personnel, because the effect is an evolving and still-relevant question. Further research should also look for cost-effective ways to reduce the burden on service members—for example, changing the structure of military units, personnel-rotation policies, and job-assignment mechanisms." The burden on service members mentioned easily translates to social capital levels. Measuring social capital can assist policy makers in developing effective ways to increase positive social capital levels, via just the mechanisms mentioned above; particularly personnel-rotation policies, and job assignments, because longitudinal comparison of social capital levels may differentiate the relative effectiveness of such mechanisms.

With a survey tailored to measure social capital, the U.S. Military stands to gain great insight into how social capital can be increased, thus improving military retention, without additional cost. Combining this with a turnover model may be even more beneficial.

The greatest limitation, and therefore opportunity for further research is the available data for this study. Because the SOFS used for this research was not specifically designed to measure social capital, it was difficult to produce reliable results. As stated in the previous paragraph, a survey tailored to measure social capital, administered on the same scale as the SOFS could provide great insight into where the Services are doing well and poorly, and how the other Services can react to improve their performance, with regard to social capital and its effects on retention.

Another suggestion for further study is to shorten the intervals at which future surveys are conducted, to mitigate fluctuations in the intent-turnover relations due to length of time between measurements. “The time interval between collection of predictor data and procurement of attrition criteria has a significant impact on the magnitude of the relationship. There appears to be a steady erosion of this relation as the time span lengthens” (Steel & Ovalle, 1984).

Finally, the integration variable, included in previous turnover research could be exchanged for a social capital variable measuring both positive and negative social capital. This would add a dimension to the granularity of the integration variable, and allow for easier interpretation. That is, higher levels of integration do not necessarily result in lower levels of turnover, whereas higher levels of positive social capital should produce lower levels of turnover.

As stated in the summary of research above, this study was limited by secondary data. Some original information was masked. Use of a more specifically tailored data set is indicated for further study. Two critical building blocks are required to construct the ideal model. These are survey items specifically designed to measure social capital, and the same quality items specifically designed to measure intent to turnover. Combining these items into a single turnover model, including cross-referencing with actual turnover data may give the nearest to ideal measure for the effects of social capital levels on actual turnover.

A stepping stone to gaining valuable insight into designing the ideal model could be retesting this model with broader application to other organizations. One scenario of particular interest could be a follow-on study comparing the Army to other Services, as the additional ranks of W-1 to W-5 make this service more heterogeneous than the other services, having only officer and enlisted ranks. This could allow for an exploratory study of the effects heterogeneity levels have on how social capital levels affect turnover.

Conclusion

This study shows that social capital levels explain about one percent of the total variance in intent to turnover in a standard turnover model (adapted from Bluedorn's 1982 Unified Model). With the cooperation of agencies such as the Defense Manpower Data Center, the study of social capital, with implications for predicting intent to turnover can help shape policy to improve military retention with no additional cost. This is key to U.S. Military policymakers, at a time when budget constraints make low- to no-cost solutions to costly problems more and more attractive. In general, social capital studies to

date have each used nonstandard surveys as measurement tools, and many used data not originally designed to measure social capital. Until a more homogenous definition of social capital and its measurement is widely accepted, a gap in the literature will continue to exist. However, the DoD is on the right track with its initiatives to increase inter-service cooperation. The more joint our forces become, the higher the norms trust and reciprocity of social capital should get, and, consequently, the lower intent to turnover should become.

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Vita

Captain Frederic W. Lunas graduated from Juanita High School in Kirkland, Washington. He entered undergraduate studies at the University of Idaho in Moscow, Idaho where he graduated in December 1997, with a Bachelor of Arts degree in Foreign Languages (German) with the Business Option. He was commissioned through Officer Training School on August 20th, 1999. His first assignment was at Elmendorf Air Force Base, beginning as Officer-In-Charge, Telephone and Cable Systems, going on to become Wing Information Assurance Officer, and culminating as Deputy Plans Flight Commander. While stationed at Elmendorf, he deployed in January 2002 as Networks OIC to spend three months in direct support of OPERATIONS ANACONDA, ENDURING FREEDOM, NORTHERN and SOUTHERN WATCH. In August 2002, he was assigned to the NATO Programming Centre in Glons, Belgium where he served as Chief, C2 Systems, and then as Executive Officer. Completing Squadron Officer School in-residence in December 2004, he returned to Belgium to complete his assignment as Executive Officer. In August 2005, he entered the Graduate School of Engineering and Management, Air Force Institute of Technology. Upon graduation, he will be assigned to The Air Force Communications Agency, Assessments and Validations Directorate, Scott Air Force Base, Illinois.

Appendix A: Definition of Terms

AIFS: Australian Institute of Family Studies
DMDC: Defense Manpower Data Center
FY: Fiscal Year
IT: Intent to Turnover
JS: Job Satisfaction
JSRCH: Job Search Behavior
N_oR: Norm of Reciprocity
N_oT: Norm of Trust
OC: Organizational Commitment
SC: Social Capital
SOFS: Status of Forces Survey
SoN: "Structure of social relations… Networks" (Stone, 2001)

Appendix B: Statistical Analyses and Regression Details

Specific Analysis of Air Force personnel O1-O3:

Statistics

		Norm_of_ Reciprocity	Norm_of_ Trust	Social_ Capital_	Job_Sat
N	Valid	389	376	378	320
	Missing	22	35	33	91
Mean		3.1938	3.8089	3.8817	3.7622
Std. Deviation		.82585	.85862	.88944	.67126
Variance		.682	.737	.791	.451
Minimum		1.00	1.07	1.00	1.78
Maximum		5.00	5.00	5.00	5.00

Correlations

		Social_ Capital	Job Satisfaction scale: conStructed from Q69a-69f
Social_Capital	Pearson Correlation	1	.452**
	Sig. (2-tailed)		.000
	N	478	476
Job Satisfaction scale: conStructed from Q69a-69f	Pearson Correlation	.452**	1
	Sig. (2-tailed)	.000	
	N	476	514

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

Correlations

		Social_ Capital_	Job Satisfaction scale: conStructed from Q69a-69f
Social_Capital_	Pearson Correlation	1	.327**
	Sig. (2-tailed)		.000
	N	506	492
Job Satisfaction scale: conStructed from Q69a-69f	Pearson Correlation	.327**	1
	Sig. (2-tailed)	.000	
	N	492	514

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

REGRESSION RESULTS

Descriptive Statistics

	Mean	Std. Deviation	N
IT	2.4212	1.09053	296
OC	3.1995	.64938	296
JS	3.8609	.61700	296
JSRCH	3.4723	.80762	296
SC	3.6419	.73828	296

Correlations

		IT	OC	JS	JSRCH	SC
Pearson Correlation	IT	1.000	-.599	-.475	.288	-.370
	OC	-.599	1.000	.464	-.771	.526
	JS	-.475	.464	1.000	-.157	.670
	JSRCH	.288	-.771	-.157	1.000	-.279
	SC	-.370	.526	.670	-.279	1.000
Sig. (1-tailed)	IT	.	.000	.000	.000	.000
	OC	.000	.	.000	.000	.000
	JS	.000	.000	.	.003	.000
	JSRCH	.000	.000	.003	.	.000
	SC	.000	.000	.000	.000	.
N	IT	296	296	296	296	296
	OC	296	296	296	296	296
	JS	296	296	296	296	296
	JSRCH	296	296	296	296	296
	SC	296	296	296	296	296

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	OC[a]	.	Enter
2	JS[a]	.	Enter
3	JSRCH[a]	.	Enter
4	SC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: IT

Model Summary[e]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.599[a]	.359	.357	.87452	.359	164.729	1	294	.000	
2	.639[b]	.408	.404	.84172	.049	24.355	1	293	.000	
3	.672[c]	.451	.446	.81183	.043	22.974	1	292	.000	
4	.677[d]	.458	.451	.80819	.007	3.640	1	291	.057	1.844

a. Predictors: (Constant), OC

b. Predictors: (Constant), OC, JS

c. Predictors: (Constant), OC, JS, JSRCH

d. Predictors: (Constant), OC, JS, JSRCH, SC

e. Dependent Variable: IT

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	125.982	1	125.982	164.729	.000[a]
	Residual	224.846	294	.765		
	Total	350.827	295			
2	Regression	143.237	2	71.619	101.085	.000[b]
	Residual	207.590	293	.708		
	Total	350.827	295			
3	Regression	158.379	3	52.793	80.102	.000[c]
	Residual	192.449	292	.659		
	Total	350.827	295			
4	Regression	160.756	4	40.189	61.530	.000[d]
	Residual	190.071	291	.653		
	Total	350.827	295			

a. Predictors: (Constant), OC

b. Predictors: (Constant), OC, JS

c. Predictors: (Constant), OC, JS, JSRCH

d. Predictors: (Constant), OC, JS, JSRCH, SC

e. Dependent Variable: IT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.641	.256		22.038	.000		
	OC	-1.006	.078	-.599	-12.835	.000	1.000	1.000
2	(Constant)	6.725	.330		20.374	.000		
	OC	-.811	.085	-.483	-9.519	.000	.784	1.275
	JS	-.443	.090	-.250	-4.935	.000	.784	1.275
3	(Constant)	9.424	.647		14.570	.000		
	OC	-1.334	.137	-.794	-9.769	.000	.284	3.518
	JS	-.284	.093	-.161	-3.070	.002	.685	1.461
	JSRCH	-.472	.098	-.349	-4.793	.000	.353	2.829
4	(Constant)	9.444	.644		14.665	.000		
	OC	-1.396	.140	-.831	-9.986	.000	.269	3.723
	JS	-.394	.109	-.223	-3.626	.000	.492	2.033
	JSRCH	-.480	.098	-.355	-4.890	.000	.353	2.834
	SC	.173	.091	.117	1.908	.057	.492	2.034

a. Dependent Variable: IT

Excluded Variables[d]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	JS	-.250[a]	-4.935	.000	-.277	.784	1.275	.784
	JSRCH	-.429[a]	-6.214	.000	-.341	.405	2.469	.405
	SC	-.076[a]	-1.386	.167	-.081	.723	1.382	.723
2	JSRCH	-.349[b]	-4.793	.000	-.270	.353	2.829	.284
	SC	.105[b]	1.643	.102	.096	.492	2.031	.492
3	SC	.117[c]	1.908	.057	.111	.492	2.034	.269

a. Predictors in the Model: (Constant), OC

b. Predictors in the Model: (Constant), OC, JS

c. Predictors in the Model: (Constant), OC, JS, JSRCH

d. Dependent Variable: IT

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	OC	JS	JSRCH	SC
1	1	1.980	1.000	.01	.01			
	2	.020	9.971	.99	.99			
2	1	2.967	1.000	.00	.00	.00		
	2	.021	11.867	.27	.96	.08		
	3	.012	15.540	.73	.04	.92		
3	1	3.901	1.000	.00	.00	.00	.00	
	2	.083	6.845	.00	.05	.01	.13	
	3	.013	17.399	.07	.11	.92	.01	
	4	.003	34.286	.93	.83	.07	.86	
4	1	4.878	1.000	.00	.00	.00	.00	.00
	2	.090	7.366	.00	.03	.00	.13	.02
	3	.020	15.671	.05	.15	.04	.00	.47
	4	.009	22.871	.02	.01	.92	.01	.51
	5	.003	38.407	.93	.81	.03	.86	.00

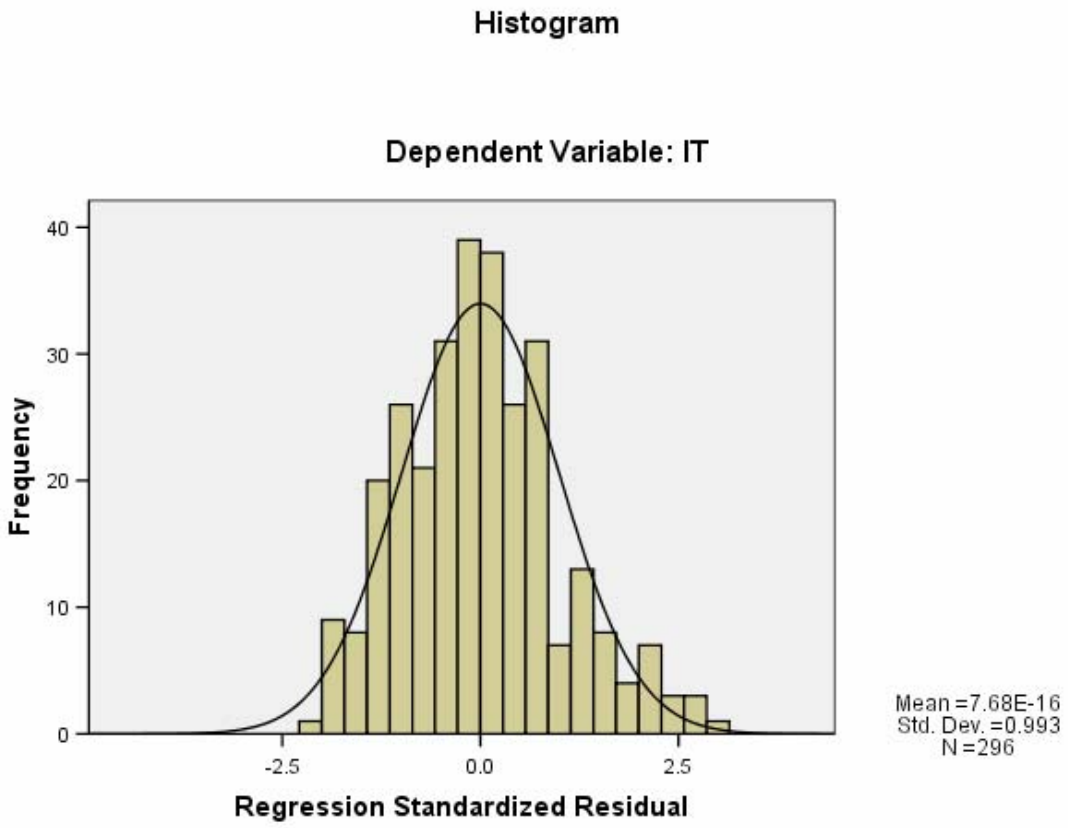
a. Dependent Variable: IT

Residuals Statistics[a]

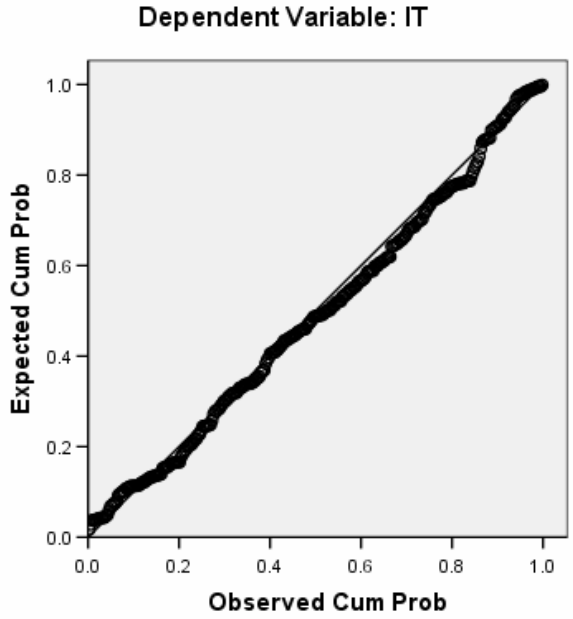
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.6921	4.7265	2.4212	.73820	296
Std. Predicted Value	-2.342	3.123	.000	1.000	296
Standard Error of Predicted Value	.048	.201	.101	.029	296
Adjusted Predicted Value	.6820	4.7817	2.4210	.73939	296
Residual	-1.71242	2.43807	.00000	.80269	296
Std. Residual	-2.119	3.017	.000	.993	296
Stud. Residual	-2.146	3.051	.000	1.002	296
Deleted Residual	-1.75733	2.49309	.00013	.81651	296
Stud. Deleted Residual	-2.160	3.095	.001	1.005	296
Mahal. Distance	.065	17.219	3.986	2.983	296
Cook's Distance	.000	.051	.003	.006	296
Centered Leverage Value	.000	.058	.014	.010	296

a. Dependent Variable: IT

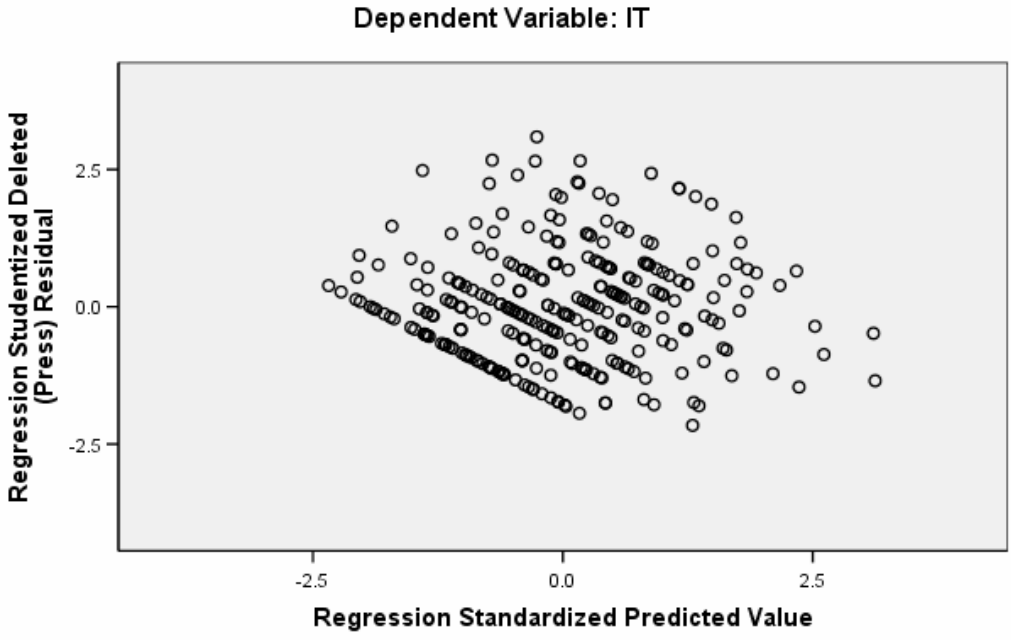
CHARTS



Normal P-P Plot of Regression Standardized Residual



Scatterplot



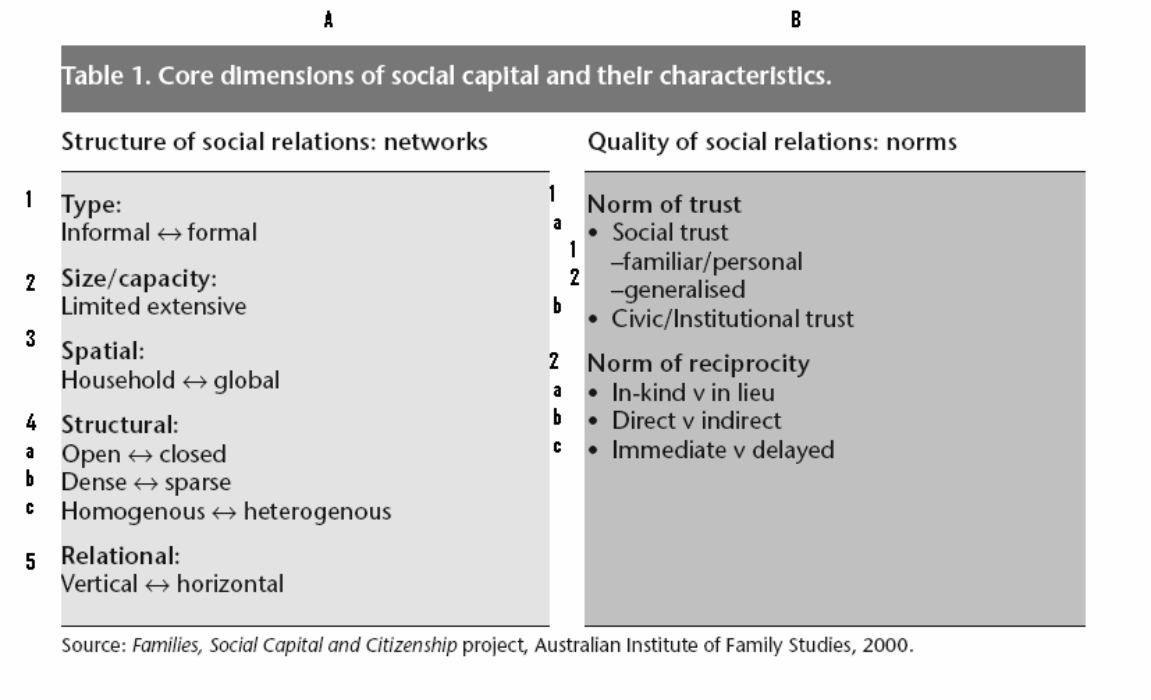
Appendix C: Theoretical Grounding

Survey Demographics Results

Respondent Personal Demographics

The survey was taken by active duty enlisted and officer personnel from all four services between the grade E-1 to O-6 and above. There were 7,934 male and 3,609 female respondents (23,501 respondents did not answer this question). Even with the high number of missing responses, n remains high (11,543) and further analysis of the data is indicated. Age was not asked in the survey, but can be estimated, based on paygrade. Paygrade is broken down into five categories (1) E-1 to E-4, n=3,344, (2) E-5 to E-9, n=4,556, (3) W-1 to W-5, n=395, (4) O-1 to O-3E, n=1,550, and (5) O-4 to O-6 or above, n=1,698. This is a logical method for paygrade grouping, as group 1 is enlisted, not noncommissioned officer (except corporal), 2 includes all noncommissioned officers, 3 includes all warrant officers, 4 includes all company grade officers, and 5 includes all field grade officers (except if some respondents are above O-6; flag). Overall numbers of warrant officers are very small, as only Army personnel can have this paygrade; a bar chart of only Army respondents would show a more even distribution. However, for the purposes of this study, comparisons will only include enlisted and officer paygrades, ranging from n=1,550 to n=4,556, an acceptable ratio of < 3:1; random sampling of a smaller n is not required for further analysis of and inference from the data. This research effort singled out category 4 (all company grade officers), and narrowed the data to Air Force (N=411). Imputed values are substituted for missing data points. In this case, groups of paygrades, instead of specific ones.

Computing Social Capital: Benefits of the AIFS Framework



	A	B
	Table 1. Core dimensions of social capital and their characteristics.	
	Structure of social relations: networks	Quality of social relations: norms
1	Type: Informal ↔ formal	1 Norm of trust
a		• Social trust
1		–familiar/personal
2		–generalised
b		• Civic/Institutional trust
2	Size/capacity: Limited extensive	2 Norm of reciprocity
3	Spatial: Household ↔ global	
4	Structural:	
a	Open ↔ closed	• In-kind v in lieu
b	Dense ↔ sparse	• Direct v indirect
c	Homogenous ↔ heterogenous	• Immediate v delayed
5	Relational: Vertical ↔ horizontal	

Source: *Families, Social Capital and Citizenship* project, Australian Institute of Family Studies, 2000.

The AIFS Framework lends to the following equation for empirical research on social capital, where **IT**=Intent to Turnover, **SC**=Social Capital, $\mathbf{N_oR}$=Norm of Reciprocity, $\mathbf{N_oT}$=Norm of Trust, and $\mathbf{S_oN}$=Structure of social relations: Networks, and **JS**=Job Satisfaction. This is a stochastic model, in that the known values of the independent variables Norm of Trust (N_oT) and Norm of Reciprocity (N_oR) can partially but not fully determine the values of the dependent variables of interest Job Satisfaction (JS) and Intent to Turnover (IT).

SC → JS → OC → JSRCH → IT

The greatest benefit to the AIFS Framework is its simplicity. The seven core dimensions of social capital and their characteristics are illustrated in a single table for ease of reference. The categories are (**A**) Structure of social relations: networks, and (**B**) Quality of social relations: norms. Category A is broken down into five sub-categories which are (1) Type: Informal <-> Formal, (2) Size/capacity: Limited <-> Extensive, (3) Spatial: Household <-> Global, (4) Structural: (a) Open <-> Closed, (b) Dense <-> Sparse, and (c) Homogeneous <-> Heterogeneous, and (5) Relational: Vertical <-> Horizontal. Category B is broken into categories, again broken into sub-categories of their own which are (1) Norm of trust: (a) Social trust, including (1) familiar and (2) personal, and (b) generalized, and (c) Civic/institutional trust, and (2) Norm of reciprocity: (a) In-kind versus in lieu, (b) Direct versus indirect, and (c) Immediate versus delayed.

Category A, Structure of social relations: networks, for application to this study, is limited to the heterogeneity component of the AIFS outlined structure due to the limitations of the survey data available. Adding additional dimensions to this core measure if data are available is indicated for a more accurate social capital measure. The following paragraphs outline the remaining dimensions of this core social capital component, and specify where the data set falls on each scale. The locations of the Services may differ on one or more subscale, especially in the case of the Army, as warrant officers are unique to this branch of the U.S. Military.

Structure of social relations: networks (S_oN: A1-5 of the AIFS Framework)

The first measure (S_oN) consisted of a 2-item scale that determined the amount of heterogeneity each respondent has in the U.S. Military, the general category of level of education at the time the questionnaire was completed, and paygrade. This measures one component of the S_oN scale (4c, Heterogeneity). All other components of the AIFS Framework are the same for this described population. That is, there is no statistically-significant difference in *structure of social relations: networks (fig. 1)* between the four Services, except for heterogeneity.

Type ranges on a scale, between the two anchors of **Informal** and **Formal**. The position a network occupies on that scale is determined by how formal the association between members is. Informal ties, such as those between friends, family, neighbors and kin indicate an informal network, whereas formal ties to official organizations indicate formal networks. The data set for this study is at the far end of this scale, the formal side, as none of the items canvasses respondents for informal associations (Stone, 2001).
Size/capacity ranges on a scale, between the two anchors of **Limited** and **Extensive**. The position a network occupies on this scale is determined by the number of its members (Stone 2001). The network of interest in this study is to the far end of the scale, the extensive side, with thousands of members.
Spatial ranges on a scale, between the two anchors of **Household** and **Global**. The position a network occupies on this scale is determined by whether relations are limited to within a single household up to the global level, or virtual networking with no theoretical distance limits (Stone, 2001). The network of interest in this study is to the far end of this scale, the global side, with respondents from bases all over the globe.
Structural has three dimensions, measured with ranges between three anchor pairs. The position a network occupies on the **Structural** scale is determined by a combination of its positions between anchors on the three sub-scales as follows:
Open and **Closed.** The position a network occupies on this scale is determined by the following: A closed network is one in which social relations exist between and among all parties (Coleman, 1988: 107-108), whereas an open network does not include links between all members. In fact, not all members of open networks may know, or even know of, one another. The size of the network in this study is a good indication of its open status, as it is not feasible that every member of the U.S. Military knows every other. However, this same network may be composed of sub-networks that are much more toward the closed end of the scale. The granularity of the available data does not allow for study of the sub-networks.

Dense to **Sparse.** The position a network occupies on this scale is determined by "the extent to which network memberships overlap (work, church, clubs, school, volunteering, etc.) affects the ability of persons in one context to call on assistance to solve a problem in another" (Stone, 2001). The available data does not allow for measurement of this dimension of the network of interest.
Homogenous to **Heterogeneous.** The position a network occupies on this scale is determined by how similar or different each member is, compared to each other member. While the U.S. Military is very homogenous, it is possible to differentiate personnel based on gender, marital status, paygrade, level of education, etc. Again, this thesis hypothesizes heterogeneity to be greater in the Army, due to the presence of the warrant officer ranks.
Once the three positions are determined, a combined score on the **Structural** scale is computed. The network of interest for this study will be: Formal, Extensive, Global, Open, with density and heterogeneity based on SOFS data.

Category B, Quality of social relations: norms, is made up of two sub-categories: **Norm of Trust** and **Norm of Reciprocity**.
Norm of Trust (an individual with regard to another or an organization) includes three types: familiar/personal, generalized, and Civic/Institutional
Familiar/personal trust is defined as the level of trust between people who know one another, one's family and friends.
Generalized trust is defined as the level of trust in people in general, including those known and unknown, such as physician or shop keeper.
Civic/Institutional trust is defined as the level of trust in institutions, e.g., the military, federal and state government, etc.
Most available data reflects measurement of Familiar/personal trust, but some questions may correlate to generalized or civic trust, e.g., willingness to recommend, etc.
Norm of Reciprocity is another combination, but of properties instead of scales. That is, types of reciprocity and their temporal properties. The possible types are **In-kind** vs. **In Lieu**, and **Direct** vs. **Indirect**, each attributed to the temporal property of **Immediate** vs. **Delayed**.
Reciprocity is the process of exchange within a social relationship where exchange of any kind given by one party is repaid by the original receiver, such that parties to the exchange understand the social contract into which they have entered (Stone, 2001).
In-kind is payment with a similar or identical service (the same kind), such as babysitting for one another at different times, professional courtesy, etc. In Lieu, or instead, is providing a member with some benefit instead of payment. Direct is monetary or other tangible compensation, perquisites, etc. Indirect is favors for others, etc.
Immediate versus delayed is the scale including how soon reciprocation is expected.

Finally, in the AIFS Framework, the **Structure** scale interacts with the **Quality** scale to produce an overall social capital measure, as indicated by the equation derived from the AIFS Framework (Figure 1).

Theoretical Grounding and Component Items of Core Dimension Measures

This section lists and provides references to historical studies in support of the use of each item composing the measures used to predict the core dimensions of social capital in this study. All numbering references in this section refer to Table 1 above, e.g., B2 refers to Norm of Reciprocity, B1 to Norm of Trust, etc. There is some cross loading of SOFS items, so each will be assigned to a single factor, according to best loading.

Measure Three [if applicable] (A4c): Structure of social relations: Networks; heterogeneity (S_oN)

This scale is made up of only Pay Grade and Education Level; this appears to be the only statistically significant variable pair that will show the heterogeneity of the U.S. Military, based on this data set. When separated by Service, the data set is expected to yield significantly different results for the Army, due to the presence of warrant officer ranks.

Dimension A4a: A third way community social capital has been measured to date is by measuring the degree to which a person is connected to the local community, and aggregating the effects of each person's commitment across the whole community to generate a measure at the community level. The 1998 CIS held social capital interviews to research the significance of 'a sense of connection to a physical place, location or to a 'place' that might be defined in terms of a network, an association, etc., in terms of promoting a sense of belonging', for example, by determining an individual's: (Length of time lived in this location). This may increase for Air Force personnel, due to the new policy to lengthen tours from three to four years.

Dimension A4a: Item 27 of the SOFS addresses this. (For individuals who have undergone a permanent change of station in the past) "How many months has it been since your last PCS? To indicate less than 1 month, enter "00". To indicate more than 99 months, enter "99" Individuals with a longer period of time since their last PCS are logically closer to the closed end of the network structure scale.

Dimension A4c: Heterogeneous vs. Homogeneous Networks

Krishna and Shrader 1999 determine heterogeneity or homogeneity of networks by investigating about members: (Are they mostly the same gender?), (Do members mostly have the same occupation? [Similarities in military occupations overall]), (Are members mostly from the same age group?), and (Do members mostly have the same level of education? [Can be examined, based on rank, tenure, etc.])

The Grootaert (2002) Heterogeneity Index uses very similar items to those measured in the SOFS. They are (kin group ~ SOFS Race), (occupation ~ service), {economic status ~ SOFS [(paygrade + years of service completed)/2]}, (gender = gender), (age ~ paygrade * years of service completed), and (level of education = level of education). Grootaert used this Index to compare social capital between households. However, others found that social capital is more important at the village level than the household level. I believe a military study such as this can conceptualize each branch of military service as its own

"extended village". This assumption allows for comparison of heterogeneity between the four active military services, and subsequent investigation of the interaction of social capital levels with their heterogeneity levels.

In keeping with Grootaert (2002), the following equation is appropriate for application of the Heterogeneity Index to the SOFS data:

Dimension A4c: Items 2, 3, 13, 16, 17, 19, and 27 of the SOFS address the heterogeneity vs. homogeneity of the U.S. Military:

Item 2 asks: "Are you…?" Respondents choose (Male) or (Female).

Dimension A4c: Item 3 asks: "What is your current paygrade?" Respondents choose from (E-1), (E-2), (E-3), (E-4), (E-5), (E-6), (E-7), (E-8), (E-9), (W-1), (W-2), (W-3), (W-4), (W-5), (O-1/O-1E), (O-2/O-2E), (O-3/O-3E), (O-4), (O5), and (O-6 or above).

Dimension A4c: Item 13 asks: "What is the highest degree or level of school that you have completed? Mark the one answer that describes the highest grade or degree you have completed." Respondents chose from (12 years or less of school, no diploma), (High school graduate-high school diploma or equivalent, e.g., GED), (Some college, but less than one year), (1 or more years of college, no degree), (Associate's degree, e.g., AA, AS), (Bachelor's degree, e.g., BA, AB, BS), and (Master's, doctoral, or professional school degree, e.g., MA, MS, MEng, MBA, MSW, PhD, MD, JD, DVM).

Dimension A4c: Item 16 asks: "Are you Spanish/Hispanic/Latino?" Respondents chose from (No, not Spanish/Hispanic/Latino), and (Yes, Mexican, Mexican-American, Chicano, Puerto Rican, Cuban, or other Spanish/Hispanic/Latino).

Dimension A4c: Item 17 asks: "What is your race? Mark one or more races to indicate what you consider yourself to be." Respondents chose from (White), (Black or African American), (American Indian or Alaska Native), (Asian, e.g., Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese), and (Native Hawaiian or other Pacific Islander, e.g., Samoan, Guamanian or Chamorro).

Dimension A4c: Item 19 may again be used to determine heterogeneity as differences in wealth/material possessions and landholdings.

Dimension A4c: Item 27 may again be used to determine heterogeneity as differences between old inhabitants and new settlers.

Dimension A5: Krishna and Shrader 1999 also designed items to measure the power for decision-making members have in networks using the following question: "Overall, how effective is the group's leadership?" Respondents answered on a 3-point Likert-type scale grounded from *Not effective at all* to *Very effective*, or *Other, Don't know; Not applicable*.

Dimension A5: Items 49A to 49L address this. Respondents answered on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5). Items 49A-L were based on the question "How much do you agree or disagree with each of the following statements about your immediate supervisor? The term "workgroup" refers to the people with whom you work on a day-to-day basis

Measure Two (B1): Norm of Trust (N_oT)

The United Kingdom (UK) 'National Survey of Voluntary Activity 1991' asks "We have talked so far about doing unpaid work or giving help through organizations or groups, but sometimes people help or do unpaid work just as an individual. Have you, in the past year, done any of these things, unpaid, in your neighborhood? (Don't include things you've done for close relatives). Respondents chose from the following: (Visiting an elderly or sick person), (Doing shopping for someone), (Mowing a lawn), (Decorating, or any kind of home or car repairs for someone), (Baby sitting or caring for children), (Looking after a pet for someone), (Giving advice about something or helping with letters or form filling), (Transporting or escorting someone [to hospital or an outing]), (Improving the environment, such as picking up litter or sweeping the pavement), (Is there anything else you've done for someone in your neighborhood as a whole?).

Dimension B1b: The Papadakis 1998 Questionnaire p. 26 asks "[In the last 12 months] Have you, or anyone in your family living here, ever contacted a government official to seek help with a personal problem you or your family had? Respondents answered from the following list: (No, not in last 12 months), (A federal member of parliament), (Some other federal government official), (A state member of parliament), (Some other state government official), or (Your local councilor or some other local government official).

Dimension B1a-c: Stewart-Weeks and Richardson, 1998 p. 132 ask, with regard to substance of social relations: "Now I'd like to look at some of the practicalities of how you go about your life" … (How do you get things done when you need to [find a baby sitter, find a school, get financial advice or other similar help?), (How would you go about looking for work if you need a job?), and (Where would you go if you were upset or 'in trouble' and needed personal help and support?).

Dimension A * B1a-c: Cochran 1990, p. 315 attempts a combination mapping a person's network and add reciprocal exchange relationships. Respondents provide a list of people in their social networks; then answer questions related to reciprocal exchange. For example (When things are really financially tight, who on the list can you turn to for help? Does anyone come to you?), (When you are upset or worried about other things, do you have anyone on your list who you can talk to?)

Dimension B1a-c: Item 55C of the SOFS addresses this. "You would go for help with a personal problem to people in your chain-of-command." Respondents answered the question "Please indicate whether you agree or disagree with the following statements?"

for item 55C on a five-point Likert-type scale grounded from *Strongly disagree* (1) to *Strongly agree* (5).

Dimension B1a1: Cox (1997) cites cooperation as an indication of trust among group members that may be used to gauge group social capital levels. Some behaviors Cox used to measure this were (Tolerance and flexibility in dealing with problems), and (Perceptions of fairness).

Dimension B1a1: SOFS items 49A, C, E, F, I-K, L, 50B, E, and 50F address trust among familiars.

Dimension B1a1: Several items in the SOFS LEADERSHIP Measure, questions 49 and 50, address trust among familiars. All items are answered in the context of this questionnaire. Item 49A: "Handling the technical skills part of the job (fully understands the capabilities and limitations of equipment in the workgroup; demonstrates knowledge of tactical skills). Item 49C: "Handling the conceptual-skills part of the job (thinks through decisions, recognizes and balances competing requirements, uses analytical techniques to solve problems). Item 49E: "Decision making (makes sound decisions in a timely manner, includes all relevant information in decisions and can generate innovative solutions to unique problems). Item 49F: "Motivating (creates a supportive work environment, inspires people to do their best, acknowledges the good performance of others, and disciplines in a firm, fair, and consistent manner). Item 49I: "Learning (encourages open discussion that improves the organization, willingly accepts new challenges, helps the workgroup adapt to changing circumstances, recognizes personal limitations). Item 49J: "Planning and organizing (develops effective plans to achieve organizational goals, anticipates how different plans will look when executed, sets clear priorities, willingly modifies plans when circumstances change). Item 49K: "Executing (completes assigned missions to standard, monitors the execution of plans to identify problems, is capable of refining plans to exploit unforeseen opportunities). Item 49L: "Assessing (accurately assesses the workgroup's strengths and weaknesses, conducts effective in- progress reviews and after-action reviews, takes time to find out what subordinate units are doing). Item 50B: "Your supervisor ensures that all assigned people are treated fairly." Item 50E: "You are satisfied with the direction/supervision you receive from your supervisor." Item 50F: "Your supervisor makes work assignments fairly in your workplace."

Dimension B1a1: 50A, 54A, B, 55C, F, and maybe 71H address trust: Item 50A, in the context of the LEADERSHIP measure above (CITE PARAGRAPH) collects agreement or disagreement with: "You trust your supervisor." Item 54A is based on the following question: "Indicate the extent to which you agree or disagree with the following statements about your unit/Service?" and states: [The current environment in your unit is one of "zero" defect (i.e., a feeling that one mistake will end a career)]. In the same context as 54A, 54B states: (The current environment in your Service is one of "zero defect"). Item 55C is based on the following question: "Please indicate whether you agree or disagree with the following statements?" and states: (You would go for help with a personal problem to people in your chain-of-command). In the same context as 55C, 55F

states (Leaders in your unit are more interested in furthering their careers than in the well-being of their Service members). Item 71H is based on the question "How much do you agree or disagree with each of the following statements?" and states: (I really feel as if the military's values are my own). Respondents answered all questions cited in the paragraph on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Dimension B1b: The VWS measured another facet of social capital, known as Civic/institutional trust, by asking how much confidence respondents had in, for example: (The armed forces), (Federal government), and (State government). The SOFS WILLINGNESS TO RECOMMEND scale may also be an indication of trust in these organizations, with active and reserve included in the (Federal government), National Guard in (State government), and all services in (The armed forces) category.

Dimension B1a1: Baum et al (1998) also measured reciprocity based on the following question: "Have you assisted neighbors or friends with the following activities in the past year?" and stated, for example: (Listened to their problems).

Dimension B1a1: SOFS item 55C matches this reciprocity measure closely by stating: (You would go for help with a personal problem to people in your chain-of-command). Respondents answered 55C on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Measure Three (B2): Norm of Reciprocity (N_oR)

Dimension B2a-c: Another aspect of social capital, the norm of reciprocity and associated cultural norms and values is measured in the 1999 Krishna and Shrader household questionnaire, based on the question: "Please tell me whether in general you agree or disagree with the following statements:" and states, for example, (People are always interested only in their own welfare), and (If I have a problem there is always someone to help [me])

Dimension B2a-c: SOFS items 55A-D, and F address the norm of reciprocity. Item 55A is based on the question "Please indicate whether you agree or disagree with the following statements?" and states: (If you make a request through channels in your unit, you know somebody will listen). Item 55B states: (Leaders in your unit are more interested in looking good than in being good). Item 55C states: (You would go for help with a personal problem to people in your chain-of-command). Item 55D states: (Leaders in your unit are not concerned with the way the Service members treat each other as long as the job gets done). Finally, 55F states: (Leaders in your unit are more interested in furthering their careers than in the well-being of their Service members). Respondents answered all questions cited in the paragraph on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Dimension B2c: According to Mangen and Westbrook (1998), expectation of future exchange is another important aspect of reciprocity norms of empirical interest. One relevant study of this is the CIS qualitative study of social capital that measures the expectation of future exchange in addition to immediate exchange, where they asked: "Thinking of different associations and groups and activities you are involved in, what sorts of reasons can you think of that you got involved in the first place?" The CIS then mentions reasons mentioned by other people, for example: "Because I enjoy it." (Stewart et al, 1998, pp. 134-136). The SOFS ORGANIZATIONAL COMMITMENT Measure item 71A matches the Stewart et al example almost exactly by stating, "Based on the question: How much do you agree or disagree with each of the following statements? (I enjoy serving in the military)." Another near-exact match is the CIS example: "Felt I wanted to give something back to the group/community", and the SOFS items 71K: "If I left the military, I would feel like I had let my country down", 71G: "I would not leave the military right now because I have a sense of obligation to the people in it", and, to a lesser degree, item 71D: "I would feel guilty if I left the military." Respondents answered all questions cited in this paragraph on a five-point Likert-type scale grounded from *Strongly disagree* (1) to *Strongly agree* (5).

Dimension A4a: A third way community social capital has been measured to date is by measuring the degree to which a person is connected to the local community, and aggregating the effects of each person's commitment across the whole community to generate a measure at the community level. The 1998 CIS held social capital interviews to research the significance of 'a sense of connection to a physical place, location or to a 'place' that might be defined in terms of a network, an association, etc., in terms of promoting a sense of belonging', for example, by determining an individual's: (Length of time lived in this location).

Dimension A4a: Item 27 of the SOFS addresses this. (For individuals who have undergone a permanent change of station in the past) "How many months has it been since your last PCS? To indicate less than 1 month, enter "00". To indicate more than 99 months, enter "99" Individuals with a longer period of time since their last PCS are logically closer to the closed end of the network structure scale.

Dimension A4c: Heterogeneous vs. Homogeneous Networks

Krishna and Shrader 1999 determine heterogeneity or homogeneity of networks by investigating about members: (Are they mostly the same gender?), (Do members mostly have the same occupation? [Similarities in military occupations overall]), (Are members mostly from the same age group?), and (Do members mostly have the same level of education? [Can be examined, based on rank, tenure, etc.])

The Grootaert (2002) Heterogeneity Index uses very similar items to those measured in the SOFS. They are (kin group ~ SOFS Race), (occupation ~ service), (economic status ~ SOFS paygrade * years of service completed * home ownership), (gender = gender), (age ~ paygrade * years of service completed), and (level of education = level of education). Grootaert used this Index to compare social capital between households. However, other

studies (WHO?) found that social capital is more important at the village level than the household. I believe a military study such as this can conceptualize each branch of military service as its own "extended village". This assumption allows for comparison of heterogeneity between the four active military services, and subsequent investigation of social capital levels interaction with their heterogeneity levels.

In keeping with Grootaert (2002), the following equation is appropriate for application of the Heterogeneity Index to the SOFS data:

Dimension A4c: Items 2, 3, 13, 16, 17, 19, and 27 of the SOFS address the heterogeneity vs. homogeneity of the U.S. Military:

Item 2 asks: "Are you…?" Respondents choose (Male) or (Female).

Dimension A4c: Item 3 asks: "What is your current paygrade?" Respondents choose from (E-1), (E-2), (E-3), (E-4), (E-5), (E-6), (E-7), (E-8), (E-9), (W-1), (W-2), (W-3), (W-4), (W-5), (O-1/O-1E), (O-2/O-2E), (O-3/O-3E), (O-4), (O5), and (O-6 or above).

Dimension A4c: Item 13 asks: "What is the highest degree or level of school that you have completed? Mark the one answer that describes the highest grade or degree you have completed." Respondents chose from (12 years or less of school, no diploma), (High school graduate-high school diploma or equivalent, e.g., GED), (Some college, but less than one year), (1 or more years of college, no degree), (Associate's degree, e.g., AA, AS), (Bachelor's degree, e.g., BA, AB, BS), and (Master's, doctoral, or professional school degree, e.g., MA, MS, MEng, MBA, MSW, PhD, MD, JD, DVM).

Dimension A4c: Item 16 asks: "Are you Spanish/Hispanic/Latino?" Respondents chose from (No, not Spanish/Hispanic/Latino), and (Yes, Mexican, Mexican-American, Chicano, Puerto Rican, Cuban, or other Spanish/Hispanic/Latino).

Dimension A4c: Item 17 asks: "What is your race? Mark one or more races to indicate what you consider yourself to be." Respondents chose from (White), (Black or African American), (American Indian or Alaska Native), (Asian, e.g., Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese), and (Native Hawaiian or other Pacific Islander, e.g., Samoan, Guamanian or Chamorro).

Dimension A4c: Item 19 may again be used to determine differences in wealth/material possessions and landholdings.

Dimension A4c: Item 27 may again be used to determine differences between old inhabitants and new settlers.

Dimension A5: Krishna and Shrader 1999 also designed items to measure the power for decision-making members have in networks using the following question: "Overall, how effective is the group's leadership?" Respondents answered on a 3-point Likert-type scale grounded from *Not effective at all* (#) to *Very effective* (#), or *Other, Don't know; Not applicable (#).*

Dimension A * B: An entire section of the SOFS addresses this, with its 18-item LEADERSHIP measure, including items 49A-50F. Respondents answered on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5). Items 49A-I were based on the question "How much do you agree or disagree with each of the following statements about your immediate supervisor? The term "workgroup" refers to the people with whom you work on a day-to-day basis.", and items 50A-F were based on the question "To what extent do you agree or disagree with the following statements about your supervisor?"

Measure Two (B1): Norm of Trust (N_oT)

$$B1 = Norm\_of\_Trust = NoT =$$
$$(49A + 49C + 49E + 49F + 49I + 49J + 49K + 49L + 50A + 50B + 50E + 50F + 55A + 55C)/14$$

Reliability Statistics

Cronbach's Alpha	N of Items
.958	14

The internal reliability of B1 (Norm of Trust) appears acceptable (Cronbach's Alpha > .7 = .96, n=10,064, N of Items=14).

The United Kingdom (UK) 'National Survey of Voluntary Activity 1991' asks "We have talked so far about doing unpaid work or giving help through organizations or groups, but sometimes people help or do unpaid work just as an individual. Have you, in the past year, done any of these things, unpaid, in your neighborhood? (Don't include things you've done for close relatives). Respondents chose from the following: (Visiting an elderly or sick person), Doing shopping for someone), (Mowing a lawn), (Decorating, or any kind of home or car repairs for someone), (Baby sitting or caring for children), (Looking after a pet for someone), (Giving advice about something or helping with letters or form filling), (Transporting or escorting someone [to hospital or an outing]), (Improving the environment, such as picking up litter or sweeping the pavement), (Is there anything else you've done for someone in your neighborhood as a whole?).

Dimension B1b: The Papadakis 1998 Questionnaire p. 26 asks "[In the last 12 months] Have you, or anyone in your family living here, ever contacted a government official to seek help with a personal problem you or your family had? Respondents answered from the following list: (No, not in last 12 months), (A federal member of parliament), (Some other federal government official), (A state member of parliament), (Some other state government official), or (Your local councilor or some other local government official).

Dimension B1a-c: Stewart-Weeks and Richardson, 1998 p. 132 ask, with regard to substance of social relations: "Now I'd like to look at some of the practicalities of how you go about your life" … (How do you get things done when you need to [find a baby sitter, find a school, get financial advice or other similar help?), (How would you go

about looking for work if you need a job?), and (Where would you go if you were upset or 'in trouble' and needed personal help and support?).

Dimension A * B1a-c: Cochran 1990, p. 315 attempts a combination mapping a person's network and add reciprocal exchange relationships. Respondents provide a list of people in their social networks; then answer questions related to reciprocal exchange. For example (When things are really financially tight, who on the list can you turn to for help? Does anyone come to you?), (When you are upset or worried about other things, do you have anyone on your list who you can talk to?)

Dimension B1a-c: Item 55C of the SOFS addresses this. "You would go for help with a personal problem to people in your chain-of-command." Respondents answered the question "Please indicate whether you agree or disagree with the following statements?" for item 55C on a five-point Likert-type scale grounded from *Strongly disagree* (1) to *Strongly agree* (5).

Dimension B1a1: Cox (1997) cites cooperation as an indication of trust among group members that may be used to gauge group social capital levels. Some behaviors Cox used to measure this were (Tolerance and flexibility in dealing with problems), and (Perceptions of fairness).

Dimension B1a1: SOFS items 49A, C, E, F, I-K, L, 50B, E, and 50F address trust among familiars.

Dimension B1a1: Several SOFS items under questions 49 and 50 address trust among familiars. All items are answered in the context of the LEADERSHIP measure above (CITE PARAGRAPH): Item 49A: "Handling the technical skills part of the job (fully understands the capabilities and limitations of equipment in the workgroup; demonstrates knowledge of tactical skills). Item 49C: "Handling the conceptual-skills part of the job (thinks through decisions, recognizes and balances competing requirements, uses analytical techniques to solve problems). Item 49E: "Decision making (makes sound decisions in a timely manner, includes all relevant information in decisions and can generate innovative solutions to unique problems). Item 49F: "Motivating (creates a supportive work environment, inspires people to do their best, acknowledges the good performance of others, and disciplines in a firm, fair, and consistent manner). Item 49I: "Learning (encourages open discussion that improves the organization, willingly accepts new challenges, helps the workgroup adapt to changing circumstances, recognizes personal limitations). Item 49J: "Planning and organizing (develops effective plans to achieve organizational goals, anticipates how different plans will look when executed, sets clear priorities, willingly modifies plans when circumstances change). Item 49K: "Executing (completes assigned missions to standard, monitors the execution of plans to identify problems, is capable of refining plans to exploit unforeseen opportunities). Item 49L: "Assessing (accurately assesses the workgroup's strengths and weaknesses, conducts effective in- progress reviews and after-action reviews, takes time to find out what subordinate units are doing). Item 50B: "Your supervisor ensures that all assigned people are treated fairly." Item 50E: "You are satisfied with the direction/supervision you

receive from your supervisor." Item 50F: "Your supervisor makes work assignments fairly in your workplace."

Dimension B1a1: 50A, 54A, B, 55C, F, and maybe 71H address trust: Item 50A, in the context of the LEADERSHIP measure above (CITE PARAGRAPH) collects agreement or disagreement with: "You trust your supervisor." Item 54A is based on the following question: "Indicate the extent to which you agree or disagree with the following statements about your unit/Service?" and states: [The current environment in your unit is one of "zero" defect (i.e., a feeling that one mistake will end a career)]. In the same context as 54A, 54B states: (The current environment in your Service is one of "zero defect"). Item 55C is based on the following question: "Please indicate whether you agree or disagree with the following statements?" and states: (You would go for help with a personal problem to people in your chain-of-command). In the same context as 55C, 55F states (Leaders in your unit are more interested in furthering their careers than in the well-being of their Service members). Item 71H is based on the question "How much do you agree or disagree with each of the following statements?" and states: (I really feel as if the military's values are my own). Respondents answered all questions cited in the paragraph on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Dimension B1b: The VWS measured another facet of social capital, known as Civic/institutional trust, by asking how much confidence respondents had in, for example: (The armed forces), (Federal government), and (State government). The SOFS WILLINGNESS TO RECOMMEND scale may also be an indication of trust in these organizations, with active and reserve included in the (Federal government), National Guard in (State government), and all services in (The armed forces) category.

Dimension B1a1: Baum et al (1998) also measured reciprocity based on the following question: "Have you assisted neighbors or friends with the following activities in the past year?" and stated, for example: (Listened to their problems).

Dimension B1a1: SOFS item 55C matches this reciprocity measure closely by stating: (You would go for help with a personal problem to people in your chain-of-command). Respondents answered 55C on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Measure Three (B2): Norm of Reciprocity (N_oR)

$$B2 = Norm\_of\_\text{Re}ciprocity = NoR = (71A + 71D + 71G + 71H + 71K)/5$$

Reliability Statistics

Cronbach's Alpha	N of Items
.812	5

The internal reliability of B2 appears acceptable (Cronbach's Alpha > .7 = .81, n=10,193, N of Items=5).

Norm_of_Reciprocity is statistically-significantly and positively correlated with a correlation coefficient of .53 to job satisfaction at p = .01 (two-tailed). This could indicate a multicollinearity problem.
Dimension B2a-c: Another aspect of social capital, the norm of reciprocity and associated cultural norms and values is measured in the 1999 Krishna and Shrader household questionnaire, based on the question: "Please tell me whether in general you agree or disagree with the following statements:" and states, for example, (People are always interested only in their own welfare), and (If I have a problem there is always someone to help [me])

Dimension B2a-c: SOFS items 55A-D, and F address the norm of reciprocity. Item 55A is based on the question "Please indicate whether you agree or disagree with the following statements?" and states: (If you make a request through channels in your unit, you know somebody will listen). Item 55B states: (Leaders in your unit are more interested in looking good than in being good). Item 55C states: (You would go for help with a personal problem to people in your chain-of-command). Item 55D states: (Leaders in your unit are not concerned with the way the Service members treat each other as long as the job gets done). Finally, 55F states: (Leaders in your unit are more interested in furthering their careers than in the well-being of their Service members). Respondents answered all questions cited in the paragraph on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Dimension B2c: According to Mangen and Westbrook (1998), expectation of future exchange is another important aspect of reciprocity norms of empirical interest. One relevant study of this was the CIS qualitative study of social capital that measured the expectation of future exchange in addition to immediate exchange, where they asked: "Thinking of different associations and groups and activities you are involved in, what sorts of reasons can you think of that you got involved in the first place?" The CIS then mentioned reasons mentioned by other people, for example: (Because I enjoy it). (Stewart-Weeks and Richardson 1998, pp. 134-136).

Dimension B2c: The SOFS ORGANIZATIONAL COMMITMENT measure's item 71A matches this example nearly exactly by stating, based on the question: "How much do you agree or disagree with each of the following statements?" (I enjoy serving in the military). Another near-exact match is the CIS example: "Felt I wanted to give something back to the group/community", and the SOFS items 71K: (If I left the military, I would feel like I had let my country down), 71G: (I would not leave the military right now because I have a sense of obligation to the people in it), and, to a lesser degree, item 71D: (I would feel guilty if I left the military). Respondents answered all questions cited in this paragraph on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Social Capital (SC)

$$Social\_Capital = S = (NoR + NoT)/2$$

As seen in the equation above, social capital (S) is the average of Norm of Trust and Norm of Reciprocity. This study theorizes that Structure of Networks (S_oN) has an empirically measurable effect on the level of S.

Job Satisfaction (JS)

Job Satisfaction, the variable this study theorizes has a direct connection to social capital, is computed as follows:

$$Job\_Sat = J = (20A + 20B + 20C + 20D + 20E + 21 + 23 + 24 + 25)/9$$

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.818	.819	9

Job Satisfaction was calculated via the 2004 SOFS SATISFACTION AND RETENTION INTENTION Instrument; therefore, this calculation has sufficient theoretical grounding for use in this study.

The internal consistency of the components of Job Sat appears acceptable (Cronbach's Alpha = .82, n=370, N of Items = 9).

Intent to Turnover (T)

Intent to Turnover is measured by Items 23-25 (RETENTION INTENTION). The items have been recoded to reflect high values as intent to turnover instead of intent to stay.

$$T = (23R + 24R + 25R)/3$$

Reliability Statistics

Cronbach's Alpha	N of Items
.838	3

The internal consistency of the components of Intent to Turnover appears acceptable (Cronbach's Alpha = .84, n=370, N of Items = 3).

Item 23 states: Suppose that you have to decide whether to stay on active duty. Assuming you could stay, how likely is it that you would choose to do so?

Item 24 states: Does you spouse or significant other think you should stay on or leave active duty?

Item 25 states: Does your family think that you should stay on or leave active duty?

The 2004 SOFS used these items to measure satisfaction and retention intention, so there is theoretical grounding to use these items to measure intent to turnover.

The interaction term (S_oN) is only of interest when comparing groups with different levels of Heterogeneity. Therefore, for immediate purposes of this study, the working definition of social capital will omit S_oN, thus

$$S = (NoR + NoT)/2$$

To operationalize this definition, all components of N_oT and N_oR may simply be summed and divided by N of Items, thus

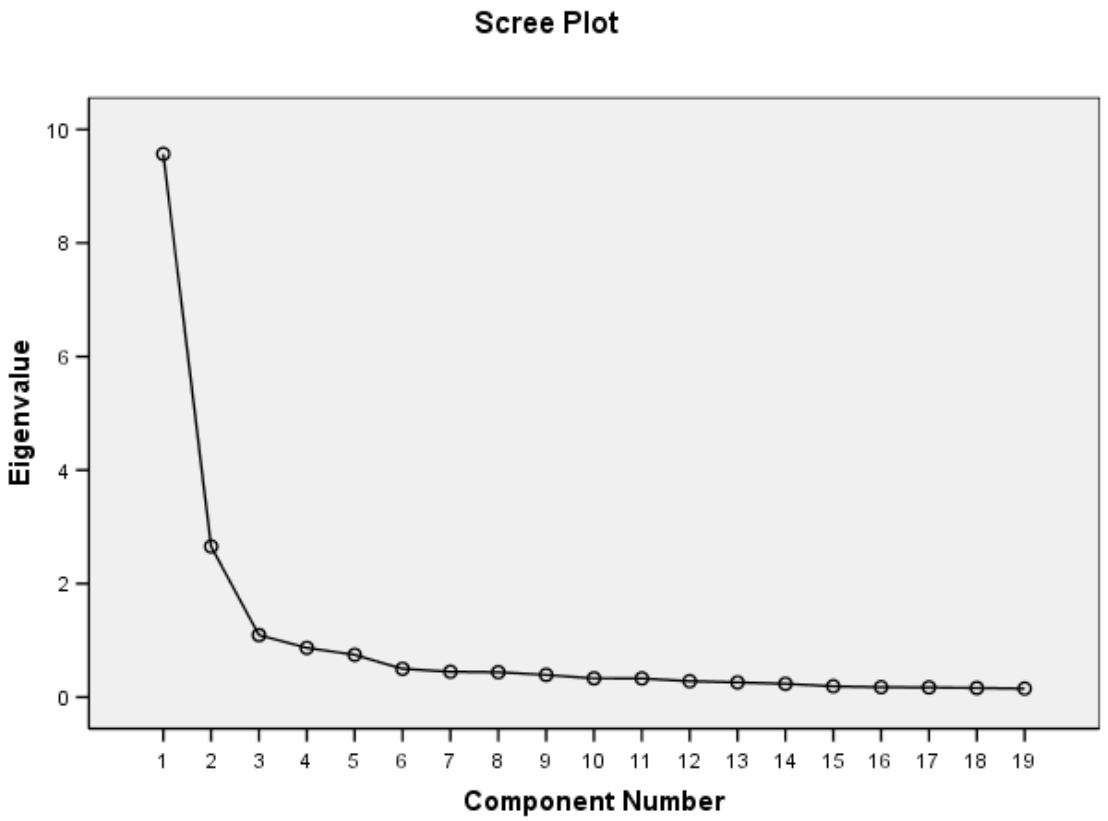
$$S = (49A + 49C + 49E + 49F + 49I + 49J + 49K + 49L + 50A +$$
$$50B + 50E + 50F + 55A + 55C + 71A + 71D + 71G + 71H + 71K)/19$$

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.569	50.363	50.363	9.569	50.363	50.363
2	2.654	13.969	64.332	2.654	13.969	64.332
3	1.094	5.759	70.090			
4	.868	4.567	74.658			
5	.746	3.927	78.585			
6	.499	2.627	81.212			
7	.448	2.356	83.568			
8	.439	2.311	85.879			
9	.393	2.066	87.945			
10	.331	1.741	89.687			
11	.330	1.737	91.423			
12	.282	1.483	92.906			
13	.259	1.365	94.272			
14	.235	1.236	95.508			
15	.192	1.011	96.519			
16	.176	.927	97.446			
17	.172	.905	98.351			
18	.161	.848	99.200			
19	.152	.800	100.000			

Extraction Method: Principal Component Analysis.

The first two factors explain 64.3 percent of the total variance, again showing that the majority of variance loads on the first two factors, and extraction of three factors is not indicated.



The above scree plot shows that only two factors are markedly above Eigen value of one, indicating two factors may be used, supported by best loading values.

Finally, the above component matrix shows which items to use to predict each factor, based on best loadings. As Norm of Trust and Norm of Reciprocity are closely related, as was expected, some cross loading occurred. Based on the results, the first fourteen items should be used to predict the Norm of Trust (N_oT), and the last five to predict Norm of Reciprocity (N_oR), thus:

NoT=(49A+49C+49E+49F+49I+49J+49K+49L+50A+50B+50E+50F+55A+55C)/14

NoR=(71A+71D+71G+71H+71K)/5

However, it may be of interest to compare the Army to the other Services, as the additional ranks of W-1 to W-5 make this service more heterogeneous than the other services, with only officer and enlisted ranks.

Dimension A4c: Items 2, 3, 13, 16, 17, 19, and 27 of the SOFS address the heterogeneity vs. homogeneity of the U.S. Military:

Item 2 asks: “Are you…?” Respondents choose (Male) or (Female).

Dimension A4c: Item 3 asks: "What is your current paygrade?" Respondents choose from (E-1), (E-2), (E-3), (E-4), (E-5), (E-6), (E-7), (E-8), (E-9), (W-1), (W-2), (W-3), (W-4), (W-5), (O-1/O-1E), (O-2/O-2E), (O-3/O-3E), (O-4), (O5), and (O-6 or above).

Dimension A4c: Item 13 asks: "What is the highest degree or level of school that you have completed? Mark the one answer that describes the highest grade or degree you have completed." Respondents chose from (12 years or less of school, no diploma), (High school graduate-high school diploma or equivalent, e.g., GED), (Some college, but less than one year), (1 or more years of college, no degree), (Associate's degree, e.g., AA, AS), (Bachelor's degree, e.g., BA, AB, BS), and (Master's, doctoral, or professional school degree, e.g., MA, MS, MEng, MBA, MSW, PhD, MD, JD, DVM).

Dimension A4c: Item 16 asks: "Are you Spanish/Hispanic/Latino?" Respondents chose from (No, not Spanish/Hispanic/Latino), and (Yes, Mexican, Mexican-American, Chicano, Puerto Rican, Cuban, or other Spanish/Hispanic/Latino).

Dimension A4c: Item 17 asks: "What is your race? Mark one or more races to indicate what you consider yourself to be." Respondents chose from (White), (Black or African American), (American Indian or Alaska Native), (Asian, e.g., Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese), and (Native Hawaiian or other Pacific Islander, e.g., Samoan, Guamanian or Chamorro).

Dimension A4c: Item 19 may again be used to determine differences in wealth/material possessions and landholdings.

Dimension A4c: Item 27 may again be used to determine differences between old inhabitants and new settlers.

Dimension A: Krishna and Shrader 1999 also designed items to measure the power for decision-making members have in networks using the following question: "Overall, how effective is the group's leadership?" Respondents answered on a 3-point Likert-type scale grounded from *Not effective at all* (#) to *Very effective* (#), or *Other, Don't know; Not applicable (#).*

Dimension A * B: An entire section of the SOFS addresses this, with its 18-item LEADERSHIP measure, including items 49A-50F. Respondents answered on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5). Items 49A-I were based on the question "How much do you agree or disagree with each of the following statements about your immediate supervisor? The term "workgroup" refers to the people with whom you work on a day-to-day basis.", and items 50A-F were based on the question "To what extent do you agree or disagree with the following statements about your supervisor?"

Dimension B1a1: Cox (1997) cites cooperation as an indication of trust among group members that may be used to gauge group social capital levels. Some behaviors Cox used

to measure this were (Tolerance and flexibility in dealing with problems), and (Perceptions of fairness).

Dimension B1a1: SOFS items 49A, C, E, F, I-K, L, 50B, E, and 50F address trust among familiars.

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Dimension B1a1: 50A, 54A, B, 55C, F, and maybe 71H address trust: Item 50A, in the context of the LEADERSHIP measure above (CITE PARAGRAPH) collects agreement or disagreement with: “You trust your supervisor.” Item 54A is based on the following question: “Indicate the extent to which you agree or disagree with the following statements about your unit/Service?” and states: [The current environment in your unit is one of “zero” defect (i.e., a feeling that one mistake will end a career)]. In the same context as 54A, 54B states: (The current environment in your Service is one of “zero defect”). Item 55C is based on the following question: “Please indicate whether you agree or disagree with the following statements?” and states: (You would go for help with a personal problem to people in your chain-of-command). In the same context as 55C, 55F states (Leaders in your unit are more interested in furthering their careers than in the well-being of their Service members). Item 71H is based on the question “How much do you agree or disagree with each of the following statements?” and states: (I really feel as if the military’s values are my own). Respondents answered all questions cited in the

paragraph on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Dimension B1b: The VWS measured another facet of social capital, known as Civic/institutional trust, by asking how much confidence respondents had in, for example: (The armed forces), (Federal government), and (State government). The SOFS WILLINGNESS TO RECOMMEND scale may also be an indication of trust in these organizations, with active and reserve included in the (Federal government), National Guard in (State government), and all services in (The armed forces) category.

Dimension B2a-c: Another aspect of social capital, the norm of reciprocity and associated cultural norms and values is measured in the 1999 Krishna and Shrader household questionnaire, based on the question: "Please tell me whether in general you agree or disagree with the following statements:" and states, for example, (People are always interested only in their own welfare), and (If I have a problem there is always someone to help [me])

Dimension B2a-c: SOFS items 55A-D, and F address the norm of reciprocity. Item 55A is based on the question "Please indicate whether you agree or disagree with the following statements?" and states: (If you make a request through channels in your unit, you know somebody will listen). Item 55B states: (Leaders in your unit are more interested in looking good than in being good). Item 55C states: (You would go for help with a personal problem to people in your chain-of-command). Item 55D states: (Leaders in your unit are not concerned with the way the Service members treat each other as long as the job gets done). Finally, 55F states: (Leaders in your unit are more interested in furthering their careers than in the well-being of their Service members). Respondents answered all questions cited in the paragraph on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Dimension B1a1: Baum et al (1998) also measured reciprocity based on the following question: "Have you assisted neighbors or friends with the following activities in the past year?" and stated, for example: (Listened to their problems).

Dimension B1a1: SOFS item 55C matches this reciprocity measure closely by stating: (You would go for help with a personal problem to people in your chain-of-command). Respondents answered 55C on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Dimension B2c: According to Mangen and Westbrook (1998), expectation of future exchange is another important aspect of reciprocity norms of empirical interest. One relevant study of this was the CIS qualitative study of social capital that measured the expectation of future exchange in addition to immediate exchange, where they asked: "Thinking of different associations and groups and activities you are involved in, what sorts of reasons can you think of that you got involved in the first place?" The CIS then mentioned reasons mentioned by other people, for example: (Because I enjoy it). (Stewart-Weeks and Richardson 1998, pp. 134-136).

Dimension B2c: The SOFS ORGANIZATIONAL COMMITMENT measure's item 71A matches this example nearly exactly by stating, based on the question: "How much do you agree or disagree with each of the following statements?" (I enjoy serving in the military). Another near-exact match is the CIS example: "Felt I wanted to give something back to the group/community", and the SOFS items 71K: (If I left the military, I would feel like I had let my country down), 71G: (I would not leave the military right now because I have a sense of obligation to the people in it), and, to a lesser degree, item 71D: (I would feel guilty if I left the military). Respondents answered all questions cited in this paragraph on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Teams:

Dimension A * B: Onyx and Bullen 2000, pp. 113 measure work based associations with the following questions: "Do you feel part of the local geographic community where you work?", "Are your workmates also your friends?", and "Do you feel part of a team at work?"

Dimension A * B: Item 49H of the SOFS addresses this. "Building (builds cohesive teams, gains the cooperation of all team members, encourages and participates in organizational an workgroup activities, focuses on mission accomplishment" Respondents answered the question "How much do you agree or disagree with each of the following statements about your immediate supervisor? The term "workgroup" refers to the people with whom you work on a day-to-day basis." for item 49H on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Dimension A * B: Onyx and Bullen 2000, pp. 113 also measures social relations beyond the local community with questions such as: "Do you feel part of the local geographic community where you work?"

Dimension B2: Item 71G-H of the SOFS addresses this. "How much do you agree or disagree with the following statements?" Respondents answered the questions (I would not leave the military right now because I have a sense of obligation to the people in it) and (I really feel as if the military's values are my own) for items 71G-H on a five-point Likert-type scale grounded from Strongly disagree (1) to Strongly agree (5).

Section Two—Norms of Reciprocity and Trust Results

Subscale Variables

A subscale variable was calculated for each of the subscales; N_oR, N_oT, and S_oN. Only the first two subscales are of interest for calculating social capital in this study, as no comparison between differently structured networks is required.

Mean and Correlation Analysis

The limitations explained previously do not preclude univariate analysis of means and correlations of variables. The means support the paired comparison findings that

social capital is the least important independent variable when compared to the variables job satisfaction and intent to turnover. The mean for the independent variable social capital is N.NN. This suggests that respondents have "above average" levels of social capital via Service association.

H_0: Changes in social capital levels will have no effect on turnover intent.
H_a: Changes in social capital levels will have some effect on turnover intent.

Could this hypothesis be answered? How many models were individually regressed and compared? The model used paygrade as a control variable, social capital as the independent variable, (should education be used as a moderating variable?), and job satisfaction as the dependent variable. Could an accurate determination of whether education level moderates the relationship between social capital and job satisfaction be made? Did scale reliability, correlation between independent variables, and the wording of each item play a role in the poor significance in the data? Were interaction terms explored?

Post Hoc Analysis

The same data was reanalyzed using principal axis factor analysis with direct oblimin rotation, because some multicollinearity was expected, as indicated from preliminary data analyses. The purpose of this factor analysis with rotation was for SPSS to combine statistically similar items into categories (factors). This simplifies data interpretation by reducing convergent validity between the independent variables and eliminating as much correlation between factors as possible. SPSS was configured to extract only factors with Eigen value greater than one, and suppress items with absolute coefficient values less than .3.

Appendix D: SOFS Survey

BACKGROUND INFORMATION

1. **In what Service were you on active duty on November 22, 2004?**
   - ☒ Army
   - ☒ Navy
   - ☒ Marine Corps
   - ☒ Air Force
   - ☒ None, you were separated or retired=>Stop here and submit the survey

2. **Are you...?**
   - ☒ Male
   - ☒ Female

3. **What is your current paygrade? *Mark one.***
   - ☒ E-1 ☒ E-6 ☒ W-1 ☒ O-1/O-1E
   - ☒ E-2 ☒ E-7 ☒ W-2 ☒ O-2/O-2E
   - ☒ E-3 ☒ E-8 ☒ W-3 ☒ O-3/O-3E
   - ☒ E-4 ☒ E-9 ☒ W-4 ☒ O-4
   - ☒ E-5 ☒ W-5 ☒ O-5
   - ☒ O-6 or above

4. **What is your marital status?**
   - ☒ Married
   - ☒ Separated
   - ☒ Divorced
   - ☒ Widowed
   - ☒ Never married

5. *[Ask if Q4 = "Divorced" OR Q4 = "Widowed" OR Q4 = "Never married"]* **How many years have you been in a relationship with your current significant other (that is, girlfriend or boyfriend)?**
   - ☒ Does not apply, I do not have a girlfriend/boyfriend
   - ☒ Less than 1 year
   - ☒ 1 year to less than 6 years
   - ☒ 6 years to less than 10 years
   - ☒ 10 years or more

In the following section, you will be asked question(s) about your spouse's employment status in enough detail to ensure comparability with national employment surveys.

6. *[Ask if Q4 = "Married" OR Q4 = "Separated"]* **Is your spouse currently serving on active duty (not a member of the National Guard or Reserve)?**
   - ☒ Yes
   - ☒ No

7. *[Ask if (Q4 = "Married" OR Q4 = "Separated") AND Q6 = "No"]* **Is your spouse currently serving as a member of the National Guard or Reserve in a full-time active duty program (AGR, TAR, AR)?**
   - ☒ Yes
   - ☒ No

8. *[Ask if (Q4 = "Married" OR Q4 = "Separated") AND Q6 = "No" AND Q7 = "No"]* **Is your spouse currently serving as a member of another type of National Guard or Reserve unit (e.g., drilling unit, IMA, IRR, military technician)?**
   - ☒ Yes
   - ☒ No

9. *[Ask if (Q4 = "Married" OR Q4 = "Separated") AND Q6 = "No" AND Q7 = "No"]* **Last week, did your spouse do any work for pay or profit?** ***Mark "Yes" even if your spouse worked only one hour, or helped without pay in a family business or farm for 15 hours or more.***
   - ☒ Yes
   - ☒ No

10. *[Ask if (Q4 = "Married" OR Q4 = "Separated") AND Q6 = "No" AND Q7 = "No" AND Q9 = "No"]* **Last week, was your spouse temporarily absent from a job or business?**
    - ☒ Yes, on vacation, temporary illness, labor dispute, etc.
    - ☒ No

11. *[Ask if (Q4 = "Married" OR Q4 = "Separated") AND Q6 = "No" AND Q7 = "No" AND Q9 = "No" AND Q10 = "No"]* **Has your spouse been looking for work during the last 4 weeks?**
    - ☒ Yes
    - ☒ No

12. *[Ask if (Q4 = "Married" OR Q4 = "Separated") AND Q6 = "No" AND Q7 = "No" AND Q9 = "No" AND Q10 = "No" AND Q11 = "Yes"]* **Last week, could your spouse have started a job if offered one, or returned to work if recalled?**

- ☒ Yes, could have gone to work
- ☒ No, because of his/her temporary illness
- ☒ No, because of all other reasons (in school, etc.)

13. **What is the highest degree or level of school that you have completed?** ***Mark the one answer that describes the highest grade or degree that you have completed.***

- ☒ 12 years or less of school (no diploma)
- ☒ High school graduate-high school diploma or equivalent (e.g., GED)
- ☒ Some college credit, but less than 1 year
- ☒ 1 or more years of college, no degree
- ☒ Associate's degree (e.g., AA, AS)
- ☒ Bachelor's degree (e.g., BA, AB, BS)
- ☒ Master's, doctoral, or professional school degree (e.g., MA, MS, MEng, MBA, MSW, PhD, MD, JD, DVM)

For the next questions, the definition of "child or children" or "other legal dependents" includes anyone in your family, except your spouse, who has or is eligible to have a Uniformed Services identification card (military ID card) or is eligible for military health care benefits and is enrolled in the Defense Enrollment Eligibility Reporting System (DEERS).

14. **Do you have a child, children or other legal dependents based on the definition above?**

- ☒ Yes
- ☒ No

15. *[Ask if Q14 = "Yes"]* **How many children or other legal dependents do you have in each age group?** ***Mark one answer in each row. To indicate none, select "0". To indicate nine or more, select "9".***

	0	1	2	3	4	5	6	7	8	9
a. 4 years old and younger	O	O	O	O	O	O	O	O	O	O
b. 5 - 8 years old	O	O	O	O	O	O	O	O	O	O
c. 9 - 11 years old	O	O	O	O	O	O	O	O	O	O
d. 12 - 14 years old	O	O	O	O	O	O	O	O	O	O
e. 15 - 18 years old	O	O	O	O	O	O	O	O	O	O
f. 19 - 22 years old	O	O	O	O	O	O	O	O	O	O
g. 23 years old and older	O	O	O	O	O	O	O	O	O	O

16. **Are you Spanish/Hispanic/Latino?**

- ☒ No, not Spanish/Hispanic/Latino
- ☒ Yes, Mexican, Mexican-American, Chicano, Puerto Rican, Cuban, or other Spanish/Hispanic/Latino

17. **What is your race?** ***Mark one or more races to indicate what you consider yourself to be.***

- ☒ White
- ☒ Black or African American
- ☒ American Indian or Alaska Native
- ☒ Asian (e.g., Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese)
- ☒ Native Hawaiian or other Pacific Islander (e.g., Samoan, Guamanian or Chamorro)

18. **Where is your permanent duty station located?**

- ☒ In one of the 50 states, DC, Puerto Rico, a U.S. Territory or possession
- ☒ Europe (e.g., Bosnia-Herzegovina, Germany, Italy, Serbia, United Kingdom)
- ☒ Former Soviet Union (e.g., Russia, Tajikistan, Uzbekistan)
- ☒ East Asia and Pacific (e.g., Australia, Japan, Korea)
- ☒ North Africa, Near East or South Asia (e.g., Bahrain, Diego Garcia, Kuwait, Saudi Arabia)
- ☒ Sub-Saharan Africa (e.g., Kenya, South Africa)
- ☒ Western Hemisphere (e.g., Cuba, Honduras, Peru)
- ☒ Other or not sure

[Ask if Q18 = "In one of the 50 states, DC, Puerto Rico, a U.S. territory or possession"] **Please select from the list below your permanent duty station location within one of the 50 states, DC, Puerto Rico, a U.S. territory or possession.**

[▼]

[Ask if Q18 = "Other or not sure"] **Please enter the name of the country or installation.**

[ ]

19. Where do you live at your permanent duty station?

- ☒ Aboard ship
- ☒ Barracks/dorm/BEQ/UEPH/BOQ/UOPH military facility
- ☒ Military family housing, on base
- ☒ Military family housing, off base
- ☒ Privatized military housing that you rent on base
- ☒ Privatized military housing that you rent off base
- ☒ Civilian housing that you own or pay mortgage on
- ☒ Civilian housing that you rent
- ☒ Other

[Ask if Q19 = "Other"] **Please specify where you live at your permanent duty station.**

SATISFACTION AND RETENTION INTENTION

20. Taking all things into consideration, how satisfied are you, in general, with each of the following aspects of being in the military?

	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
a. Your total compensation (i.e., base pay, allowances, and bonuses)	☒	☒	☒	☒	☒
b. The type of work you do in your military job	☒	☒	☒	☒	☒
c. Your opportunities for promotion	☒	☒	☒	☒	☒
d. The quality of your coworkers	☒	☒	☒	☒	☒
e. The quality of your supervisor	☒	☒	☒	☒	☒

21. Overall, how satisfied are you with the military way of life?

- ☒ Very satisfied
- ☒ Satisfied
- ☒ Neither satisfied nor dissatisfied
- ☒ Dissatisfied
- ☒ Very dissatisfied

22. How many years of active-duty service have you completed (including enlisted, warrant officer, and commissioned officer time)? *To indicate less than 1 year, enter "0". To indicate 35 years or more, enter "35".*

Years

23. Suppose that you have to decide whether to stay on active duty. Assuming you could stay, how likely is it that you would choose to do so?

- ☒ Very likely
- ☒ Likely
- ☒ Neither likely nor unlikely
- ☒ Unlikely
- ☒ Very unlikely

24. *[Ask if (Q4 = "Married" OR Q4 = "Separated") OR ((Q4 = "Divorced" OR Q4 = "Widowed" OR Q4 = "Never married") AND (Q5 = "Less than 1 year" OR Q5 = "1 year to less than 6 years" OR Q5 = "6 years to less than 10 years" OR Q5 = "10 years or more"))* **] Does your spouse or significant other think you should stay on or leave active duty?**

- ☒ Strongly favors staying
- ☒ Somewhat favors staying
- ☒ Has no opinion one way or the other
- ☒ Somewhat favors leaving
- ☒ Strongly favors leaving

25. Does your family think that you should stay on or leave active duty?

- ☒ Strongly favors staying
- ☒ Somewhat favors staying
- ☒ Has no opinion one way or the other
- ☒ Somewhat favors leaving
- ☒ Strongly favors leaving

TEMPO, READINESS, AND STRESS

26. Have you ever PCSed?

- ☒ Yes
- ☒ No

27. *[Ask if Q26 = "Yes"]* **How many months has it been since your last PCS? *To indicate less than 1 month, enter "00". To indicate more than 99 months, enter "99".***

Months

28. **In the past 12 months, how many days have you had to work longer than your normal duty day (i.e., overtime)? *To indicate none, enter "0".***

Days

29. **In the past 12 months, how many nights have you been away from your permanent duty station because of your military duties? *To indicate none, enter "0".***

Nights

30. ***[Ask if Q29 > 0]*** **Are you currently on a deployment of 30 days or more?**

- ☒ Yes
- ☒ No

31. ***[Ask if Q29>0 AND Q30 = "Yes"]*** **Where are you currently deployed?**

- ☒ In one of the 50 states, DC, Puerto Rico, a U.S. Territory or possession
- ☒ Afghanistan
- ☒ Iraq
- ☒ Other North Africa, Near East or South Asia country (e.g., Bahrain, Diego Garcia, Kuwait, Saudi Arabia)
- ☒ Europe (e.g., Bosnia-Herzegovina, Germany, Italy, Serbia, United Kingdom)
- ☒ Former Soviet Union (e.g., Russia, Tajikistan, Uzbekistan)
- ☒ East Asia and Pacific (e.g., Australia, Japan, Korea)
- ☒ Sub-Saharan Africa (e.g., Kenya, Liberia, South Africa)
- ☒ Western Hemisphere (e.g., Cuba, Honduras, Peru)
- ☒ Other or not sure

[Ask if Q31= "In one of the 50 states, DC, Puerto Rico, a U.S. territory or possession"] **Please select from the list below your deployment location within one of the 50 states, DC, Puerto Rico, a U.S. territory, or possession.**

[Ask if Q31 = "Other or not sure"] **Please enter the name of the country or installation.**

32. **In the past 12 months, have you spent more or less time away from your permanent duty station than you expected when you first entered the military?**

- ☒ Much more than expected
- ☒ More than expected
- ☒ Neither more nor less than expected
- ☒ Less than expected
- ☒ Much less than expected

33. **What impact has time away (or lack thereof) from your permanent duty station in the past 12 months had on your military career intentions?**

- ☒ Greatly increased your desire to stay
- ☒ Increased your desire to stay
- ☒ Neither increased nor decreased your desire to stay
- ☒ Decreased your desire to stay
- ☒ Greatly decreased your desire to stay

34. **Overall, how well prepared are you to perform your wartime job?**

- ☒ Very well prepared
- ☒ Well prepared
- ☒ Neither well nor poorly prepared
- ☒ Poorly prepared
- ☒ Very poorly prepared

35. **Overall, how well prepared is your unit to perform its wartime mission?**

- ☒ Very well prepared
- ☒ Well prepared
- ☒ Neither well nor poorly prepared
- ☒ Poorly prepared
- ☒ Very poorly prepared

36. **How well has your training prepared you to perform your wartime job?**

- ☒ Very well
- ☒ Well
- ☒ Neither well nor poorly
- ☒ Poorly
- ☒ Very poorly

37. **Overall, how would you rate the current level of stress in your work life?**

- ☒ Much less than usual
- ☒ Less than usual
- ☒ About the same as usual
- ☒ More than usual
- ☒ Much more than usual

38. **Overall, how would you rate the current level of stress in your personal life?**

- ☒ Much less than usual
- ☒ Less than usual
- ☒ About the same as usual
- ☒ More than usual
- ☒ Much more than usual

DEPLOYMENTS SINCE SEPTEMBER 11, 2001

39. **Since September 11, 2001, have you been deployed for any of the following operations?** ***Mark "Yes" or "No" for each item.***

	Yes	No
a. Operation Noble Eagle	☒	☒
b. Operation Enduring Freedom	☒	☒
c. Operation Iraqi Freedom	☒	☒
d. Other	☒	☒

40. *[Ask if Q39a = "Yes" OR Q39b = "Yes" OR Q39c = "Yes" OR Q39d = "Yes"]* **Since September 11, 2001, how many times have you been deployed?**

41. *[Ask if Q39a = "Yes" OR Q39b = "Yes" OR Q39c = "Yes" OR Q39d = "Yes"]* **Since September 11, 2001, were you deployed to any of the following locations?** ***Mark "Yes" or "No" for each item.***

	Yes	No
a. In one of the 50 states, DC, Puerto Rico, a U.S. territory or possession	☒	☒
b. Afghanistan	☒	☒
c. Iraq	☒	☒
d. Other North Africa, Near East or South Asia country (e.g., Bahrain, Diego Garcia, Kuwait, Saudi Arabia)	☒	☒
e. Europe (e.g., Bosnia-Herzegovina, Germany, Italy, Serbia, United Kingdom)	☒	☒
f. Former Soviet Union (e.g., Russia, Tajikistan, Uzbekistan)	☒	☒
g. East Asia and Pacific (e.g., Australia, Japan, Korea)	☒	☒
h. Sub-Saharan Africa (e.g., Kenya, Liberia, South Africa)	☒	☒
i. Western Hemisphere (e.g., Cuba, Honduras, Peru)	☒	☒
j. Other	☒	☒

[Ask if Q41a = "Yes"] **Please select from the list below your most recent deployment location within one of the 50 states, DC, Puerto Rico, a U.S. territory, or possession.**

[Ask if Q41j = "Yes"] **Please enter the name of the country or installation to which you were most recently deployed.**

42. *[Ask if Q39a = "Yes" OR Q39b = "Yes" OR Q39c = "Yes" OR Q39d = "Yes"]* **Since September 11, 2001, what is the total number of days you have been away from your permanent duty station?**

Days

43. *[Ask if Q39a = "Yes" OR Q39b = "Yes" OR Q39c = "Yes" OR Q39d = "Yes"]* **Have you been deployed to a combat zone or an area where you drew imminent danger or hostile fire pay since September 11, 2001?**

- ☒ Yes
- ☒ No

44. *[Ask if Q39a = "Yes" OR Q39b = "Yes" OR Q39c = "Yes" OR Q39d = "Yes" AND Q43 = "Yes"]* **How many days have you been deployed to a combat zone or an area where you drew imminent danger or hostile fire pay since September 11, 2001?**

Days

45. *[Ask if Q39a = "Yes" OR Q39b = "Yes" OR Q39c = "Yes" OR Q39d = "Yes"]* **Were you involved in combat operations?**

☒ Yes

☒ No

46. *[Ask if Q43 = "Yes"]* **Are you still deployed to a combat zone or an area where you are drawing imminent danger or hostile fire pay?**

☒ Yes

☒ No

47. *[Ask if Q39a = "Yes" OR Q39b = "Yes" OR Q39c = "Yes" OR Q39d = "Yes"]* **Were any of your deployments since September 11, 2001 longer than you expected?**

☒ Yes

☒ No

48. **Since September 11, 2001, have you been under stop-loss at anytime?**

☒ Yes

☒ No

LEADERSHIP

49. **How much do you agree or disagree with each of the following statements about your immediate supervisor?** ***The term "workgroup" refers to the people with whom you work on a day-to-day basis.***

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. **Handling the technical-skills part of the job** (fully understands the capabilities and limitations of equipment in the workgroup; demonstrates knowledge of tactical skills)	☒	☒	☒	☒	☒
b. **Handling the people-skills part of the job** (demonstrates effective interpersonal skills, listens attentively, demonstrates concern for individuals)	☒	☒	☒	☒	☒
c. **Handling the conceptual-skills part of the job** (thinks through decisions, recognizes and balances competing requirements, uses analytical techniques to solve problems)	☒	☒	☒	☒	☒
d. **Communicating** (provides clear direction, explains ideas so that they are easily understood, listens well, keeps others informed, and writes well)	☒	☒	☒	☒	☒
e. **Decision making** (makes sound decisions in a timely manner, includes all relevant information in decisions and can generate innovative solutions to unique problems)	☒	☒	☒	☒	☒
f. **Motivating** (creates a supportive work environment, inspires people to do their best, acknowledges the good performance of others, and disciplines in a firm, fair, and consistent manner)	☒	☒	☒	☒	☒
g. **Developing** (encourages the professional growth of subordinates, is an effective teacher, uses counseling to provide feedback, provides the opportunity to learn, and delegates authority)	☒	☒	☒	☒	☒
h. **Building** (builds cohesive teams, gains the cooperation of all team members, encourages and participates in organizational and workgroup activities, focuses the workgroup on mission accomplishment)	☒	☒	☒	☒	☒

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
i. **Learning** (encourages open discussion that improves the organization, willingly accepts new challenges, helps the workgroup adapt to changing circumstances, recognizes personal limitations)	☒	☒	☒	☒	☒
j. **Planning and organizing** (develops effective plans to achieve organizational goals, anticipates how different plans will look when executed, sets clear priorities, willingly modifies plans when circumstances change)	☒	☒	☒	☒	☒
k. **Executing** (completes assigned missions to standard, monitors the execution of plans to identify problems, is capable of refining plans to exploit unforeseen opportunities)	☒	☒	☒	☒	☒
l. **Assessing** (accurately assesses the workgroup's strengths and weaknesses, conducts effective in- progress reviews and after-action reviews, takes time to find out what subordinate units are doing)	☒	☒	☒	☒	☒

50. To what extent do you agree or disagree with the following statements about your supervisor?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. You trust your supervisor	☒	☒	☒	☒	☒
b. Your supervisor ensures that all assigned people are treated fairly	☒	☒	☒	☒	☒
c. There is conflict between your supervisor and the people who report to him/her	☒	☒	☒	☒	☒
d. You are satisfied with the direction/supervision you receive from your supervisor	☒	☒	☒	☒	☒
e. Your supervisor evaluates work performance fairly	☒	☒	☒	☒	☒
f. Your supervisor makes work assignments fairly in your workplace	☒	☒	☒	☒	☒

MENTORING

51. In your opinion, have you ever had a mentor?

- ☒ Yes, you have one now
- ☒ Yes, you had one, but you don't have one now
- ☒ No, but you would have liked one
- ☒ No, and you never wanted one
- ☒ No, and you don't know what a mentor is

52. *[Ask if Q51 = "Yes"]* **Is your current mentor (or was your most recent mentor)...?** ***Mark one.***

- ☒ Your rater
- ☒ Your senior rater
- ☒ A person who is/was higher in rank than you, but not your rater or your senior rater
- ☒ A person who is/was at your same rank
- ☒ A person who is/was lower in rank than you
- ☒ A person who is not or was not in the military at the time the mentoring was provided

53. *[Ask if Q51= "Yes"]* **If your current mentor (or if none now, your most recent mentor) provides the following assistance, how helpful is/was each to you?**

	Not provided	Not at all helpful	Slightly helpful	Moderately helpful	Very helpful	Extremely helpful
a. Teaches job skills	☒	☒	☒	☒	☒	☒
b. Gives feedback on your job performance	☒	☒	☒	☒	☒	☒
c. Assigns challenging tasks	☒	☒	☒	☒	☒	☒
d. Helps develop your skills/ competencies for future assignments	☒	☒	☒	☒	☒	☒
e. Provides support and encouragement	☒	☒	☒	☒	☒	☒
f. Provides personal and social guidance	☒	☒	☒	☒	☒	☒
g. Provides career guidance	☒	☒	☒	☒	☒	☒
h. Demonstrates trust	☒	☒	☒	☒	☒	☒
i. Acts as a role model	☒	☒	☒	☒	☒	☒
j. Protects you	☒	☒	☒	☒	☒	☒
k. Invites you to observe activities at his/her level	☒	☒	☒	☒	☒	☒
l. Instills Service core values	☒	☒	☒	☒	☒	☒
m. Provides moral/ethical guidance	☒	☒	☒	☒	☒	☒
n. Teaches/advises on organizational politics	☒	☒	☒	☒	☒	☒
o. Provides sponsorship/ contacts to advance your career	☒	☒	☒	☒	☒	☒
p. Assists in obtaining future assignments	☒	☒	☒	☒	☒	☒

ORGANIZATIONAL CULTURE

54. **Indicate the extent to which you agree or disagree with the following statements about your unit/Service?**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. The current environment in your **unit** is one of "zero" defect (i.e., a feeling that one mistake will end a career)	☒	☒	☒	☒	☒
b. The current environment in your **Service** is one of "zero defect"	☒	☒	☒	☒	☒
c. Micromanagement is prevalent in your **unit**	☒	☒	☒	☒	☒
d. Micromanagement is prevalent in your **Service**	☒	☒	☒	☒	☒

55. **Please indicate whether you agree or disagree with the following statements?**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. If you make a request through channels in your unit, you know somebody will listen	☒	☒	☒	☒	☒
b. Leaders in your unit are more interested in looking good than in being good	☒	☒	☒	☒	☒
c. You would go for help with a personal problem to people in your chain-of-command	☒	☒	☒	☒	☒
d. Leaders in your unit are not concerned with the way the Service members treat each other as long as the job gets done	☒	☒	☒	☒	☒
e. You are impressed with the quality of leadership in your unit	☒	☒	☒	☒	☒

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
f. Leaders in your unit are more interested in furthering their careers than in the well-being of their Service members	☒	☒	☒	☒	☒

CAREER OPPORTUNITIES

56. When you first entered active-duty service, did you have a preference for a military occupation?

- ☒ Yes
- ☒ No

57. *[Ask if Q56 = "Yes"]* Did you receive the military occupation of your choice?

- ☒ Yes
- ☒ No, but I received a related occupation
- ☒ No, I received an occupation unrelated to my choice

58. How satisfied are you now with the military occupation you received when you first entered active duty?

- ☒ Very satisfied
- ☒ Satisfied
- ☒ Neither satisfied nor dissatisfied
- ☒ Dissatisfied
- ☒ Very dissatisfied

59. How much do you agree with the following statements about your military career and Service?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. I will get the assignments I need to be competitive for promotions	☒	☒	☒	☒	☒
b. My Service's evaluation/selection system is effective in promoting its best members	☒	☒	☒	☒	☒
c. If I stay in the Service, I will be promoted as high as my ability and effort warrant	☒	☒	☒	☒	☒

60. How satisfied are you with the following aspects of your career?

	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
a. Your level of responsibility on the job	☒	☒	☒	☒	☒
b. Your level of authority on the job	☒	☒	☒	☒	☒
c. Your opportunities for promotion	☒	☒	☒	☒	☒
d. Your chances to acquire valuable job skills	☒	☒	☒	☒	☒

61. If you stay on active duty, when would you expect your next promotion to a higher grade?

- ☒ Less than 3 months
- ☒ 3 months to less than 7 months
- ☒ 7 months to less than 1 year
- ☒ 1 year to less than 2 years
- ☒ 2 years or more
- ☒ Does not apply, I do not expect a promotion
- ☒ Does not apply, I have no opportunities for promotion

62. Have you completed a professional development course (for example, Basic Non-Commissioned Officers Course [BNCO], Command and General Staff College)? *Mark only one answer.*

- ☒ Yes, via correspondence
- ☒ Yes, in-residence
- ☒ Yes, both via correspondence and in-residence
- ☒ No

63. *[Ask if Q62 = "Yes, via correspondence" AND Q62 = "Yes, in-residence" AND Q62 = "Yes, both via correspondence and in-residence"]* **How many professional development courses have you completed?**

- ☒ One
- ☒ Two
- ☒ Three or more

64. *[Ask if Q62 = "Yes, via correspondence" AND Q62 = "Yes, in-residence" AND Q62 = "Yes, both via correspondence and in-residence"]* **To what extent did completing a professional development course enhance your performance as a Soldier/Sailor/Marine/Airman?**

- ☒ Very large extent
- ☒ Large extent
- ☒ Moderate extent
- ☒ Small extent
- ☒ Not at all

65. *[Ask if Q62 = "Yes, via correspondence" AND Q62 = "Yes, in-residence" AND Q62 = "Yes, both via correspondence and in-residence"]* **To what extent did completing a professional development course enhance your chances of being promoted?**

- ☒ Very large extent
- ☒ Large extent
- ☒ Moderate extent
- ☒ Small extent
- ☒ Not at all

66. *[Ask if Q62 = "Yes, both via correspondence and in-residence"]* **Which form of professional development, correspondence or in-residence, was more beneficial in terms of your development as a Soldier/Sailor/Marine/Airman?**

- ☒ Correspondence was much more beneficial
- ☒ Correspondence was more beneficial
- ☒ Correspondence and in-residence were equally beneficial
- ☒ In-residence was more beneficial
- ☒ In-residence was much more beneficial

67. *[Ask if Q62 = "Yes, both via correspondence and in-residence"]* **Which form of professional development, correspondence or in-residence, was more beneficial in terms of your enhancing your chances of being promoted?**

- ☒ Correspondence was much more beneficial
- ☒ Correspondence was more beneficial
- ☒ Correspondence and in-residence were equally beneficial
- ☒ In-residence was more beneficial
- ☒ In-residence was much more beneficial

ORGANIZATIONAL EFFECTIVENESS

68. To what extent do you agree or disagree with the following statements about the people you work with?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. There is very little conflict among your coworkers	☒	☒	☒	☒	☒
b. You like your coworkers	☒	☒	☒	☒	☒
c. Your coworkers put in the effort required for their jobs	☒	☒	☒	☒	☒
d. You are satisfied with the relationships you have with your coworkers	☒	☒	☒	☒	☒
e. The people in your workgroup tend to get along	☒	☒	☒	☒	☒
f. The people in your workgroup are willing to help each other	☒	☒	☒	☒	☒

69. To what extent do you agree or disagree with the following statements about the work you do?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. Your work provides you with a sense of pride	☒	☒	☒	☒	☒
b. Your work makes good use of your skills	☒	☒	☒	☒	☒
c. Your present assignment is good for your military career	☒	☒	☒	☒	☒
d. You like the kind of work you do	☒	☒	☒	☒	☒
e. Your job gives you the chance to acquire valuable skills	☒	☒	☒	☒	☒
f. You are satisfied with your job as a whole	☒	☒	☒	☒	☒

70. Please respond to the following items regarding the *effectiveness of your workgroup* (all persons who report to the same supervisor that you do) using the scale below.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. The amount of output of my workgroup is very high	☒	☒	☒	☒	☒
b. The quality of output of my workgroup is very high	☒	☒	☒	☒	☒
c. When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my workgroup do an outstanding job in handling these situations	☒	☒	☒	☒	☒
d. My workgroup always gets maximum output from available resources (e.g., personnel and materials)	☒	☒	☒	☒	☒
e. My workgroup's performance in comparison to similar workgroups is very high	☒	☒	☒	☒	☒

ORGANIZATIONAL COMMITMENT

71. How much do you agree or disagree with each of the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. I enjoy serving in the military	☒	☒	☒	☒	☒
b. Serving in the military is consistent with my personal goals	☒	☒	☒	☒	☒
c. If I left the military, I would feel like I'm starting all over again	☒	☒	☒	☒	☒
d. I would feel guilty if I left the military	☒	☒	☒	☒	☒
e. Generally, on a day-to-day basis, I am happy with my life in the military	☒	☒	☒	☒	☒
f. It would be difficult for me to leave the military and give up the benefits that are available in the Service	☒	☒	☒	☒	☒
g. I would not leave the military right now because I have a sense of obligation to the people in it	☒	☒	☒	☒	☒
h. I really feel as if the military's values are my own	☒	☒	☒	☒	☒
i. I would have difficulty finding a job if I left the military	☒	☒	☒	☒	☒
j. Generally, on a day-to-day basis, I am proud to be in the military	☒	☒	☒	☒	☒
k. If I left the military, I would feel like I had let my country down	☒	☒	☒	☒	☒
l. I continue to serve in the military because leaving would require considerable sacrifice	☒	☒	☒	☒	☒
m. I feel like being a member of the military can help me achieve what I want in life	☒	☒	☒	☒	☒
n. One of the problems with leaving the military would be the lack of available alternatives	☒	☒	☒	☒	☒
o. I am committed to making the military my career	☒	☒	☒	☒	☒

WILLINGNESS TO RECOMMEND

72. *[Ask if Q15d>0 OR Q15e>0 OR Q15f > 0]* **Suppose your child came to you for advice. How likely is it that you would recommend...?**

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely
a. Joining a military service such as the Army, Navy, Marine Corps, Air Force, or Coast Guard	☒	☒	☒	☒	☒
b. Joining a Reserve component of the military such as the Army National Guard, Army Reserve, Naval Reserve, Marine Corps Reserve, Air National Guard, Air Force Reserve or Coast Guard Reserve	☒	☒	☒	☒	☒
c. Career opportunities as a civil federal government employee	☒	☒	☒	☒	☒
d. Getting a full-time job	☒	☒	☒	☒	☒
e. Getting a part-time job	☒	☒	☒	☒	☒
f. Attending a four-year college or university	☒	☒	☒	☒	☒
g. Attending a trade, technical, vocational, or community college	☒	☒	☒	☒	☒

73. *[Ask if Q14="No" OR (Q14="Yes" AND (Q15d=0 OR Q15e=0 OR Q15f= 0))]* **Suppose a youth came to you for advice. How likely is it that you would recommend...?**

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely
a. Joining a military service such as the Army, Navy, Marine Corps, Air Force, or Coast Guard	☒	☒	☒	☒	☒
b. Joining a Reserve component of the military such as the Army National Guard, Army Reserve, Naval Reserve, Marine Corps Reserve, Air National Guard, Air Force Reserve or Coast Guard Reserve	☒	☒	☒	☒	☒
c. Career opportunities as a civil federal government employee	☒	☒	☒	☒	☒
d. Getting a full-time job	☒	☒	☒	☒	☒
e. Getting a part-time job	☒	☒	☒	☒	☒
f. Attending a four-year college or university	☒	☒	☒	☒	☒
g. Attending a trade, technical, vocational, or community college	☒	☒	☒	☒	☒

PERMANENT CHANGE OF STATION (PCS) MOVES

74. *[Ask if (Q15b>0 OR 15c>0 OR Q15d>0 OR Q15e> 0) AND Q26="Yes"]* **For your most recent PCS move, were any of the following a problem?**

	Not a problem	Slight problem	Somewhat of a problem	Serious problem
a. Discontinued special education, gifted education, English as a Second Language, or other services	☒	☒	☒	☒
b. Missed mandated entrance or exit exams on any grade level	☒	☒	☒	☒
c. Difficulty transferring school records	☒	☒	☒	☒
d. Difficulty with correct classroom placement	☒	☒	☒	☒
e. Exclusion from extra-curricular activities	☒	☒	☒	☒
f. Unable to continue Kindergarten or 1st grade due to age restriction	☒	☒	☒	☒
g. Difficulties adjusting to new school	☒	☒	☒	☒
h. Graduation requirements could not be met due to junior or senior year transfer	☒	☒	☒	☒

SUPPORT SERVICES

75. Have you used the Military OneSource website or 1-800 help-line service in the past 12 months?

- ☒ Yes
- ☒ No

76. *[Ask if Q75="No"]* **What is the primary reason you have not used Military OneSource?**

- ☒ Not familiar with Military OneSource
- ☒ Not relevant, I did not have any issues I needed information or referrals for
- ☒ Concerned about confidentiality
- ☒ Thought I could get help elsewhere
- ☒ I heard Military OneSource was not useful
- ☒ Military OneSource was hard to use

77. *[Ask if Q75="Yes"]* **How many times have you accessed Military OneSource via the Internet in the past 12 months?**

- ☒ 0 times
- ☒ 1 time
- ☒ 2-3 times
- ☒ 4-5 times
- ☒ 6-10 times
- ☒ 11 or more times

78. *[Ask if Q75="Yes"]* **How many times have you e-mailed Military OneSource in the past 12 months?**

- ☒ 0 times
- ☒ 1 time
- ☒ 2-3 times
- ☒ 4-5 times
- ☒ 6-10 times
- ☒ 11 or more times

79. *[Ask if Q75="Yes"]* **How many times have you talked on the telephone with a Military OneSource consultant in the past 12 months**

- ☒ 0 times
- ☒ 1 time
- ☒ 2-3 times
- ☒ 4-5 times
- ☒ 6-10 times
- ☒ 11 or more times

80. *[Ask if Q75="Yes"]* **How many times have you used Military OneSource to arrange face-to-face counseling sessions in the past 12 months?**

- ☒ 0 times
- ☒ 1 time
- ☒ 2-3 times
- ☒ 4-5 times
- ☒ 6-10 times
- ☒ 11 or more times

TOP ISSUES RELATED TO DEPLOYMENTS

81. *[Ask if Q30="No"]* **Which of the following was your biggest concern about returning from your most recent deployment?** ***Select one item from the list below.***

- ☒ Readjusting to work life
- ☒ Financial stability
- ☒ Readjusting to family life
- ☒ Reestablishing a good relationship with your spouse
- ☒ Reestablishing a good relationship with your children
- ☒ Recovering from a physical injury/limitation
- ☒ Recovering from the emotional impact and stress of deployment
- ☒ Health care coverage for yourself
- ☒ Health care coverage for your family
- ☒ Possibility of being deployed again
- ☒ Other

[Ask if Q30="No" AND Q81="Other"] **Please specify your biggest concern about returning from your most recent deployment.**

82. *[Ask if Q30="Yes"]* **Which of the following is your biggest concern while deployed?** ***Select one item from the list below.***

- ☒ Financial stability
- ☒ Ability to communicate with family
- ☒ Problems for spouse
- ☒ Problems for children
- ☒ Possibility of you being physically injured
- ☒ Possibility of you experiencing emotional issues and stress as a result of deployment
- ☒ Health care coverage for your family
- ☒ Other

[Ask if Q30="Yes" And Q82="Other"] **Please specify your biggest concern while deployed.**

83. *[Ask if Q30="No"]* **Which of the following was your second biggest concern about returning from your most recent deployment?** ***Select one item from the list below.***

- ☒ Readjusting to work life
- ☒ Financial stability
- ☒ Readjusting to family life
- ☒ Reestablishing a good relationship with your spouse
- ☒ Reestablishing a good relationship with your children
- ☒ Recovering from a physical injury/limitation
- ☒ Recovering from the emotional impact and stress of deployment
- ☒ Health care coverage for yourself
- ☒ Health care coverage for your family
- ☒ Possibility of being deployed again
- ☒ Other

[Ask if Q30="No" And Q83="Other"] **Please specify your second biggest concern about returning from your most recent deployment.**

84. *[Ask if Q30="Yes"]* **Which of the following was your second biggest concern while deployed?** ***Select one item from the list below.***

- ☒ Financial stability
- ☒ Ability to communicate with family
- ☒ Problems for spouse
- ☒ Problems for children
- ☒ Possibility of you being physically injured
- ☒ Possibility of you experiencing emotional issues and stress as a result of deployment
- ☒ Health care coverage for your family
- ☒ Other

[Ask if Q30="Yes" And Q84="Other"] **Please specify your second biggest concern while deployed.**

85. *[Ask if Q30="No"]* **Which of the following was your third biggest concern about returning from your most recent deployment?** ***Select one item from the list below.***

- ☒ Readjusting to work life
- ☒ Financial stability
- ☒ Readjusting to family life
- ☒ Reestablishing a good relationship with your spouse
- ☒ Reestablishing a good relationship with your children
- ☒ Recovering from a physical injury/limitation
- ☒ Recovering from the emotional impact and stress of deployment
- ☒ Health care coverage for yourself
- ☒ Health care coverage for your family
- ☒ Possibility of being deployed again
- ☒ Other

[Ask if Q30="No" And Q85="Other"] **Please specify your third biggest concern about returning from your most recent deployment.**

86. *[Ask if Q30="Yes"]* **Which of the following was your third biggest concern while deployed?** ***Select one item from the list below.***

- ☒ Financial stability
- ☒ Ability to communicate with family
- ☒ Problems for spouse
- ☒ Problems for children
- ☒ Possibility of you being physically injured
- ☒ Possibility of you experiencing emotional issues and stress as a result of deployment
- ☒ Health care coverage for your family
- ☒ Other

[Ask if Q30="Yes" And Q86="Other"] **Please specify your third biggest concern while deployed.**

HEALTH

87. **By which of the following health plans are you (and/or your spouse and dependents) currently covered?** ***Mark "Yes" or "No" for each item.***

	Yes	No
a. TRICARE Prime	☒	☒
b. TRICARE Extra or Standard (CHAMPUS)	☒	☒
c. TRICARE Plus	☒	☒
d. Medicare	☒	☒
e. A civilian HMO (such as Kaiser)	☒	☒
f. Other civilian health insurance (such as Blue Cross)	☒	☒
g. The Veterans Administration	☒	☒

88. **How much do you think you would have to pay each year for a health insurance policy giving you and your family the same benefits as you currently receive from your military health plan?**

_____ Dollars

89. **A Health Savings Account (HSA) combines a high deductible health plan policy with a medical savings account. One example of an HSA might include a health plan with a $4,000 deductible combined with $2,000 provided to your medical savings account annually by the insurer. You would use the savings account to pay for medical expenses such as eye exams, medical treatments, and prescription drugs up to your plan deductible. Medical expenses, after the deductible has been met, would be covered by the health plan. If available, how interested would you be in an HSA plan?**

- ☒ Extremely interested
- ☒ Very interested
- ☒ Moderately interested
- ☒ Slightly interested
- ☒ Not at all interested

TAKING THE SURVEY

90. **Where did you take this survey?** ***Mark "Yes" or "No" for each item.***

	Yes	No
a. Home/barracks	☒	☒
b. Work/office	☒	☒
c. Installation/ship library	☒	☒
d. Installation/ship recreation center	☒	☒
e. Other non-military location (e.g., public library, cyber café)	☒	☒
f. Deployed location (on land)	☒	☒
g. On a deployed ship	☒	☒
h. On board a ship at sea on regular duty	☒	☒
i. On board a ship in port	☒	☒
j. TDY or training location (non-deployment)	☒	☒

91. **Which of the following computers did you use to take the survey?** ***Mark "Yes" or "No" for each item.***

	Yes	No
a. Government computer	☒	☒
b. Privately-owned computer	☒	☒
c. Public (e.g., library or café) computer	☒	☒
d. Other	☒	☒

92. If you have comments or concerns that you were not able to express in answering this survey, please enter them in the space provided. Any comments you make on this questionnaire will be kept confidential, and no follow-up action will be taken in response to any specifics reported.

93. Thank you for participating in the DoD December 2004 Status of Forces Survey of Active-Duty Members. There are no more questions on this survey. If you would like to receive a message advising you of when and where the results will be available, please provide your e-mail address. Your address will only be used for this purpose.

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14. ABSTRACT

In the United States, and around the world, social capital is becoming an intriguing new focus for slowing the declining sense of community and community trust. This strengthening focus on social capital in empirical study has great potential for an important role in U.S. public policy, as policy changes focused on increasing social capital may decrease turnover.

Yet, according to researchers, not enough sufficiently tested empirical measures of social capital exist. This thesis incorporated survey responses into a predictive model of intent to turnover, incorporating a social capital variable, based on the several of its historical measurement studies.

This social capital variable was used to add to the body of knowledge and help begin to fill the gap in the research about measuring this little-studied construct with regards to integrating it into a classic turnover model. If universally accepted as a necessary component of employee turnover models, this social capital variable will require the beta coefficients for the classic antecedents to be reevaluated. This thesis takes the first steps toward this goal, by adding about one percent to the variance explained, above variance explained by classic turnover antecedents.

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REPORT	**ABSTRACT**	**c. THIS PAGE**			Michael J. Hicks, PhD., Assistant Professor
U	**U**	**U**	**UU**	118	**19b. TELEPHONE NUMBER** *(Include area code)* (937) 255-3636, ext 4605; e-mail: Michael.hicks@afit.edu