

Impact of Spiritual Leadership on the Performance of Information Technology Projects

Reyna M. Rollins
Systems and Security Engineer
The MITRE Corporation
7515 Colshire Drive
McLean, VA 22102-7508
703-336-3232
Email: rrollins@mitre.org

Louis W. Fry
Texas A&M University Central Texas
1901 South Clear Creek Rd.
Killeen, TX 76549
254-458-3251
Email: fry@tarleton.edu

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Abstract

Information technology enables mission achievement and business results across the federal government departments and agencies. Lamentably, billions of taxpayers' dollars invested in federal information technology projects are at risk because of poor leadership. The federal oversight organizations have reported and made recommendations repeatedly to improve the management of information technology investments. Using structural equation modeling, the research study explored to what extent the use of the spiritual leadership model improves the performance of information technology projects in the federal government. Results revealed support for the spiritual leadership model and its positive impact on IT project commitment, productivity, and performance. Implications for future theory, research, and practice in this area are discussed.

INTRODUCTION

Billions of taxpayers' dollars invested in information technology projects are at risk because of poor management. The Office of Management and Budget (OMB) and the Government Accountability Office (GAO) have documented the waste of resources in terms of funding in federal government information technology projects (GAO, 2005, 2008, 2009a, 2009b; OMB, 2007). The federal government invests billions of dollars in information technology projects yearly. The estimated federal government spending for fiscal 2009 was 71 billion dollars (GAO, 2008, 2009a, 2009b). Lamentably, the GAO and the OMB have found persistent deficiencies in the management of information technology initiatives across the federal departments and agencies (GAO, 2005, 2006, 2008, 2009a, 2009b). Because of poor management, an estimated number of 413 information technology projects were at risk in fiscal year 2008, totaling 25.2 billion dollars (GAO, 2008). In 2007, the OMB and the federal agencies reported that approximately 608 information technology projects were at risk (OMB, 2007). Two years before, the GAO had reported that the Department of Defense undertakes complex information technology projects without the proper oversight (GAO, 2005). In 2009, the number of projects at risk increased to 472 (GAO, 2009). The social concern behind the study is the waste of federal government capital investments because of poor management.

Research in leadership suggests that spiritual leadership provides a process that “develops employee empowerment, commitment, and learning” (Fry & Cohen, 2009, p. 9). Equally important, productivity, and financial performance are also outcomes that the research links directly to the spiritual leadership paradigm (Fry & Nisiewicz, 2013; Fry, Matherly, & Ouimet, 2010). In this paper we explore the influence of the spiritual leadership model (Fry, 2008) on IT project commitment, productivity and performance. First we review the nature and scope of the

issues related to IT project technology performance in the Federal Government. Next the current state of the IT leadership literature is reviewed and the case made for the spiritual leadership model as a potential leadership approach to address these issues. Then, using structural equation modeling, we explored to what extent the use of the spiritual leadership model improves the performance of information technology projects in the federal government. Finally, implications for future theory, research, and practice in this area are discussed.

Federal Information Technology Project Performance and Challenges

To measure the value of investments in information technology, the United States government developed the Performance Reference Model (PRM) as part of the Federal Enterprise Architecture (OMB 2003, 2007). The PRM intends to assist the federal departments and agencies to show the causal link from information technology performance to program performance to agency strategic outcome attainment (OMB, 2003). The federal departments and agencies also use a balance scorecard (BSC) approach based on Kaplan and Norton's method published in 1992. The BSC postulates employee empowerment, to emphasize the central role that the federal employees play in the improvement of government performance and accountability (BSC Institute, 2010). The BSC also supports federal managers to balance short and long term objectives, financial and non-financial measures as well as internal and external perspectives.

Challenges Implementing the Federal Guidance

The federal departments and agencies must demonstrate robust performance management efforts, including the development or improvement of strategic plans and aggressive and accurate measurement of progress in achieving overarching performance goals (OMB, 1993; Clinger-Cohen Act, 1996: OMB, 2003). However, the regulations and requirements only address the

need to demonstrate improved performance and do not provide a methodology that the departments and agencies can employ to make the necessary improvements. This raises the issue that performance management is not only a daunting task in the federal government but is detached from the challenges that managers of federal information technology projects face at the operational level. Despite the prolific guidance from the OMB, the federal government managers focus on managing performance as a periodic comparison of current results to technical specifications documented in requirements and performance agreements with contractors such as service level agreements or system specifications. According to Gunther McGrath (2009), the nature of performance monitoring is reactive. The early warning indicators of failure in fulfilling key stakeholder needs do not receive timely attention (Chua, 2009).

Until July 2010, the performance measures in the federal and the private sector differed. The private sector focuses on time and budget (Chua, 2009; McManus & Wood-Harper, 2007) as opposed to the federal government where time and budget referred to as earned value system (EVM) is part of one of the ten elements of the performance criteria. According to the GAO (2005), “EVM is a project management approach that, if implemented appropriately, provides objective reports of project status, produces early warning signs of impending schedule slippages, and cost overruns, and provides unbiased estimates of anticipated cost at completion” (p. 1). Not until July 2010, the Federal Chief Information Officer clarified that significant variance in cost or schedule, lack of leadership, unmet objectives, and frequent re-baseline may be causes for the termination of an information technology project. In addition to time and budget, the literature raises the issue that immature, unstable, and changing requirements have a serious and negative effect on the scope of a project (Chua, 2009; Gunther McGrath, 2009; McManus & Wood-Harper, 2007).

In summary, researchers note that the management of the project scope is also a concern because of unstable and changing requirements during the life of the effort (Chua, 2009). The related literature addresses that the federal departments and agencies do not have the tools to establish integrated performance measurements among the relationships, causes, effects, processes, outcomes, decision making, and external and internal events affecting the information technology investments (Eman & Koru, 2007; Kasi et al., 2008).

The Scale of the Failure of Information Technology Projects

According to Hashmi (2010), “[information-technology-project] failure is the biggest challenge information technology and business people in the 21st century face” (p. 3). According to Huff and Prybutok (2008), firms such as the Standish Group have developed consulting practices to study why information technology projects fail. The literature on the problem reveals that failed information technology projects are not phenomena exclusive neither to the United States nor to the public sector (McManus & Wood-Harper, 2007; Chua, 2009). The Federal Bureau of Investigations (FBI) Virtual Case File (VCF) is one of the most cited examples that illustrates the circumstances surrounding a failed project. The VCF project intended to automate the paper-based FBI processes. The FBI retained the Science Applications International Corporation (SAIC) in June 2001 to develop the VCF. The attacks of September 11th, 2001 changed the landscape for the FBI and the SAIC. In Less than two months, the FBI imposed an aggressive software development schedule that forced SAIC to create eight teams to address the development of the VCF. In addition, SAIC received new requirements that expanded the scope of the project. Two years later, the FBI rejected the system SAIC developed at a loss of 170 million dollars. The audit reports on the VCF concluded that project management failures led to the failure of the project. The auditors identified 1) unclear and

insufficient requirements, 2) unrealistic schedule, and 3) broken change control processes. Chua (2009) states that “fiscal prudence and control” (p. 34) were not exercised.

A large group of authors and researchers agree that a serious effort to identify the root causes for the failure of information technology projects is required (Eman & Koru, 2007; Levasseur, 2010; McManus & Wood-Harper, 2007; Yardley, 2002). The consensus is that the scale of the failure makes the problem an urgent one. Most of the literature published addresses the problem from a strict perspective of (a) project management, (b) software development, (c) risk mitigation, and (d) governance (Kasi et al., 2008; McManus & Wood-Harper, 2007).

Leadership Challenges in Information Technology Projects

The literature acknowledges that because projects are pursuing change, projects are inherently demanding and arduous (Eman and Koru, 2008; Huff & Prybutok, 2008). Equally important, the researchers “accede that although project management has been an established field for many years, managing information technology requires ideas and information that go beyond standard project management” (Huff & Prybutok, 2008, p. 5). Balancing the demands creates a stressful work environment. Gunther McGrath (2009) addresses the information technology work environment, whose characteristics include uncertainly and varying degrees of risk. Gunther McGrath’s (2009) work centers on approaches to manage uncertainty in information technology projects. In addition, Gunther McGrath’s work serves to describe the work environment of information technology workers because it addresses the uncertain conditions that are the background of a typical information technology initiative. Gunther McGrath adds that a project schedule and budget are created based on assumptions to manage the inherent uncertainty. Therefore, large and long-term projects imply greater uncertainty and risk, creating a stressful work environment.

According to Bakke (2005), the work environment of the typical information technology worker is toxic because the “bureaucratic behavior remains the heart and soul of most work environments. Important decisions are still made at the top. The rest of the leaders and employees are left out of the process or, at best, are asked only for their suggestions” (p. 53). Working in such environments leads to apathy, depression, and a variety of other psychological symptoms.

A group of researchers that includes McManus and Wood-Harper (2007), Chua (2009) and Levasseur (2010) have started to document the people-related risk factors in information technology projects for answers to the compelling issues. The people-related risk factors include insufficient communication, project leadership; politics; total reliance on project and software development methodologies and processes that are not enough to address the complexity of the human aspects. In 2007, McManus and Wood-Harper conducted a study of 214 information technology projects across the European Union. The criteria to determine failure was time, cost, and scope. The researchers’ criteria is consistent with the criteria other researchers use to determine information-technology-project failure. The research showed that the root causes for project failure included: “frequent requests by users to change the system, insufficient communication between the different members of the team working on the project and the end users, and no clear requirements definition” (p. 41). McManus and Wood-Harper work concluded that the project leadership is one of the major causal factors contributing to the failure of the project. The culture of the projects included in the study did not allow the mitigation of risk factors outside the software development methodology. The findings also suggested that politics prevented the project stakeholders from documenting properly the risk factors. McManus and Wood-Harper stated that:

One of the major weaknesses uncovered during the analysis was the major reliance placed on project and development methodologies. One explanation for the reliance on methodology is the absence of leadership within the delivery process. Processes alone are far from enough to cover the complexity and human aspects of many large projects subject to multiple stakeholders, resource, and ethical constraints. (p. 32)

Chua (2009) analyzed eight highly-visible cases of failed information technology projects that have been well documented not only by the media but by the oversight organizations as well. Chua classifies risk according to their relation to people, process, and technology. According to Chua, the risk factors appear throughout the life cycle, including initiation, development, and implementation. Chua joins other researchers stating that a clear definition of failure of an information technology project does not exist. Chua's research confirms that schedule and budget are the most common indicators to determine failure of an information technology initiative. Chua makes a distinction between abandonment and failure of an information technology project. "The former refers to the termination of the project during the process of development whereas the latter refers to the failure of usage and operation after the project has been implemented" (p. 31). Chua's work emphasizes that the failure of an information technology project is related intrinsically to the people who are engaged in the project. Chua adds that the analysis of failed information technology projects highlights "the influence of cognitive, social, and psychological dimensions of people on the projects" (p. 36). Chua concluded that the lack of stakeholder engagement was one of the root causes for project failure. Chua provides six common reasons for failure:

(1) lack of effective project management skills or involvement, (2) lack of adequate user involvement, (3) lack of top management commitment to the project, (4) lack of required

knowledge or skills in the project personnel, (5) poor or adequate user training, and (6) lack of cooperation from users. (p. 32)

Levasseur (2010) argues that the root causes of the high rate of failure of information technology projects resides in management causal factors or people-related risks. Levasseur acknowledges that change management may not be practical because of “the time and expense required” (p. 159). Levasseur reviewed related literature and summarized the most common non-technical reasons for information-technology-project failure:

(1) lack of top management support, (2) failure to gain user commitment, (3) project manager cannot effectively lead team, (4) no process for controlling the change, (5) stakeholders not involved in the process, (6) failure to manage end user expectation, (7) weak team member commitment, (8) breakdown in stakeholder communication, (9) lack of key stakeholder participation in meetings, and (10) conflict between user departments. (p. 7)

Levasseur’s work offers change-management-based recommendations that include engaging the stakeholders to “embrace the interconnectedness of the people affected by the change” (p. 161). Levasseur discourages top-down communications. The second recommendation is that the individuals affected by the change need to be part of the effort. Levasseur states that employees like managers do not like surprises. Third, Levasseur’s research makes a compelling case for two-way and meaningful communications. Levasseur recommends addressing not only the organizational but also the personal implications of the change. Last, Levasseur suggests asking for volunteers to take responsibility for critical actions rather than assigning responsibility. Levasseur argues that the above suggestions promote collaboration.

Huff and Prybutok (2008) investigated how the experience level and risk propensity influence project managers’ decision making. The study confirms that federal information

technology projects are measured by elapsed time and accumulated cost. To minimize risk, the authors propose that prior experience managing similar endeavors is desirable when hiring project managers. The researchers pose that experience may also influence the management of uncertainty and risk. They tested the hypotheses with 436 project managers – 75% male and 25% female. The study results “proved that prior experience is a less-than-optimum discriminator of subjects’ continuation decisions” (p. 40). The hypothesis that prior experience influences how uncertainly and risk are managed was rejected cautiously. The results of the study provide insight into the level of difficulty to narrow the people-related risk factors to prevent information-technology-project failure.

Spiritual Leadership as a Model for IT Projects

The spiritual leadership model (see Figure 1) serves as the theoretical framework for this research study. Spiritual leadership is a causal leadership theory for organizational transformation designed to create an intrinsically motivated learning organization (Fry, 2008).

Insert Figure 1 Here

As shown in Figure 1, spiritual leadership requires the following:

1. Creating a vision wherein leaders and followers experience a sense of calling in that life has meaning, purpose, and makes a difference.
2. Establishing a social/organizational culture based on the values of altruistic love whereby leaders and followers have a sense of membership, feel understood and appreciated and have genuine care, concern, and appreciation for both self and others.

The source of spiritual leadership is inner life or spiritual practice that, as a fundamental source of inspiration and insight, positively influences development of (1) hope/faith in a transcendent vision of service to key stakeholders and (2) the values of altruistic love (Fry, 2008). The spiritual leadership theory is unique because, unlike other leadership theories, the spiritual leadership theory incorporates a spiritual component (Fry, 2003). More specifically, spiritual leadership theory explicitly incorporates specific and theoretically relevant leader and follower higher order needs and cultural and organizational effectiveness into a causal model framework-something no other leadership theory has done to date (Fry, 2003).

Spiritual Leadership for Information Technology Projects

For decades management gurus have been delivering the message consistently that to be effective, leaders need to “show respect, demonstrate fairness, listen attentively, appreciate others’ gifts and contributions, and treat others with love and compassion” (Reave, 2005, p. 657). Caring and expressing concern for others is an embodiment of spirituality in leaders. Therefore, accepting the spiritual dimension of an individual in the workplace is critical for organizational success (Day, 2001; Fry, 2003, 2005; Florida, 2009). Not addressing the spiritual dimension of an individual dismisses the source of innovation and creativity (Florida, 2009; Fry et al., 2010). Equally important, the absence of the spiritual dimension of the leader and the follower renders the current literature on leadership incomplete. Fortunately in the last 15 years, a group of researchers has addressed the leadership gap pointing that the spiritual leadership is a potential source of organizational commitment and productivity in addition to innovation and creativity (Giacalone & Jurkiewicz, 2003; Fry, 2003, 2005, 2008).

Hypotheses

Based on the spiritual leadership causal model depicted in Figure 1, we offer the following hypotheses for this study:

H1: Inner life practice will predict spiritual leadership significantly.

H2: Spiritual leadership will predict meaning and membership significantly.

H3: Meaning and membership will mediate the relationship between spiritual leadership and organizational commitment, productivity, life satisfaction, and the success of federal information technology projects.

Methods

Sample and Procedure

To explore the use of the spiritual leadership model in the management and leadership of information technology projects, this study surveyed personnel engaged in federal information technology projects regardless of their geographical location. Because the research study was not about leadership practices in information technology projects in a particular federal government department or agency but across the federal government, LinkedIn provided the social network platform needed to reach across government agencies. Study participants work in the different phases of an information technology lifecycle such as requirements gathering, design, development, deployment, or information security. Only those members of the professional associations who were employed in a contractor or federal-employee capacity were eligible to participate in the research study.

The research study participants received an invitation to participate through the LinkedIn professional organizations the information technology professionals are affiliated such as the Information Technology Specialist Network and Women in Technology among others.

Information technology professionals who may have a strong interest in the advancement of the understanding of leadership were also targeted such as the Center for Creative Leadership, the Project Management Network, and the Emotional Intelligence Network. The invitation included the purpose of the research study and a request for participation.

A total of 270 individuals received the invitation to participate in the research study. A total of 233 individuals responded. However, 60 did not complete the survey successfully. Therefore, 173 responses were valid, resulting in a 74% response rate. 55 respondents were women and 118 respondents were men. 115 respondents were federal contractors and 31 respondents were federal direct-hire employees. 27 participants responded being affiliated to organizations with special status such as non-profit technical centers of excellence or technical researchers engaged in federal technology projects. 115 of the respondents identified their role as leader and 90 respondents identified their role as non-leader. Regarding the information technology project lifecycle phase, 51 respondents were working in the requirements phase, 28 in design, 36 in development, 24 in deployment, and 25 in information security. An additional four indicated working on another phase. Based on the general comments, the respondents who stated working on other phases included acquisition efforts of information technology products or services. 61 respondents reported working on Defense information technology projects, 31 for the Department of Homeland Security, 19 for the Veteran Affairs, 15 for the Department of Health and Human Services, 8 for the Department of Transportation, 7 for the Department of Justice, and 7 for the Department of Treasury. The remaining participants work for a wide range of federal government agencies such as the Department of Commerce, State, Education, and Agriculture. 55 of the respondents indicated that their work is located in Virginia, 36 in the District of Columbia, 35 in Maryland, and 24 in Massachusetts. The rest of the respondents are

located across the United States in states and territories such as Texas, Colorado, Florida, West Virginia, New Jersey, Kansas, and Alabama among others.

Measures

The Spiritual Leadership Assessment instrument plus items related to IT project performance included 52 statements pertaining to a specific scale variable of the spiritual leadership causal model with the following Likert scale numerical scores: 1 (*strongly disagree*), 2 (*disagree*), 3 (*neither agree nor disagree*), 4 (*agree*), and 5 (*strongly agree*). The variables of the research study were (a) inner life; (b) spiritual leadership as a higher or second order factor comprised of the first order variables vision, altruistic love, hope, and faith; (c) meaning/calling; (d) membership; (e) life satisfaction; (f) information technology project commitment; (g) productivity; and (h) information technology project success.

Spiritual leadership. The coefficient alpha is utilized to determine internal consistency across the items of an instrument (Creswell, 2005). The measures for spiritual leadership and spiritual well-being were adapted to information technology project terminology (Fry, 2008). The coefficient alpha for the spiritual leadership causal model scale-type variables are as follows: .79 for inner life, .85 for spiritual leadership, .77 for meaning/calling, and .89 for membership.

Satisfaction with life. The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was used to measure life satisfaction. The coefficient alpha for life satisfaction is .79.

Productivity. Nyhan's (2000) group productivity scale was used to measure productivity. The coefficient alpha for productivity is .85.

Information technology commitment. Five items adapted from Allen and Meyer's (1990) measures of organizational commitment resulted in the information technology project commitment. The coefficient alpha for commitment to the information technology project is .75.

Information technology success. Six items of the research studies of McManus and Wood-Harper (2007), Chua (2009), and Levasseur (2010) on the root causes of failure of information technology projects resulted in the information technology project success measure. The alpha for the success of the information technology project is .80

Results

Table 1 gives the correlation matrix for the variables inner life, spiritual leadership, meaning and calling, membership, satisfaction with life, productivity, information technology project commitment, and information technology project success. Following Fry et al. (2011) we conducted a confirmatory factor analysis to examine whether a second order spiritual leadership factor existed and whether it explained the relationships among the three lower order factors. To assess whether the observed covariance matrix fit the hypothesized model, the comparative fit index (CFI), normed fit index (NFI), incremental fit index (IFI), and standard root-mean square error of approximation (RMSEA) were used. The NFI, IFI and the CFI will demonstrate good fit indicated by values $> .90$, and the RMSEA indicates a good fit with values $< .10$ (Blunch, 2008). The test of the higher order factor of the spiritual leadership variable yielded the following result: chi square = 205.57; degrees of freedom = 62; $p < .001$; $CFI = .90$; $NFI = .86$; $IFI = .90$; $RMSEA = .12$. The fit indices were slightly below the acceptable threshold but close enough to combine the variables (i.e., altruistic love, faith/hope, and vision) into the higher order spiritual leadership variable.

Insert Table 1 Here

Test of the Spiritual Leadership Model

We used AMOS with maximum likelihood estimation (Arbuckle & Wothe, 1999) to test the hypothesized model shown in Figure 1. The results of the CFA for the hypothesized model are as follows: *Chi-square* = 239.78; *df* = 17; *p* < .001; *NFI* = .74; *IFI* = .76; *CFI* = .75; *RMSEA* = .28. The results demonstrate that the hypothesized model is not a good fit for the data in the research study because (a) the indices NFI, IFI, and CFI are below .90 and (b) the RMSEA is above .10 (Blunch, 2008). Hooper et al. (2008) stated that “it is not uncommon to find that the fit of a proposed model is poor” (p. 56). Hooper et al. recommended making modifications to improve the model. The redirecting or addition of paths among the model’s variables reconfigured and improved the model fit. The subsequent analysis involved testing of three alternative models for fit against the hypothesized model.

The models tested had meaning/calling and membership as mediating variables. The mediating variables are meaning/calling and membership and the outcome variables are satisfaction with life, productivity, information technology project commitment, and information technology project success. The role of the mediating variables is to explain the relationship between an independent variable and dependent variable (Baron & Kenny, 1986; James et al., 2006). A mediating variable can have a full or partial mediation role.

Full mediation implies that the relationship between the independent variable and the dependent variable disappears in the event that the mediating variable is added. Partial mediation implies that the direct path from the mediating variable to the outcome variable is also

significant (Baron & Kenny, 1986; James et al., 2006). The first model tested was based on the findings of Dayler's (2011) research work, which included partial mediation of meaning/calling and membership with the outcome variables and direct effect without mediation of inner life and spiritual leadership with the outcome variables. The CFA results were, *chi square* = 130.61; $p < .01$; *CFI* = .86; *IFI* = .87; *NFI* = .87; *RMSEA* = .21, which did not provide a good fit model. The second model tested refined the association between meaning/calling and membership with the research study's outcome variables of satisfaction with life, productivity, information technology project commitment, and information technology project success. The CFA results for Model 2 were as follows: *chi square* = 96.73; $p < .01$; *CFI* = .90; *IFI* = .91; *NFI* = .91; *RMSEA* = .19, which did not provide a good fit model either.

Model 3 is depicted in Figure 2. The CFA results are as follows: *chi square* = 64.90; $p < .01$; *CFI* = .95; *IFI* = .95; *NFI* = .93; *RMSEA* = .14. The fit indices were above .90 for the CFI, IFI, and NFI but slightly above .10 for the RMSEA, making Model 3 a good fit to the data because the results are close enough to the acceptable threshold. The results provide support for Hypotheses 1 and 2 with a positive relationship from inner life to spiritual leadership ($\beta .31, p < .01$) and from spiritual leadership to meaning/calling ($\beta .72, p < .01$) and membership ($\beta .78, p < .01$).

Insert Figure 2 Here

While Model 3 supports Hypotheses 1 and 2, Hypothesis 3 is not supported. The results showed partial mediation of meaning/calling of the relationship between spiritual leadership and information technology commitment ($\beta .11, p < .01$). Furthermore, the results showed a partial

mediation of membership of the relationship between spiritual leadership and information technology project commitment ($\beta .22, p < .01$) as well as information technology project success ($\beta .16, p < .01$). In addition, spiritual leadership mediated the relationship between inner life and the outcome variables of satisfaction with life ($\beta .29, p < .01$), productivity ($\beta .69, p < .01$), information technology project commitment ($\beta .53, p < .01$), and information technology project success ($\beta .64, p < .01$).

DISCUSSION

The results of the research study indicate the possibility of not only avoiding failure but achieving performance excellence in federal information technology projects by implementing the spiritual leadership model. The results of the research study suggest that leaders who practice spiritual leadership can create a culture that minimizes the negative effects of the fierce competition, long hours, uncertainty, and constant change inherent in an environment characterized by an accelerated pace of technological change and pressure to deliver against unrealistic timelines. The results indicate that federal information technology projects need leaders who not only have invested personal inner resources in developing the qualities of spiritual leaders such as humility, integrity, compassion, broadmindedness, equality, respect for others, and controlled egos but who remain committed to such values. Failure to place and monitor individuals as leaders who encourage collaboration, trust, and the ethical use of power may help prevent the waste of taxpayer billions of dollars in information technology initiatives that are intended to improve the delivery of services to the public.

Implications for Theory, Research, and Practice

Theoretical Implications. The current study results support hypothesis 1 - the association between inner life and spiritual leadership- as well as hypothesis 2 – the association between

spiritual leadership with meaning/calling and membership. Fundamental to the spiritual leadership theory is the belief that meaning/calling and membership mediate the outcomes of satisfaction with life, productivity, organizational commitment, and performance- hypothesis 3. In the current study, meaning/calling and membership do not mediate the outcome of satisfaction with life nor productivity. Instead of a full mediation, a partial mediation exists between meaning/calling and information technology project commitment. In addition, the research study results show a partial – not full -mediation between membership and information technology project commitment and information technology project success. Further research is needed to gain insight into the reasons meaning/calling and membership do not have a significant influence on the outcome variables of satisfaction with life and productivity. Further research is also needed to gain understanding on the complementing role of spiritual leadership with the mediating variables of meaning/calling and membership.

In addition, spiritual leadership mediated the relationship between inner life and the outcome variables of satisfaction with life, productivity, information technology project commitment, and information technology project success. An implication of the research study results pertain to the impact of spiritual leadership as a mediator of inner life on satisfaction with life and productivity without the mediating effect of meaning/calling and membership. Further research on additional external influences in a variety of settings may assist in understanding not only the role of the mediating variables of meaning/calling and membership but also the role of spiritual leadership as a mediator of inner life in the spiritual leadership causal model.

Practical Implications. Competition in the information technology field both in the public and private sectors is fierce. The structure of the information technology organization demands flexibility to react to a changing environment. The concept of leadership in the

information technology field has been confined to the proficiency of technical skills and processes to produce new technologies or improve existing ones (Neufeld et al., 2007; Mengesha, 2008; Powell, 2009). Information technology personnel are promoted based on technical proficiency not ability to work through others (Mengesha, 2008). Choosing leaders based on technical proficiency dehumanizes the individual and denies the spiritual dimension of an individual, which is the source of creativity and innovation (Florida, 2008).

The focus of organizational-culture-creation efforts and human resource development programs should be to develop and support an individual's inner life as well as spiritual leadership skills. Spiritual leadership skills include creating full lasting meaning work and fostering a sense of belonging or membership. The values of spiritual leadership include but are not limited to justice, equity, authenticity, humility, dignity, and honesty among others (Fry et al., 2010). Progress towards implementing the spiritual leadership model will need to be monitored and measured. A possible tool for progress measurement is the Spiritual Leadership Assessment. Organizational commitment to the effort may include keeping off the leadership track individuals who do not attain and live the level of spiritual leadership needed to achieve the performance excellence the research study results suggest is possible in such an organizational context. Once on the leadership track, leaders will need monitoring because the spiritual leadership qualities fade if not supported on a daily basis.

Albert Einstein (1879 – 1955) believed that the true value of a human being is determined primarily by the measure and the sense in which the individual has attained liberation from the self (Solomon, 2003). Tolle (2005) argues that the identification with thinking maintains the ego. The ego produces negative states of mind that include anger, fear, resentment, envy, and jealousy. According to Satchinanda (2007), the mind must be quiet to understand one's true

nature. An uncontrolled mind distorts the truth. A regular meditation, journaling, prayer, or quiet reflection practice helps not to build thought upon thought, fantasize, or replay old events. Meditation as well as other inner life practices cleans the mind and weakens the ego, assisting the individual in going beyond the conditioning derived from society, family, personal experiences, and the education process.

The following are selected practical ways that may allow individuals to integrate the spiritual values with the demands of an ever-changing environment such as a federal information technology project. Programs in the workplace that assist in developing and supporting the following qualities of a healthy inner life promise to improve the performance of federal information technology projects according to the results of the research study. For such programs to succeed, they need to be elevated to the status of current initiatives such as diversity and equal employment opportunities that exist today.

Taming the mind. According to Tolle (2005), the mind is an instrument. As such, the mind serves the individual. Unfortunately, most people experience the mind as a tyrant demanding constant attention. Equally detrimental, the mind goes into repetitive and useless loops. The constant mental activity depletes the body of vital energy (Tolle, 2005). Left unattended, this state becomes harmful to the individual. The importance of taming the mind is closely related to the concept of being in the present moment. Life only happens in the present moment. When the individual lives in imaginary settings created by the mind, life is passing by. Therefore, the individual is bound to experience frustration due to fleeting thoughts and unfulfilled potential.

Being in the present moment. According to Tolle (2005), being present in the moment is the framework to develop personal freedom. Being in the present moment to escape the use of

rules or schemas to interpret reality promotes creativity and innovation (Widmayer, 2007).

Schemas are conditioning used to filter one's experiences. Conditioning is best understood as an invisible jail that prevents an individual from living life to its fullest. When an individual is conditioned to experience reality in a prescribed manner, that individual is not free. If the schema or conditioning has an unfavorable label for an experience, the individual interprets what is essentially a new event as unfavorable as well. When the individual either lives trapped in the past or in the schema adopted in the form of opinions, memories, preferences, and accumulated knowledge, the individual walks away from the varied possibilities life offers. People keep making the same mistakes, getting the same type of jobs, making the same acquaintances without getting off the beaten path for fear of stepping outside the schema or conditioning..

Acceptance. According to Tolle (2005), the identification with the ego creates attachment to material things. In a consumer society, the only measure of progress is getting more of everything – food, clothing, and entertainment - to support the prevalent economic structure.

An organization committed to developing the spiritual leadership the spiritual leadership model will invest in the physical and business infrastructure needed to support such efforts and offer rooms for silence, reflection and meditation, testimonials of leaders who are successfully implementing the spiritual leadership model while meeting or exceeding performance targets, providing timely and sincere support to those who face challenges in the implementation phase of the spiritual leadership model. Concrete actions such as the ones outlined or similar will help in integrating the spiritual leadership model.

Suggestions for Future Research

The results of the research study indicate that the effects of spiritual leadership are pervasive, affecting positively the outcome variables of satisfaction with life, productivity, information technology project commitment, and information technology project success. The strong connection between the various elements of the spiritual leadership causal model and the outcome variables of the research study are consistent with the findings of a community of practitioners who share the perspective of needing to integrate the human dimensions not only because an individual does not stop being human in the workplace but also because of the established nexus between spiritual leadership and organizational performance (Benefiel, 2005; Reave, 2005; Parameshwar, 2005; Fry et al., 2010). Further research is required to clarify the mediating versus partial mediation effects of meaning/calling and membership on the outcome variables. The results of the research study showed an association that while statistically significant is not as high as spiritual leadership is on the outcome variables.

The results of the research study show that spiritual leadership mediates inner life. Inner life brings congruence in an individual's life guiding the individual to work that is viewed as one's contribution to humanity. The constant nurturing of the leader's inner life is critical for the development and sustainment of spiritual leadership. The nurturing of the follower's inner life is also essential to receive the positive influence from the leader. Activities that support the development of an individual's inner life include meditation, journaling, prayer, and quiet reflection (Fry, 2008). Further research is needed to explore the direct, mediating, and partial mediation effects of spiritual leadership in relation to an individual's inner life.

The field of information technology is vast. Technological advances and user expectations have contributed to making technology an integral and foundational part today's

way of life. In practice, the technical focus of an information technology endeavor in the federal government may include development of Web-based applications, data analysis, enterprise resource planning implementations, and information technology strategic planning, network design and deployment among others. The team culture of an information technology project may be different depending on the technical focus. The technical focus of an information technology project dictates the skills and general characteristics of the professionals engaged. The current research study did not attempt to delve into the technical focus of the federal information technology projects. Future research may deepen the understanding of spiritual leadership by technical focus in federal information technology projects.

In the research study as in previous similar research efforts, spiritual leadership became a composite variable formed by vision, hope and faith as well as altruistic love – variables that were considered independent prior to 2008 but showed high correlation (Dayler 2010; Fry et al., 2010). Management gurus such as Peter Drucker (1909 – 2005) have stated that “work is an extension of [an individual’s] personality. Work is one of the ways a person defines himself or herself, measures his worth, and his humanity” (Collins, 2004, p. 189). Therefore, the leader whose leadership practice is based on spirituality is likely to be more effective in creating a vision wherein the follower experiences “a sense of calling in that work has meaning and makes a difference” (Fry, 2003, p. 711). The leader with a harmonious inner life is more apt to convey to the follower that “things hoped for (the vision), but yet unseen or proven by evidence, are true” (International Institute for Spiritual Leadership, 2010, p. 3). A deeper understanding of the variables vision, hope and faith as well as altruistic love is required to implement programs in the workplace to strengthen spiritual leadership practices.

CONCLUSION

An important limitation of the research study is that the sample size is small. A larger sample size would not only provide a firmer foundation for the current research study's conclusions but might also unveil additional associations. Another important limitation of the research study is that the respondents do not work together. The results of a similar research study at the unit level are needed to further validate the results. While LinkedIn provides a platform for professional networking, reaching the members in particular professional groups requires approval at different levels of the organization, limiting the ability to reach the target population.

For a vast number of jobs, the federal government requires security clearances. The security clearance requirement extends to federal contractors. Such requirements enforce a culture of information sharing on a need-to-know basis. Therefore, identifying eligible research study participants who are willing to share information about their work environment was a difficult task and a limitation faced during the research study. The discussion of the spiritual dimension of an individual is deeply personal and not the topic of mainstream discussions. A common observation captured in the research study participants' general comments was their frustration and disbelief that spirituality was related to their jobs. Sixty participants failed to complete the Spiritual Leadership Assessment survey. The possibility exists that some individuals aborted the survey because of feeling uncomfortable addressing questions deemed deeply personal.

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FIGURE 1: Theoretical Model with Hypotheses

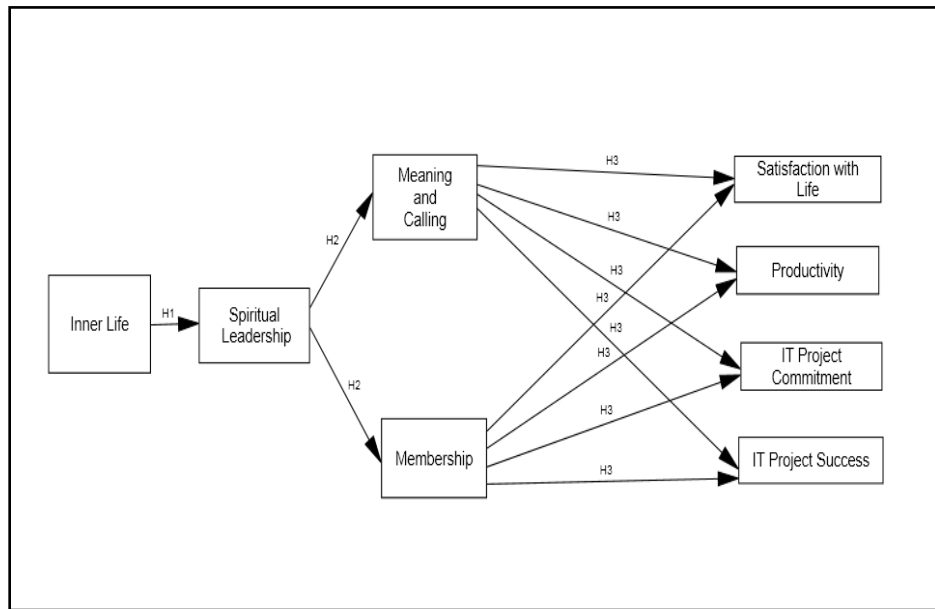
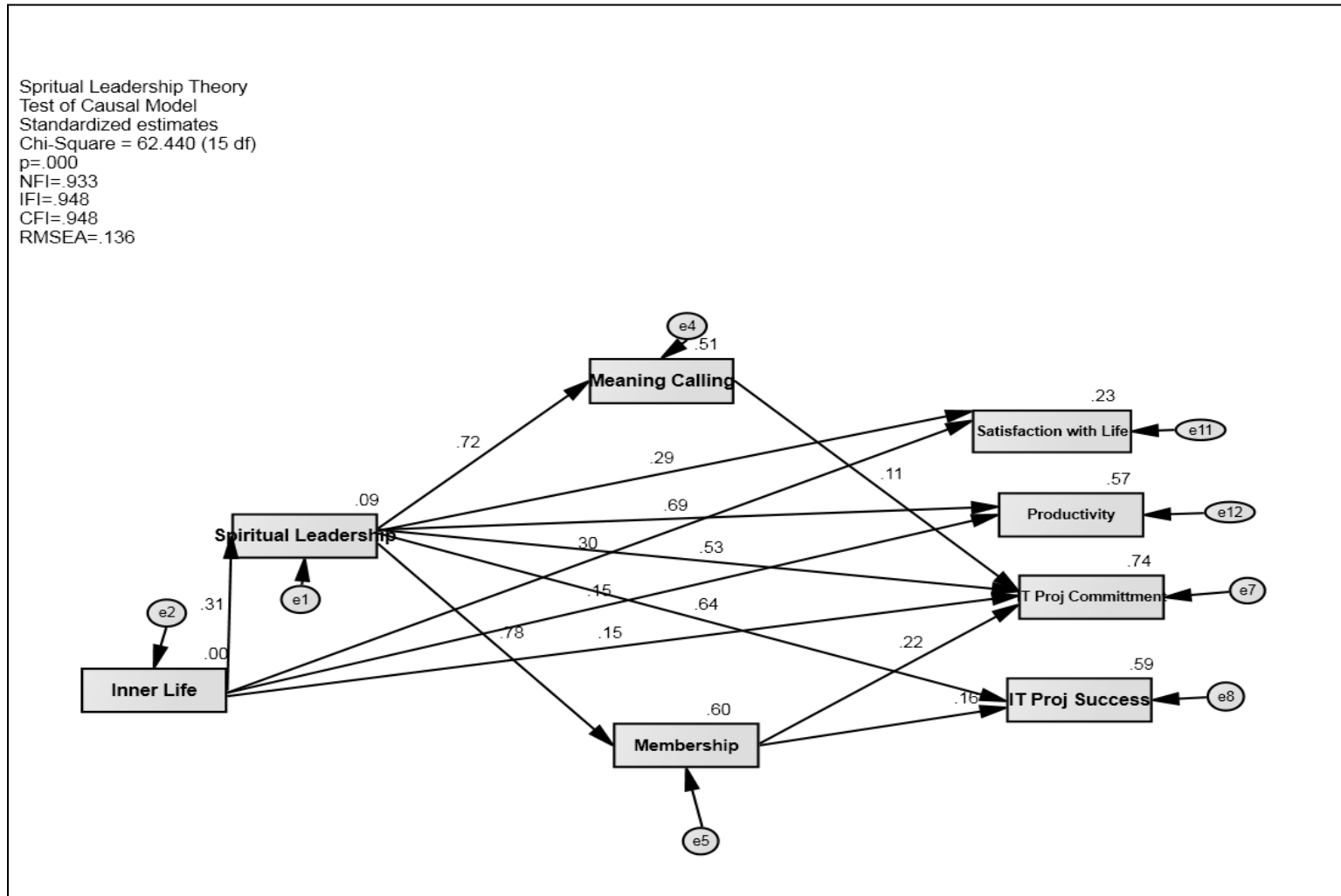


TABLE 1: Correlation Matrix

Variable	M	SD	1	2	3	4	5	6	7	8
1. Inner Life	4.01	.61	.79							
2. Sp. Leadrshp	3.82	.64	.31	.85						
3. Mean/Calling	4.04	.65	.23	.72	.77					
4. Membership	3.95	.79	.13	.78	.46	.89				
5. Satisf. Life	3.90	.67	.39	.39	.34	.29	.79			
7. Productivity	3.71	.83	.36	.73	.50	.60	.41	.85		
6. IT Prj. Com.	3.67	.75	.37	.84	.63	.71	.39	.68	.75	
8. IT Prj. Succ.	3.71	.69	.26	.76	.47	.66	.27	.74	.69	.80

Note: $N = 173$; Correlations $\geq .20$ are significant at $p < .01$. Correlations $\geq .15$ are significant at $p < .05$. Scale reliabilities are bolded on the diagonal.

FIGURE 2: Results of SEM Analysis for Model 4



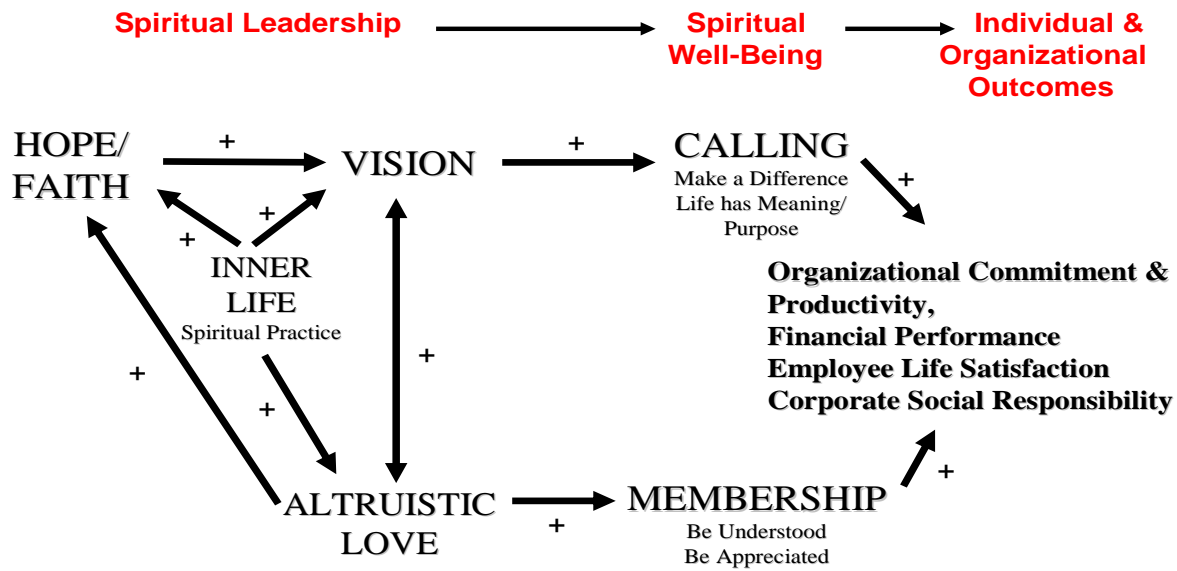


Figure 1: Causal model of spiritual leadership