Spiritual Intelligence and Mindfulness as Sources of Transformational Leadership

By

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Dedication

To my beloved wife and eternal companion, and to my awesome children and grandchildren.

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I certainly could not have finished my doctoral studies and this dissertation without the continuous support, understanding, and patience of my wife. We shared this challenge, starting with the conception and presentations of the research proposal drafts in 2013, and finishing with this dissertation. For this and innumerable other reasons and experiences that we have shared throughout our long and awesome journey and adventure, I am eternally grateful.

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Abstract

The transfer rate of transformational leadership training is considered marginal; it is estimated that less than 30% of leaders who participate in the training change their behavior once back in the workplace. Most quantitative investigations have focused on predictors of transformational leadership, providing insufficient information about possible internal driving forces that influence leaders to behave in a transformational manner; furthermore, some correlations of those predictors with specific dimensions of transformational leadership have not been thoroughly explained. In the present quantitative, survey-based, cross-sectional research, we tested the effects of spiritual intelligence and mindfulness on transformational leadership behavior patterns among a sample of 542 leaders in Peru, with the results suggesting that mindfulness partially mediates the effects of spiritual intelligence on transformational leadership. Based on these findings, we propose that introducing spiritual intelligence and mindfulness training as part of the traditional curricula for transformational leadership training will improve the transfer of knowledge to leaders.

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Chapter 1: Introduction

There is a serious concern regarding the sustainability of the global socioeconomic system; the role of leaders is therefore of utmost importance (D. Meadows, Meadows, Randers, & Behrens, 1974; World Commission on Environment and Development, 1987; D. Meadows, Randers, & Meadows, 2004; Senge, Smith, Kruschwitz, Laur, & Schley, 2008; Schellnhuber, Molina, Stern, Huber, & Kadner, 2010). While strong leadership is necessary for a successful future, major financial scandals have called into question the integrity and wisdom of some senior executives (D'Alessio, 2010; Sablich, 2017). To deal with such issues, the mental models of individuals and leaders need a new direction (Senge et al., 2008). The transformational leadership model appears to have desirable dimensions to provide such a direction to leaders.

Since ancient times, intellectuals and researchers have studied the concept of leadership from different perspectives, giving rise to a number of important theories, models, styles, and taxonomies that have been used to understand and explain the behaviors and traits of people that seem well prepared to, or have succeeded in, leading others. The notion of leadership is elusive and complex (Schiro, 1999), and the debate about the effectiveness of different styles continues. Since its introduction, the importance of transformational leadership has been recognized by several authors (Avolio, Waldman, & Yammarino, 1991; Bass & Riggio, 2006; Bass, Waldman, Avolio, & Bebb, 1987; Covey, 1991; Judge & Piccolo, 2004; Tucker & Russell, 2004; van Dierendonck, Stam, Boersma, de Windt, & Alkema, 2013), and it has been investigated more than all other popular theories of leadership combined (Judge & Piccolo, 2004). The scientific community has made considerable efforts to study and understand the transformational leadership theory, finding important correlates and predictors. Yet, insufficient research has attempted to identify the factors that drive

leaders toward a tendency or preference for behaving like transformational leaders (Hartsfield, 2003).

In 2013, the training industry in the United States spent close to US$ 25 billion in leadership development (Bersin, 2014b). While it is unknown how much of the knowledge provided during training is actually transferred to the workplace, it is estimated to be below 30% (Saks & Belcourt, 2006). This estimate suggests that transfer rate of leadership training requires urgent improvement, turning into a critical issue for human resource development (Burke & Hutchins, 2007). The identification of components and constructs that influence leaders to behave in a transformational manner could help improve the transfer rate of training for this particular leadership style (Waldman, Balthazard, & Peterson, 2011).

Some dimensions of transformational leadership have not been fully explained by constructs such as general cognitive intelligence, emotional intelligence, or personality. Transformational leadership has dimensions that seem to correlate with some components of spiritual intelligence, a concept that is relatively new and that has not been studied extensively (King, 2008). Traditional mindful meditation practice is not new to the Western world and during the last few decades, mindfulness practices have been extensively investigated and incorporated into the medical and mental health disciplines (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Bergomi, Tschacher, & Kuppe, 2012; Brown, Ryan, & Creswell, 2007). Lately, the scientific research on mindfulness has concentrated on the area of higher education (Bush, 2011), and just recently, mindfulness has been studied and applied to organizational research, the workplace, task performance and management (Bjurström, 2012; Dane, 2010). In particular, the field of mindfulness in relation to leadership has seen increased interest of late (Reb & Atkins, 2015; Choi & Leroy, 2015; Reb, Sim, Chintakananda, & Bhave, 2015). Mindfulness has dimensions that seem to correlate with some dimensions of spiritual intelligence; additionally, several studies have proposed an

important effect of mindfulness on leadership. A review of the literature suggests that mindfulness could mediate the relationship between spiritual intelligence and transformational leadership.

Very few quantitative studies have analyzed the relationships between spiritual intelligence, mindfulness and transformational leadership; further investigation is therefore required to understand those relationships, and such an understanding should help improve the knowledge transfer rate of training in the transformational leadership style. The purpose of this quantitative, survey-based, cross-sectional study is to identify the effects of spiritual intelligence and mindfulness on transformational leadership behavior patterns among leaders in Peru.

Background of the Problem

There is a serious concern with the sustainability of the global socioeconomic system and the role of the leader is more critical and important than ever (Meadows et al., 1974; World Commission on Environment and Development, 1987; Meadows et al., 2004; Senge, Smith, Kruschwitz, Laur, & Schley, 2008; Schellnhuber, Molina, Stern, Huber, & Kadner, 2010). The industrial, technological and economic development; demographic growth; and intensive consumption, have set a growth rate difficult to sustain (Meadows et al., 1974; World Commission on Environment and Development, 1987; Meadows et al., 2004; Senge et al., 2008; Schellnhuber et al., 2010). Furthermore, major financial scandals have shocked the world community, casting doubt on the integrity and wisdom of certain senior executives (D'Alessio, 2010). Peru is no exemption; major corruption scandals during the last 25 years have involved some of the uppermost senior leaders from very prestigious political and corporate groups (Sablich, 2017), and most of these executives were educated in some of the best universities in the world, several even with doctoral degrees.

The challenges that societies are facing have led to several trends of thought and initiatives to address critical issues like scarcity of natural resources, environmental damage, social exclusion, economic disparity, poverty, and others; resulting in cutting edge economic and organizational theories, and in new business models that have been embraced by governments, corporations and institutions, such as corporate social responsibility, green economy, sustainable development, green development, corporate sustainability, ISO26000, and others (World Commission on Environment and Development, 1987; Castka & Balzarova, 2007; Schellnhuber et al., 2010). Nevertheless, several studies have suggested that models like corporate social responsibility (CSR) still have serious limitations (Haigh & Jones, 2006).

North (1994) states that one of the most fundamental sources of sustainable change in society is learning by individuals and organization's senior executives; "that is, the beliefs that individuals, groups and societies hold which determine choices are a consequence of learning through time" (p. 360). He continues,

> The speed of economic change is a function of the rate of learning, but the direction of that change is a function of the expected payoffs to acquiring different kinds of knowledge. The mental models that the players develop shape perceptions about the payoffs … Mental models are the internal representations that individual cognitive systems create to interpret the environment; institutions are the external (to the mind) mechanisms individuals create to structure and order the environment. (pp. 363-363)

There is an urgent need for changes in leaders' mental models, and the solutions to major issues must come through innovation (Senge et al., 2008). CEOs from some of the most important corporations around the world have identified the education of new leaders as one of the cornerstones in this endeavor, concluding that a new era of sustainability is far from guaranteed and will require both leadership and urgency (Lacy, Cooper, Hayward, &

Neuberger, 2010). In this context, the role of the leader as the driver of innovation and change is very important. The transformational leadership style fits well within a context in which a clear vision, a mission and values are mandatory, and where the skills to motivate, inspire and drive change are essential (Bass, 1990; Bass & Avolio, 1994). A real commitment towards integrity and sustainability is required in corporations, governments and institutions in general.

Though it has a long history, the debate about whether leaders are born or made continues to this day (D'Alessio, 2010). McCarthy et al. (1998) suggested that roughly 25% to 50% of leaders' self-ratings on aspects of transformational leadership can be attributed to genetics. Bass and Riggio (2006), on the other hand, proposed that although heredity, early life experiences, and early leadership experiences can affect leadership development, transformational leadership can indeed be taught and developed. And in fact, the topic of leadership development has seen continuous interest (Bass & Riggio, 2006; Day, 2001).

Before its recent growth, the professional training industry in the United States reportedly spent around US$ 50 billion each year (Raelin, 2004), excluding outside degree programs and tuition reimbursements. For the period of 2005-2010, O'Leonard (2011) reported that the industry spent an average of US$ 53.11 billion per year, with 22% of its budget allocated to leadership development. The period of 2009 to 2013 has seen an average annual increase in general training of 12%, with US$ 70 billion spent in 2013, and 35% of that budget (US$ 24.5 billion) allocated to leadership development (Bersin, 2014b). The worldwide training industry expenditure is estimated to be around US$ 130 billion (Bersin, 2014a). Saks and Belcourt (2006) surveyed trainers from the United States and reported that on average, 53% of employees failed to transfer the knowledge gained through training into the workplace, with the figure increasing to 67% after one year. The transfer of training knowledge remains an unresolved issue (Bersin, 2014a; Bersin, 2014b; Burke & Hutchins,

2007; Fitzpatrick, 2001; Georgenson, 1982; O'Leonard, 2011; Raelin, 2004; Saks, 2002; Saks & Belcourt, 2006; Waldman et al., 2011). Partial failure to transfer knowledge after leadership training is common, and transformational leadership training is no exception. The identification of components and constructs that influence leaders to behave in a transformational manner could therefore help improve the transfer rate of knowledge gained in this type of leadership training, increasing leaders' chances of breaking through barriers and fostering the innovation and creativity required to ensure compatibility between leaders' personal goals and global development, profitability and sustainability.

Correlations between transformational leadership and several other constructs have been extensively investigated (Bass & Riggio, 2006), but few studies have attempted to identify the factors that drive leaders to behave in a transformational manner (Hartsfield, 2003). Most research related to the prediction of transformational leadership behavior has focused on investigating its relationship with personality, general cognitive intelligence, and emotional intelligence (Bass & Riggio, 2006). Studies performed by Bono and Judge (2004), Bryman (1992), Church and Waclawski (1998), Crant and Bateman (2000), D'Alessio (2006), De Hoogh et al. (2005), Den Hartog and Koopman (2001), Hetland and Sandal (2003), Howell and Avolio (1993), Jacobsen and House (2001), Ployhart, Lim and Chan (2001), and Sosik, Avolio, and Jung (2002), among others, have suggested important correlations between some domains of personality and leadership. Most authors have agreed that the results are not conclusive (e.g., Bono & Judge, 2004; Crant & Bateman, 2000; Judge & Bono, 2000; Ployhart et al., 2001). Similarly considerable effort has been made to relate emotional intelligence to transformational leadership, with an important correlation proposed between the factors of emotional intelligence and leadership in general, and transformational leadership in particular, suggesting emotional intelligence as a predictor of transformational leadership (e.g., Ashkanasy, Hartel, & Daus, 2002; Barling, Slater, & Kelloway, 2000; Butler

& Chinowsky, 2006; Duckett & Macfarlane, 2003; Gardner & Stough, 2002; Leban & Zulauf, 2004; Mandell & Pherwani, 2003; Mills, 2009). Most of these studies identified important correlations, but did not clearly explain some of the transformational leadership behaviors, encouraging further research into spirituality (Field, 2003; Hariprasad, 2006; Hartsfield, 2003; Hinds, 2005; Zwart, 2000) and mindfulness (Boyatzis & McKee, 2005; Gieseke, 2014; Hawkins, 2010) as possible predictors.

The emergence of spiritual intelligence as a possible predictor of transformational leadership is supported by researchers such as Amram (2007), Amram and Dryer (2008), Emmons (2000a), King (2008), MacDonald (2000), Nasel (2004), Vaughan (2002), Wolman (2001), and Zohar and Marshall (2000). Similarly, several authors have conceived possible theoretical relationships between spiritual intelligence and transformational leadership (Amram, 2009; Howard, Guramatunhu-Mudiwa, & White, 2009; McDowelle, 2009; Yee Min Tan, Tee Suan Chin, Seyal, Jian Ai Yeow, & Sin Ta, 2013). The construct of spiritual intelligence has domains that exhibit possible theoretical relationships with behaviors identified as transformational leadership components, as well as with the construct of mindfulness.

King (2008) defined spiritual intelligence as "a set of mental capacities which contribute to the awareness, integration and adaptive application of the nonmaterial and transcendent aspects of one's existence, leading to such outcomes as deep existential reflection, enhancement of meaning, recognition of a transcendent self, and mastery of spiritual states" (p. 56). King made a thorough study of the concept of spiritual intelligence, proposing four core components: (a) critical existential thinking, (b) personal meaning production, (c) transcendental awareness, and (d) conscious state expansion. Spiritual intelligence is an ability that can be developed (Amram, 2009; King & DeCicco, 2009; Rossiter, 2006; Vaughan, 2002; Wigglesworth, 2012; Wolman, 2001; Zohar & Marshall,

2000). Further research concerning the effects of introducing spiritual intelligence development techniques within transformational leadership training programs could assess its effectiveness in improving the transfer of knowledge from training. It is important to emphasize that spirituality and spiritual intelligence are different constructs from religiosity (King, 2008; Wuthnow, 1998). *Religiosity* is defined as "an organized system of beliefs, practices, rituals and symbols designed (a) to facilitate closeness to the sacred or transcendent (God, higher power, or ultimate truth/reality), and (b) to foster an understanding of one's relation and responsibility to others in living together in a community" (Koenig, McCullough, & Larson, 2001, p. 18). Spirituality is a construct that is closer to spiritual intelligence; the two share some common ground but are not the same. Spirituality is defined as "the personal quest for understanding answers to ultimate questions about life, about meaning, and about relationship to the sacred or transcendent, which may (or may not) lead to or arise from the development of religious rituals and the formation of community" (Koenig et al., 2001, p.18). The construct of spiritual intelligence, as opposed to spirituality, is an applicative concept, a set of mental capacities that, among other aspects, contributes to the adaptive application of abilities for solving complex problems found in everyday life; it is a source of intrinsic motivation that drives, directs, and aids in the selection of behaviors (King, 2008). The present study measures spiritual intelligence using the Spiritual Intelligence Self-Report Inventory scale (SISRI-24) developed by King (2008).

The concept of mindfulness has been extensively studied within the health and psychology disciplines (Brown et al., 2007; Grossman, Niemann, Schmidt, & Walach, 2004), and research on its relation to leadership has been increasing exponentially (Reb & Atkins, 2015; Choi & Leroy, 2015; Reb et al., 2015). A search of the ProQuest database for the field of 'mindfulness' AND 'leadership' gave the following results: (a) six results for 1980-1990 (b) 319 results for 1990-2000; (c) 2,498 results for 2000-2010,; and (d) 3,875 results for

2010-2015. However, little quantitative research has been done on the relationship between the two (Gieseke, 2014; Hawkins, 2010; Horowitz, 2012). Like with many other complex constructs that relate to the innermost areas of the human psyche, the scientific community has not reached a clear consensus on a single definition for mindfulness (Bishop et al., 2004; Hawkins, 2010). Hawkins (2010, p. 11) did make an attempt to classify some of the proposed definitions, citing mindfulness as (a) a practice based on meditation and sharp thoughtfulness (Baer, 2003; Baer, Fischer, & Huss, 2005; Bishop et al., 2004; Hayes & Wilson, 2003; Kabat-Zinn, 2003; Seiling & Hinrichs, 2005), (b) a concept firmly based in its Buddhist traditions (Gunaratana, 2011; Nhat Hanh, 1976), (c) a state of mind that can stimulate creative thinking in an individual and/or a widespread system of assumptions and concepts (Boyatzis & McKee, 2005; Langer, 1989, 1997, 2007). Bishop et al. (2004) offered a possible operational definition of mindfulness based on two components, where "[t]he first component involves the self-regulation of attention so that it is maintained on immediate experience, thereby allowing for increased recognition of mental events in the present moment, [and the] second component involves adopting a particular orientation toward one's experiences in the present moment, an orientation that is characterized by curiosity, openness, and acceptance" (p. 232). The present study uses Bishop et al.'s (2004) definition of mindfulness as "a kind of nonelaborative, nonjudgmental, present-centered awareness in which each thought, feeling, or sensation that arises in the attentional field is acknowledged and accepted as it is" (p. 232).

The present investigation measured mindfulness using the Five Factor Mindfulness Questionnaire (FFMQ) developed by Baer et al. (2006). In the development of this questionnaire, Baer et al. (2006) correlated the items generated from five previously established instruments, providing a solid instrument for measuring mindfulness. In their model, Baer et al. (2006) proposed five component skills: *observing*, *describing*, *acting with awareness, nonjudging of inner experience,* and *nonreactivity to inner experience*. The

construct of mindfulness has domains that exhibit possible theoretical relationships with the construct of spiritual intelligence, and with behaviors identified as transformational leadership components (Waldman et al., 2011).

Statement of the Problem

Transformational leadership is recognized as one of the most effective leadership styles (Bass & Riggio, 2006; Judge & Piccolo, 2004; van Dierendonck et al., 2013), and is considered a cornerstone of organizational change (Bass, 1985, 1990, 1999, 2000; Burns, 1978; Howard et al., 2009; Judge & Piccolo, 2004; Kouzes & Posner, 2002; Morler, 2006; Tucker & Russell, 2004; Yukl, 1994). It has also been studied more often than all the other popular theories of leadership combined (Judge & Piccolo, 2004). Despite the popularity of the transformational leadership style, little is known about what influences leaders to behave in a transformational manner; few studies have tried to identify possible factors that drive leaders to act within the model (Hartsfield, 2003).

While many are trained in the model, the rate of knowledge transfer from leadership training into practice is marginal, with estimates below 30% (Saks & Belcourt, 2006). Most of the quantitative investigations so far have focused on identifying predictors of transformational behavior, typically using correlational techniques to find relationships between factors of the constructs under study. Such studies thus provide limited information about possible internal driving forces that influence leaders' tendency toward, or preference for, behaving like transformational leaders. In addition, it appears that constructs such as general cognitive intelligence, emotional intelligence, and personality fail to provide theoretical support to explain some of the dimensions of transformational leadership; furthermore, some of the dimensions seem to correlate with components of spiritual intelligence and mindfulness. The identification of additional factors that drive leaders to act within the transformational leadership model would therefore increase our understanding of

transformational leadership and assist with the design of effective leadership training programs.

Purpose of the Study

The purpose of this quantitative, survey-based, cross-sectional research is to evaluate the effects of spiritual intelligence and mindfulness on transformational leadership behavior patterns among leaders in Peru.

Significance of the Problem

The concerns with the sustainability of the global system (Meadows et al., 1974; World Commission on Environment and Development, 1987; Meadows et al., 2004; Senge et al., 2008; Schellnhuber et al., 2010) and the recurring financial scandals around the globe (D'Alessio, 2010; Sablich, 2017) suggest a need for changes to the mental models used by leaders and society (Senge et al., 2008), and the transformational leadership model appears to have the dimensions to deal with these problems. Organizations spend more than US$ 50 billion per year training their leaders, but less than 30% of those leaders are estimated to change their behavior once back at the workplace (Saks & Belcourt, 2006). Management education focuses on sharpening students' skills in managing externalities, but tends to leave students alone to manage the internal forces that largely determine their behavior (Hunter, 2015). The low rate of knowledge transfer from training must be improved (Burke & Hutchins, 2007). Identifying and gaining a better understanding of the factors that influence leaders' transformational behaviors could enable the design of more effective leadership training programs (Waldman et al., 2011). With this study, the aim is to come to a better understanding of some of the dimensions of transformational leadership that have not been sufficiently explained by traditional predictors. Such findings could contribute to the design of more effective training programs, with improved transfer of knowledge from training to practice, eventually helping address the serious global problems described above.

Nature of the Study

In this research, a quantitative, survey-based, cross-sectional approach is taken to evaluate the effects of spiritual intelligence (SI) and mindfulness (MF) on transformational leadership (TF) behavior patterns among leaders in Peru. The methodology falls under the post-positivist paradigm and involves testing hypotheses presented in a structural model. While most previous investigations in this area have been qualitative, this quantitative study may help to confirm the results of the few available quantitative investigations (Christ-Lakin, 2010; Gieseke, 2014). Those studies used correlational designs under multiple regression models. To confirm or deny possible relationships, the present study uses a confirmatory factor analysis methodology with a higher order structural equations technique, where the second-order latent variables are the constructs of spiritual intelligence, mindfulness and transformational leadership, the first-order latent variables are the factors explained by each second-order latent variable, and the questions within the measuring instruments are the measurable (or observable) variables defined by each factor. This technique is the most suitable for working with constructs such as transformational leadership, mindfulness and spiritual intelligence because, besides describing the relationships between observable variables of different constructs (via regression), the technique can describe relationships between first- and second-order latent variables and between the constructs themselves (Kline, 2011; Lévy, 2003; Pearl, 2012), thus providing a higher-level evaluation in the analysis (Kline, 2011). Structural equation modeling (SEM) also provides a better estimate of effect size, as opposed to the plain outcome of traditional statistical tests such as multiple regression and ANOVA, and better address the problem of measurement error (Kline, 2011). This statistical multivariate analysis technique has "the ability to simultaneously estimate multiple dependence relationships (similar to multiple regression equations) while also incorporating multiple measures for each concept (i.e., akin to factor analysis)" (Hair, Black,

Babin & Anderson, 2010, p. 627). The present study tests several alternative equivalent models under the conceptual framework presented in Figure 1, considering the following variables:

- Second-order latent variable: Transformational leadership (TF).
- Second-order latent variable: Spiritual intelligence (SI).
- Second-order latent variable: Mindfulness (MF).
- First-order latent variables explained by the second-order latent variable (TF): *Idealized influence attributed* (IA), *idealized influence behavior* (IB), *inspirational motivation* (IM), *intellectual stimulation* (IS), and *individualized consideration* (IC).
- First-order latent variables explained by the second-order latent variable (SI): *Critical existential thinking* (CET), *personal meaning production* (PMP), *transcendental awareness* (TAW), and *conscious state expansion* (CSE).
- First-order latent variables explained by the second-order latent variable (MF): *observing* (OB), *describing* (DE), *acting with awareness* (AA), *nonjudging of inner experience* (NJ), and *nonreacting to inner experience* (NR).
- Observable variables (questions in the measuring instrument) explained by each of TF's first-order latent variables (IA, IB, IM, IS, and IC).
- Observable variables (questions in the measuring instrument) explained by each of SI's first-order latent variables (CET, PMP, TAW, and CSE).
- Observable variables (questions in the measuring instrument) explained by each of MF's first-order latent variables (OB, DE, AA, NJ and NR).

The study uses self-report questionnaires that have been validated in reliable international research, namely, the Spiritual Intelligence Test (SISRI-24) designed by King (2008), the Five Facets Mindfulness Questionnaire (FFMQ) designed by Baer et al. (2006), and the Multifactor Leadership Questionnaire (MLQ-5X) designed by Bass and Avolio

(2004). These instruments use five-point Likert-type scales. The MLQ-5X and the FFMQ questionnaires were previously validated in Peru. The SISRI-24 was translated into Spanish and validated in Peru in the course of the present study using a confirmatory factor analysis methodology. Because the purpose of this study is not to investigate transformational leadership, mindfulness and spiritual intelligence as constructs, but rather, to look at the relationships between these three constructs, the focus is on the five factors that define transformational leadership within the MLQ-5X: *Idealized influence attributed*, *idealized influence behavior*s, *inspirational motivation*, *intellectual stimulation*, and *individualized consideration*.

A convenience mixed-sampling technique was used, targeting part-time students in the postgraduate business administration program (MBA) of CENTRUM-Católica who were working in organizations in supervisory or management positions (surveyed in-person) and leaders from the Top 10,000 and LinkedIn databases (surveyed online). The sample size was estimated using the *N:q* rule (Kline, 2011); considering the complexity of the model and the number of parameters that require statistical estimates (*q*), the minimum suggested ratio of 5:1 was used as a guideline and the application of bootstrapping and/or parceling techniques was anticipated. The acceptable number of participants (*N*) was expected to be around 500. The sample size was fine-tuned during the pilot test after an analysis of the data for normality and missing data.

Research Questions

The following research questions guide the present study:

- Does spiritual intelligence influence transformational leadership behavior?
- Does mindfulness influence transformational leadership behavior?
- Does mindfulness mediate the effect of spiritual intelligence on transformational leadership behavior?

- Do relevant demographic data and social desirability influence the effects of spiritual intelligence and mindfulness on transformational leadership?

A better understanding of the factors that drive leaders' transformational behaviors will assist academic institutions and the training industry in developing new leaders with a transformational leadership style. Positive effects suggested by the analysis could inform future studies using experimental designs or multiple time measures to provide grounds for the claim that spiritual intelligence and/or mindfulness has a causal effect on transformational leadership.

Hypotheses

The intention of the proposed research is to explore relationships between spiritual intelligence, mindfulness and transformational leadership constructs by testing the following null hypotheses:

($H1_0$): Spiritual intelligence has no effect on transformational leadership behavior.

($H2_0$): Mindfulness has no effect on transformational leadership behavior.

($H3_0$): Mindfulness does not mediate the effect of spiritual intelligence on transformational leadership behavior.

($H4_0$): Relevant demographic data and social desirability do not influence the effects of spiritual intelligence and mindfulness on transformational leadership behavior.

Theoretical Framework

This research looks at leadership from a theoretical basis. The intention is to investigate the relationships between the constructs of transformational leadership, mindfulness and spiritual intelligence. The study of spirituality in the corporate field is not well established, but it has become a popular subject within different disciplines of the psychological sciences (Teasdale, 1997). The increased research pertaining to the relationship between transformational leadership and spirituality indicates the relevance of the concept of

spirituality as a variable for studies of organizational behavior and management theory (e.g., Cavanagh, 1999; Howard, 2002; Tombaugh, Mayfield & Durand, 2011; Karakas, 2010; McCormick, 1994; Rojas, 2002; Sawatzky, Ratner, & Chiu, 2005). Spiritual intelligence has emerged as a proposed factor in transformational leadership, supported by findings from researchers such as Amram and Dryer (2008), Emmons (2000a, 2000b), King (2008), MacDonald (2000), Nasel (2004), Vaughan (2002), Wolman (2001), and Zohar and Marshall (2000), among others. However, little research in this area has been produced (King, 2008). The construct of spiritual intelligence includes domains that exhibit theoretical relationships with some transformational behaviors that have not yet been adequately explained. This gap in the research has encouraged theoretical propositions of a relationship between spiritual intelligence and transformational leadership (Amram, 2009; Howard et al., 2009; McDowelle, 2009; Yee Min Tan et al., 2013).

Mindfulness is a large part of the Eastern spiritual traditions, and is practiced as a Buddhist discipline; it involves internal mental contemplation, awareness, detachment and non-judgmental processes (Dhiman, 2009; Hawkins, 2010). After its introduction to the Western academia by Kabat-Zinn during the 1980s, mindfulness has been embraced as a form of clinical therapy in the West (Bishop et al., 2004; Dhiman, 2009). The Western world has adopted mindfulness following two trends: Buddhist philosophy and cognitive psychology; while most clinical therapy procedures based on mindfulness belong to the first group, most work related to organizational research and business studies is based on the second (Dhiman, 2009). In recent years, "many business leaders have acknowledged the benefits of meditative practice both in their personal as well as professional lives" (Dhiman, 2009, p. 72). The construct of mindfulness has facets that reveal possible theoretical associations with the construct of spiritual intelligence, as well as with behaviors identified as components of transformational leadership (Waldman et al., 2011).

In explaining the theory of transformational leadership, Bass (1999) emphasized the concepts of transcending self-interests; pursuing causes that transcend one's self; embracing behaviors such as altruism, conscientiousness and civic virtue; and inspiring followers to embrace such values. Bass also proposed that transformational leaders influence ideology and "bigger-than-life issues" (p.19), and are generally concerned with the well-being of society (Bass & Steidlmeier, 1999). Kanungo and Mendonca (1996) stated that the processes used by transformational leaders to evaluate situations, formulate the vision, and lead its implementation have transcendent and spiritual dimensions. The spiritual intelligence construct used in the present study reflects four core components: critical existential thinking, personal meaning production, transcendental awareness, and conscious state expansion (King, 2008). Similarly, the mindfulness construct used in the present study includes five facets, which Cebolla et al. (2012) briefly describe as follows:

> *Observing*, including noticing or attending to internal and external experiences such as sensations, thoughts, or emotions. *Describing* refers to labeling internal experiences with words. *Acting with awareness* includes focusing on one's activities in the moment as opposed to behaving mechanically. *Nonjudging of inner experience* refers to taking a non-evaluative stance toward thoughts and feelings. Finally, *nonreactivity to inner experience* is allowing thoughts and feelings to come and go, without getting caught up in or carried away by them. (p. 120)

The theoretical relationships identified between transformational leadership behaviors, mindfulness and spiritual intelligence will be analyzed in greater detail in the literature review section. In this study, SEM is employed to describe the relationships between the latent variables, using the spiritual intelligence conceptual framework proposed by King (2008), the mindfulness conceptual framework proposed by Baer et al. (2006), and the transformational leadership conceptual framework proposed by Bass (1990). A simplified

model is presented in Figure 1. The complete SEM model presented in Figure 2 will be used to determine the direct relationships between second-order latent variables.

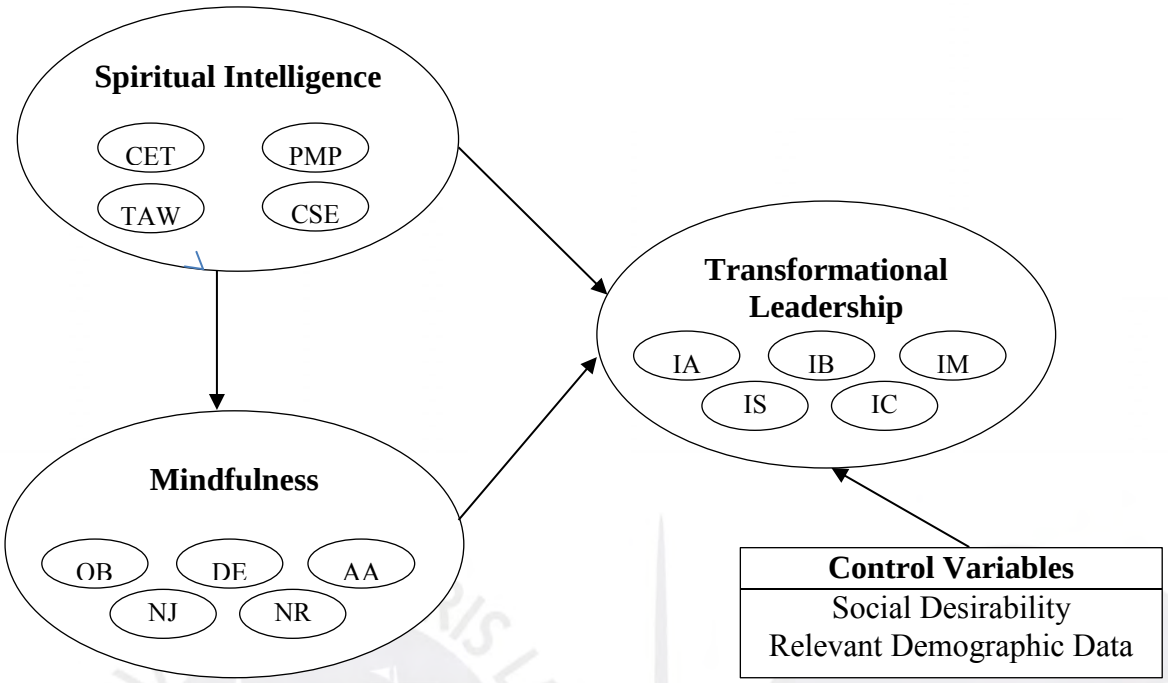

Figure 1. Conceptual framework showing the relationships between the constructs under study.

Note. AA: Acting with awareness; CSE: Conscious state expansion; CET: Critical existential thinking; DE: Describing; IA: Idealized influence attributed; IB: Idealized influence behaviors; IC: Individualized consideration; IM: Inspirational motivation; IS: Intellectual stimulation; NJ: Nonjudging of inner experience; NR: Nonreactivity of inner experience; OB: Observing; PMP: Personal meaning production; and TAW: Transcendental awareness.

The variables used in these frameworks have been properly operationalized and suitable measurement instruments have been developed and scientifically tested. The spiritual intelligence framework used by King (2008) is one of the most recent and comprehensive in the spiritual intelligence field, and King offers a more defined separation between spirituality and religiosity. King's construct reflects four core components: c*ritical existential thinking*, *personal meaning production*, *transcendental awareness*, and *conscious state expansion*.

Baer et al.'s (2006) mindfulness framework proposes five component skills: *observing*, *describing*, *acting with awareness*, *nonjudging of inner experience,* and

nonreactivity to inner experience. It provides a solid instrument, since Baer et al. (2006) correlated the items generated from five previously established instruments in the model's development. The transformational leadership theoretical framework developed by Bass and Avolio (1994), the most scientifically tested and accepted construct of transformational leadership, proposes five core components: idealized influence attributed, idealized influence behaviors, inspirational motivation, intellectual stimulation, and individualized consideration.

Definitions of Terms

The study applies the following definitions:

Consciousness: "The fact of awareness by the mind of itself and the world" (Consciousness [Def. 1], n.d.); "the state of being characterized by sensation, emotion, volition, and thought: mind" (Consciousness [Def. 2], n.d.). "Consciousness generally refers to awareness in a much more complex way; consciousness is awareness as modulated by the structure of the mind" (Tart, 1983/2000).

Emotional intelligence: "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 189). It is comprised of four primary abilities: (a) the capacity to perceive emotions accurately, (b) the capacity to use emotions to facilitate thinking, (c) the capacity to understand emotional meanings, and (d) the capacity to manage emotions (Salovey & Mayer, 1990).

Emotional quotient (EQ): Also known as the emotional coefficient, it is a score derived from written self-report questionnaires designed to assess an individual's perceived emotional intelligence. The Emotional Quotient Inventory (EQ-i) is the most accepted self-report measurement and includes subscales of interpersonal, intrapersonal, stress management, adaptability, and general mood (Bar-On, 2006).

Emotions: "Organized responses, crossing the boundaries of many psychological subsystems, including the psychological, cognitive, motivational, and experiential subsystems" (Salovey & Mayer, 1990, p. 186).

Existential intelligence: Intelligence with regard to big questions; it is based on the human tendency to contemplate the most fundamental questions of life. This term emerged as a result of earlier claims of spiritual intelligence as part of Gardner's multiple intelligence theory (Gardner, 1993).

Intellectual quotient (IQ): A score derived from standardized tests designed to assess intellectual intelligence. Among the most accepted tests are the Stanford-Binet Intelligence and Wechsler scales (Intelligence test, 1986).

Intelligence: "[The] ability to adapt effectively to the environment, either by making a change in oneself or by changing the environment or finding a new one . . . [I]ntelligence is not a single mental process, but rather a combination of many mental processes directed toward effective adaptation to the environment" (Legg & Hutter, 2007, p. 3).

Mind: "refers to the totality of both inferable and potentially experienceable phenomena of which awareness and consciousness are components (Tart, 1983/2000)

Mindfulness: "the awareness that arises through intentionally attending in an open, caring, and discerning way" (Shapiro, Wang, & Peltason, 2015, p. 17).

Rational intelligence: Or, general cognitive intelligence, as defined and used by Zohar (2005) and Bass and Riggio (2006). Means intelligence as traditionally measured by IQ tests.

Religiosity: "an organized system of beliefs, practices, rituals and symbols designed (a) to facilitate closeness to the sacred or transcendent (God, higher power, or ultimate truth/reality), and (b) to foster an understanding of one's relation and responsibility to others in living together in a community" (Koenig et al., 2001, p. 18). It is important to emphasize that religiosity is a different construct from spirituality and spiritual intelligence.

Spiritual coefficient (SQ): Also known as spiritual intelligence or SI (King, 2008), it is a score derived from written self-report questionnaires that are designed to assess an individual's perceived spiritual intelligence. The present study employs a validated self-report questionnaire, namely, the SISRI-24 (King, 2008).

Spiritual intelligence: "A set of mental capacities which contribute to the awareness, integration, and adaptive application of the nonmaterial and transcendent aspects of one's existence; leading to such outcomes as deep existential reflection, enhancement of meaning, recognition of a transcendent self and mastery of spiritual states" (King, 2008, p.56). King elaborates, "Four core components are proposed to comprise spiritual intelligence (1*) critical existential thinking*, (2) *personal meaning production*, (3) *transcendental awareness,* and *(4) conscious state expansion*" (p. 56).

Spirituality: "The personal quest for understanding answers to ultimate questions about life, about meaning, and about relationship to the sacred or transcendent, which may (or may not) lead to or arise from the development of religious rituals and the formation of community" (Koenig et al., 2001, p.18). It is important to emphasize that spirituality has common ground with spiritual intelligence, but they are different constructs.

Transformational leadership: A leadership approach that allows a person to communicate the vision and inspire followers by instilling pride, self-respect, and faith in the leader. Transformational leaders have the potential to move their followers away from their own self-interests toward the interests of the group, which can be the organization, community, country, or society as a whole (Bass, 1990, 2000; Bass & Avolio, 1994).

Assumptions

The following assumptions are made for the purposes of the study:

1. The respondents will answer the questionnaires honestly.

2. CENTRUM is the business school of Pontificia Universidad Católica del Perú; most of its students pursue a degree there because of its prestige and quality of education, and not due to any religious convictions.
3. The review of the literature suggests that leadership behavior supervenes upon intelligence, meaning that the properties of leadership ontologically depend upon the properties of intelligence. The literature also suggests that mindfulness supervenes upon spiritual intelligence. However, no empirical tests of these propositions were found and they therefore constitute assumptions of this study.

Limitations

1. The study used self-report questionnaires, which do not ensure general unbiased answers. However, the study controlled the final model for the effects of social desirability.
2. The vast majority of Peruvian citizens have been raised in families that profess the Catholic faith. Therefore, most individuals belonging to the population in this study were in families that profess the Catholic faith. Further studies would be required to analyze the influence of other faiths and cultures.
3. The knowledge and practice of mindfulness are presently incipient within the population of Peruvian leaders.

Delimitations

The study is delimited to Peru. A nonprobability convenience purposive mixed sampling technique was used; however, the methodology and results could be generalizable to similar populations in other developing countries, as analyzed at the end of in Chapter 5.

Summary

The study of leadership and its predictors and drivers (mind, intelligence, personality, genetics, environment, culture, etc.) have presented a challenge to scientific research. Technological advances in the areas of neuroscience and physics are bringing new

perspectives to leadership research, and new studies are continually expanding the knowledge frontier in this field (Waldman et al., 2011). Business, technology, economies, and geopolitics around the globe are continuously and rapidly changing, forcing organizations and institutions to adapt, with consequent changes of direction and individual alignments necessary. Demographic and industrial growth, staggering consumption, globalization, wealth disparity, and environmental ethics are becoming more difficult to maintain every year. This complex context requires effective and capable leaders. More than that, it may require a change of mentality, of perception of reality, and of priorities that will foster creativity and innovation to develop models to manage current and future challenges. Transformational leadership has powerfully emerged as a well-suited model for addressing such challenges; it has been extensively studied and empirically tested. Nevertheless, some dimensions of transformational leadership show weak theoretical associations with the constructs that attempt to explain it; in addition, not much is known about the sources that drive the transformational behaviors of leaders. The attention that science is giving to areas such as spirituality and mindfulness has substantially increased with the new millennium. Spiritual intelligence and mindfulness have some components that appear to have theoretical correlations with one another and with the transformational leadership dimensions. This quantitative study proposes that spiritual intelligence and mindfulness could be two of the sources that drive transformational behavior among leaders. Using a post-positivist paradigm, the aim of the research is to evaluate the effects of spiritual intelligence and mindfulness on transformational leadership behavior patterns among leaders in Peru, using previously designed theoretical frameworks that will be empirically verified by testing hypotheses in a causal model. This background will be reviewed in Chapter 2.

Chapter 2: Review of the Literature

Documentation

The present literature search avoided non-scientific, philosophical, theological, mystical, and metaphysical literature in the area of mindfulness, spirituality and spiritual intelligence. A special effort was made to find studies that were focused on investigating the relationships between transformational leadership, mindfulness and spiritual intelligence. This literature review includes contemporary, scientific, peer-reviewed articles from databases such as ProQuest, EBSCOhost, the JSTOR Archive, Ebrary, and Emerald, among others, in addition to books recognized in academia. Several papers and documents have provided qualitative approaches for investigating the relationships between spiritual intelligence and leadership, and mindfulness and leadership. Only one quantitative study looking at the relationships between spiritual intelligence, mindfulness and transformational leadership was found (Gieseke, 2014), with most of the qualitative research focused on the concept of mindful leadership. Similarly, one quantitative study investigating the relationship between spiritual intelligence and transformational leadership was identified (Christ-Lakin, 2010), with most of the available qualitative research focused on the relationships between transformational leadership and spirituality, such as the studies by Zwart (2000), Hartsfield (2003), Field (2003), Hinds (2005), and Hariprasad (2006), among others.

Review of the Literature

The statement of the problem and the purpose of this research suggest nine main subjects for the literature review: leadership, transformational leadership, intelligence, spirituality, spiritual intelligence, and mindfulness, instruments for measuring spiritual intelligence and mindfulness, and predictors of transformational leadership behavior. The review of the literature is used to guide the conceptualization, justification, and interpretation of the problem, while looking for results that support or deny the conceptual framework and

hypothesized relationships between the constructs of transformational leadership, mindfulness and spiritual intelligence. The most important constructs in the social sciences are complex and elusive, and the same is the case for leadership, mindfulness, intelligence, and spirituality.

Leadership

The concept of leadership has been extensively studied since ancient times; numerous authors have studied leadership from diverse perspectives and have developed a number of theories and models to explain the behaviors and traits of people that seem well suited to, or have succeed in, leading others. The concept is elusive and complex (Schiro, 1999; Weiskittel, 1999), to the extent that the definition of the term *leadership* shows little consensus between authors (Weiskittel, 1999). For example, Capezio and Morehouse (1997) defined leadership as "the ability to influence individuals or groups to think, feel and take positive action to achieve goals" (p. 1), while Kouzes and Posner (1993) defined leadership as "a reciprocal relationship between those who choose to lead and those who decide to follow" (p. 1).

Many studies have influenced the present theories of leadership. Several studies have proposed different ways to classify these theories and models. According to Fleishman et al. (1991), as many as 65 different taxonomy systems have been used to classify the dimensions of leadership. Two of these taxonomies were presented by Bass (1990) and van Maurik (2001). Bass (1990) grouped leadership theories into five main categories, including (a) personal and situational theories, (b) interaction and social learning theories, (c) theories and models of interactive processes, (d) perceptual and cognitive theories, and (e) hybrid explanation theories, with several subcategories. Van Maurik (2001) simplified the issue by grouping these theories and models based on a generational school of thought. Van Maurik described four main generational trends, where the theory revolved around (a) traits, (b)

behavior, (c) contingency, and (d) transformational leadership. Many important leadership theories have emerged in last century, and it is beyond the scope of this research to mention most of them or to identify which are the most effective; instead, we will mention some of the most recent and relevant leadership theories and studies such as the transformational leadership (Burns, 1978), the continuum approach (Tannenbaum & Schmidt, 1958), the managerial grid (Blake & Mouton, 1964), servant leadership (Greenleaf, 2012), situational leadership (Hersey & Blanchard, 1969; Hersey, Blanchard, & Natemeyer, 1979); transactional and transformational leadership (Bass & Avolio, 1994), the distributed approach (Pearce & Sims, 2002); spiritual leadership (Fry, 2003; Zohar, 2005); transcendental leadership (Sanders III, Hopkins, & Geroy, 2003), and authentic leadership (Luthans & Avolio, 2003), to mention a few. Traditional leadership theories are focused mainly on transactional approaches and task-oriented versus people-oriented leadership styles; these theories have recently been displaced by transformational, charismatic, situational, and empowering leadership styles (Pearce & Sims, 2002). Contemporary management theories have been evolving rapidly in an effort to understand and explain what makes a person successful as a leader. The relationships and comparisons between leadership theories have captivated scholarly attention and driven important research efforts (Emerald Group, 2010). Most authors agree that no leader behaves according to one single style, but uses mental models and behaviors that fit with different styles, depending upon the context and situational and contingency factors, among other elements (Crevani, Lindgren, & Packendorff, 2010; Emerald Group, 2010; Gosling, Sutherland, & Jones, 2012).

A recent school of thought gives less attention to the individual as the unit of analysis in leadership research, moving the focus to the interdependent and coordinated, socially-concertized actions within an organization that give rise to the distributed practice concept (Bass & Riggio, 2006; Bolden, 2007; Crevani et al., 2010; Day, 2001; Groon, 2002). This

school of thought recognizes that the nature of most organizations requires that individuals acting as followers in certain situations also act as leaders in other circumstances, moving leadership roles away from formal organizational structures (Bass & Riggio, 2006; Day, 2001; Gosling et al., 2012; Raelin, 2011). Such an approach provides a new perspective on the analysis of the complex construct of leadership from a systemic point of view, building on and complementing, rather than dismissing, previous research that held the individual as the unit of analysis. As Raelin (2011) put it: "These perspectives are not meant to dethrone the individualistic paradigm for its own sake, but rather to affirm the value of detaching leadership from personality in order to allow leadership to focus on social interactions and behavioral change within organizational life" (p. 195).

Under this new paradigm, a clear distinction is made between traditional *leader* development and contemporary *leadership* development; the former is focused on the individual, or human capital, while the latter is focused on social resources embedded within work relationships, or social capital (Day, 2001). Leader development emphasizes the intrapersonal competencies of leaders, such as self-awareness, self-regulation, and self-motivation, whereas leadership development emphasizes interpersonal competencies and the building of social capital, and is focused on networking relationships among individuals that facilitate cooperation and concerted actions for developing organizational value (Day, 2001). The present study is well suited to the leader development paradigm because the transformational/transactional model is one of the most influential contemporary models within the leader development paradigm (Avolio et al., 1991; Bass et al., 1987; Covey, 1991; Judge & Piccolo, 2004; Tucker & Russell, 2004).

Transactional/Transformational Leadership Model

While studying leadership within a political context, Burns (1978) proposed grouping leadership styles into two main conceptual models: transactional and transformational. Bass

(1985) later built a more comprehensive transformational leadership model based on Burns's original work. No leader is totally transactional or totally transformational, and depending on the situation, a leader can behave under a transactional or transformational model, but the most effective corporate leaders tend to be more transformational and less transactional (Bass, 1999). Burns (1978) considered that leaders move within a single continuum with the transactional and transformational leadership styles at opposite ends; Bass (1985), in contrast, proposed that transactional and transformational leadership are two different and independent concepts, with most leaders using both styles in different amounts and intensities. According to Gosling et al. (2012) "the pace and complexity of modern society create a greater demand for transformational leadership" (para. 10) due to its greater effectiveness (Bass, 1999). Other authors have considered that transactional leadership can be viewed as "a contractual relationship between leaders and followers," while transformational leadership can be viewed "as a social relationship where the aspirations of followers are raised to those of the leaders themselves" (Crevani et al., 2010, p. 78). Given that the aim of the present study is not to analyze the transformational and transactional theories, but rather, to identify the possible effects of mindfulness and spiritual intelligence on transformational leadership, the focus will be on transformational leadership.

Transformational leadership

The transformational leadership construct is relatively new, but some of the ideas and factors that form it have been visited since the study of human behavior and leadership first began. For instance, Confucius in China, and Aristotle and Plato in Greece, encouraged individuals in power to embrace high moral standards to influence their followers for good and progress (Humphreys & Einstein, 2003). Bass's (1990) proposal for the transformational leadership style embraced four factors (a) idealized influence (attributed and behaviors), (b) inspirational motivation, (c) intellectual stimulation, and (d) individualized consideration.

While the term 'charisma' has been extensively used as a leadership style on its own, Antonakis, Avolio, and Sivasubramaniam (2003) suggested replacing it, as part of the transformational model, with *idealized influence*. Explaining idealized influence and the distinctions between idealized influence attributes and behaviors, Bass (1999) offered the following analogy: "Idealized influence attributes … 'make us proud to be associated with him or her,' and idealized influence behaviors … 'specify the importance of being committed to our beliefs'" (p. 20). To interact within the transformational paradigm, the achievement of idealized influence, as perceived by the followers, is of utmost importance; followers normally develop increased confidence and trust in and appreciation and respect for such leaders. As Bass stated, "Idealized influence encompasses influence over ideology, influence over ideals, and influence over 'bigger-than-life' issues" (p. 19).

Transformational leaders usually transmit high expectations and inspire followers to reach lofty objectives using simple, symbolic and metaphorical language to communicate important and transcendent purposes; this inspirational motivation gives meaning and relevance to followers' endeavors (Bass, 1999). Intellectual stimulation entails encouraging knowledge, intelligence, critical thinking, innovation, creativity, and the challenging of old paradigms (Avolio, Waldman & Einstein, 1988). Individualized consideration defines behaviors related to the individual differences and needs of followers, and allowing and supporting their continuous growth through mentoring and coaching.

The transformational leadership style allows leaders to gain the trust and confidence of followers (Bass, 1985), not only uniting and aligning followers but also, and most importantly, enabling changes to followers' goals and beliefs (Burns, 1978). The relationship between leader and followers transcends a set of values and beliefs: "The relationship can be moralistic, of course. But transforming leadership ultimately becomes moral in that it raises the level of human conduct and ethical aspiration of both leader and led, and thus it has a

transforming effect in both" (Burns, 1978, p. 20). Transformational leaders uplift the morale, motivation, and morals of their followers (Bass, 1999), and in doing so are able to positively influence the effectiveness of those followers (Ashkanasy et al., 2002; Shamir, House, & Arthur, 1993; Yukl, 1999).

Bass (1999, p. 12) cited Burns (1978) and Handy (1994, p. 275), pointing out that the hierarchy of needs described by Maslow (1954/1987) should move past the individual's self-oriented concerns, implying that Maslow's theory is disappointingly egocentric:

> In 1978, Burns had handled this possible bitter aftertaste by *describing* the transforming leader as one who not only moved followers up on Maslow's hierarchy, but also moved them to transcend their own self-interests, presumably including their own self-realization. Williams (1994) showed that transformational leaders display more citizenship behaviors such as altruism, conscientiousness, sportsmanship, courtesy, and civic virtue, as well as imbue their subordinates with these same values.

Maslow defined his theory of the hierarchy of needs in 1954, in which self-actualization was proposed as the highest level of need that individuals attempt to satisfy. Self-actualization is defined as the desire for self-fulfillment, or becoming everything that one is capable of becoming (Maslow, 1943). Further research encouraged Maslow to expand his understanding of individuals' search for self-satisfaction, leading him to propose a new higher level that was uplifting and ego-transcending – the concept of peak or transcendent experiences. Maslow (1994) defined peak experiences as especially happy and exciting events, involving feelings of intense joy, well-being, wonder, and awe. These research efforts were part of the groundwork for the establishment of the *Journal of Transpersonal Psychology* in 1969 and the foundation of the Association for Transpersonal Psychology in 1972.

Transformational leadership has proven to be one of the most effective leadership styles (van Dierendonck et al., 2013) and one of the backbones of organizational change (Bass, 1985, 1990, 1999, 2000; Burns, 1978; Howard et al., 2009; Judge & Piccolo, 2004; Kouzes & Posner, 2002; Morler, 2006; Tucker & Russell, 2004; Yukl, 1994). Several authors have observed strong correlations between transformational leadership and employee and organizational performance (Bass, 1985; García-Morales, Jiménez-Barrionuevo & Gutiérrez-Gutiérrez, 2012; Gupta, Huang, & Yayla, 2011; Tse & Chiu, 2014; van Dierendonck et al., 2013; Yammarino & Dubinsky, 1994). Nevertheless, Bass (1999) stated:

Although the concepts of transformational and transactional leadership are found universally, much more still needs to be learned about how they are affected by the context in which the leadership occurs. Finally, much more explanation is needed about the workings of transformational leadership and how followers are moved from compliance, to identification, and to internalization of values and beliefs. (p. 23)

Transactional leadership

The transactional leadership style involves a relationship between leader and follower in which an exchange of tangible or intangible assets takes place to meet the parties' respective self-interests. A mutual influence exists that is maintained as long as the exchange of valuable items is perceived to be fair by both parties (Burns, 1978). This style can include behaviors encompassed under four categories of action: (a) contingent reward, (b) active management-by-exception, or passive leadership in its forms of (c) passive management-by-exception and (d) laissez-faire. When acting within the contingent reward domain, the leader informs the follower of the outcome expected and the rewards that will be secured by its achievement. Active management-by-exception refers to leaders continuously observing and controlling the performance of followers, taking corrective action when performance falls below predefined expectations. Passive management-by-exception entails no corrective

action except when critical problems arise, and under the laissez-faire style, no action is involved. The passive leadership styles are generally considered detrimental to the organization. The transactional leadership paradigm can be effective in reaching the organization's goals and satisfying followers, but the effectiveness of the transformational leadership style enhances and goes beyond what is achieved with a transactional leadership style (Bass, 1999).

Intelligence

The human mind and the concept of intelligence have been extensively studied, but their comprehension and definitions remain elusive. The construct of intelligence in particular is complex and not well understood. Leg and Hutter (2007) stated: "Despite a long history of research and debate, there is still no standard definition of intelligence. This has led some to believe that intelligence may be approximately described, but cannot be fully defined" (p. 2). The authors went on to list several definitions from a variety of sources, among them:

- 'The ability to use memory, knowledge, experience, understanding, reasoning, imagination and judgment in order to solve problems and adapt to new situations' (*All Words Dictionary*, 2006).
- '[The] ability to adapt effectively to the environment, either by making a change in oneself or by changing the environment or finding a new one . . . intelligence is not a single mental process, but rather a combination of many mental processes directed toward effective adaptation to the environment' (Encyclopaedia Britannica, 2006).

Other definitions include "a combination of the innate characteristics of an individual central nervous system—which are genetically endowed—and of developed intelligence—which is molded by experience, learning and environmental factors"; "a cognitive disposition (knowing) distinct from the affective (emotional) or motivational models of human behavior"

(Theories and Distribution of Intelligence, 1986, p. 710); "not a single, unitary ability, but rather a composite of several functions. The term denotes that combination of abilities required for survival and advancement within a particular culture" (Anastasi, 1992); and "the ability to solve problems, or to create products, that are valued within one or more cultural settings" (Gardner, 2011, para. 7). Neisser et al. (1996, p. 77) stated, "Individuals differ from one another in their ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, [and] to overcome obstacles by taking thought."

The study of intelligence has been ongoing since ancient times. Greek philosophers such as Socrates, Anaxagoras, Plato, Aristotle, and others developed theories that were intended to explain the construct (Plucker, 2003). Such philosophers studied the mind using inductive and deductive approaches to develop theories that could describe or explain its processes. At the end of the 19th century, strong efforts towards the development of new theories on human intelligence were initiated by Galton (1869), Catell (1890), Spearman (1904), Terman (1916), and others (Cianciolo & Sternberg, 2004).

Spearman (1904) introduced the concept of general intelligence, commonly known as the *g* factor, proposing that it influences performance on mental aptitude tests. Since then, the *g* factor has been the basis of many studies related to psychometric testing and cognitive test data. The French psychologist Alfred Binet is considered one of the first scientists to develop a scientific method to objectively measure intelligence (Buzan, 2002). Alfred Binet and Theodore Simon published their first version of the Binet-Simon test to measure intelligence in 1905. In 1916, Lewis Terman, from Stanford University, modified the test, developing the Stanford-Binet intelligence scale, which was subsequently adopted in the United States and other countries as the standard for measuring the intelligence quotient (IQ), a parameter developed to quantify intelligence. With its basis in the idea of cognitive intelligence (logic,

mathematics, and verbal skills), the Stanford-Binet scale dominated the understanding and measurement of intelligence for several decades (Intelligence test, 1986). Only after 1970 did new scientific theories emerge to provide different perspectives on how intelligence operates in the human mind (Theories and distribution of intelligence, 1986).

Horn and Cattell (1966) developed one of the most influential theories of intelligence by questioning the notion of a single structure known as general intelligence (*g*), and proposing instead that *g* is composed of up to 100 mental abilities grouped into two factors, namely, fluid (*Gf*) and crystallized (*Gc*) intelligences. Fluid intelligence includes most of the measurable intellectual outcomes that depend on biological factors, independent of environmental influences; this type of intelligence is more active when the tasks to be performed are not known from previous experience or learning. In contrast, crystallized intelligence includes most of the measurable outcomes that depend on the environment, including those influenced by experience, education, and culture. Carroll (1993) reviewed Spearman's original concept of general intelligence and presented a three-level hierarchical array, with *g* as the complex and abstract second-level latent construct, and factoring in eight first-level latent variables to cluster over 70 different abilities.

Humphreys (1979) considered that there is a genetic as well as environmental contribution to individual differences in general intelligence. Under the evolutionary psychologist's view, general intelligence should have been shaped by natural selection (Rutter, 2000); therefore, it could be feasible to assume that general intelligence predates leadership behaviors in individuals. Galton (1869) suggested that intelligence and leadership are hereditary. Under the behavioral geneticist's view, the general intelligence trait has shown consistently high heritability; nevertheless, Rutter (2000) suggested the following:

> Both genetic and environmental factors influence cognitive performance and ... some of the influence derives from a synergistic interplay between the two (stemming from

> both gene-environment correlations and interactions). The key question is whether that applies differently to intelligence than to any other behavioral trait (Gangestad, 1997). We are likely to think that it does not. (p. 4)

Lubinsky (2000) proposed that *g* influences many facets of human life, as supported by the fact that several prominent personality theorists consider *g* to constitute "an important dimension of psychological diversity relevant to molar behavior (i.e. general personological functioning)" (p. 7), and thus regard *g* as a significant feature of the total personality. A task force from the American Psychological Association (APA) found in 1996 that intelligence test scores are stable throughout an individual's developmental years, with some change seen over time: the "average change between age 12 and age 17 was 7.1 IQ points; some individuals changed as much as 18 points" (Neisser et al., 1996, p. 81). The task force recognized that several other individual characteristics (inter-personal skills, personality traits, etc.) could be as important, or even more important, for predicting an individual's success in life (as understood within the person's cultural environment).

It is a general consensus that intelligence is influenced by both genetic and environmental factors (APA, 1996; Humphreys, 1979; Rutter, 2000). Nevertheless, evolutionary psychologists and behavioral geneticists have failed to reach an agreement about the factors that influence intelligence due to contradictory findings with respect to genetic influences on variations in intelligence. Rutter (2000) explained this conflict clearly:

> Evolutionary psychologists, it was said, would expect that a trait so strongly adaptive as general intelligence would have been intensely shaped by natural selection and that, as a result, intelligence should show only weak genetic effects on individual variations within the population (Tooby & Cosmides, 1990). By contrast, behavior geneticists have argued that empirical research findings have been consistent in showing a high heritability for intelligence. The supposed quandary was how to explain why the high

> intelligence that distinguishes humans from other species, and which must have been under strong selection, nevertheless still shows large individual differences that are subject to strong genetic influences. (p. 1)

Evidence shows that the genetic influence on intelligence increases from infancy to adulthood; environmental influences (cultural, social, school setting) and unique experiences have also been shown to have an influence on children's intelligence (APA, 1996, p. 86). The suggestion is that intelligence is not only influenced by genetics and general environmental/social factors, but also by individual life experiences.

Gardner (1993, 2011) expressed disagreement with the idea that a single factor (*g* factor) can correlate with achievements in any intellectual area, and refuted the IQ proposition. Under Gardner's (2011) theory of multiple intelligences (MIT), seven types of intelligence are identified, including (a) spatial, (b) linguistic, (c) logical-mathematical, (d) bodily-kinesthetic, (e) musical, (f) interpersonal, and (g) intrapersonal; he later added (h) naturalistic and (i) existential intelligence, describing the final type as intelligence regarding the big questions, which explains why some individuals tend to think about the most fundamental questions of life, looking for meaning and purpose. Gardner (1993) used a list of eight criteria for accepting a particular ability as a type of intelligence. These criteria included (a) potential for isolation through brain damage; (b) place in evolutionary history; (c) presence of core operations; (d) susceptibility to encoding (symbolic expression); (e) distinct developmental progression; (f) existence of savants, prodigies, and exceptional people; and (g) support from experimental psychology and psychometric findings.

The concept of emotional intelligence was introduced by Salovey and Mayer (1990), who studied individual abilities in the area of emotions, coining the term *emotional intelligence* (Mayer, DiPaolo, & Salovey, 1990; Salovey & Mayer, 1990). Salovey and Mayer (1990) defined emotional intelligence as a "subset of social intelligence that involves

the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (p. 189). Gardner's intelligence model didn't include emotional intelligence, but proposed the interpersonal and intrapersonal intelligences. Goleman (1995, p. 39) stated the following:

> Gardner noted that the core of interpersonal intelligence includes the "capacities to discern and respond appropriately to the moods, temperaments, motivations, and desires of other people." In intrapersonal intelligence, the key to self-knowledge, he included access to one's own feelings and the ability to discriminate among them and draw upon them to guide behavior.

Goleman (1995) brought the term and theory into the academic world through his book *Emotional Intelligence*, in which he challenged IQ as the standard of excellence in life and proposed that humans have two brains—the left and the right—that work in different fashions, and which constitute two minds and two different types of intelligence (rational and emotional). He suggested that an individual's chances for success in life are determined by both IQ (as a measurement of rational intelligence) and EQ (as a measurement of emotional intelligence), with the latter being the more important.

Spiritual intelligence has recently emerged as a new concept, supported by researchers such as Amram and Dryer (2008), Emmons (2000a), King (2008), MacDonald (2000), Nasel (2004), Vaughan (2002), Wolman (2001), and Zohar and Marshall (2000). However, before discussing spiritual intelligence, it must be differentiated from spirituality.

Spirituality

When studying this concept, the first question a researcher needs to answer is whether the concept of *spirit* is something that belongs to the scientific domain or whether is relevant for study (Yob, 2003). Over the last few decades, there have been enormous advances in physical science and an astonishing growth in understanding of the macro- and microcosms,

driven by the discovery of physical laws and elements that are fundamental to the universe as we know it, challenging humanity's conceptions of reality. Among some of the most controversial but scientifically solid proposals are ones that suggest consciousness as one of the fundamental elements existing in the universe, with matter, space and time simply being consequences of that phenomenon. Within that paradigm, brain (material) and consciousness (immaterial) co-exist in a dualistic interrelationship, where consciousness and spirit could represent similar concepts; however, this and other competing theories remain to be empirically tested (Capra, 2013; Gao, 2012; Wigner, 1997; Zohar, 1990). Psychologically speaking, the vast majority of individuals in the world (87%) believe in the existence of some kind of spirit (WIN-Gallup International, 2012), and their mental models and behaviors are influenced by such beliefs. This means that it is necessary to study constructs within that paradigm, bearing in mind that the paradigm has the potential to influence the behavior of individuals who subscribe to it.

Kuh and Gonyea (2006) indicated that one of the most intriguing phenomena in the new century among young adults in the United States is their rapidly growing interest in the subject of spirituality. Research efforts in this area can be found in a variety of disciplines, including medicine, psychology, and thanatology (Vaughan, 2002). That spirituality has become an important topic in both physics and the social sciences cannot be doubted (Piedmont, 2001). Furthermore, the construct of spirituality has become a popular research subject within different disciplines in the psychological sciences (Teasdale, 1997), with the results indicating the contemporary relevance of using spirituality as a variable in studies of organizational behavior and management theories (e.g., Cavanagh, 1999; Howard, 2002; Tombaugh et al., 2011; Karakas, 2010; McCormick, 1994; Rojas, 2002; Sawatzky et al., 2005). The concept of spirituality at work gained the attention of several researchers in late

1990s (Conlin, 1999; Donde & Duchon, 2000; Freshman, 1999; Mitroff & Denton, 1999; Wheaton & Baird, 2002). Donde and Duchon (2000) defined spirituality at work as

> the recognition that employees have an inner life that nourishes and is nourished by meaningful work that takes place in the context of community. Thus, we see spirituality at work as having three components: the inner life, meaningful work, and community. (p. 4)

Within this context, Donde and Duchon (2000) identified five factors to define spirituality: (a) conditions for community, (b) meaning at work, (c) inner life, (d) blocks to spirituality, and (e) personal responsibility. Tischler, Biberman, and McKeage (2002) reviewed different theoretical models to explore the impact of emotional intelligence and spirituality on workplace performance, concluding that both constructs appear to influence an individual's work success and that further investigation was required.

Through the years, several influential psychiatrists and psychologists have proposed that spirituality needs to be studied and that its conscious and unconscious manifestations or influences on people's behaviors need to be considered in order to completely understand the individual (e.g., Jung, 1933/2013, 1968; Maslow, 1970). Almost a century ago, Jung (1933/2013), one of the most influential investigators in the psychological and psychiatric sciences, noted, "The spiritual problem of modern man is one of those questions which belong so intimately to the present in which we are living that we cannot judge of them fully" (Chapter 10, para. 1). In 1993, the American Psychological Association's Diagnostic and Statistical Manual of Mental Disorders (DSM) acknowledged the importance of spirituality to a person's well-being (Turner, Lukoff, Barnhouse & Lu, 1995).

The term 'spirituality' is vague and difficult to define, and there is little agreement on a single definition (Emmons, 2000a; Nasel, 2004). Most often, the concept spirituality is used in terms of religion and philosophy, but in some instances, spirituality may not be related to

religion (Fuller, 2001; Pascarella & Terenzini, 2005). Emmons (2000a, p. 4) stated, "The many meanings of spirituality and religiousness have recently become the focus of vigorous theoretical and empirical scrutiny." MacDonald (2000) found over 70 psychometric instruments that measure spirituality, but no unique, harmonious theoretical framework. Emmons (2000a, p. 9) stated, "Spirituality is an enormously rich and diverse construct that defies easy definition, simple measurement, or easy identification in the life of another person." Yob (2003, p. 112) clearly acknowledged that confusion exists in the definitions of spirituality – a term used indiscriminately and that has different meanings in different contexts. Yob continued with probing questions, including whether spirituality equals religion or whether spirituality is just one of religion's features, 'Is it independent or opposed to religion?', 'Is it a human or an extra-human quality?', 'Is it natural or forced?', 'Is it subjective or objective?', 'Is it just a psychological experience?'

Vaughan (2002) summarized some current thoughts about spirituality as follows: (a) It involves the highest levels of any of the developmental lines, for example, cognitive, moral, emotional, and interpersonal; (b) it is itself a separate developmental line; (c) it is an attitude (such as openness to love) at any stage; and (d) it involves peak experiences and not stages. Koenig et al. (2001) defined spirituality as "the personal quest for understanding answers to ultimate questions about life, about meaning, and about relationship to the sacred or transcendent, which may (or may not) lead to or arise from the development of religious rituals and the formation of community" (p.18). Piedmont (2001) defined and explained spirituality as

> an individual's effort to construe a broad sense of personal meaning within an eschatological context. This means that as humans we are intimately aware of our own mortality. As such, we strive to construct some sense of purpose and meaning for

> the lives we are leading. We question our purpose for existence and the value our lives provide to the world we inhabit. (p. 5)

Several authors have claimed that the diverse definitions of spirituality are finally converging, reaching some sort of closure. Zinnbauer, Pargament, and Scott (1999) argued that some degree of agreement has been achieved on the meaning, beliefs, behaviors, and goals related to the construct of spirituality. Hoffmann (1997) also suggested that the definitions of spirituality include some commonalities.

The term 'spirituality' comes from the Latin word *spiritualitas*, also rooted in the word *spirit*, coming from the Latin word *spiritus*, which has diverse meanings such as 'soul,' 'courage,' 'vigor,' and 'breath.' At least etymologically, spirituality is concerned with issues related to the spirit, as broadly as spirit can be conceived. The term 'psychology' is derived from the Latin word *psyche,* meaning 'animating spirit' and the Greek word *psyke,* meaning 'breath, mind, and soul.' The complex and elusive concept of spirituality attracted the interest of some eminent philosophers and scientists of the past, although their arguments were consistently refuted based on earlier scientific discoveries. However, new scientific discoveries have ignited contemporary debate.

According to Silverman (2012), Plato (429-347 BCE) proposed that the body belongs to the material world, while the soul (mind) belongs to the world of ideas, the latter not being attached to time and space, whereas the former is. René Descartes (1596-1650) proposed that the pineal gland was the physical structure in the brain at which the soul interacts with the body. The focus of Carl Jung's lifetime of research was the psyche. Jung (1933/2013) maintained that all experiences and one's immediate reality can only be psychic. He argued that during the evolution of human thought, the Eastern world embraced inner space and the mind, while the Western world embraced outer space and matter. Jung (1933/2013) summarized the importance of the psychic as follows:

> We may well point to the idea of psychic reality as the most important achievement of modern psychology, though it is scarcely recognized as such. It seems to me only a question of time for this idea to be generally accepted. It must be accepted, for it alone enables us to do justice to psychic manifestations in all their variety and uniqueness. Without this idea it is unavoidable that we should explain our psychic experiences in a way that does violence to a good half of them, while with it we can give its due to that side of psychic experience which expresses itself in superstition and mythology, religion and philosophy. And this aspect of psychic life is not to be undervalued. Truth that appeals to the testimony of the senses may satisfy reason, but it offers nothing that stirs our feelings and expresses them by giving a meaning to human life. (Chapter 9, para. 35)

Elkins, Hedstrom, Hughes, Leaf, and Saunders (1988) defined spirituality as "a way of being and experiencing that comes about through awareness of a transcendent dimension and that is characterized by certain identifiable values in regard to self, others, nature, life, and whatever one considers to be the Ultimate" (p.10). Piedmont (1999) explained transcendence as the fundamental ability that facilitates an individual's ability to perceive life from a larger and interconnected perspective, with a sense of synchronization with life and of commitment to others, both of which create an attachment to humanity that is perceived as unbreakable, even by death.

Coming from a more materialist perspective, Sagan (1977, Introduction, para. 11) clearly disregarded any possibility of the mind being something other than a direct consequence of the brain's functions:

> My fundamental premise about the brain is that its workings—what we sometimes call 'mind'— are a consequence of its anatomy and physiology, and nothing more.

‘Mind’ may be a consequence of the action of the components of the brain severally or collectively.

Sagan (1977) studied brain functions in general, as well as the particular interactions between the two hemispheres, as orchestrated through the corpus callosum, and reckoned that the left hemisphere mediates sequential functions such as reading, writing, speaking, mathematics, etc., while the right hemisphere provides parallel functions such as pattern recognition, music, art, holistic reasoning, etc. Sagan (1977) conveyed the idea that the Western world developed the left hemisphere and the Eastern world developed the right hemisphere, agreeing on this point with Jung (1933/2013). This could explain why people in the Eastern world general tend to be more spiritual than those in the Western world (Mark, 2008). Sagan (1977) proposed that critical thinking (left hemisphere) with no creative and intuitive awareness (right hemisphere) would be unproductive, arguing that the sequential reasoning abilities of the left hemisphere have obscured the awareness of the intuitive right hemisphere and that the path to a successful future requires the balanced and well-coordinated activity of both hemispheres.

Important innovations in neurology and technological advances in instrumentation have ignited controversies about the mind-body problem, consciousness, and spirituality. Applications of advanced technologies such as multichannel electroencephalography (EEG), magnetoencephalography (MEG), neuroelectric and neuromagnetic source imaging, positron emission tomography (PET), and functional magnetic resonance imaging (fMRI), have helped identify different regions of the brain involved in conscious activities and altered brain functioning (Vaitl et al., 2013; Waldman et al., 2011). These advances have also allowed neural correlates of complex psychological phenomena such as moral judgment, emotion, and personal agency to be uncovered, decreasing the acceptance of transcendental realms as explaining the mind; however, whenever neuroscientists present weak arguments or

demonstrate gaps in their findings, belief in spirituality is reinforced (Preston, Ritter, & Hepler, 2013;). Preston et al. (2013, p. 32) noted, "Despite the many impressive breakthroughs of fMRI studies, there remains one epistemological issue about mind that neuroscience may not be able to solve, dubbed the 'hard problem of consciousness.'" Elaborating on this problem, the authors suggested that "although neuroscientists can identify neural correlates associated with mental processes, they are still unable to explain precisely how activity in the brain creates the experience of these mental phenomena" (p. 32).

Research into the transcendental realms has increased significantly due to the huge advances achieved in physics and astrophysics, and a general growth in our understanding of the macro- and microcosms, which has expanded people's conceptions of reality (Gao, 2012; Penrose, 1989, 2006; Scientific American, 2013; Wigner, 1997; Zohar, 1990). The astonishing increase in the number of physicists who have become interested in ontological domains has to do with the empirical validation of the theory of quantum physics (or quantum mechanics). Such a validation has challenged the long-held acceptance of classical mechanical laws that support a deterministic approach toward understanding reality and its relationship with living species. The deterministic approach basically proposes that with enough information about the present, the future behavior of an individual can be determined; quantum physics, on the other hand, provides grounds for accepting a dualistic explanation of the body-mind problem (i.e. the acceptance of a relationship between the material world and a non-material world) that assumes that mind (or consciousness) and matter belong to two different ontological categories. The deterministic approach also encourages a reductionist view by assuming that any system can be explained by studying the independent and isolated parts that form that system. Nobel laureate Francis Crick proposed a non-dualistic approach, framing the mind-body problem with the argument that consciousness can be explained in terms of the complex interactions of a massive network of neurons and associated bio-

molecules (Crick, 1995). The deterministic and materialistic perspectives dissociate science from the various ancient philosophies that embraced non-dualistic perspectives, in an attempt to explain the emergence of mind or consciousness.

Quantum mechanics is the field of physics that studies the laws governing the sub-atomic systems that form the material world. These systems and their corresponding physical laws are fundamental aspects that form what is known as *reality*—from sub-atomic particles, to atoms, to molecules, to living cells, to complex biological systems, to the entire universe comprising billions of galaxies and trillions of stars and planets. Within the domain of quantum mechanics, space and time have a different meaning than in classical mechanical laws. There is no simple way to define the actual and future states of the material world, due to the laws that rule the quantum kingdom, such as the principles of uncertainty, superposition, wave function collapse, and entanglement (Penrose, 1989, 2006; Wigner, 1997; Zohar, 1990). Some propositions emphasize the need for a conscious observer to collapse the wave function of the quantum domain so that it behaves as particle within the material world, opening the door to dualistic approaches or the possibility of two kinds of realities to explain the mind-body problem and understand reality (Wigner, 1997; Zohar, 1990). Quantum mechanics, and its interpretations and implications, are not yet completely understood, and some of the propositions of quantum mechanics contributed by eminent scientists (e.g., Capra, 2013; Hagan, Hameroff, & Tuszyn´ski, 2002; Hameroff, 1987, 2007; Penrose, 1989; Hameroff & Penrose, 2013; Wigner, 1997; Zohar, 1990) are quite controversial, generating strong arguments from numerous renowned scientists that such propositions are not valid (e.g., Nauenberg, 2007; Stenger, 1992; Yu & Nikolic, 2011). The continual development of new theories in the field, new discoveries, and empirical validation of propositions—like the recent tentative validation of the Higgs field theory, which explains

why some sub-atomic particles acquire mass (CERN, 2013)—constantly adds new ammunition to each proposition , maintaining an ongoing debate.

Spiritual Intelligence

There exists a clear distinction between spirituality and religiosity (King, 2008; Koenig et al., 2001; Wuthnow, 1998), despite the fact that most individuals tend to interpret spirituality in relation to religiosity (Wulff, 1997). There is also a clear distinction between spiritual intelligence and spirituality. Spiritual intelligence is an applicative concept regarding a group of mental capacities; among other benefits, these capacities contribute to the adaptive application of abilities to solve complex problems found in everyday life, and they provide a source of intrinsic motivation that drives, directs, and selects behaviors (King, 2008). The concept of spiritual intelligence represents an attempt to move away from the mystical and ritualistic interpretations and descriptions that have been traditionally attached to the construct of spirituality. As stated by King (2008), "Spiritual intelligence describes the mental abilities which underlie many components of spirituality" (p. 55), but equating spirituality with spiritual intelligence "could be compared to equating *music* with *musical intelligence* or *language* with *linguistic intelligence*" (p. 40).

While the concept of spiritual intelligence is relatively new and underdeveloped (King, 2008), several researchers have contributed to the field, including Amram and Dryer (2008), Emmons (2000a), King (2008), MacDonald (2000), Nasel (2004), Vaughan (2002), Wolman (2001), and Zohar and Marshal (2000), among others. Nasel (2004) defined spiritual intelligence as "the ability to draw on one's spiritual abilities and resources to better identify, find meaning in, and resolve existential, spiritual, and practical issues" (p. 42).

Ten years after his initial work in 1983, Gardner (2008) considered two additional forms of intelligence: naturalist and existential, with the latter being a substitute for spiritual intelligence. Based on the criteria for identifying candidates for a separate type of

intelligence, Gardner did not commit to the term 'spiritual intelligence,' using instead the term 'existential intelligence' to describe the intelligence that gives rise to the big questions that transcend perception, and that explains why individuals tend to think about the most fundamental questions of life, looking for meaning and purpose. Gardner hesitated to formally accept existential intelligence as part of his model due to a lack of scientific evidence linking a specific part of the brain to thought about existential issues. About the newly identified forms of intelligence, Gardner stated:

> People have very strong views on religion and spirituality. For many (particularly in the contemporary United States), experiences of the spirit are the most important ones; and many assume that a spiritual intelligence not only exists but actually represents the highest achievement of human beings. Others, particularly those of a scientific bent, cannot take seriously any discussion of the spirit or the soul; it smacks of mysticism. And they may be deeply skeptical about God and religion—especially so in the academy. Asked why I had not endorsed a spiritual or religious intelligence, I once quipped, 'If I did so, it would please my friends—but it will please my enemies even more!' (para. 8)

Vaughan (2002) suggests that spiritual intelligence "is one of the several types of intelligence and that it can be developed relatively independently" (p. 1). Some of the proposals about spiritual intelligence have generated controversy, criticism, and important discussions in academia. Emmons (2000a) argued that spirituality could be considered a type of intelligence under Gardner's (1993) criteria. Emmons's (2000a) essay initiated a series of five replies, from Gardner (2000), Kwilecki (2000), Mayer (2000), Emmons (2000b) and Edwards (2003). Gardner (2000) did not agree with the conclusions of Emmons (2000a), arguing that spirituality should not be considered a type of intelligence; however, Gardner accepted that individuals do have a capacity to deal with existential issues, calling this

existential intelligence. Emmons (2000a) listed five domains that define the construct of spiritual intelligence:

> (a) The capacity for transcendence; (b) the ability to enter into heightened spiritual states of consciousness; (c) the ability to invest everyday activities, events, and relationships with a sense of the sacred; (d) the ability to utilize spiritual resources to solve problems in living; and (e) the capacity to engage in virtuous behavior or to be virtuous (to show forgiveness, to express gratitude, to be humble, to display compassion). (p. 10)

Emmons (2000b) later removed the last domain after feedback from Gardner (2000) and Mayer (2000), revising his model.

One contemporary school of thought proposes a set of specific intelligence types or arrays of abilities: rational intelligence, emotional intelligence, and spiritual intelligence (Zohar & Marshall, 2000). Zohar and Marshall (2000) argued that certain mind processes function under the rules of quantum physics, explaining the nature and functioning of the human mind from an integrated physical, neurological, and psychological perspective. In this integrated perspective, an elaborate conceptual framework based on the latest discoveries in neurology and quantum physics holds spiritual intelligence as the binding element between the brain's many independent systems, suggesting that spiritual intelligence is the element that generates consciousness. In its simplest form, the integrated perspective explains how the mind unifies perceptual fields formed by thousands of simultaneous sensorial inputs, transforming them into a single concept and allowing an understanding of perceptual reality. In a most elaborate way, the theory allows for both a material and an immaterial reality. In the behavioral science field, this integrates some of the theories of Freud, Jung, Holland, Myers-Briggs, Cattell, Goleman, and others to explain personality and the psychological capacities associated with people's immaterial (spiritual) nature. Zohar and Marshall (2000)

suggested that spiritual intelligence is what gives people the grounds for self-awareness, free will (self-determination), creativity (imagination, innovation), fundamental value systems, vision, adaptability, purpose, and the search for meaning, thus maintaining a clear separation between spirituality and religion. The authors further proposed spiritual intelligence (SQ) as the highest level of intelligence, and suggested a crucial link between spiritual intelligence and sustainability. According to Zohar and Marshall (2000), the following nine indicators can be used to identify a highly developed SQ:

> (a) The capacity to be flexible (actively and spontaneously adaptive); (b) high degree of self-awareness; (c) capacity to face and use suffering; (d) capacity to face and transcend pain; (e) the quality of being inspired by vision and values; (f) reluctance to cause unnecessary harm; (g) tendency to see the connections between diverse things (being holistic); (h) marked tendency to ask 'Why?' or 'What if?' questions, and seek fundamental answers; (i) being *field independent* (possessing a facility for working against convention. (p. 15).

King (2008) recently performed a comprehensive study on spiritual intelligence and clearly differentiated between spiritual intelligence, spirituality, and religiosity. In the paper, spiritual intelligence was defined as

> A set of mental capacities which contribute to the awareness, integration and adaptive application of the nonmaterial and transcendent aspects of one's existence, leading to such outcomes as deep existential reflection, enhancement of meaning, recognition of a transcendent self, and mastery of spiritual states. (p.56)

King's (2008) thorough study of the spiritual intelligence concept refuted Gardner's (1993) statements against it, and questioned Emmons's (2000a) tendency to equate religiosity with spirituality and to look at the spiritual intelligence model in terms of religiosity instead of spirituality. Continuing with his analysis, King (2008) criticized Zohar and Marshall

(2000) for avoiding the establishment of a core set of mental abilities. He proposed four core components that make up spiritual intelligence: (a) critical existential thinking, (b) personal meaning production, (c) transcendental awareness, and (d) conscious state expansion. Using the criteria defined by Gardner (1993) to identify different types of intelligence, King (2008), and King and DeCicco (2009) presented solid arguments supporting the inclusion of the construct of spiritual intelligence and identified the mental capacities and abilities associated with spirituality. What follows is a brief description of the factors embraced by King's model.

Critical existential thinking.

King and DeCicco (2009) stated that *critical existential thinking* "involves the capacity to critically contemplate meaning, purpose, and other existential or metaphysical issues (e.g., reality, the universe, space, time, death)" (p. 70) by using critical thinking to integrate scientific knowledge and personal experience. King (2008, p.57) defined critical existential thinking as "the capacity to critically contemplate the nature of existence, reality, the universe, space, time, death, and other existential or metaphysical issue" (p.57); the factor embraces critical reasoning on subjects such as consciousness, the universe, time, truth, justice, and evil, among others.

King (2008) went further, proposing that "critical existential thinking can be applied to any problem or issue in life since any object or event can be viewed in relation to one's existence" (p.57). Similar concepts of existential thinking are commonly found in studies on spirituality (Koenig et al., 2001; Matheis, Tulsky, & Matheis, 2006; Wink & Dillon, 2002), spiritual intelligence (Amram, 2007; Nasel, 2004; Vaughan, 2002; Wolman, 2001; Zohar & Marshall, 2000), and Gardner's existential intelligence (Allan & Shearer, 2012; Gardner, 1993; Halama & Strizenec, 2004; Tupper, 2002). Halama and Strizenec (2004) suggested that existential and spiritual intelligence are two different constructs that have common

characteristics. Halama (2003, as cited in King, 2008) proposed four components of existential intelligence:

> the ability to perceive adequate value and meaning in concrete situations; the ability to form adequate hierarchies of values and goals; the ability to manage and assess goal achievement; and the ability to influence and help others in finding purpose and meaning in life. (p. 58)

Halama and Strizenec (2004) suggested that certain abilities within the construct of spiritual intelligence, such as the ability to experience higher states of consciousness, could not be explained using the construct of existential intelligence. In contrast, King (2008) considered existential thinking and the ability to find meaning in life to be separate factors of spiritual intelligence. Under King's (2008) model, existential intelligence is integrated into the construct of spiritual intelligence.

Personal meaning production.

Personal meaning production is defined as "the ability to construct personal meaning and purpose in all physical and mental experiences, including the capacity to create and master a life purpose" (King, 2008, p. 61). Personal meaning is also defined as "having a purpose in life, having a sense of direction, a sense of order and a reason for existence" (Reker, 1997, as cited in King, 2008, p.62), or "a framework for delineating the purposes and goals that make life worth living and for evaluating the degree to which these purposes and goals are being fulfilled" (Farber et al. 2010, p. 73). King (2008) made a clear distinction between having a personal reason for existence and thinking about existence, claiming these capacities belonged to separate constructs.

The concept of personal meaning is common to theories of spirituality (Delaney, 2003; Donde & Duchon, 2000; Harvey, 2004) and spiritual intelligence (Amram & Dyer, 2008; Nasel, 2004; Vaughan, 2002; Zohar & Marshall, 2000). Frankl (1985) proposed that

each individual has the responsibility to find personal meaning in his or her own life; additionally, Frankl proposed that by answering this question about one's meaning, a person will find the freedom to choose which attitude to espouse in any given set of circumstances.

Transcendental awareness.

King (2008) recognized that *transcendental awareness* is the least understood of all capacities, and that the word 'transcendental' could be considered out of place in the academic and scientific communities; nonetheless, the concept of transcendent realms is a feature of theories and research regarding spirituality (Delaney, 2003; De Marco, 2000; Deshpande, 2012; Franz & Wong, 2005; Harvey, 2004; Piedmont, 1999) and spiritual intelligence (Amram & Dyer, 2008; Emmons, 2000a; Nasel, 2004; Vaughan, 2002; Wolman, 2001; Zohar & Marshall, 2000). As Piedmont (1999) affirmed, "Transcendence is a fundamental capacity of the individual, a source of intrinsic motivation that drives, directs, and selects behaviors" (p. 988).

Transcendent is defined as "going beyond the limits of ordinary experience" (*Merriam-Webster,* n.d.), or "existing apart from and not subject to the limitations of the material universe" (*Oxford Dictionaries online*, n.d.). King (2008) defined *transcendental awareness* as

> the capacity to identify transcendent dimensions of the self (e.g., a transpersonal or transcendent self), of others, and of the physical world (e.g., non-materialism, holism) during the normal, waking state of consciousness, accompanied by the capacity to identify their relationship to one's self and to the physical. (p. 64)

In this line of thought, Maslow's extensive research (e.g. Maslow, 1943, 1968, 1970, 1971) contributed to the formation in 1969 of the *Journal of Transpersonal Psychology,* which led to the founding of the Association for Transpersonal Psychology in 1972. Hass (2011) stated, "Transpersonal psychology involves an approach to behavior and the self that

transcends ordinary states of mind as well as extends to the larger environment as a whole" (p. 69). King (2008) limited this factor to "that which occurs during the normal, waking state of consciousness; as such, it describes the capacity to recognize transcendent dimensions of reality in objects, activities, experiences, and events on a daily basis" (p. 72), thus dissociating it from altered states of consciousness such as pure consciousness, oneness, unity, or timelessness.

Conscious state expansion.

Consciousness is defined as "the fact of awareness by the mind of itself and the world" (*Oxford Dictionaries online*, n.d.) and "the state of being characterized by sensation, emotion, volition, and thought: mind" (*Merriam-Webster*, n.d.). State of consciousness is a term used to explain human consciousness as part of an individual's experience (Tart, 1983, 2000; Vaitl et al., 2013). Tart proposed a systemic approach to analyzing consciousness, introducing the concepts of discrete states of consciousness (d-SoC), discrete altered states of consciousness (d-ASC), and a baseline state of consciousness (b-SoC). Tart defined d-SoC as "a unique, dynamic pattern or configuration of psychological structures, an active system of psychological subsystems" (p. 5), including ordinary waking state, non-dreaming sleep, dreaming sleep, hypnosis, alcohol intoxication, marijuana intoxication, and meditative states, among others. An altered state of consciousness (d-ASC) is defined as a "d-SoC that is different from some baseline state of consciousness (b-SoC)" (Tart, 1983/2000, p. 5). Under this proposition, the baseline state of consciousness is usually taken as the ordinary waking state of consciousness, noting that what a special d-SoC is for one individual could well be an ordinary state or everyday experience for another. According to Tart, d-SoC works in such a way that even under variations in environment and psychological structures or subsystems, the state of consciousness is stabilized by a number of processes that retain its identity and function, while still leaving open the possibility that under the influence appropriate

modeling forces, the overall organization of the b-SoC could break down and the subsystems could be reassembled into a new, stable d-ASC configuration. Tart (1990) proposed that heightened states of consciousness imply mental configurations through which the individual experiences higher levels of awareness than experienced during the person's ordinary state of consciousness.

Vaitl et al. (2013) used the term 'altered states of consciousness' (ASCs) to embrace the various states of awareness that diverge from ordinary waking consciousness. Altered states are generated by compromised brain structures, transient changes in brain dynamics (disconnectivity), neurochemical and metabolic processes, and in a more impermanent form, environmental stimuli and mental and self-control techniques (meditation). Heightened (or expanded) states of consciousness, together with most altered states of consciousness, including those associated with spiritual experiences and meditation, are associated with different mental configurations (Cahn & Polich, 2013; Tart, 1990; Vaitl et al., 2013). Tart (1990) suggested that spiritual experiences are a type of altered state of consciousness, arguing that the scientific data contradict a strictly materialistic view of reality.

King (2008) defined the capacity of *conscious state expansion* as "the ability to enter and exit higher/spiritual states of consciousness (e.g., pure consciousness, cosmic consciousness, unity, oneness) at one's own discretion (as in deep contemplation, meditation, prayer, etc.)" (p. 72). This factor is related to altered (or spiritual) states of consciousness. Tart (1983/2000) provided a solid distinction between *transcendental awareness* (a normal sate of consciousness) and *conscious state expansion* (a higher or altered state of consciousness). Nevertheless, the simple experience of higher states does not establish a person's ability to enter into such states at his or her own determination, a condition necessary for conscious state expansion (King & DeCicco, 2009).

Mindfulness

As with many other complex constructs that relate to the innermost regions of the human psyche, there is no clear consensus on a single definition for mindfulness (Bishop et al., 2004; Hawkins, 2010). Hawkins (2010, p. 11) made an important effort to classify some of the previously proposed definitions, which include mindfulness as (a) a practice based in meditation and sharp thoughtfulness (Baer, 2003; Baer, Fischer & Huss, 2005; Bishop et al., 2004; Hayes & Wilson, 2003; Kabat-Zinn, 2003; Seiling & Hinrichs, 2005), (b) a concept firmly based in its Buddhist traditions (Gunaratana, 2011; Nhat Hanh, 1976), and (c) a state of mind through which an individual can stimulate creative thinking and/or access a broad system of assumptions and concepts (Boyatzis & McKee, 2005; Langer, 1989, 1997, 2007). Bishop et al. (2004) proposed a model based on two components: "The first component involves the self-regulation of attention so that it is maintained on immediate experience, thereby allowing for increased recognition of mental events in the present moment. The second component involves adopting a particular orientation toward one's experiences in the present moment, an orientation that is characterized by curiosity, openness, and acceptance" (p. 232). The authors also suggested the following definition: "Broadly conceptualized, mindfulness has been described as a kind of nonelaborative, nonjudgmental, present-centered awareness in which each thought, feeling, or sensation that arises in the attentional field is acknowledged and accepted as it is" (p. 232).

The present study will use the definition suggested by Shapiro et al. (2015) of mindfulness as "the awareness that arises through intentionally attending in an open, caring, and discerning way" (p. 17). Shapiro and colleagues incorporated the elements of intention, attention, and attitude, which are linked or entangled elements that interact with and reinforce one another in a recurring and spiraling process. Intention embraces our values, motivations, and purposes. Attention has to do with stabilizing the mind by focusing on the present

experience, avoiding reactivity and allowing complete awareness of one's self, being conscious of one's own consciousness, and observing the observer inside in order to lucidly perceive reality and respond effectively. Attitude is related to the acceptance, openness, kindness, compassion and curiosity that we manifest during experiences, with no judgment or manipulation.

Mindfulness has a long history in the Eastern world (Dhiman, 2009; Hawkins, 2010), specifically in the spiritual traditions of Buddhism, Taoism, and Zen, dating back to more than 2,500 years ago with the teachings of Buddha (Gunaratana, 2011; Hawkins, 2010). Mindfulness is an English term that originated from the Pali term *sati* and its Sanskrit counterpart *smṛti*; its meaning has been extensively investigated and debated (Sharf, 2014). The review of the literature found that Rhys (1881, p. 107) was the first author to translate the Pali word *sati* into the English 'mindfulness.' The oldest Buddhist meditation practice is called Vipassana, which "by definition is the cultivation of mindfulness or awareness" (Gunaratana, 2011, p. 13).

During the last few decades, the concept of mindfulness has been extensively studied within the health and psychology disciplines (Brown et al., 2007; Grossman et al., 2004), and empirical research in this area has been continuously facilitated by the introduction of several self-report instruments (Reb, Narayanan, & Chaturvedy, 2014). Mindfulness research in relation to leadership has also been rising exponentially (Reb & Atkins, 2015); a search of the ProQuest database using the search terms 'mindfulness' AND 'leadership' gave the following results: (a) six results for the period of 1980-1990; (b) 319 results for 1990-2000; (c) 2,498 results for 2000-2010; and (d) 3,875 results for 2010-2015. However, little quantitative research has been done on the relation of mindfulness with leadership (Gieseke, 2014; Hawkins, 2010; Horowitz, 2012).

The Western world has adopted mindfulness following two trends of thought: Buddhist philosophy and cognitive psychology; while most clinical therapy procedures based on mindfulness belong to the first group, most work-related, organizational research and business studies grounded on mindfulness are based on the second (Dhiman, 2009). John Kabat-Zinn introduced the Mindfulness-Based Stress Reduction (MBSR) program at the University of Massachusetts in 1979, with the aim of supporting medical treatment for a variety of health conditions (Bishop et al., 2004; Dhiman, 2009). Ever since then, most research has uncovered positive associations between mindfulness and desirable outcomes, including chronic pain reduction, increased immunity, anxiety reduction, increased psychological well-being and positive affect (Reb et al., 2014). Other well-known mindfulness-based clinical therapies developed after the introduction of MBSR include *mindfulness-based cognitive therapy*, *acceptance and commitment therapy*, *dialectical behavior therapy*, and *mode deactivation therapy*, among others.

In recent years, mindfulness research related to the social sciences has increased substantially (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007; Block-Lerner, Adair, Plumb, Rhatigan, & Orsillo, 2007; Brown & Ryan, 2003; Hayes & Feldman, 2004; Wachs & Cordova, 2007). The current literature is exploring the role of mindfulness in the workplace and within the realm of leadership (Boyatzis & McKee, 2005; Carroll, 2007; Dane, 2010; Dhiman, 2009; Elrich, 2015; Gieseke, 2014; Harung, Heaton & Alexander, 1995, 1999; Hawkins, 2010; Mellor, 2015; Reb & Atkins, 2015; Reb et al., 2014; Sauer & Kohls, 2011). Dhiman (2009) stated: “Many business leaders have acknowledged the benefits of meditative practice both in their personal as well as professional lives” (p.72). Dhiman claimed that many corporations are embracing mindfulness principles in the workplace, such as Google, Hughes Aircraft, and Deutsche Bank. Carroll (2007) made similar claims, mentioning corporations such as Raytheon, Procter & Gamble, Unilever, Nortel Networks, Comcast, and

many law firms. Additionally, Dhiman indicated that many top executives at major corporations are personally embracing mindfulness practice, such as Bill George (ex-CEO of Medtronics Inc. and a member of the supervisory boards of Goldman Sachs Group Inc., Exxon Mobil Corp., and Novartis AG), and William Ford (Ford Motor Co. Chairman). A similar claim was made by Gonzales (2012), who mentioned top executives such as Robert Shapiro (former Monsanto chief executive), Steve Jobs (Apple co-founder), and Robert Stiller (Green Mountain Coffee Roasters). Nevertheless, insufficient quantitative research has been done to find the relationship between mindfulness and leadership (Gieseke, 2014; Hawkins, 2010; Horowitz, 2012), although one study claimed that self-awareness has important correlations with well-developed traits of self-confidence and self-efficacy in transformational leaders (Sosik & Megerian, 1999).

Lately, some authors have suggested the concept of mindful leadership (Boyatzis & McKee, 2005; Carroll, 2007; Hawkins, 2010). Boyatis and McKee brought together concepts from Buddhist philosophy and cognitive psychology and proposed a model named *resonant leadership*, suggesting that it encompasses three dimensions: mindfulness, hope, and compassion, with the first dimension being crucial in today's business environment. Carroll (2007) proposed the *mindful leadership* model, in which the practice of mindfulness helps the leader develop the crucial talents of simplicity, poise, respect, courage, confidence, enthusiasm, patience, awareness, skillfulness, and humility. Hawkins's (2010) research was situated within three fields: leadership, change, and mindfulness. Hawkins defined a mindful leader as someone "who is accepting, curious, and humble and who has the capacity to selflessly and compassionately connect with others in a desire to bring about the best and/or engender change" (p. 101).

After his non-empirical work with Senge, Scharmer, Jaworski, and Flowers (2004, 2005), Scharmer (2009) developed "theory U" for leadership, change and transformation.

This theoretical proposition was Scharmer's (2009) attempt to answer questions such as how leaders can "act from the future that is seeking to emerge, and how [we can] access, activate and enact the deeper layers of the social field" (p. 8), as well as "what sources [leaders are] actually operating from" (p. 7). Scharmer suggested that to find inspiration and creativity, we need to follow a U-shape inner journey that starts with our learning and past experiences, dives deep down into our inner consciousness, and then comes back to the surface with the proper source of inspiration that is linked to the emerging future, facilitating the transformation of our creative ideas into reality. Despite the fact that "theory U" does not refer directly to mindfulness, it is evident that mindfulness practices are aligned with the capacities this model is attempting to develop. Goleman (2013) acknowledged the importance of mindfulness in the development of emotional intelligence, as well as its ultimate importance for managers in their search to become successful leaders. However, it seems that by renaming a hot topic, Goleman oversimplified the concept and benefits of mindfulness, getting trapped in what Reb and Atkins (2015) called "mindfulness as a fad, just another commercial commodity" (p. 14). Reb and Atkins (2015) edited a comprehensive scholarly volume dedicated to exploring the application of mindfulness in organizations. To do so, they brought together the work of the world's top scholars and practitioners, and presented an overview of the latest research efforts in the area. The authors also identified areas of tension and open issues, most of them related to the secular Westernization of the Eastern culture of meditation, philosophy and religion. These included (a) tension between spirituality and typical workplace culture, (b) diversity of perspectives on and understanding of mindfulness, (c) how mindfulness and mindfulness-based interventions can be translated for use in the workplace, and (d) how mindfulness can be adapted with richness and integrity while avoiding the pitfall of faddism. The interaction between spiritual intelligence and mindfulness proposed in the present study can overcome some of those shortfalls. All authors covered by

Reb and Atkins (2015) clearly agreed on the multiple benefits of mindfulness at the workplace.

Instruments for Measuring Spiritual Intelligence

Several efforts have been made to develop instruments for measuring spiritual intelligence. Nasel (2004) developed three instruments as part of a doctoral dissertation looking at the construct of spiritual intelligence from the perspectives of traditional Christianity and New Age/individualistic spirituality. These three instruments were (a) the Spiritual and Religious Dimensions Scale (SRDS), which is a measure of spiritual orientation; (b) the Spiritual Intelligence Scale (SIS); and (c) the Personal Well-being Index (PWI). Amram and Dryer (2008) criticized Nasel's (2004) Spiritual Intelligent Scale (SIS) with the following comment:

> The SIS is a 17-item self-report measure of spiritual intelligence rated on a 4-point Likert scale. Despite the overall satisfactory reliability, construct validity, and some limited predictive validity, the SIS was designed to measure spiritual intelligence from a particular set of two perspectives—traditional Christianity and New Age/individualistic spirituality. Furthermore, with only 17 items, the model of spiritual intelligence used by the SIS seems to exclude several potentially important elements of spiritual intelligence. (p. 7)

As their alternative, Amram and Dryer (2008) provided the Integrated Spiritual Intelligence Scale (ISIS), based on Amram's (2007) model of spiritual intelligence. The instrument consists of 22 subscales related to beauty, discernment, "egolessness," equanimity, freedom, gratitude, higher-self, holism, immanence, inner wholeness, intuition, joy, mindfulness, openness, practice, presence, purpose, relatedness, sacredness, service, synthesis, and trust. These 22 subscales are divided into five domains: consciousness, grace, meaning, transcendence, and truth.

King (2008) proposed four core components of spiritual intelligence (a) *critical existential thinking*, (b) *personal meaning production*, (c) *transcendental awareness*, and (d) *conscious state expansion*. The factors of this model have been described previously in the section dedicated to *Spiritual Intelligence*.

Manghrani (2011) developed a test comprising 11 factors and a total of 75 items. The items include (a) belief in God and religiosity, (b) belief in the existence of a soul, (c) self-awareness, (d) practice of spiritual exercises, (e) lifestyle values, (f) belief in fate and karma, (g) practice of good social relations, (h) ability to see divinity in love, (i) practice of spirituality in leadership, (j) sense of gender equality, and (k) a helping attitude.

Instruments for Measuring Mindfulness

In the last few years, several self-report questionnaires have been developed in an effort to capture the essence of mindfulness and to operationalize the construct (Baer et al., 2006; Choi & Leroy, 2015). Choi and Leroy identified a total of 12 scales for use in measuring mindfulness. After a survey of ProQuest, the three most cited questionnaires were the Mindful Attention Awareness Scale (Brown & Ryan, 2003), the Mindfulness Questionnaire (Chadwick, Hember, Mead, Lilley, & Dagnan, 2005), and the Five Facets Mindfulness Questionnaire (Baer, et al., 2008; Baer, Samuel, & Lykins, 2011; van Dam, Earleywine, & Danoff-Burg, 2009). The present investigation uses the Five Factor Mindfulness Questionnaire (FFMQ) developed by Baer et al. (2006), since items generated from five previously established instruments were correlated during its construction, making it a solid instrument. In the model, Baer et al. (2008) proposed five component skills: *observing, describing, acting with awareness, nonjudging of inner experience,* and *nonreactivity to inner experience*. Those components were defined as follows:

> *Observing* includes noticing or attending to internal and external experiences, such as sensations, cognitions, emotions, sights, sounds, and smells. *Describing* refers to

> labeling internal experiences with words. *Acting with awareness* includes attending to one's activities of the moment and can be contrasted with behaving mechanically while attention is focused elsewhere (often called *automatic pilot*). *Nonjudging of inner experience* refers to taking a nonevaluative stance toward thoughts and feelings. *Nonreactivity to inner experience* is the tendency to allow thoughts and feelings to come and go, without getting caught up in or carried away by them. (p. 330)

Choi and Leroy (2015, p.77) indicated that "individuals unaware of their stream of consciousness may not be able to estimate their mind-wandering patterns," thus exposing the research methodology "to greater vulnerability: discrepancies between actual and reported mindfulness; item miscomprehension; biased ratings from variable levels of respondent experience; scale construction; and inconsistencies from interrelationships among scales meant to distinguish the multiple facets of mindfulness." As with most psychometric self-report measures, there are several methodological concerns about the measure's accuracy. One of such concerns is the bias in the answers due to social desirability. To address this concern, the present study uses the Social Desirability Scale (Crowne & Marlowe, 1960) in its validated Spanish version (Cosentino & Castro, 2008). The questionnaire is intended to measure the participant's tendency to respond what is presumed to be desired, rather than what the participant actually thinks or feels. Exploratory and confirmatory factor analyses confirmed that single factor explained 16% of the total variance. Convergent validity confirmed by a Cronbach's alpha of .72 and criterion validity determined by correlating against Edwards Social Desirability Scale (r = .41) validated the instrument (Hartsfield, 2003).

Predictors of Transformational Leadership Behavior

Hartsfield (2003) indicated that "the impact of transformational leadership on individuals and organizations is clearly supported by research, but the internal forces that

cause a leader to act in a transformational manner are not as well understood" (p. 3). Hartsfield continued by suggesting that "with this understanding, it becomes necessary to broaden the study of transformational leadership beyond the four I's to determine the internal driving forces at work in the transformational leader" (p. 4).

Several studies have aimed to find the relationships between different constructs or variables and transformational leadership. Most research related to the prediction of transformational leadership behavior has been focused on the investigation of its relationships with personality, general cognitive intelligence, and emotional intelligence (Bass & Riggio, 2006). Several studies have found correlations between some personality domains and leadership in general (Stodgill, 1948). Studies performed by Bono and Judge (2004), Bryman (1992), Church and Waclawski (1998), Crant and Bateman (2000), D'Alessio (2008), De Hoogh et al. (2005), Den Hartog and Koopman (2001), Hetland and Sandal (2003), Howell and Avolio (1993), Jacobsen and House (2001), Ployhart et al. (2001), Sosik et al. (2002), and others, have suggested that personality is an important predictor of leaders' behavior. Nevertheless, the results of the empirical research are not conclusive (e.g., Crant & Bateman, 2000; D'Alessio, 2008; Judge & Bono, 2000; Ployhart et al., 2001).

Fiedler (1986) stated, "The importance of intelligence in most other areas of human performance suggests that intellectual abilities must play a larger role in determining leadership performance than current leadership theories would suggest" (p. 532). Lord, De Vader and Alliger (1986) conducted a meta-analysis of the relationships between personality traits and leadership; the traits under analysis were intelligence (perceived), masculinity-femininity, adjustment, dominance, extroversion-introversion, and conservatism. The authors concluded that perceived intelligence was the trait with the greatest correlation to leadership performance. Judge, Colbert and Ilies (2004) conducted a meta-analysis of the relationship between intelligence (objective) and leadership perceptions, finding a positive correlation that

was lower than previously assumed; this decrease would support the stronger correlation between leadership and perceived intelligence. The authors concluded that no single trait had a strong correlation with leadership; the effect was the summation of all the different traits.

Considerable research efforts have been made to correlate emotional intelligence with leadership in general and transformational leadership in particular, with a good degree of success, suggesting that emotional intelligence can be used as predictor of transformational leadership (e.g., Ashkanasy et al., 2002; Barling et al., 2000; Butler & Chinowsky, 2006; Duckett & Macfarlane, 2003; Gardner & Stough, 2002; Leban & Zulauf, 2004; Mandell & Pherwani, 2003, Mills, 2009). Scarr (1989) stressed the importance of general intelligence in human functioning, which leadership obviously involves, and proposed important correlates between intelligence and social skills. Scarr (1989) suggested that social skills, together with personality traits such as extraversion, self-confidence, and low anxiety, are also prerequisites for proper action within society, but also stressed that "many social behaviors are intellectual correlates" (p. 83). Mayer and Salovey (1993) proposed that "personality traits such extraversion involve dispositions toward behavior; intelligence involves organismic abilities to behave. Although a trait such as extraversion may depend on social skill, or result in it, a trait is a behavioral preference rather than an ability. Knowing what another person feels, in contrast, is a mental ability" (p. 434-435). Goleman (1995) has been one major proponents of the importance of emotional intelligence in leaders' success. Goleman (2015) recently recognized the importance of mindfulness in the development of emotional intelligence, and consequently, its importance in managers' quest to become successful leaders. One may therefore ask what sources influence the leader to prefer behaving within the transformational model. D'Alessio (2006) studied the correlations between personality, critical thinking, emotional intelligence and transformational leadership in MBA students from the CENTRUM business school in Lima, Peru, and found that extraversion and

conscientiousness had the strongest positive correlations with transformational leadership, while agreeableness, critical thinking, and emotional intelligence had no significant correlation.

Previous studies have presented evidence that general cognitive intelligence, personality, and emotional intelligence are constructs that positively correlate with leadership. However, transformational leadership has some dimensions that are not well explained by those constructs, but that seem to have a close relationship with spiritual intelligence and with mindfulness to a lesser extent, such as

- "the importance of transcending self-interest" (Bass, 1999, p. 12),
- "the pursuit of an ideal or a cause that is more than oneself" (Handy, 1994, p. 275),
- "influence over ideology, influence over ideals, and influence over 'bigger-than-life' issues" (Bass, 1999, p. 19),
- the use of metaphoric language to communicate transcendent purposes (Bass, 1999),
- "display[ing] more citizenship behaviors such as altruism, conscientiousness, sportsmanship, courtesy, and civic virtue" (Williams, 1994, cited in Bass, 1999, p. 12),
- considering followers' needs above one's own needs and guiding their actions based on ethical principles and values (D'Alessio, 2010),
- "moving the follower beyond immediate self-interests" (Bass, 1999, p. 11),
- claiming universal unity (Bass & Steidlmeier, 1999),
- possessing fundamental values that are morally uplifting (Burns, 1978),
- "the morality of transformational leadership" (Bass & Riggio, 2006, p.16),
- " [channeling] the need [for power] in socially constructive ways into the service of others" (Bass & Steidlmeier, 1999, p. 190),
- "[being able to] be counted on to do the right thing, demonstrating high standards of ethical and moral conduct" (Bass & Riggio, 2006, p. 6),

- being truly concerned and feeling responsible for the group, organization, or society's well-being (Bass & Steidlmeier, 1999), and
- "incorporat[ing] an open architecture dynamic into processes of situation evaluation, vision formulation and patterns of implementation. Such openness has a transcendent and spiritual dimension and helps followers to question assumptions and to generate more creative solutions to problems. It is especially suited to the normative side of ethics, where human probing of the ground of being is both fathomless and endless. To the point, this dynamic breaks the bonds of organizational and leadership cultures that ignore fundamental questions such as altruism" (Kanungo & Mendonca, 1996, p. 79, cited in Bass & Steidlmeier, 1999, p. 187).

These gaps have encouraged further research on constructs such as spirituality, spiritual intelligence, and mindfulness as additional predictors of transformational leadership behavior. Bass (1999) stated, "The importance of transcending self-interests is something lost sight of by those who see that the ultimate in maturity of development is self-actualization" (p. 12), and expanded on this idea by citing Handy (1994, p. 275): "There [should] be a stage beyond self-realization, a stage [of] … idealization, the pursuit of an ideal or a cause that is more than oneself."

These behaviors go beyond the scope of traditional predictors and thus require further understanding and explanation. Maslow's (1943, 1964, 1968, 1970, 1971, etc.) extensive research led him to an expanded understanding of an individual's search for self-realization. Maslow thus proposed a new, higher level that is uplifting and ego-transcending by introducing the concept of transcendent experiences, which finally evolved into the field of Transpersonal Psychology, a school of psychology focused on the investigation of the transpersonal, self-transcendent, and spiritual aspects of individual experiences. Walsh and Vaughan (1993) defined transpersonal experiences as events where the sense of individual

distinctiveness, or self, expands beyond the person's individual being to incorporate broader aspects of humanity, life, psyche, or the cosmos.

Bass and Riggio (2006) stated, "It is clear that much work needs to be done to better understand the dynamics of authentic leadership, in general, and authentic transformational leadership in particular" (p.16). The gaps identified encouraged the search for correlations between spirituality and transformational leadership; some of those studies are described in the following paragraphs.

Zwart (2000) studied the relationships between transformational leadership, measured by the MLQ instrument, and the dimensions of spirituality, measured with the Spirituality Assessment Scale developed by Beazley (1997). Using Pearson product correlation and Spearman Rho rank order correlation coefficient techniques with a sample of 266 leaders, Zwart (2000) found a correlation between the dimensions of these two constructs.

Hartsfield (2003) investigated correlations between transformational leadership and the constructs of spirituality, emotional intelligence, and self-efficacy. Hartsfield measured transformational leadership using the MLQ-5X instrument (Bass & Avolio, 1990), and spirituality using the Spiritual Well-Being Scale (Paloutzian & Ellison, 1991). The latter instrument was designed to measure spirituality in relation to religiosity. Hartsfield analyzed data for 124 participants from a single large corporation using multiple regression techniques, and found no relevant correlations between the dimensions of spirituality and transformational leadership.

Field (2003) found a positive correlation between spirituality and transformational leadership using a correlational approach. The instrument used to measure transformational leadership was the MLQ, while spirituality was measured using two instruments: the Spiritual Well-Being Scale (Paloutzian & Ellison, 1991) and the Spiritual Transcendence Scale (Piedmont, 1999). Field (2003) surveyed 290 leaders from the hi-tech industry and found

positive correlations between the Spiritual Well-Being Scale and the MLQ; between the Spiritual Transcendence Scale and the MLQ; and between the Spiritual Well-Being Scale and the Spiritual Transcendence Scale.

Hinds (2005) studied correlations between spiritual well-being and transformational leadership. The study employed the MLQ-5X and the Spiritual Well-Being Scale, testing the hypothesis against a sample size of 9, with no positive correlations found. However, the study had weak validity due to the small sample size. Hariprasad (2006) explored the relationship between the construct of spirituality and nine transformational leadership behaviors based on the leadership practices inventory (LPI) instrument developed by Kouzes and Posner (1987) and the MLQ (Bass & Avolio, 1990). Spirituality was measured using the Spirituality Assessment Scale (SAS) proposed by Beazley (1997). By using multiple regression analysis techniques on a sample of 225 participants coming from the Leadership Fort Lauderdale (LFL) training program designed for leaders of public, private, and non-profit organizations, Hariprasad (2006) concluded that two of the LPI leadership behaviors were statistically related to the spirituality, while none of the MLQ factors were related to the spirituality construct as measured by the SAS scale.

These studies have looked at the construct of spirituality using correlational techniques, and have provided contradictory results. Several authors have theorized about relationship between spiritual intelligence and transformational leadership (Amram, 2009; Howard et al., 2009; McDowelle, 2009; Yee Min Tan et al., 2013). The construct of spiritual intelligence has domains that exhibit possible theoretical relationships with transformational behaviors, but the proposed relationships were not sufficient to establish correlations with transformational leadership.

Christ-Lakin (2010) studied the correlations between transformational leadership (idealized influence attributed, idealized influence behaviors, inspirational motivation,

intellectual stimulation, individualized consideration) and spiritual intelligence (mindfulness, intellectuality, divinity, childhood spirituality, extra-sensory phenomenon, community, and trauma). The author used the MLQ-5X to measure transformational leadership, and the PsychoMatrix Spiritual Inventory (Harvey, 2004) to measure the spiritual intelligence. The sample consisted of 115 participants from the Armed Forces Reserve Center, a non-profit organizational leadership council in the southwest region of the United States. The quantitative correlational design used bivariate comparisons, and applied Spearman's rank correlations and partial correlations. A positive correlation between the constructs was found.

Gieseke (2014) investigated possible correlations between spiritual intelligence, mindfulness and transformational leadership among academic leaders at the University of Maine. Gieseke used the FFMQ, the SISRI-24, and the MLQ-5X questionnaires to measure mindfulness, spiritual intelligence, and transformational leadership, respectively. The quantitative study used an explanatory associational research design to find correlations between the variables, within a sample of 235. The analysis showed the presence of a positive correlation between the variables.

Research on the relationship between mindfulness and leadership has increased significantly in recent years (Reb & Atkins, 2015). The notion that mindfulness benefits leadership performance has been supported by a number of authors (Baron & Cayer, 2011; Bruce, 2014; Dickman & Stanford-Blair, 2009; Glomb, Duffy, Bono, & Yang, 2011; Gonzales, 2012; Joseph, Ngoboka, Ndahiro, & Eyaa, 2013; Reb et al., 2015). Reb et al. (2015) explored the relationships between some dimensions of mindfulness and specific leadership behaviors, highlighting that the elements of intention, attention, and attitude (Shapiro et al., 2015), when nurtured properly, can bring multiple benefits to leaders in general. Reb et al. (2015) also considered that mindfulness has an inherent link with three particular leadership styles—authentic, charismatic and servant—suggesting that "the relation

between mindfulness and authentic leadership can be considered one of cause and effect" (p. 273). Similarly, Reb et al. (2015, p. 274) proposed that the practice of mindfulness enhances several dimensions of charismatic leaders: "appearance of being extraordinary and visionary," "followers' personal identification [with the leader]," "internalization of new values and attitudes", and regulation of their emotions. Similarly, Colzato, Ozturk, and Hommel (2012) found positive relationships between mindfulness and creativity.

The origins of mindfulness have an important spiritual context (Dhiman, 2009; Gunaratana, 2011; Hawkins, 2010), and it could be too simplistic to detach the essence of mindfulness from much of its original substance (Purser & Loy, 2013; Reb & Atkins, 2015), risking the loss of the quality, complexity, subtleness and fullness of the experience. Most organizations, however, tend to avoid mixing the spiritual and the professional in the workplace (Hoffman, 2003; Jurkiewicz & Giacalone, 2004; Reb & Atkins, 2015; Tischler et al., 2002), which would explain the secular perspective that embraces mindfulness. The construct of mindfulness proposed by Baer et al. (2006) is detached from the spiritual context that is an important element of the original mindfulness practice. Spirituality and spiritual intelligence are different constructs but are closely related to one another, as King (2008) succinctly describes: "Spiritual intelligence describes the mental abilities which underlie many components of spirituality" (p. 55). The construct of spiritual intelligence (measured with SISRI-24) proposed by King (2008) has elements that show some relationships with the construct of mindfulness (measured with FFMQ) proposed by Baer et al. (2008). For example, *transcendental awareness* in SISRI-24 is theoretically related to *acting with awareness* in FFMQ. King (2008) defined *transcendental awareness* as "the capacity to identify transcendent dimensions of the self (e.g., a transpersonal or transcendent self), of others, and of the physical world (e.g., non-materialism, holism) during the normal, waking state of consciousness, accompanied by the capacity to identify their relationship to one's self

and to the physical" (p. 64). Baer et al. (2008) stated that "acting with awareness includes attending to one's activities of the moment and can be contrasted with behaving mechanically while attention is focused elsewhere (often called automatic pilot)" (p. 330). Similarly, *conscious state expansion* in SISRI-24 has a connotation of awareness; Oxford Dictionary defines consciousness as "the fact of awareness by the mind of itself and the world" (*Oxford Dictionaries online*, n.d.). As shown in the literature review, both *transcendental awareness* and *conscious state expansion* in SISRI-24, have a much deeper spiritual meaning but also include the idea of *acting with awareness*. As described earlier in this section, spiritual intelligence alone has several elements that appear to be related to transformational leadership, and the same is true for mindfulness. Additionally, spiritual intelligence could add the important element of spirituality that has been detached from the mindfulness concept.

The literature seems to suggest possible associations between spiritual intelligence, mindfulness and transformational leadership. The present research looks at those associations, proposing that the constructs of spiritual intelligence and mindfulness are sources of transformational leadership behavior within the studied population, through a mediated association. As is described in greater detail in Chapter 3, several requirements must be met to arrive at a causal interpretation: theoretical support, sequence, covariation, and nonspurious covariation (Hair et al., 2010). Mindfulness (a Western construct for the traditional meditation practices from Far Eastern cultures), and specifically the model proposed by FFMQ, lacks most of the transcendental and spiritual content that has traditionally formed a pillar of oriental meditation. Spiritual intelligence fills that gap, providing, together with mindfulness, a more complete explanation for some of the facets of transformational leadership that have not been explained sufficiently by traditional predictors.

The sequence of appearance for each construct is relevant to this research because structure of the model is based in which feature was developed first in the individuals—

spiritual intelligence, mindfulness or transformational leadership behavior. Previous research has shown that genetics and the environment influence intelligence. Bass (1990) claimed that the propensity to lead is shaped by the mind, but that behavior is influenced by how people feel about themselves. Fiedler (1986) stressed the importance of intelligence in leadership. Lord et al. (1986) concluded that "intelligence, dominance, and masculinity-femininity were significantly associated with leadership perceptions" (p. 406). Judge, Colbert and Ilies (2004) found that positive correlations between intelligence (objective) and other's perception of leadership skills were lower than previously assumed; this was partially explained by the stronger correlation between leadership and perceived intelligence. The authors concluded that leaders seem to require several other traits in addition to intelligence in order to perform. No single trait had a strong correlation with leadership; the effect was the summation of all of the different traits.

Following this trend of thought, it would seem logical to assume that leadership behavior follows from intelligence. However, an empirical test would be required to claim the proposition as true, and it one of the assumptions of the present study. Many studies have proposed the benefits of mindfulness practice to leadership and to develop emotional intelligence, one of the major predictors of leadership. In the Eastern world mindfulness has a strong spiritual connotation, suggesting an important correlation between spirituality and mindfulness. The Western culture has recently incorporated mindfulness in isolation from those spiritual traditions, at least in the context and within the models investigated in this research; mindfulness development is based on meditation and awareness, involving dedicated and specific mental training, with no spiritual, moral or ethical connotation. Therefore, in contemporary Western cultures, mindfulness seems to result from spiritual intelligence, suggesting that spiritual intelligence is the source mindfulness. This concept is also one of the assumptions of this study, which proposes that spiritual intelligence precedes

mindfulness and transformational leadership. These propositions are analyzed with more detail in Chapter 4 and Chapter 5.

According to Rooke and Torbert (2005), most psychologists agree that differences between leaders are related to the logic behind their actions, to their perceptions, and to their interpretation of the environment. The authors proposed seven styles of leadership, arguing that leaders can move between the logic of actions; transform themselves with different leadership styles; be influenced by the environment, training, and personal experiences; develop styles that require self-awareness and consciousness of new visions of the world; and search for ethical and spiritual improvement. This argument embraces the proposition that individuals can move into transformational leadership behavior. Thus, this study proposes spiritual intelligence and mindfulness as two of the possible constructs that could influence the conscious or subconscious shift into that logic of action.

Summary

Leadership in general and transformational leadership in particular have been extensively studied. Transformational leadership is considered by many authors to be the leadership style with the greatest effectiveness in organizations. The relationships of transformational leadership to personality, general intelligence, and emotional intelligence have been extensively studied, with the conclusion being that those constructs can be used as predictors of leadership behavior in general but that they fail to thoroughly explain some dimensions of transformational leadership behavior. Thus, no clear understanding of the sources of transformational leadership behavior is present in the literature. The present research was designed to study spiritual intelligence and mindfulness as possible sources of transformational leadership using a quantitative paradigm and the application of structural equations to find relationships in the data and the effects between them. The research design is presented in greater detail in Chapter 3.

Conclusion

The literature includes a vast number of studies in the area of transformational leadership, less in the area of mindfulness, and relatively few in the area of spiritual intelligence. Nevertheless, important links have been found between these three constructs, appearing to fill several gaps found in previous research and supporting the present hypotheses. Several studies have tested possible correlations between spirituality and transformational leadership, with contradictory results. Spirituality is a vague concept and to a certain degree the construct of spiritual intelligence has tried to operationalize it; however, the two concepts are not interchangeable. Christ-Lakin (2010) found positive correlations between spiritual intelligence and transformational leadership, whereas Gieseke (2014) found positive correlations between spiritual intelligence, mindfulness and transformational leadership.

Not enough research has been conducted studying these relationships and no research has focused on the effects of spiritual intelligence and mindfulness on transformational leadership, therefore justifying the present study.

The research questions guiding the present study will help establish possible sources that drive some leaders to behave in a transformational manner, and could in that way foster future studies using experimental designs, multiple time measures, and competing models to provide solid grounds for accepting or rejecting spiritual intelligence and mindfulness as causes of transformational leadership.

Chapter 3: Methodology

Research Design

The purpose of this quantitative, survey-based, cross-sectional study was to identify relationships and effects between the constructs of spiritual intelligence, mindfulness, and transformational leadership behaviors among leaders. A post-positivist paradigm and methodology was applied to test the hypotheses presented in a structural model based on the literature review. The methodology is post-positivist because the search for objectivity acknowledges possible biases and admits that background knowledge, values, and theories will influence what is observed.

The methodology used second-order structural equations to test for direct and indirect effects of spiritual intelligence and mindfulness on transformational leadership. An extensive analysis of the literature supported this proposal. The limitations of cause-effect interpretations are acknowledged. Causation is "the strongest type of theoretical inference a researcher can draw" (Hair et al., 2010, p. 643), and correlation does not imply causation. Causal interpretations must be made with care because an important controversy exists about the capability of SEM to support causal inferences. SEM cannot establish causal relationships from associations alone (Bollen & Pearl, 2012). To consider dependent relationships as causal, the SEM model must exhibit four pieces of evidence: Theoretical support, sequence, covariation, and nonspurious covariation (Hair et al., 2010). Mulaik (2009, as cited in Kline, 2011) and Pearl (2009) offered similar arguments, listing five conditions that must be met: temporal precedence, association, correct effect priority, and known distributional form. This last requirement emphasizes the importance of distributional assumptions across random samples, such as normality; in general, estimates of causal effects may be biased if those assumptions are not met (Kline, 2011). Preacher and Hayes (2004) suggested that one way to establish causal priority is to sustain the argument based on theory or prior research.

Similarly, Bollen and Pearl (2012) argued that "… researchers do not derive causal relations from an SEM. Rather the SEM represents and relies upon the causal assumptions of the researcher. These assumptions derive from the research design, prior studies, scientific knowledge, logical arguments, temporal priorities, and other evidence that the researcher can marshal in support of them." (p. 312). Bollen and Pearl continued:

> … the analysis is done under the speculation of "what if these causal assumptions were true." These latter analyses are useful because there are often ways of testing the model, or parts of it. These tests can be helpful in rejecting one or more of the causal assumptions, thereby revealing flaws in specification. Of course, passing these tests does not prove the validity of the causal assumptions, but it lends credibility to them. (p. 309).

Hypothetical covariance was tested with the SEM. Zero covariance would be sufficient to establish lack of causality (Bollen & Pearl, 2012); however, to establish causality, the systematic covariance between constructs is necessary but not sufficient (Bollen & Pearl, 2012; Hair et al., 2010; Kline, 2011). Ensuring nonspurious covariance is difficult, and testing alternative or equivalent models is advisable, especially when the competing model has incorporated a new causal construct as an additional predictor variable (Hair et al., 2010). The sequence evidence for causality requires that the suggested cause happen before the effect, and SEM can only provide this type of evidence using an experimental or longitudinal research design (Hair et al., 2010).

Correct effect priority (Kline, 2011) means that the direction of the causal relationship should be well established, and a longitudinal design could provide a suitable framework for testing for that condition. Longitudinal or experimental designs that apply complex models place additional stress on scarce resources such as time and cost. Such designs also impose

difficult constraints, forcing researchers to narrow their focus to prioritized variables and discard alternative models supported in the theory (Kline, 2011).

The theory behind assumptions is of the utmost importance. In the review of the literature, theoretical support for proposing spiritual intelligence and mindfulness as sources of transformational leadership behavior was presented, together with the mediating role of mindfulness. In the current study, covariance between the constructs of spiritual intelligence, mindfulness, and transformational leadership was tested and the results of the SEM analysis are reported in Chapter 4.

The chances of avoiding spurious covariance can be increased by testing for alternative models or including additional variables (Hair et al., 2010, p. 645). Strong candidates for alternative models should incorporate constructs such as reflective, ethical, and moral constructs (Rucinski & Bauch, 2006); the addition of such constructs in this study, however, would have increased the number of parameters to be calculated, thus increasing the sample size and complexity to an unmanageable level. The additional constructs were therefore not added, since elaboration of those alternative and competing models and their test transcend the scope of this study. However, several equivalent models developed around the three constructs under study were tested and analyzed.

In this study, previously designed theoretical frameworks were validated with a methodology arising out of a post-positivist paradigm that permits the testing of hypotheses within a causal model. While most research on the relationships between spiritual intelligence, mindfulness and transformational leadership have been qualitative, the present quantitative study will helps confirm or reject the results of previous research (Christ-Lakin, 2010; Gieseke, 2014) and will provide the grounds for suggesting conceivable causal relationships between constructs. The literature review included several quantitative studies that were aimed at identifying relationships between spirituality and transformational

leadership, such as research by Field (2003), Hariprasad (2006), Hartsfield (2003), Hinds (2005), and Zwart (2000). These studies gave some contradictory results, thus requiring additional research to better understand the relationships between spiritual intelligence, mindfulness and transformational leadership behavior.

The present study used higher-order structural equations techniques in which the second-order latent variables were the constructs of spiritual intelligence, mindfulness, and transformational leadership; the first order latent variables were the factors explained by each second-order latent variables; and the questions in the measuring instruments were the measurable (or observable) variables clustered under those factors. The constructs of transformational leadership, mindfulness, and spiritual intelligence, together with the instruments used to measure them, were described in Chapter 2.

Hair et al. (2010) proposed six stages in a research design process: (a) defining individual constructs, (b) developing the overall measurement model, (c) designing a study to produce an empirical result, (d) assessing the measurement model's validity, (e) specifying the structural model, and (f) assessing structural model's validity. The present research was designed to analyze the causal relationships between three second-order constructs that had been previously studied and validated. The relationships between the observable variables and the first-order factors (first-level latent variables) and between the first and second-order factors (second-order latent variables) had been established previously.

Hair et al. (2010) stated, "Higher-order factors can be thought of as explicitly representing the causal constructs that impact the first order factors" (p. 754). Consequently, in the present study, each second-order construct was first validated by testing the degree to which the previous model's configurations of factor loadings represented the sample data. The validation of each construct followed stages (a) to (d) described in the previous

paragraph (Hair et al., 2010), and the complete structural model was subsequently specified (see Figure 2) and its structural validity assessed.

The study used self-report measurement instruments in questionnaire format that were developed and validated by reliable scientific sources, namely, SISRI-24 (King, 2008), FFMQ (Baer et al., 2006) and MLQ-5X (Bass & Avolio, 1990). Considering that the present study does not attempt to explain the behavior of leaders in relation to specific situations or environments, but rather seeks to understand possible sources or drivers that impel leaders to consciously or subconsciously choose transformational leadership behaviors, the focus of the research was the transformational leadership factors of MLQ-5X.

The measurement instruments have five-point Likert-type scales. The MLQ-5X questionnaire has been extensively validated in Peru, and Loret de Mola (2009) validated the FFMQ in Peru. The present study validated the SISRI-24 questionnaire in Peru using confirmatory analysis methodologies, after translating the instrument into Spanish via scientifically accepted back-translation techniques (Behling & Law, 2000; Cha, Kim & Erlen, 2007; Harkness, Pennell & Schoua-Glusberg, 2004; Harkness & Schoua-Glusberg, 1998). Once each questionnaire was validated, the complete structural model was analyzed (Figure 2), including control variables taken from the demographic data, such as gender, age, active participation in spiritual or religious activities, and the practice of relaxation activities such as yoga, meditation, and Tai Chi.

The theoretical model for each construct and the proposed structural model are consolidated in Figure 2; all models exhibited over-identification. Possible causal interpretations were constrained by a set of assumptions and suspected relationship based on the theory and empirical results identified in the literature review. The model presents the following variables:

- Endogenous second-order latent variable: Transformational leadership (TF).

- Exogenous second-order latent variable: Spiritual intelligence (SI).
- Endogenous second-order latent variable, functioning as partial mediator: Mindfulness (MF).
- Endogenous first-order latent variables explained by the endogenous latent variable (TF): *Idealized influence attributed* (IA), *idealized influence behavior* (IB), *inspirational motivation* (IM), *intellectual stimulation* (IS), and *individualized consideration* (IC).
- Exogenous first-order latent variables explained by the exogenous latent variable (SI): *Critical existential thinking* (CET), *personal meaning production* (PMP), *transcendental awareness* (TAW), and *conscious state expansion* (CSE).
- Endogenous first-order latent variables explained by the endogenous latent variable (MF): *observing* (OB), *describing* (DE), *acting with awareness* (AA), *nonjudging of inner experience* (NJ), and *nonreacting to inner experience* (NR).
- Endogenous (dependent) observable variables (questions in the measurement instrument) explained by each of TL's endogenous first-order latent variables (IA, IB, IM, IS, and IC).
- Exogenous (independent) observable variables (questions in the measurement instrument) explained by each of SI's endogenous first-order latent variables (CET, PMP, TAW, and CSE).
- Endogenous (independent) observable variables (questions in the measurement instrument) explained by each of MF's endogenous first-order latent variables (OB, DE, AA, NJ, and NR).

The graphical representation of the SEM uses ellipses to represent unobserved latent factors, rectangles to represent observed variables, circles to represent the residual errors in the prediction of a factor or the measurement of an observed variable, single-headed straight arrows to represent structural regression coefficients (loadings), and double-headed curved

arrows to represent covariance, or the correlation or impact of one variable on another; the direction of the arrows (path estimate) represents the dependence or suggested cause-and-effect relationship, with the head of the arrow pointing to the effect (Byrne, 2010).

The model presented in Figure 2 proposes spiritual intelligence and mindfulness as sources of transformational leadership behavior, with mindfulness acting as a mediator between spiritual intelligence and transformational leadership. Each second-order latent variable explains the first-order latent variables attached to it, whereas each of the first-order latent variables explains each set of clustered indicators (observed variables) that finally constitute the questions in each survey (SISRIn, MINDn and LIDn; where n = 1, 2, … ., representing the statement number of each psychometric instrument in the SISRI-24, FFMQ and MLQ-5X, respectively), suggesting that the model fits within the parameters of reflective measurement theory (Hair et al., 2010).

This simplified model does not show the errors of each variable (normally represented by circles). Observed variables' measurement errors are indicated as e_n, while unobserved variables' residual errors are indicated as res_x. Similarly, the single headed arrows between the errors and the variables indicate the impact of the error on the associated variable (Byrne, 2010; Hair et al., 2010). The SEM technique cannot simultaneously estimate the regression paths (structural regression coefficients) between the variables attached to a latent variable and the variance of that latent variable; therefore, one of the structural regression coefficients is constrained to the value of 1, allowing specification of the model (Byrne, 2010). The constraint can be set at 1, either for the regression path or for the variance of the independent variable (in this case, a latent variable). For most of the models in this study, it was chosen to constrain the paths and allow the variances to be free because of their relevance to the study. Considering that the first-order factors also act as dependent variables, their variances and covariances are not estimable parameters because the second-order factor accounts for such

variations (Byrne, 2010, Harris et al., 2010, Kline, 2011). The model in Figure 2 follows the norms for defining possible relationships between second-order latent variables.

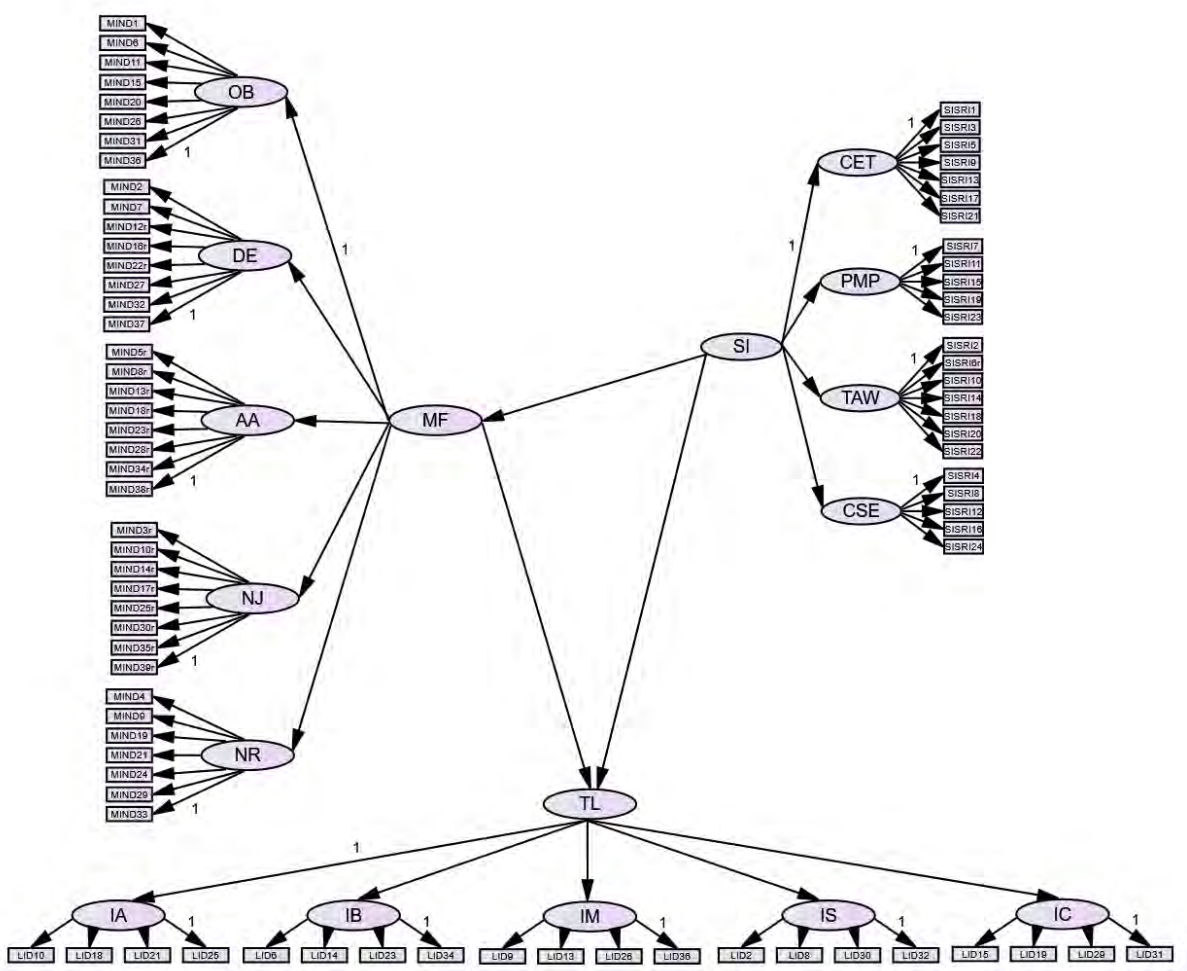

Figure 2. Simplified diagram of the structural model with mindfulness partially mediating the relationship between spiritual intelligence and transformational leadership.

The model is over-identified, with the number of data points exceeding the number of estimable parameters, resulting in 3,303 degrees of freedom. The positive degree of freedom allows for rejection of the model, which is the desired state of SEM models in general (Byrne, 2010; Hairs et al., 2010). The model has 83 observable variables, with a total of 3,486 data points or sample moments (83[83+1]/2) from which to derive the parameters of the model. The model needs to estimate 69 measurement regression paths (83-14), 14

structural regression paths (17-3), 83 error variances, one latent variance, and 16 residual error variances; in total, 183 parameters needs to be estimated. Second-order models require the identification status of the higher-order portion of the model to be confirmed (Byrne, 2010). The second-order latent variable can be viewed as accounting for covariance between constructs, meaning that the first-order latent variables act as indicators of the second-order latent variable (Hairs et al., 2010). In this case, the higher-order portion of the model has 14 observable variables, with a total of 105 data points or sample moments (14[14+1]/2). The model thus needs to estimate 11 measuring regression paths (14-3), three structural regression paths, 14 error variances, one latent variance, and 2 residual error variances; in total, 31 parameters need to be estimated. The higher-order portion of the model is over-identified, with 74 degrees of freedom.

Two alternative competing models were developed re-specifying the base model: (a) Nested Model 1: by constraining to zero the direct path from SI to MF, and (b) Nested Model 2: by constraining to zero the direct path from SI to TF.

The study tested all three models using statistical analysis, retaining the base model to introduce selected control variables and analyze their effects, as described at the end of this chapter.

Appropriateness of Design

Kline (2004, 2011) suggested that investigators should focus on estimating the size or magnitude of effects rather than taking the plain outcome of statistical tests. Kline (2011) argued that "SEM gives better estimates of effect size than traditional techniques for observed variables, including MR [multiple regressions] and ANOVA" (p. 13). For this study, a second-order structural analysis technique is considered the most suitable for working with complex constructs such as transformational leadership, mindfulness, and

spiritual intelligence because the technique is characterized by the following features (Hair et al., 2010, p. 635):

1. Estimation of multiple and interrelated dependence relationships
2. An ability to represent unobserved concepts in these relationships and account for measurement error in the estimation process
3. Defining a model to explain the entire set of relationships

Besides describing the relationships among the observable variables of different constructs (regression) under specific conditions, SEM can describe conceivable causal relationships between latent variables when those relationships are supported by theory and a pre-defined set of assumptions (Bollen & Pearl, 2012; Hair et al., 2010; Kline, 2011; Lévy, 2003). This design also enables the rejection of relationships and causality and provides grounds for future research aimed at claiming or reject causality.

The study used the AMOS 21.0.0 software, which has the capability of processing different kinds of data. The measurement instruments use a five-point Likert-type scale, which is considered a non-metric ordinal scale; AMOS 21.0.0 can handle and properly process such data (Hair et al., 2010).

Research Questions

The study was guided by the following research questions:

- Does spiritual intelligence influence transformational leadership behavior?
- Does mindfulness influence transformational leadership behavior?
- Does mindfulness mediate the effect of spiritual intelligence on transformational leadership behavior?
- Do relevant demographic data and social desirability influence the effects of spiritual intelligence and mindfulness on transformational leadership?

The identification of possible causal interpretations could lead to future studies using experimental designs and multiple time measures to support the claim that spiritual intelligence and mindfulness are sources of transformational leadership. The research questions result in the following null hypotheses for use in exploring the relations between the constructs of spiritual intelligence, mindfulness and transformational leadership:

($H1_0$): Spiritual intelligence has no effect on transformational leadership behavior.

($H2_0$): Mindfulness has no effect on transformational leadership behavior.

($H3_0$): Mindfulness does not mediate the effect of spiritual intelligence on transformational leadership behavior.

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($H5_0$): The relevant demographic data and social desirability do not influence the relationships between spiritual intelligence, mindfulness and transformational leadership.

Population

In this study, statistical inferences were made from a targeted population of supervisors and managers in Peru, using four primary sources: (a) students presently enrolled in a part-time MBA program at the business school of Pontificia Universidad Católica del Perú (PUCP - CENTRUM), (b) supervisors and managers identified in the Top 10,000 database, (c) supervisors and managers identified in CENTRUM's alumni database, and (d) the LinkedIn database; therefore, the unit of analysis is the individual. CENTRUM participants were coordinated with the administration and proper authorization was granted. It is well known that most students of CENTRUM do not pursue a degree at the business school because of any religious convictions, but because of the prestige of the university and the quality of the academics; however, this has not been formally studied. The administration and corporate government of PUCP and CENTRUM have been secular throughout most of the university's history and have been independent from the Catholic Archdiocese of Lima since

1970. Therefore, the assumption is that the school's affiliation with Catholicism, the religion under which most of the Peruvian population has been raised, should not bias the results of this study more than it would any other group in Peru. A more detailed description of the population is included in the Descriptive Statistics section in Chapter 4. The limited amount of research in this area allows the results of the study to be used as a guideline for future studies in similar cultures, and different geographic and general demographic contexts.

Informed Consent

The participants were contacted personally or by email, and were informed about the nature of the study. The questionnaires were administered on paper or through the Google Forms online survey application. During the introduction to the in-person survey, in the invitation email, and in the informed consent letter, all participants were informed that participation was strictly voluntary and that confidentiality was granted. The informed consent letter did not have a predefined space to provide a name, email or any personal data that could identify the participant. Copies of the informed consent and invitation letter are included in Appendix E.

Sampling Frame

A pilot test was conducted prior to the final study; it included participants from the study population in order to screen items for appropriateness and to estimate data normality and missing data. The initial estimation technique was the ML estimation, which suggested a sample size as small as 400 (Hair et al., 2010). Considering the first estimation of sample size, the initial approach to deal with missing data was the imputation method; the results obtained during the pilot test presented low missing data ratios and adequate normality. The study used a covariance matrix as input to give stronger statistical meaning and flexibility for handling the ordinal data and greater information content, relying on a variety of fitting coefficients to measure differences and compare observed and estimated covariance matrices,

the basis for the goodness-of-fit measure. Finally, the reliability of each structural model was assessed. Considering the sample size requirements, the amount of items in the questionnaires, the response rate, missing data considerations, and the normal difficulties in achieving the proper sample size, a mixed sampling technique was defined using in-person and online surveys. The in-person group consisted of selected part-time MBA program groups that were due to take their scheduled pre- and post-MBA surveys, as per CENTRUM's pre-defined schedule. The online group consisted of participants from the Top 10,000, LinkedIn and CENTRUM alumni databases. Top 10,000 is a paid service that provides a database of the emails of supervisors and managers from the 10,000 most important companies in Peru. The present study targeted participants above 21 years of age with supervisory or management experience. The gender, race, social status, political or religion choices, affiliation to social institutions, associations, societies, and the like were not considered in the sample selection.

Considering that SEM techniques are more sensitive to sample size than other multivariate approaches (Hair et al., 2010; Kline, 2011; Schumacker & Lomax, 2004), the choice of sample size is of great importance. The literature includes efforts to allow SEM to fit smaller sample sizes (Kline, 2011; Nevitt & Hancock, 2004). However, SEM is considered a large sample technique, as standard errors and some other statistical estimates in SEM may lack accuracy if the sample size is not large enough (Hair et al., 2010; Kline, 2011). The normality of the data also plays an important role when defining the sample data (Hair et al., 2010; Kline, 2011, Nevitt & Hancock, 2004); therefore, during the pilot test and prior to gathering the final sample, this factor was considered and final adjustments to sample size were evaluated. According to Hair et al. (2010), traditional guidelines that suggest always maximizing the sample size or using a minimum sample of 300 are no longer valid. Hair et al. (2010) suggested a compromise between different elements that may conflict with one

another when choosing the sample size; some of the most important elements to consider are multivariate normality of data, estimation technique, and model complexity. The complexity of the model plays an important role in SEM; complex models generally require larger sample sizes than simpler models. The basic reason for this is that a complex model usually has more parameters or elements that require statistical estimates (Hair et al., 2010; Kline, 2011).

The literature presents several sample size considerations based on absolute numbers. Kline (2011) described sample sizes of less than 100 as too small, and that even 200 could be small for complex models. Comrey and Lee (1992) proposed that for factor analysis techniques, a sample size of 50 could be judged as very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1,000 as excellent; however, since factor analysis techniques depend on correlations while SEM depends on covariance, this guideline should be treated with caution. For techniques such as the maximum likelihood (ML) estimation, sample sizes smaller than 400 are suggested, in order to increase the ability to detect differences and assess the model using goodness-of-fit measures. Applying these considerations to models with a large number of constructs or factors (more than seven), Hair et al. (2010) suggested a minimum sample size of 500 or more, due to estimations of multivariate normality and missing data exceeding 10%. Tabachnick and Fidell (2000) proposed that is advisable to have a minimum sample of 300; if variables have high pattern coefficients (> .80), a sample of 150 should suffice. Kline (2011) indicated that a typical sample size in SEM studies using ML estimation and with fairly normal data distribution is 200. Boomsma (1983, as cited in Tanaka, 1987) suggested minimum sample sizes of 100 when ML estimation is used, and proposed a general minimum of 200.

When ML estimation is used, as was the case in the present study, the literature suggests the use of the *N:q* rule, where *N* is the number of cases and *q* the number of

parameters or elements that require statistical estimation (Byrne, 2010; Hair et al., 2010; Kline, 2011; Nevitt & Hancock, 2004; Tanaka, 1987). The proposed model has three second-order latent variables, 14 first-order latent variables, and 83 observable variables, with a total of 183 parameters to be calculated (elements in SEM that require statistical estimation); this represents a model with the required level of complexity for SEM. Under the N:q rule (Jackson, 2003), Hair et al. (2010) suggested a minimum ratio of 5:1, with a more acceptable ratio of 10:1. Kline (2011) suggested a minimum ratio of 10:1, and an absolute minimum of 5:1. Bentler and Chou (1987) suggested ratios between 5:1 and 10:1, while Jackson (2003) suggested ratios between 10:1 and 20:1. Nevitt and Hancock (2004) performed extensive Monte Carlo simulations and finally recommended the ML estimation method when the research requires smaller sample sizes and suggested a minimum ratio of 2:1. It is known that when using large sample sizes, the statistical power to reject the null hypothesis could be high, increasing the risk of rejecting the model, even with only negligible deviations from the population's model; this presents a predicament for selecting the sample size (Tanaka, 1987).

Bearing in mind that the models for the present study needed to estimate a maximum of 183 parameters, and taking into account the previous sample size considerations and the resource limitations of doctoral studies, it was concluded that the sample size range should be between 366 (2:1) and 915 (5:1), and finally, a minimum of 500 was chosen.

Confidentiality

The confidentiality of the study was strictly ensured, with the identity and datasets of participants remaining confidential. In-person surveys were anonymous, and online participants had the option to keep their responses anonymous, or to include their name and email address to receive the study's conclusions and/or participate in a Magistral Conference and an iPad raffle. Participants that returned the survey completed were assigned unique identification numbers to preserve their confidentiality and to link the response to the

participant. Consent forms were attached to the demographic information and the questionnaires; consequently, no personal information was included in the database. During statistical analysis, no data was traceable to specific participants. All data stored in Google Drive and a non-shared computer was protected with passwords, and all hard copies were properly filed and physically protected with restricted access. After three years, all hard copies will be destroyed and computer data files completely erased. This procedure has ensured total confidentiality. All participants were informed of this process and the confidentiality of their information.

Geographic Location

The study was limited to participants that fulfilled the requirements specified previously in the present chapter in the section Population; the study's geographic location was Lima, Peru, but participants were distributed throughout the nation.

Instrumentation

Several self-report measurement instruments based on validated questionnaires developed by reliable scientific international sources were evaluated, with the most adequate chosen for the present study, namely, SISRI-24 (King, 2008), FFMQ (Baer et al., 2006) and MLQ-5X (Bass & Avolio, 2004). These instruments are self-report questionnaires that use five-point Likert-type scales. The present study also used the Social Desirability Scale (Crowne & Marlowe, 1960), which is a questionnaire made up of dichotomous questions intended to measure participants' tendency to respond with what is presumed to be desired rather than what they actually think or feel. An MLQ-5X online license (Mind Garden) and authors' written permissions for SISRI-24 and FFMQ were granted, with the respective copies included in Appendix F.

MLQ-5X is the most accepted instrument for measuring transformational leadership. During construction of FFMQ, Baer et al. (2006) correlated the items generated from five

previously established instruments, providing a solid instrument for measuring mindfulness. After analyzing various instruments for measuring spiritual intelligence, SISRI-24 stood out as the most robust; the methodology used to analyze the data and develop the instrument was comprehensive and thorough, and a clear delimitation between the spiritual and religious domains was maintained. Both SISRI-24 and FFMQ include some factors that appeared to be related and were presumed to covariate.

The MLQ-5X and FFMQ questionnaires have been already validated in Peru. In the present study, SISRI-24 was validated using confirmatory factor analysis as part of the SEM methodology; this was done after translating the instrument into Spanish using scientifically accepted back-translation methodologies (Behling & Law, 2000; Cha et al., 2007; Harkness et al., 2004; Harkness & Schoua-Glusberg, 1998). The reliability and validity coefficients of each instrument are reported in Chapter 4.

SISRI-24 Translation

Securing authorization from SISRI-24 scale's author for its translation and validation in Peru was done first. The translation was performed in four stages: (a) English-to-Spanish translation; (b) two-stage pilot tests; (c) Spanish-to-English back translation; and (d) cross checking between original and back-translated scales and final modifications.

The initial English-to-Spanish translation was performed by a first committee, formed by two professional translators, a bilingual subject matter expert, and myself, acting as bilingual facilitator. The bilingual subject matter expert was a clinical psychologist with studies in Mindfulness Based Stress Reduction (MBSR) at London University. The original SISRI-24 scale and the document "A practical guide to spiritual intelligence" (King, 2013) were delivered to the committee and an initial translation was done separately by each of the professional translators. The committee met to compare both translations, finding fertile ground for discussion about the meanings and proper translations of terms such as

spirituality, consciousness, awareness, and the like. This process was audio recorded for future reference. The initially translated scale used two different translations for each of the words “consciousness” and “awareness”, on different questions, to define in the next stage the best words to express the proper meaning. A first pilot test of the questionnaire was performed using a random sample of ten MBA students, followed by a 15-minute one-to-one interview, reviewing how clear the instructions and the questions were, the perceived meaning of the translated words for “consciousness” and “awareness,” and their possible best translations. The committee was informed of the findings, and a final consensus on the translation was met.

The translated scale was delivered to the second committee, formed by two professional translators, a second bilingual subject matter expert and myself, acting as bilingual facilitator. The second bilingual subject matter expert was past director and professor of theology at the Evangelist Seminary in Lima, with a degree in theology and professional experience in Germany, Brazil, the United States, and Peru. Both of the professional translators performed separate translations back to English, later meeting with the rest of the second committee to compare the translations. After a productive discussion, the committee concurred on a single back-translated questionnaire and compared it against the original scale. During that comparison, the committee had access to King’s (2013) user guide to clear up any doubts about concepts and meaning. The main objective was to find and discuss possible important conceptual differences between the original questionnaire and the back-translated one, to define whether those differences originated with the initial translation or the back translation processes, and finally, if required, to perform adjustments to the Spanish translated instrument. This process was similarly audio recorded for future reference. Minor adjustments were made to the Spanish-translated scale, but no important conceptual differences were found; the critical words had been correctly back translated. Finally, the

committee concluded that the original SISRI-24 questionnaire had been satisfactorily translated into Spanish. A second pilot test was performed with 28 part-time CENTRUM MBA students to evaluate the respondents' understanding of the survey process, to determine the required response time, and to obtain an estimation of missing data.

Pilot Test

A final pilot test was performed with the complete set of questionnaires. The sample size for the in-person and online surveys was five each. The results confirmed the clarity and adequacy of the invitation letter, online survey procedure, questionnaire set, missing data ratio, and response average time.

Data Collection

In-person and online participants were informed about the nature of the study. The questionnaires were administered either on paper (in-person technique) or through the Google Forms online survey application. The survey did not collect information nor gave distinction to race, social status, political affiliation or religion; or affiliation to social institutions, associations, societies, and the like. The study included a demographic survey (Appendix D), and relevant data and findings are reported in Chapter 4. The set of questionnaires included an informed consent letter, demographic data questionnaire, SISRI-24, FFMQ, SDS, and MLQ-5X, in that order. For the in-person surveys, each set was printed, stapled and labeled with a correlative numbering system (001, 002, etc.). CENTRUM granted permission to coordinate in-person surveys within the MBA program groups that were scheduled for regular pre- and post- program surveying. In-person data collection took four months and included thirteen program groups, totaling 384 participants.

The Top 10,000 database contained over 64,000 email addresses, 26,000 of which were for individuals holding leadership positions in diverse companies and institutions. An email delivery service sent the invitation to participate in the study to those emails addresses,

as well as a link to access the survey. The invitation was sent three times during a period of four weeks with the following responses: (a) 69 responses for the first invitation, (b) 24 responses for the second invitation, and (c) 11 responses for the third invitation. The invitation to participate in the study was also sent to 1,254 MBA graduate professionals from the CENTRUM alumni database, with 48 responses. LinkedIn's professional service was used to contact 215 professionals, with 10 responses. In-person surveys returned 384 cases, while online survey returned 162, totaling 546 cases. The data from the in-person questionnaires was inputted into an Excel database and consolidated with the data from the online surveys. The database was randomly reviewed twice for data entry errors and imported into SPSS v21 software to initiate data clean up and treatment.

Data Treatment

A quick review of the dataset showed three cases of duplicated online answers, resulting in the deletion of three responses. Also, a revision of the in-person data returned three cases with data entry errors, which were subsequently corrected. The preliminary descriptive analysis showed low total missing data (< .6%), with the highest variable missing data at 2.3%. The complete descriptive statistics are presented in Tables 32 and 33 in Appendix H. Considering that SEM is a large sample technique, I tried to keep as many samples as possible to avoid bias in the analysis. Some authors (e.g. Kline, 2005) have suggested that a pairwise deletion approach could result in meaningless covariance; therefore I refrained from using it in this study. Garson (2015) suggested that listwise deletion of cases with a high rate of missing data can be applied to less than 5% of the sample without altering the analysis, in order to avoid lowering the power and increasing the probability of Type II error; therefore, 24 cases (less than 4.6%) with over 60% missing data on SISRI, FFMQ and/or MLQ questionnaires were eliminated from the dataset (Hair et al., 2010), maintaining a dataset with a ratio of cases with missing data of less than 8.5% (two remaining cases had

12.6% and 23.1% missing data) and scattered missing data with a maximum of 1.9% missing data for individual variables. Garson (2015) suggests that missing data imputation is recommended when item non-response is less than 20%; however, Hair et al. (2010) suggests caution when it exceeds 10%. Imputation presumes data is missing at random (MAR). However, some authors argue that even when that condition is not met, imputation and listwise deletion are just as effective (Garson, 2015). Finch (2010) defined MAR as "when the probability of a value being missing is dependent on some measurable characteristic of the individual but not on the missing value itself" (p. 362). Single imputation methods have the drawback of creating a certain level of bias because the uncertainty of the imputed values is not taken into consideration (Audigier, Husson, & Josse, 2015; Finch, 2010). Graham (2009) claimed that multiple imputation, in any case, is at least as good as listwise deletion. Multiple imputation is an approach that is extensively accepted for use in dealing with missing data (Rubin, 1987) and is especially strong for categorical data with five or more categories and less than 30% missing data (Leite & Beretvas, 2004; Schafer, Khare, & Ezzati-Rice, 1993) because it creates randomness in the imputations (Finch, 2010). SISRI-24, FFMQ and MLQ-5X use five-point Likert-type scales, delivering categorical data, while SDS uses a binary nominal scale (yes/no).

Schumacker and Lomax (2004) affirmed that categorical data can be assumed to be normal when skewness and kurtosis are between - 2.0 to 2.0. Conversely, Byrne (2010) considered a standardized kurtosis index above 7.0 as an indication of departure from normality. The SISRI and FFMQ data showed univariate skewness and kurtosis between -1.09 and +1.09, while MLQ data showed skewness between -1.7 and +2.15, and kurtosis between -1.4 and +15.0. These indicators correlated with the histogram plots. Dong and Chao-Ying (2013) stated that MI provides adequate results even under non-normal distributions. To consider missing data imputation, the study continued to analyze the data to

define whether it was missing completely at random (MCAR) or missing at random (MAR). Using Little's MCAR (Little, 1988), the dataset tested negative for MCAR, with a significance of .003. Testing for MAR using the Separate Variance t-Test confirmed no MCAR but the results were not conclusive about MAR, with roughly 50% of the variables with missing data ratios above 1.5% having $p < .05$ (2-tail). Garson (2015, Testing for MAR in SPSS, para. 7) stated that "the difference between MAR and MNAR [missing not at random] is a continuum, not a dichotomy, and there is no commonly accepted cutoff for when MI is so imperfect that data must be considered MNAR." Garson stated that based on that argument, most researchers confirm MAR and justify proceeding with multiple imputation. One approach to deal with missing categorical data uses a log-linear analysis together with a multinomial distribution; however, the approach is limited to the number of variables in the model, due to the complexity of the higher order interaction terms (Finch, 2010; Schafer, 1997). SPSS uses a logistic regression model for categorical data and presents similar limitations on the number of variables, processing power and processing time. To deal with the categorical and binary nominal condition of the missing data, both properties were made quantitative before applying multiple imputation and requesting SPSS to round the imputed values to the nearest integer (Schafer, 1997). Several studies have stated that rounding imputed values does not have major effects on the analysis of the data; therefore, once the missing values were replaced by rounded imputed values, the data properties were changed back to categorical and binary nominal to continue with statistical analysis using standard techniques (Schafer, 1997; van Ginkel, van Der Ark, & Sijtsma, 2007; Vermunt, van Ginkel, van der Ark, & Sijtsma, 2008). Initial analyses were performed on all five data sets, calculating the pooled coefficients by averaging the indices from each data set. However, due to the small percentage of missing data, all five imputed datasets presented very similar statistical properties, and it was chosen to perform subsequent analysis only on the first set of

imputed data. SISRI-24 has one reverse-coded item and FFMQ has 19; consequently, the study reversed the scores of those items in the data set.

Validity and Reliability of Instruments

All measurement instruments used in this study were designed and validated using solid procedures. FFMQ and MLQ-5X were previously translated into Spanish and validated in Peru. The present study translated SISRI-24 and validated the three instruments for the specific sample. The reliability of each instrument was tested using the reliability analysis application of SPSS v21, with Cronbach's Alpha coefficients computed for the complete scales and their respective subscales. Inter-item and item-total coefficients allowed for testing of each individual item, with attention paid to any possible deviation from what was considered satisfactory. Confirmatory factor analysis with structural equation modeling was applied for each construct using AMOS v21.0.0. Separate diagrams for SISRI-24, FFMQ and MLQ-5X were designed, as well as a complete structural model that included all three constructs, confirming model identification. Outliers were identified using Mahalanobis's test (observations farthest from the centroid) and deleted as required. Univariate skewness and kurtosis were tested once again with SEM techniques and the multivariate normality of the data computed. Bearing in mind the models' complexity, sample size considerations, the degree of multivariate non-normal distribution, and the ordinal condition of the data, different estimation techniques were used to test the data, such as maximum likelihood (ML), asymptotic distribution free (ADF) and generalized least squares (GLS); in some cases, bootstrapping and parceling techniques were also applied. Estimation technique selection will be explained for each case and properly supported. In addition to the exact fit hypothesis (chi-square goodness of fit, abbreviated as χ^2 or CMIN), the following fit indices were used: (a) the root mean square error of approximation (RMSEA), (b) the goodness of fit index (GFI), (c) the adjusted goodness of fit index (AGFI), (d) the comparative fit index (CFI), and (e) the

normed chi-square (χ^2/df). References and suggested cut-off values are indicated in Table 36 in Appendix I.

Major attention was initially paid to information regarding standardized regression weights, variances, and model fit indices. Additionally the standardized residual covariation matrix was analyzed, together with the root mean square residual coefficient (RMR) to add information during diagnosis of the models. Modification indices were analyzed to improve model fit and if theory supported the addition of covariance between errors (usually between items within the same factor), the improvements from doing so were tested. Low regression weights were reviewed against previous Cronbach's alpha reliability tests, and items were tested for cross-loading to confirm unidimensionality and model improvement. In the case of low regression weights or model fit indices outside suggested thresholds, different estimation techniques were applied, such as maximum likelihood (ML), asymptotic distribution free (ADF) and generalized least squares (GLS), and sometimes bootstrapping and parceling (Byrne, 2010; Garson, 2012; Hair et al., 2010; Kline, 2011). Manageable deviations from adequate fitting or low regression weights were analyzed and discussed. Additionally, the average variance extracted (AVE) and the composite reliability indices (CR) were calculated to complement the reliability and validity analyses (Hair et al., 2010).

Structural Model Analysis

Finally, the structural model was tested and analyzed, addressing the research questions and testing the hypotheses. The literature appears to support the hypothesis of a mediating relationship between spiritual intelligence and mindfulness on transformational leadership. It was therefore proposed that mindfulness mediates the effect of spiritual intelligence on transformational leadership. Considering the complexity of the complete structural model (Figure 2), which has a large number of variables and parameters to estimate, as well as the sample size and the ordinal categorical condition of the data, the

researcher chose to apply parceling techniques (Kline, 2011). The parceling technique basically consists of grouping a series of items into parcels, and subsequently using those parcels as the new indicators for each factor; that is, each parcel have the composite score of their respective clustered items (Matsunaga, 2008). In this way, "parcels are generally treated as continuous variables" and "if the distributions of all parcels are normal, then default ML [maximum likelihood] estimation could be used to analyze the data" (Kline, 2011, p. 179). Parceling presents several benefits, such as that it stabilizes parameter estimates, improves model fit, helps deal with the issue of non-normality and ordinal data, improves scale communality, tends to better approximate true construct distribution, and increases the model's efficiency in defining the latent construct (Matsunaga, 2008). However, Matsunaga (2008) warns that these benefits come with a price: parceling could increase estimation bias and allow model misspecification if the condition of unidimensionality were not met. This condition refers to the requirement that all items in a parcel relate to a single factor in the model—the factor that the parcel loads. After reviewing the matrix loads for all items and factors to confirm unidimensionality, it was decided to aggregate all items of each factor into a single composite score (Little, Cunningham, Shahar, & Widaman, 2002). This was considered to be the most effective and parsimonious statistical alternative, as each first-order latent variable became the new construct's indicator (Figure 5).

Model fit was tested using parceling techniques, paying major attention to estimating the magnitude of effects rather than just focusing on statistical test results, as suggested by Kline (2004, 2011). The mediating effect was analyzed and identified using Baron and Kenny's (1986) test and bootstrapping (Hayes, 2009). Baron and Kenny (1986) proposed that "in general, a given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion" (p. 1176). The basic purpose of mediation is to find a more precise description of the effect of one or more independent

variables on one or more dependent variables, and as described in the literature review, the theory supports that proposal.

Hair et al. (2010, p. 647) suggested that "theory can provide only a starting point for development of a theoretically justified model that can be empirically supported. Thus the researcher must employ SEM not just to test the model empirically but also to provide insights into its respecification". The present study applied a competing model strategy, using a model trimming approach (Kline, 2011, p. 214); it compares the estimated proposed model with two alternative equivalent models, also called hierarchical or nested models: "Two models are hierarchical or nested if one is a proper subset of the other" (Kline, 2011, p. 214). In this research two competing nested models were created by constraining different paths on the proposed model (base model): (a) Nested Model 1: where the direct path from SI to MF is constrained to cero, and (b) Nested Model 2: where the direct path from SI to TF is constrained to cero. It is important to emphasize that any re-specification of a model to test nested versions needs to be guided by the researcher hypotheses (Kline, 2011); additionally, when comparing nested models, theory has a critical importance in the selection of the model that closer represents the reality. Nested models are considered alternative competing models, and as such the researcher can test them with the same data, comparing their results using the chi-square difference test (Byrne, 2010; Hair et al., 2010; Kline, 2011).

The present study also analyzed the effects of social desirability and control variables taken from the demographic data. Control variables were treated as potentially confounding variables that were taken into consideration but not made the main focus of the research.

Summary

The review of the literature was comprehensive and guided the purpose of this research and the selection of the methodology. The SISRI-24 questionnaire was properly translated into Spanish and validated using a representative sample. The validity and

reliability of all the questionnaires used were tested and deviations properly assessed. The design of the study shows a solid epistemological approach, and the selected techniques for answering the proposed questions and testing the null hypotheses represent a solid approach with a strong statistical foundation.

Chapter 4: Results

The previous chapters have introduced the problem of concern, presented the most relevant findings in the literature, and detailed the research design. This chapter reports the results of applying the described statistical techniques to the data, in agreement with the purpose of evaluating the effects of spiritual intelligence and mindfulness on transformational leadership behavior among leaders in Peru. This chapter follows a logical sequence to answer the research questions and test the hypotheses: first, it presents the descriptive statistics; second, it describes the validation of the three instruments used in the study; third, it presents tests of competing equivalent structural models, in accordance with the hypotheses; and finally, it summarizes the results.

Descriptive Statistics

The descriptive statistics for the most relevant demographic data and second-order latent variables under investigation are presented in Appendix H. The age of most of the participants (73.5%) was between 24 and 42 years, while 20.2% fell in the range of 43 to 55 years of age. The final sample of 525 individuals consisted of 65% males and 35% females, with 44.2% reporting single status and 46.9% married. The majority of participants (63.7%) were working at companies with more than 250 employees and 20.4% were working at companies with between 50 and 250 employees. Forty-three percent had between one and five years of supervisory experience, 22% between six and ten years, 10% between 11 and 15 years, and 16% with more than 15 years of experience. Most participants (76.7%) considered themselves to have had a religious family education and 72.6% had a religious school education; however, 65.5% responded that they currently never or almost never went to church or participated in religious rituals. On the other hand, 30.3% responded that they prayed less than 15 minutes each day, and 43.4% prayed infrequently (less than twice a week). Additionally, 78.7% responded that they have never have practiced meditation.

Validation of Instruments

Validation of the Spiritual Intelligence Self-Report Inventory (SISRI-24)

SISRI-24 (King, 2008) was developed on a solid conceptual base that was properly operationalized following accepted best practices and interpreted using well-defined factors and measurable indicators (King, 2008; King & DeCicco, 2009), suggesting scale nomological validity. The SISRI-24 instrument has only one reverse coding in SISRI6, which is represented as SISRI6r in the structural model presented in Figure 3. Using the reliability analysis application in SPSS v21, the Cronbach's alpha identified for the entire SISRI-24 scale was .93—very similar to the .92 found in the original research (King, 2008).

The individual subscales (CET, PMP, TAW and CSE) showed adequate Cronbach's alphas and average inter-item correlations, and compared very well with the original values found by King (2008), as summarized in Table 1. The item-total statistics showed all items to be above the .3 cutoff (Garson, 2016). An inter-item correlation matrix represents the correlation of each item with the others. The expectation was that there would be no large correlations to suggest multicollinearity (> .8; Garson, 2016), nor excessively small correlations to insinuate a lack of relationship between scale items (which would suggest that some items could be measuring different constructs). Generally it is expected to fit between .15 and .5 (Clark & Watson, 1995). Average inter-item correlation fitted well, at .37, compared to .34 in the original study (King, 2008); however, SISRI6r averaged .12, so this item was kept under scrutiny during further analysis. If that item was deleted, Cronbach's alpha was maintained at .93 for all items except SISRI6r, which increased to .94 if deleted. These statistical coefficients suggested that the scale has good internal consistency and reliability. The SISRI-24 scale was then tested using confirmatory factor analysis with AMOS v21.0.0 to find the second-order and first-order structural models over-identified with 248 and 2 degrees of freedom, respectively.

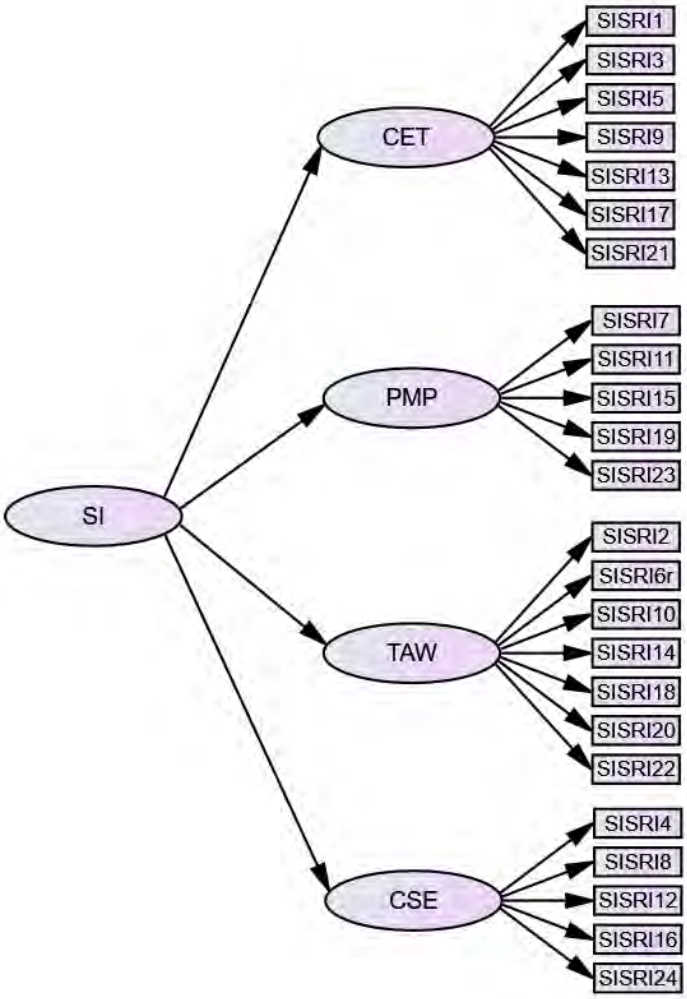

Figure 3. Simplified diagram of SISRI-24 structural model

Table 1

Cronbach's Alpha and Average Inter-item Correlation Indices for SISRI-24 Subscales

	Present study		King (2008)	
Subscales	Cronbach's Alpha	Average inter-item correlation	Cronbach's Alpha	Average inter-item correlation
CET	.81	.39	.78	.34
PMP	.82	.33	.78	.42
TAW	.79	.35	.87	.49
CSE	.90	.45	.91	.69

According to Byrne (2010, p. 143), it is acceptable to treat categorical data coming from an ordinal Likert scale as if they were continuous, especially when the data come from Likert-type scales with five or more categories and approximate a normal distribution. Several studies support this approach (Atkinson, 1988; Babakus, Ferguson, & Jöreskog, 1987; Bentler & Chou, 1987; Bollen & Barb, 1981; Finch, West, & MacKinnon, 1997; Boomsma, 1982; Green, Akey, Fleming, Hershberger, & Marquis, 1997; Muthén & Kaplan, 1985; West, Finch, & Curran, 1995). Rhemtulla, Brosseau-Liard, and Savalei (2012) agreed, and indicated that Likert scales with five or more categories, a small sample size, and approximately symmetric category thresholds can be estimated using maximum likelihood (ML) methodology, assuming that underlying each categorical variable within the constructs under study is a normally-distributed, continuous variable. The present study took this paradigm and built from it.

SISRI-24 is a higher-order factor model in which the second-order latent variable (SI) "accounts for covariance between constructs, just as first-order factors account for covariation between observed variables [1]. In other words, the first order factors now act as indicators of the second-order factor" (Hair et al., 2010). As such, the structural model of SISRI-24 becomes the measurement model as well, with the former used for statistical analysis with AMOS. Returning to the analysis of normality, the study followed the procedure suggested by Byrne (2010), with the imputed data run through AMOS v21 for the SISRI-24 structural model, using ML estimation to obtain standardized estimates and modification indices (with a threshold of 10), and to test for normality and outliers. The Mahalanobis d-squared coefficient identified two cases as outliers, and these were deleted. The analysis of the new data showed that all items' univariate skewness was within the +/- 2.0 threshold (averaging -.42) and their univariate kurtosis was within the 7.0 threshold (averaging -.30), as suggested by Byrne (2010); thus, the items exhibited univariate

normality. However, Mardia's normalized estimate of multivariate kurtosis, an indicator of multivariate normality, had a value of 111.7 and a critical ratio of 36.2, exceeding Byrne's proposed threshold of 5.0, suggesting a non-normally distributed sample. To mitigate the suggested non-normality, asymptotic distribution free (ADF) estimation and bootstrapping were applied. Bootstrapping is a technique that is used to deal with mid-size samples and non-normal distributions (Byrne, 2010; Hancock & Nevitt, 1999; Nevitt & Hancock, 2001). ADF estimation is suggested when non-normal data could affect the analysis (Byrne, 2010). The sample size after treatment ($N = 525$) was greater than 10 times the number of estimated parameters (52), which is an ADF requirement (Raykov & Marcoulides, 2000); this also exceeds AMOS v21.0.0's requirement of a minimum sample size of $n(n+1)/2$, where n is the number of observable variables. Maximum likelihood (ML) estimation returned better model fit indices and regression weights than ADF. Bootstrapping with ML estimation returned similar values to those obtained without bootstrapping, indicating that normality and sample size did not affect the estimation.

There is no clear consensus regarding what fit indices are the most appropriate for evaluating a particular model fit. At this point is important to note that structural equation model fitting is an issue that has been largely debated for quite some time, with disagreement mainly rooted in the issue of statistical significance. This debate began several decades ago (Rozeboom, 1960) and has continued to the present time (Hayduk, 2014); it has been summarized well by Byrne (2010). Throughout the present study, the guidelines suggested by Byrne (2010), Cangur and Ercan (2015), Garson (2012), Hair et al. (2010), Hu and Bentler (1999) and Kline (2011) regarding model fit indices were used. Following those guidelines (Table 36 in Appendix I), it was found to be convenient to use three absolute fit indices (chi-square, RMSEA, and GFI), two incremental fit indices (AGFI and CFI) and one parsimonious fit index (χ^2/df). When sample size is larger than 200, chi-square (χ^2) tends to

have high and significant values ($p < .05$) and normally, some other indices are taken into consideration during evaluation; however, the ratio χ^2/df tends to correct for such sensitivity to sample size and model complexity (Garson, 2012). In the present study, almost all models had a *significant* χ^2 ($p < .001$), suggesting that "the fit of the data to the hypothesized model is not entirely adequate" (Byrne, 2010, p. 76), and the χ^2/df ratios were adequate, close to the cutoff value of 3 (Kline, 2011), as expected. Schumacker and Lomax (2004) suggested a less demanding normed chi-square cutoff value of 5. Hoelter's model fit index can be used to assess whether the sample size is adequate: "By convention, sample size is adequate if Hoelter's N > 200" (Garson, 2012, Goodness of fit measures, para. 6; Byrne, 2010, p. 83). The model in the present study had a Hoelter index of 200 at the .01 level of significance, suggesting an adequate sample size. A comparison of the model fit indices achieved with ML against the values from the original study (King, 2008) and the recommended cutoff values (Table 36 in Appendix I) is presented in Table 2.

Table 2

Comparison of Fit Indices for SISRI-24 Found in King (2008) and in the Present Study

Indices	King (2008)	Present Estimate	Cutoff
χ^2 *	464.68	746.74	$p > .05$
RMSEA	.06	.07	< .08
LCL	.05	.06	
UCL	.06	.07	
GFI	.89	.89	> .9
AGFI	.86	.86	> .9
CFI	.93	.92	> .9
df	246	233	
χ^2/df	1.89	3.21	< 3

Note. LCL = RMSEA Lower Confidence Limit; UCL = RMSEA Upper Confidence Limit.
* $p < .001$

A narrow RMSEA confidence interval (gap between lower and upper confidence limits) suggests good precision of the computed value. Following these considerations, the values presented in Table 2 correspond to a nearly adequate model fit. Regression weights

and error variances were computed and are presented in Tables 3 and 4; a comparison of standardized regression weights with those from the original study (King, 2008) is presented in Table 31 in Appendix G. The bootstrapped computed values were similar to the standard ML estimation, confirming low deviation from normality and adequate sample size. Standardized regression weights and error variances were all highly significant at $p < .001$, showing adequate loads and further confirming the convergent validity of the model. All standardized regression weights (Table 3) were above the suggested cutoff of .5 (Hair et al., 2010), except for SISRI6r, which agreed with the previous Cronbach's alpha reliability analysis. Hair et al. (2010) suggested considering the removal of an item if it falls below the .5 cutoff, while Kline (2010) suggests a more conservative approach (e.g., .2); either way, SISRI6r needed further consideration. Two additional tests were performed to define SISRI6r: (a) SISRI6r was unconstrained to load all the factors to confirm its unidimensionality and discard cross-loadings; it had loading with .47 at TAW (its original factor) and less than .27 with the other factors, rejecting cross-loadings; and (b) SISRI6r was removed from the model. Both analyses resulted in no significant improvements of fit indices or loads.

Confirmatory factor analysis (CFA) has a strong theoretical basis and theoretical criteria should prevail over empirical criteria when deciding on the inclusion or removal of an item (Hair et al., 2010); as stated by Hair et al. (2010, p. 711), "the researcher should avoid making changes based solely on empirical criteria such as the diagnostics provided by CFA." The statement of SISRI6 that "It is difficult for me to sense anything other than the physical and material" (King, 2008) is an important theoretical support of the *transcendental awareness* factor. King recognized that *transcendental awareness* is the least understood of all capacities and that the word *transcendental* could be considered out of place in the academic and scientific communities. King (2008, p. 64) defined *transcendental awareness*

as “the capacity to identify transcendent dimensions of the self (e.g., a transpersonal or transcendent self), of others, and of the physical world (e.g., non-materialism, holism) during the normal, waking state of consciousness, accompanied by the capacity to identify the relationship to one’s self and to the physical.” After taking the above into consideration, it was decided that there was insufficient grounds to remove SISRI6 and so the item was kept. However, this is a suggested area for future research.

Table 3

Regression Weights for SISRI-24

			Estimate	S.E.	C.R.	*p*	Standardized Estimate
CET	<---	SI	0.43	0.05	9.00	***	.97
PMP	<---	SI	0.58	0.04	14.77	***	.84
TAW	<---	SI	0.58	0.04	13.63	***	.96
CSE	<---	SI	0.78	0.05	17.49	***	.84
SISRI1	<---	CET	1.00				.40
SISRI3	<---	CET	1.38	0.15	9.34	***	.58
SISRI5	<---	CET	1.65	0.20	8.29	***	.62
SISRI9	<---	CET	1.69	0.19	8.95	***	.60
SISRI13	<---	CET	1.47	0.17	8.65	***	.70
SISRI17	<---	CET	2.01	0.23	8.91	***	.78
SISRI21	<---	CET	1.54	0.19	8.05	***	.58
SISRI7	<---	PMP	1.00				.70
SISRI11	<---	PMP	0.76	0.06	12.77	***	.63
SISRI15	<---	PMP	0.79	0.06	12.43	***	.67
SISRI19	<---	PMP	0.78	0.06	13.09	***	.65
SISRI23	<---	PMP	1.02	0.07	15.54	***	.79
SISRI2	<---	TAW	1.00				.59
SISRI6r	<---	TAW	0.43	0.09	4.89	***	.23
SISRI10	<---	TAW	1.27	0.10	12.23	***	.69
SISRI14	<---	TAW	1.32	0.10	12.78	***	.72
SISRI18	<---	TAW	1.06	0.09	12.11	***	.67
SISRI20	<---	TAW	0.99	0.09	11.71	***	.64
SISRI22	<---	TAW	1.11	0.09	12.41	***	.70
SISRI4	<---	CSE	1.00				.80
SISRI8	<---	CSE	1.04	0.05	19.35	***	.81
SISRI12	<---	CSE	1.00	0.05	19.90	***	.81
SISRI16	<---	CSE	0.93	0.05	18.17	***	.78
SISRI24	<---	CSE	1.02	0.05	19.62	***	.81

*** $p < .001$

An analysis of the standardized residual covariance matrix provided additional information about the model. Hair et al. (2010) suggested that standardized residual covariances larger than |4.0| may indicate a potential unacceptable degree of error; however, "some large standardized residuals may occur just because of sampling error" (p. 711), and some amount of those offenders can be accepted. In those situations, the main concern is a consistent pattern of large standardized residual covariances over a single variable, or within the complete construct. It is not clear the amount of large residuals that can be accepted but, the larger the quantity, the weaker the model (Kline, 2011). The root mean square residual coefficient (RMR) provides useful information of the behavior of the residuals in the model, representing the average residual value resulting from the fitting of the variance–covariance matrix between the hypothesized model and the sample data, with a suggested cut-off value of .05 (Byrne, 2010). The SISRI-24 model computed a RMR of .05, and its standardized residual covariance matrix showed no residual covariance exceeding the |4.0| cut-off, indicating a correct model.

The average variance extracted (AVE) and the composite reliability indices (CR) were calculated using the formulas suggested by Hair et al. (2010, p. 710), where L_i indicates each of the model loads, e_i their error variances, and n the number of items in the model (Figure 4).

$$CR = \frac{(\sum_{i=1}^{n} L_i)^2}{(\sum_{i=1}^{n} L_i)^2 + (\sum_{i=1}^{n} e_i)} \qquad AVE = \frac{\sum_{i=1}^{n} L_i^2}{n}$$

Figure 4. CR and AVE formulas as suggested by Hair et al. (2010, p. 710)

The CR and AVE computed for the spiritual intelligence construct using the ML estimator totaled 96.7% and 81.5%, respectively. These values exceeded the respective suggested cut-off values of 70% and 50% (Hair et al., 2010), indicating good composite reliability. The AVE ratio, at 81.5%, indicates that the second-order construct explained at

least 81.5% of the variance. Respective CR and AVE ratios for the SISRI-24 factors were as follows: (a) CET 76.4% and 38.2%, (b) PMP 85.7% and 47.6%, (c) TAW 79.9% and 39.2%, and (d) CSE 87.1% and 64.4%.

Table 4

Variances for SISRI-24

	Estimate	S.E.	C.R.	*p*
SI	1.00	-	-	-
res1	0.01	0.01	2.19	.03
res2	0.14	0.02	6.43	***
res3	0.03	0.01	2.77	.01
res4	0.26	0.03	8.06	***
e1	1.03	0.07	15.82	***
e3	0.76	0.05	14.99	***
e5	0.87	0.06	14.96	***
e9	1.05	0.07	15.05	***
e13	0.45	0.03	14.30	***
e17	0.53	0.04	12.96	***
e21	0.94	0.06	15.06	***
e7	0.51	0.04	13.31	***
e11	0.41	0.03	14.37	***
e15	0.36	0.03	13.63	***
e19	0.40	0.03	14.22	***
e23	0.29	0.03	11.95	***
e2	0.69	0.05	15.16	***
e6	1.20	0.08	16.02	***
e10	0.66	0.05	14.02	***
e14	0.58	0.04	14.10	***
e18	0.50	0.04	14.45	***
e20	0.51	0.04	14.56	***
e22	0.47	0.03	13.82	***
e4	0.48	0.04	12.56	***
e8	0.50	0.04	11.62	***
e12	0.45	0.04	12.29	***
e16	0.48	0.04	11.94	***
e24	0.48	0.04	11.84	***

*** $p < .001$

The translation of SISRI-24 to Spanish proved to be a smooth process. Cronbach's alpha and confirmatory factor analysis (CFA) were used to test construct validity. The SISRI-

24 scale presented good convergent and divergent (or discriminant) validity, with adequate Cronbach's alphas, and average inter-item and item-total correlations. Content validity was granted during SISRI-24 scale development and though revision by a panel of experts during translation. The proposed convergent and divergent validities for the SISRI-24 model, together with the unidimensionality of the items, were tested during CFA; the model exhibited reasonable fitting indices, confirming convergent and divergent validity. Additionally, all items had high standardized loading estimates, confirming convergent validity, with the exception of SISRI6 (.27), which concurred with its low inter-item correlation, leading to further tests of that item. After a thorough analysis, possible cross-loadings were discarded and model re-specifications did not significantly increase the statistical coefficients; consequently, due to the important contribution of SISRI6 to the theory, the variable was retained. The AVE ratio supported convergent validity or internal consistency, while the composite reliability index suggested good reliability, concurring with computed the Cronbach's alphas.

Validation of the Multifactor Leadership Questionnaire (MLQ-5X)

MLQ-5X has been extensively validated in many countries, including Peru. Analyzing the transformational facet of the MLQ-5X, the study identified a Cronbach's alpha for the scale averaging .87. Cronbach's alpha and inter-item correlations for individual subscales IA, IB, IM, IS, and IC are summarized in Table 5.

Table 5

Reliability Indices for MLQ-5X Subscales

Subscale	Cronbach's alpha	Average inter-item correlation	Corrected item-total correlation	Alpha if item deleted
IA	.43	.16	.43	.80
IB	.68	.35	.68	.71
IM	.79	.48	.65	.72
IS	.67	.33	.59	.74
IC	.49	.19	.52	.76

Low subscale alphas were found for factors IA and IC, justifying further analysis. Inter-item correlations fit well within the .15 and .5 cutoffs (Clark & Watson, 1995), but were close to the lower side for IA and IC, suggesting that those factors could be weakly related to the rest. The item-total correlations for all items were above the .3 cutoff (Garson, 2016). Additionally, the alphas if the individual items were deleted, were below alpha within subscales (.80), except for factor IA, suggesting that the reliability of the scale will not suffer if IA is removed. Computed inter-item correlations within subscales returned acceptable values, except for LID25 (.11) and LID19 (.05), loading IA and IC, respectively. Item-total correlations within IC showed LID19 to be at .08 (below suggested .3 cut off).

The confirmatory factor analysis on MLQ-5X (Figure 4) found the second-order and first-order structural models to be over-identified, with 165 and 6 degrees of freedom, respectively. Mardia's normalized estimate of multivariate kurtosis provided a value of 65.53 and a critical ratio of 25.12, exceeding Byrne's proposed threshold of 5.0, suggesting a non-normally distributed sample. Therefore, ADF and bootstrapping were also applied. Once again, maximum likelihood (ML) estimation returned better model fit indices and regression weights than ADF. Bootstrapping with the ML estimator returned similar values to no bootstrapping, indicating that normality and sample size did not affect estimation. The model fit indices are presented in Table 6, with the satisfactory values suggesting convergent and divergent model validity.

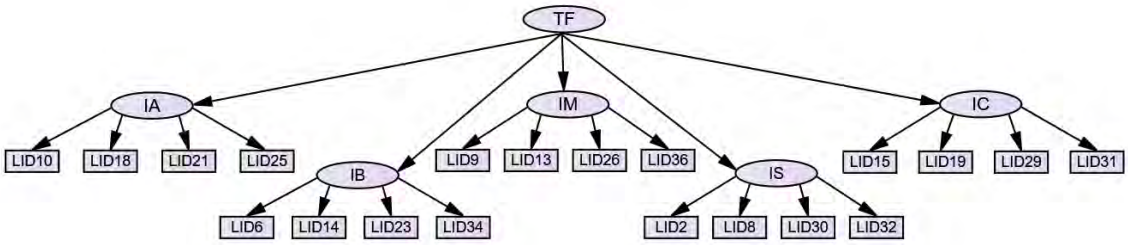

Figure 5. Simplified diagram of MLQ-5X structural model

Table 6

Fit Indices for MLQ-5X Transformational Leadership

Indices	Estimate	Cutoff
$\chi 2$ *	458.93	$p > .05$
RMSEA	.06	< .08
LCL	.05	
UCL	.07	
GFI	.92	> .9
AGFI	.89	> .9
CFI	.90	> .9
df	165	
$\chi 2/df$	2.78	< 3

Note. LCL = RMSEA Lower Confidence Limit; UCL = RMSEA Upper Confidence Limit.
* $p < .001$

The model had a Hoelter index of 237 at the .01 level of significance, suggesting an adequate sample size (Garson, 2012, Goodness of fit measures, para. 6; Byrne, 2010, p. 83). Regression weights and error variances were computed and are presented in Table 7 and Table 8.

The standardized regression weights and error variances were all highly significant at $p < .001$, except for LID19 (IC), res5 (IA), and res9 (IC). Two standardized regression weights failed to meet Kline's (2010) conservative lower limit of .2: LID19 loading at IC (*individualized consideration*), and LID25 at IA (Idealize Influence - Attributes). However, all of the first-order latent variables had good standardized loadings for transformational leadership (second-order latent variable), suggesting convergent validity.

The root mean square residual coefficient (RMR) computed .046, below the .05 suggested cut-off value, and its standardized residual covariance matrix showed no residual covariance exceeding the |4.0| cut-off, indicating a correct model.

Table 7

Regression Weights for MLQ-5X Transformational Leadership

			Estimate	S.E.	C.R.	*p*	Standardized Estimate
IA	<---	TF	0.15	0.05	2.85	.00	.77
IB	<---	TF	0.53	0.03	17.35	***	.95
IM	<---	TF	0.37	0.02	15.39	***	.90
IS	<---	TF	0.49	0.03	17.19	***	.88
IC	<---	TF	0.57	0.03	20.23	***	.98
LID32	<---	IS	1.00	-	-	-	.79
LID30	<---	IS	0.93	0.06	14.50	***	.69
LID8	<---	IS	0.65	0.09	7.69	***	.37
LID2	<---	IS	0.62	0.07	9.31	***	.44
LID36	<---	IM	1.00	-	-	-	.70
LID26	<---	IM	1.33	0.09	15.11	***	.76
LID13	<---	IM	1.12	0.08	14.45	***	.72
LID9	<---	IM	1.08	0.08	12.91	***	.64
LID25	<---	IA	1.00	-	-	-	.15
LID21	<---	IA	2.50	0.89	2.82	.01	.61
LID18	<---	IA	2.09	0.77	2.70	.01	.38
LID10	<---	IA	2.54	0.93	2.74	.01	.42
LID34	<---	IB	1.00	-	-	-	.74
LID23	<---	IB	0.68	0.06	12.36	***	.58
LID14	<---	IB	0.88	0.06	14.97	***	.71
LID6	<---	IB	0.62	0.08	7.37	***	.35
LID31	<---	IC	1.00	-	-	-	.80
LID29	<---	IC	0.43	0.04	9.79	***	.45
LID19	<---	IC	0.06	0.12	0.47	.64	.02
LID15	<---	IC	0.81	0.06	13.05	***	.58

*** $p < .001$

The model's composite reliability (*CR*) was 99.2%, suggesting good construct reliability; while average variance extracted (AVE) of 80% indicated that the second-order latent variable explained, on average, 80% of the first-order factor variances, suggesting good convergent validity. The respective CR and AVE ratios for the MLQ-5X factors were as follows: (a) IS 74.6% and 36.7%, (b) IM 89.6% and 47.6%, (c) IA 36.7% and 16.8%, (d) IB 77.5% and 37.3%, and (e) IC 53.5% and 29.9%. The model was tested by removing LID19

and LID25 in all combinations, resulting in a modest increase of subscales' *CR* and *AVE* values.

Table 8

Estimated Variances for MLQ-5X

	Estimate	S.E.	C.R.	*p*
TF	1.00	-	-	-
res5	0.02	0.01	1.38	.17
res6	0.03	0.01	2.53	.01
res7	0.03	0.01	4.75	***
res8	0.07	0.02	4.39	***
res9	0.01	0.02	0.77	.44
eL32	0.19	0.02	10.19	***
eL30	0.31	0.02	13.02	***
eL8	0.84	0.05	15.55	***
eL2	0.50	0.03	15.26	***
eL36	0.18	0.01	13.57	***
eL26	0.22	0.02	12.42	***
eL13	0.20	0.02	13.20	***
eL9	0.29	0.02	14.29	***
eL25	1.53	0.10	15.88	***
eL21	0.38	0.04	10.26	***
eL18	0.99	0.07	14.74	***
eL10	1.12	0.08	14.31	***
eL34	0.26	0.02	12.32	***
eL23	0.28	0.02	14.62	***
eL14	0.25	0.02	13.10	***
eL6	0.86	0.06	15.69	***
eL31	0.19	0.02	9.60	***
eL29	0.25	0.02	15.44	***
eL19	2.09	0.13	16.06	***
eL15	0.44	0.03	14.70	***

*** $p < .001$

Additionally, the full MLQ-5X containing the three domains of transformational, transactional and passive/avoidance was tested, with similar results to the transformational facet alone, as expected (Table 9). The present study used the Spanish version of the self-rated MLQ-5X questionnaire provided by Mind Garden. In the English version of the self-rated MLQ-5X questionnaire, LID25 states, "I display a sense of power and confidence," and

in the rater questionnaire it states, "*Displays a sense of power and confidence"; the intended meaning is that the individual under analysis is perceived by his or her followers as somebody who exhibits that characteristic, not necessarily that the individual shows pride or arrogance due to a place of authority.

Table 9

Comparison of Full Scale MLQ-5X (Transformational, Transactional and Passive/Avoidant) and MLQ-5X Transformational Facet

			Full-scale	Transformational	Cutoff
	Fit Indices	χ^2 *	1568.92	458.93	
		RMSEA	.06	.06	< .08
		LCL	.05	.05	
		UCL	.06	.07	
		GFI	.85	.92	> .9
		AGFI	.83	.89	> .9
		CFI	.81	.90	> .9
		df	585.00	165.00	
		χ^2/df	2.68	2.78	< 3
Standardize Factor Loadings	Transformational Subscales	IA	.75	.76	
		IB	.98	.96	
		IM	.91	.91	
		IS	.86	.87	
		IC	.97	.96	
	Transactional Subscales	CR	.96	-	
		MA	.37	-	
	Passive / Avoidant Subscales	LF	-.57	-	
		MP	-.43	-	
Reliability Indices		CR	94.5%	91.2%	> .8
		AVE	32.3%	33.7%	> .5

Note. LCL = RMSEA Lower Confidence Limit; UCL = RMSEA Upper Confidence Limit.
* $p < .001$

One possible explanation for the low standardized regression weight of LID25 is that some of the participants in the sample may have understood LID25 in a negative context—as

if it was being asked if he or she shows pride and an arrogant attitude because of any formal or unendorsed power—and thus avoided answering in a positive way. Similarly, item LID19 stated: "I treat others as individuals rather than just as a member of a group." As I understand it, the scale's author was trying to convey the idea that the leader strives to perceive and consider each person as an individual, rather than adopting an impersonal group perception. Some participants, however, could have understood this statement as opposing the encouragement of teamwork, thus perceiving it in a negative sense. These possible misunderstandings could have introduced measurement errors that SEM was not able to account for, affecting the statistical indices related to these items.

An additional factor that could have contributed with this distortion was social desirability. Social desirability is defined as "the need of *Ss* [subjects] to obtain approval by responding in a culturally appropriate and acceptable manner" (Crowne & Marlow, 1960, p. 353). The role of social desirability in these results is discussed in Chapter 5. Finally, considering that the statistical improvements after deletion of the items were modest in comparison to their importance to the theory behind each of their constructs, and owing to the extensive validation done on this scale already, it was decided to retain these factors during the present study.

The MLQ-5X scale has been extensively validated in many countries, including Peru. The present study was focused on the transformational aspect of the scale, and low Cronbach's alphas were found for *idealized influence attributed* (IA) and *individualized consideration* (IC). LID25 and LID19 did not meet alpha's cutoff, in line with the results from confirmatory factor analysis. Model re-specifications did not significantly improve the statistical values, with little strength added to the model; in this case, the theory overweighed the statistical analysis, providing the proper basis for keeping the model. The computed fitting indices were adequate, suggesting convergent and divergent model validity. Similarly,

all of the first-order latent variables presented adequate standardized loadings for transformational leadership (second-order latent variable). Additionally, composite reliability suggested adequate reliability of the construct and average variance extracted indicated good convergent validity.

Validation of the Five Factor Mindfulness Questionnaire (FFMQ)

In the present study, the Cronbach's alpha for the FFMQ scale averaged .82, while the original validation in Peru returned .90 (Loret de Mola, 2009). Cronbach's alpha and inter-item correlations for individual subscales of *observing* (OB), *describing* (DE), *acting with awareness* (AA), *nonjudging of inner experience* (NJ) and *nonreactivity to inner experience* (NR) are summarized in Table 10. The study found a low alpha for factor OB, justifying further analysis. Inter-item correlations fit well within the .15 and .5 cutoffs (Clark & Watson, 1995). For the item-total correlations, the values for factors OB and NJ were below the .3 cutoff (Garson, 2016), suggesting that these items have low correlation with the overall scale. Additionally, the alphas if items OB and NJ were deleted were above the average factor alpha of .49, suggesting that the reliability of the scale would increase if OB and NJ were removed.

Table 10

Reliability Indices for FFMQ Subscales

Subscale	Cronbach's alpha	Average inter-item correlation	Corrected item-total correlation	Alpha if item deleted
OB	.43	.35	.01	.57
DE	.84	.40	.53	.21
AA	.89	.50	.36	.33
NJ	.85	.41	.14	.50
NR	.74	.24	.30	.39

The OB subscale had an alpha of .81, with inter-item correlations within the .15 and .5 cutoffs, item-total correlations above .3 cutoff, and Cronbach's alpha below the subscale's

alpha if the item OB was deleted. The alpha computed for the NJ subscale was .85, inter-item correlation was within the .15 and .5 cut offs, item-total correlations were above the .3 cut off, and Cronbach's alpha was below the subscale's alpha if the item NJ was deleted. The comparison of reliability indices with those from the original study (Baer et al., 2006) and the validation of FFMQ in Peru (Loret de Mola, 2009) are presented in Table 11.

Mindfulness is a practice that was established long ago in most of the far eastern cultures, but that has recently been introduced in the corporate field in some of the most industrialized western countries; it remains to be introduced in Peru. The descriptive analysis of the current demographic data showed that 21% of the participants had some degree of exposure to mindfulness practices, which could affect the results (Baer et al., 2006). Loret de Mola (2009) used a sample that included 55 mindfulness practitioners coming from meditation institutions and 55 non-meditators, similar to the sample structure used by Baer et al. (2008); in both cases, the participants did not necessarily hold leadership roles in corporations or institutions.

The second-order and first-order structural models (Figure 6) were found over-identified, with 697 and 5 degrees of freedom, respectively. Mardia's normalized estimate of multivariate kurtosis returned a value of 183.4 and a critical ratio of 37.0, exceeding Byrne's proposed threshold of 5.0, suggesting a non-normally distributed sample. For this particular model, population and sample size, the ML estimator did not perform well, computing a non-significant, close-to-zero negative standardized regression weight for the NJ factor, and a close-to-zero standardized regression weight for the AA factor, although all items showed satisfactory loadings for their respective factors.

It is important to mention that Baer et al. (2006) found that in samples with small percentages of non-meditators, only the factors of DE, AA, NJ and NR formed part of a single hierarchical structure (a four-factor, second-order, latent structure). Only when the

sample included meditators and non-meditators in nearly similar proportions did the construct behaved as a five-factor, second-order, latent structure, including the OB factor. Baer et al. (2006) speculated, "It is possible that the observe facet is particularly sensitive to changes with meditation experience that alter its relationships with other mindfulness facets and with related variables, such that observe becomes a clear facet of mindfulness and related in expected directions to other variables as mindfulness skills develop" (p. 42).

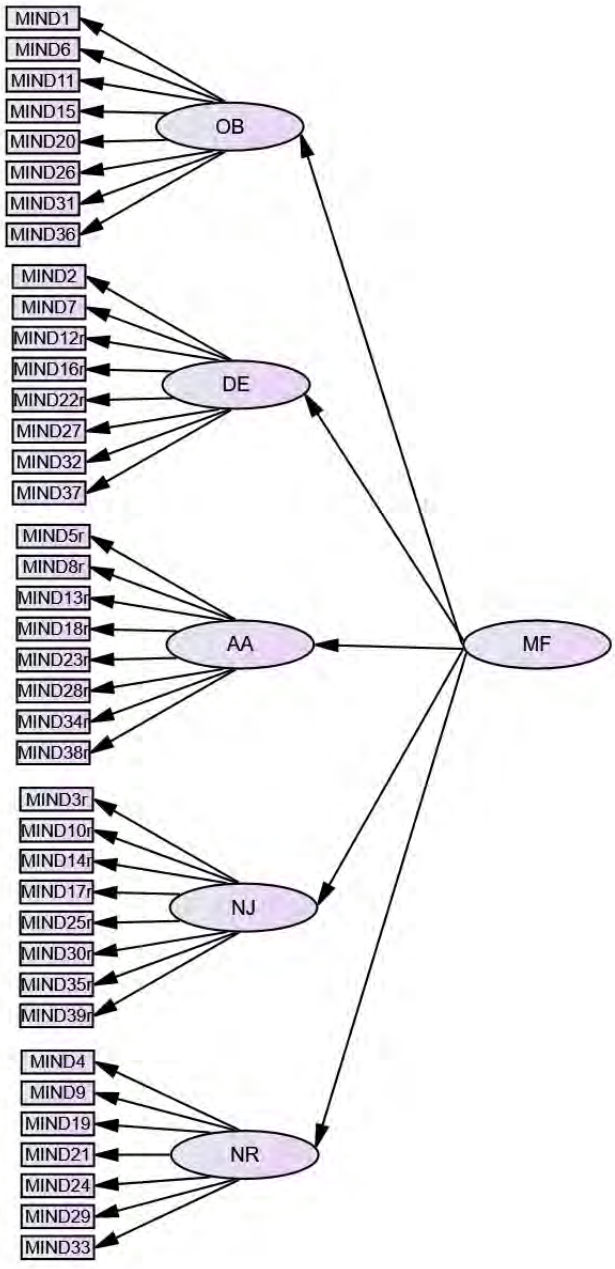

Figure 6. Simplified diagram of FFMQ structural model

The model was next tested using alternative estimating techniques, in case multivariate non-normality or sample size was affecting the results. The ADF estimator was not applied because it requires a sample size larger than $n(n+1)/2$ (as set by AMOS v21.0.0), where n is the number of observable variables, resulting in 780, compared to our sample size of 525. As an alternative, together with maximum likelihood estimation, the generalized least squares (GLS) technique was applied, considering that GLS is commonly used when ML is not suitable, such as when multivariate normality is far from ideal (Garson, 2012; Kline, 2011), or when the data has an ordinal condition (Kline, 2011).

Kline (p. 176) acknowledged that "the GLS method is a member of a larger family of methods known as fully weighted least squares (WLS) estimation, and some other methods in this family can be used for severely non-normal data." Similarly, Garson (2012, Generalized least squares estimation, para. 1) argued that the "GLS is a popular method when ML is not appropriate, as when data are not multivariate normal," further declaring that GLS "is probably the second-most common estimation method after ML" (p. 1091).

Table 11

Comparison of Cronbach's Alpha for the FFMQ Scale and Subscales against Values from Previous Validations

Variables	Present study	Baer et al. (2006)	Loret de Mola (2009)
MF	.82	-	.90
OB	.43	.83	.77
DE	.84	.91	.84
AA	.89	.87	.86
NJ	.85	.87	.86
NR	.74	.75	.78

Gerbing and Anderson (1987) argued that when the model presents low loads (standardized regression weights) and the sample size is small (< 100), ML estimation could present some problems. The present study proceeded to test the model fit with the GLS

estimator, finding good regression weights and acceptable fitting indices with the exception of a low CFI (.46); however, for the same data and model, CFI is expected to have much lower values when estimated with GLS than with ML (Rigdon, 2016). Additionally, CFI penalizes model complexity and rewards parsimony (Iacobucci, 2010). In other words, CFI results deteriorate as the number of variables increases (Kenny & McCoach, 2003).

Testing SISRI-24 and MLQ-5X with GLS produced the same effect on CFI, and this was replicated when testing with the ADF estimator. Fitting indices computed with the ML and GLS estimators were very close to satisfactory). The standardized regression weights and error variances were all highly significant. However, the root mean square residual coefficient (RMR) computed .22, above the suggested cut-off value of .05, and the standardized residual covariance matrix showed more than half of the residual covariances exceeding the |4.0| cut-off, indicating a marginal model for this sample. Sampling error can induce large standardized residuals, and certain amount of those offenders can be accepted; although in this case the main concern is the consistent pattern of large standardized residual covariances over the complete construct, and the larger the quantity, the weaker the model (Kline, 2011). In this regard the researcher identified two related factors that could possible influence these results. As mentioned at the beginning of this section, the lack of mindfulness knowledge and practice that most individuals possess within the present population became an inherent limitation of this study, and could have damaged these ratios. Additionally, the sensitivity of the model to samples with a small proportion of meditators could have weakened these results (Baer et al., 2006).

It is important to note that, considering the complexity of the FFMQ structure and few other reasons, Baer et al. (2006) and Cebolla et al. (2012), decided to use parceling techniques during the FFMQ validation. The parceling technique basically consists of grouping a series of items into parcels and subsequently using those parcels as the new

indicators of each factor, where each parcel retains the composite score of their respective clustered items (Matsunaga, 2008). The benefits and limitations of this technique were described in Chapter 3. After reviewing the matrix loads of all items and factors to confirm unidimensionality, it was decided that parceling the items clustered within each factor would be the most effective and parsimonious statistical solution; i.e., the items of each particular factor were aggregated into a single composite score for that factor (Little et al., 2002). After parceling in this way, each first-order latent variable became the construct's indicator. However, when testing the model, nonjudging (NJ) showed a nonsignificant, negative, standardized regression weight. Following Baer et al.'s (2006) procedure, the *observing* (OB) factor was removed from the FFMQ structure, but the condition persisted.

Reviewing Baer et al. (2006), I noticed that at least three different instruments for measuring mindfulness used the concept of acceptance, which Baer et al. operationalized using *nonjudging to inner experience* and *nonreactivity to inner experience*. As an example, Feldman et al. (2007) designed the Cognitive and Affective Mindfulness Scale (CAMS) to measure four components: "1) the ability to regulate attention, 2) an orientation to present or immediate experience, 3) awareness of experience, and 4) an attitude of acceptance or nonjudgment towards experience" (p. 178). Taking this into account, the model was re-specified by merging the factors that presented a theoretical association with Feldman et al.'s factor of *acceptance or nonjudgment towards experience*, i.e. *nonjudging of inner experience* (NJ) and *nonreactivity to inner experience* (NR).

The simplified diagram for the resulting model is presented in Figure 7. To replicate previous validations of the instrument (Baer et al. 2006; Cebola, et al., 2012; Loret de Mola, 2009) and avoid the sensitivity of the model to samples with a small proportion of meditators, the study used all the cases with meditation practice, and took a random sub-sample with close to equal amount of cases with no meditation practice, totaling a sub-sample with 123

cases; similar methodology to generate a sub-sample with better meditators to non-meditators ratio was also used by Baer et al. (2006). The model was found to be over-identified, with 1 degree of freedom and 9 parameters to be estimated. It was univariate normal and had a multivariate normal sample distribution, with a Mardia's normalized estimate of multivariate kurtosis of 1.22 and a critical ratio of .98.

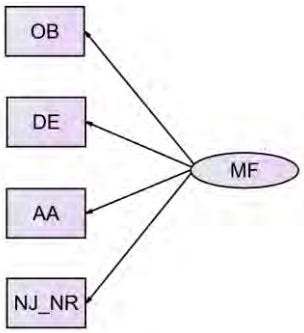

Figure 7. Simplified diagram of FFMQ re-specified structural model using parceling techniques

The model's fitting indices, regression weights, and variances, computed using the maximum likelihood estimator, are shown in Tables 12, 13 and 14, respectively. Hoelter fitting index computed 1842 ($p < .05$) suggesting an adequate sample size for the model (Garson, 2012, Goodness of fit measures, para. 6; Byrne, 2010, p. 83).

Table 12

Fit Indices for Model FFMQ

Indices	Estimate	Cutoff
χ^2 *	.25	$p > .05$
RMSEA	.00	< .08
LCL	.00	
UCL	.19	
GFI	.99	> .9
AGFI	.99	> .9
CFI	1.00	> .9
df	1	
χ^2/df	.25	< 3

Note. LCL = RMSEA Lower Confidence Limit; UCL = RMSEA Upper Confidence Limit.
* $p = .62$

The chi-square computed a statistically insignificant value of .25 (p = .62) indicating a good fit, together with the rest of the fitting indicators. RMR index returned a value of .01 below the suggested .05 cutoff value and all standardized covariance residuals were smaller than the |4.0| cut-off, with the largest at .26 (*Observing - Describing standardized covariance residual*). The standardized regression weights returned .30, .68, .56 and .78 for OB, DE, AA, and NJ_NR respectively. Baer et al. (2006) original validation computed .34, .57, .72, .55, and .71 for OB, DE, AA, NJ, and NR respectively.

Table 13

Regression Weights for FFMQ

			Estimate	S.E.	C.R.	*p*	Standardized Estimate
OB	<---	MF	0.23	0.08	2.88	0.04	0.30
DE	<---	MF	0.42	0.06	7.24	***	0.68
AA	<---	MF	0.42	0.07	5.64	***	0.56
NJ_NR	<---	MF	0.39	0.05	8.20	***	0.78

*** $p < .001$

Table 14

Error Variances for FFMQ

	Estimate	S.E.	C.R.	*P*
MF	1.00			
e6	0.53	0.07	7.48	***
e7	0.20	0.04	5.56	***
e8	0.38	0.06	6.42	***
e9	0.10	0.03	3.87	***

*** $p < .001$

The re-specified model gave reasonable results and adequate convergent validity. The computed CR and AVE for the model were 81.7% and 36.8%, respectively. SEM critical ratios for regression weights and variances were all above the 1.96 lower cutoff (Byrne, 2010; Garson, 2012). The FFMQ was previously validated in Peru (Loret de Mola, 2009) and its second validation was done in this study. In this opportunity several red flags appeared

during the validation of the scale using Cronbach's alpha, bringing into question the strength of the subscales *observing* (OB) and *nonjudging of inner experience* (NJ). Confirmatory factor analysis using the maximum likelihood estimator did not perform as expected, possibly due to the model complexity, sample size, population and sample characteristics, and non-normal multivariate distribution. Parceling and sub-sampling techniques were applied achieving acceptable results. Regardless of these issues, the FFMQ questionnaire was validated in this study using a sub-sample with an equal proportion of participants with and without meditation experience.

Test of the measurement model

The literature review suggested possible associations between spiritual intelligence, mindfulness and transformational leadership. The present study looked at those associations, proposing that the constructs of spiritual intelligence and mindfulness are sources of transformational leadership behavior within the study population, via a mediated association. The literature review also identified apparent contradictions and insufficient research regarding the relationships between those constructs.

This section analyzes the relationship between spiritual intelligence, mindfulness and transformational leadership based on the study data. It was proposed that mindfulness mediates the effect of spiritual intelligence on transformational leadership, as described in the structural model presented in Figure 2. This structural model presents relationships between three second-order latent variables; consequently, it was advisable to test first the measurement model (Byrne, 2010; Hair et al., 2010; Kline, 2011), as represented in Figure 8.

The complexity of the hypothesized structural model (Figure 2) and measurement model (Figure 8), the sample size requirements, the ordinal categorical condition of the data, and the amount of factors, items (observable variables) and parameters to estimate, impose challenging demands on the statistical analysis; therefore it was judged convenient to apply

parceling techniques using the FFMQ re-specified model; the resulting model is presented in Figure 9.

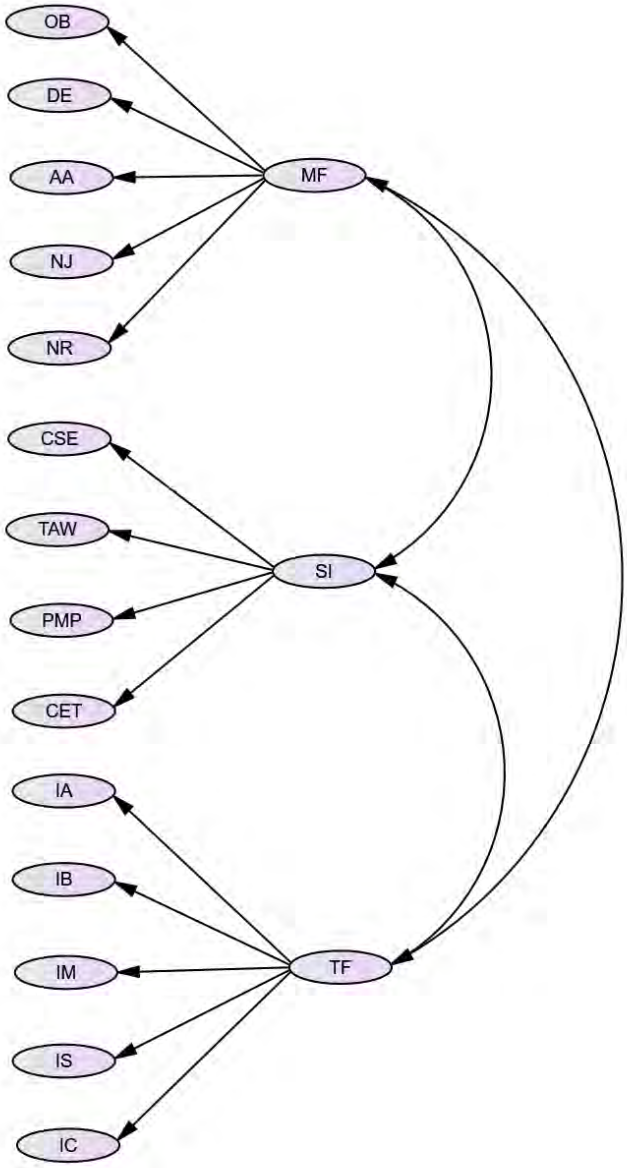

Figure 8. Simplified diagram of the measurement model not showing the indicators of each first order latent variable.

The model was run using the complete data set, and it was found to be over-identified, with 59 degrees of freedom and 32 parameters to be estimated. It was univariate normal and had a sample distribution close to multivariate normality, with a Mardia's normalized estimate of multivariate kurtosis of 15.63 and a critical ratio of 9.07. The model was run

using the ML and GLS estimators and both computed acceptable statistical values in general. Normed chi-squares were 5.47 and 3.55 for ML and GLS respectively, therefore the researcher decided to keep the GLS estimator figures. The model's regression weights, fitting indices, and variances and covariance, computed using the generalized least square estimator, are shown in Tables 15, 16 and 17, respectively.

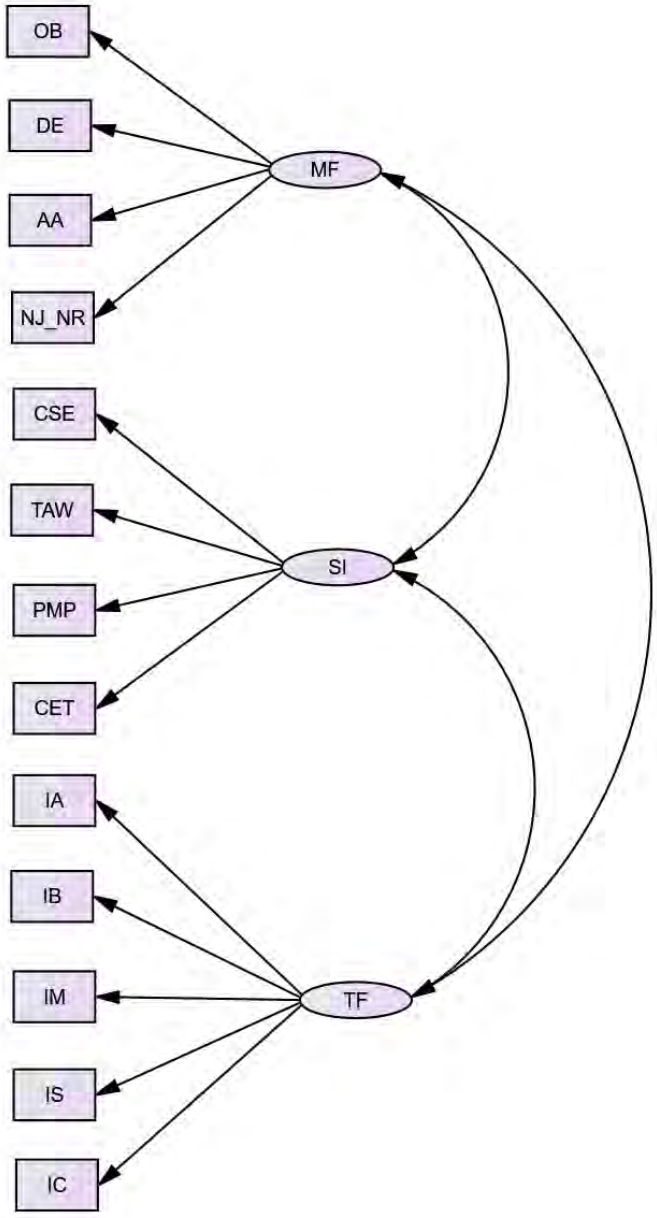

Figure 9. Simplified diagram of the parcelled measurement model re-specifying FFMQ

The model computed a RMR of .05, and the residual covariance matrix indicated less than 8% of the values exceeding the |4.0| cut-off, with all offenders within the mindfulness

construct. These results indicate an acceptable measurement model, but raised some questions over the mindfulness model, concurring with the results in the previous section where the FFMQ returned the weakest validation of the three instruments.

Table 15

Regression Weight Estimates for Measurement Model

			Estimate	S.E.	C.R.	*p*	Standardized Estimate
IA	<---	TF	0.28	0.03	9.48	***	.44
IB	<---	TF	0.45	0.02	20.96	***	.83
IM	<---	TF	0.40	0.02	19.26	***	.80
IS	<---	TF	0.39	0.02	16.12	***	.68
IC	<---	TF	0.32	0.03	13.18	***	.59
OB	<---	MF	0.35	0.04	9.87	***	.51
DE	<---	MF	0.46	0.03	15.25	***	.71
AA	<---	MF	0.25	0.04	6.82	***	.40
NJ_NR	<---	MF	0.22	0.02	9.91	***	.51
PMP	<---	SI	0.57	0.03	23.04	***	.88
TAW	<---	SI	0.53	0.03	20.37	***	.81
CSE	<---	SI	0.70	0.04	18.31	***	.75
CET	<---	SI	0.62	0.03	20.52	***	.88

*** $p < .001$

Table 16

Fit Indices for Measurement Model.

Indices	Estimate	Cutoff
χ^2 *	209.29	p > .05
RMSEA	.07	< .08
LCL	.06	-
UCL	.08	-
GFI	.94	> .9
AGFI	.91	> .9
CFI	.70	> .9
df	59	-
χ^2/df	3.55	< 3

Note. LCL = RMSEA Lower Confidence Limit; UCL = RMSEA Upper Confidence Limit.
* $p < .001$

The re-specified model gave satisfactory results and adequate convergent validity. The computed CR and AVE for the measurement model were 96.7% and 48.3%, respectively, indicating adequate composite reliability and adding to the convergent validity. The respective computed CR and AVE ratios for each construct were (a) TF 92.7% and 46.5%, (b) MF 81.9% and 29.7%, and (c) SI 93.7% and 69.1%.

Table 17

Estimated Variance and covariance for Measurement Model

	Estimate	S.E.	C.R.	*p*
SI	1.00	-	-	-
TF	1.00	-	-	-
MF	1.00	-	-	-
e1	0.32	0.02	14.99	***
e2	0.09	0.01	9.94	***
e3	0.09	0.01	10.62	***
e4	0.18	0.01	13.56	***
e5	0.20	0.01	13.90	***
e6	0.34	0.03	12.48	***
e7	0.20	0.02	10.46	***
e8	0.33	0.03	12.81	***
e10	0.14	0.01	13.18	***
e11	0.12	0.02	7.66	***
e12	0.10	0.01	8.20	***
e13	0.15	0.01	12.35	***
e14	0.37	0.03	13.66	***

			Covariance				Correlations
			Estimate	S.E.	C.R.	*p*	Estimate
MF	<-->	SI	0.79	0.04	21.47	***	.79
TF	<-->	MF	0.71	0.04	17.13	***	.71
TF	<-->	SI	0.64	0.04	18.14	***	.64

*** $p < .001$

The statistically significant covariance between spiritual intelligence, mindfulness and transformational leadership ($p < .001$) supports one of the conditions of mediation (Hair et al., 2010, p. 767): "Mediation requires significant correlations among all three constructs." The variance inflation factor helps to define whether the constructs show adequate correlation

without excessive collinearity [VIF = 1 / (1 – R^2), where R^2 is the coefficient of determination]. For this model, the variance inflation factor returned the following values: (a) 2.66 for spiritual intelligence with mindfulness, (b) 2.01 for mindfulness with transformational leadership, and (c) 1.69 for spiritual intelligence with transformational leadership; all below the suggested upper cut-off value of 10 (Kutner, Nachtsheim, & Neter, 2004), suggesting acceptable collinearity. Subsequently, the study proceeded with the test of the structural model.

Test of the structural model

The structural model describes spiritual intelligence having a direct effect on mindfulness and transformational leadership, with mindfulness mediating the relationship between spiritual intelligence and transformational leadership. Thus, spiritual intelligence has a direct effect on transformational leadership as well as an indirect effect through mindfulness, as represented in Figure 10.

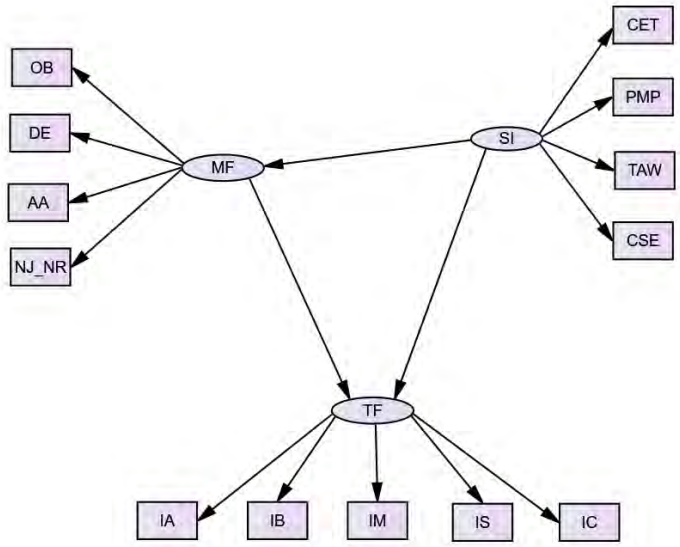

Figure 10. Simplified diagram of parcelled structural model

The model was run using the complete data set, and it was found over-identified, with 58 degrees of freedom and 33 parameters to be estimated, presenting adequate coefficients. The fitting indices, regression weights, variances and effects between constructs are shown in Tables 18, 19, 20 and 21, respectively. The standardized residuals covariances matrix

presented less than 8% of covariances above the cut-off value of |4|, and the RMR of the model returned an acceptable value of .05.

Table 18

Fitting Indices of the structural model

Indices	Estimator	Cutoff
χ^2 *	207.20	$p > .05$
RMSEA	.07	< .08
LCL	.06	-
UCL	.08	-
GFI	.94	> .9
AGFI	.91	> .9
CFI	.71	> .9
df	58	-
χ^2/df	3.57	< 3

Note. LCL = RMSEA Lower Confidence Limit; UCL = RMSEA Upper Confidence Limit.
* $p < .001$

Table 19

Regression Weights of the structural model

			Estimate	S.E.	C.R.	*p*	Standardized Estimate
MF	<---	SI	0.45	0.05	9.67	***	.78
TF	<---	MF	0.41	0.11	3.79	***	.52
TF	<---	SI	0.11	0.05	2.14	.03	.23
IA	<---	TF	1.00	-	-	-	.44
IB	<---	TF	1.62	0.17	9.37	***	.83
IM	<---	TF	1.42	0.15	9.41	***	.80
IS	<---	TF	1.40	0.16	8.82	***	.68
IC	<---	TF	1.16	0.14	8.46	***	.59
OB	<---	MF	1.00	-	-	-	.52
DE	<---	MF	1.30	0.16	8.35	***	.72
AA	<---	MF	0.72	0.14	5.09	***	.40
NJ_NR	<---	MF	0.64	0.09	6.85	***	.52
PMP	<---	SI	0.92	0.05	18.96	***	.88
TAW	<---	SI	0.86	0.04	20.53	***	.81
CSE	<---	SI	1.14	0.06	18.74	***	.75
CET	<---	SI	1.00	-	-	-	.88

*** $p < .001$

Table 20

Variances of the structural model

	Estimate	S.E.	C.R.	*p*
SI	0.38	0.04	10.19	***
res16	0.05	0.01	3.91	***
res15	0.04	0.01	4.32	***
e1	0.32	0.02	14.99	***
e2	0.09	0.01	9.96	***
e3	0.09	0.01	10.61	***
e4	0.18	0.01	13.56	***
e5	0.20	0.01	13.91	***
e6	0.34	0.03	12.39	***
e7	0.20	0.02	10.44	***
e8	0.33	0.03	12.84	***
e9	0.14	0.01	13.08	***
e11	0.11	0.02	7.62	***
e12	0.10	0.01	8.16	***
e13	0.15	0.01	12.36	***
e14	0.38	0.03	13.67	***

*** $p < .001$

As shown in Table 21, the standardized effects follow the same trend as the standardized regression weights, with mindfulness having the biggest direct effect on transformational leadership. Baron and Kenny (1986) argued that a mediating effect must meet certain criteria: (a) variations in the independent variable must significantly account for variations in the mediator; (b) variations in the mediator must significantly account for variations in the dependent variable; and (c) when the mediator's significant effects are taken into account, the effect of the independent variable on the dependent variable should decrease (partial mediation) or become no longer significant (full mediation). To test for mediation, a combined approach was applied, using Baron and Kenny's (1986) test and bootstrapping (Hayes, 2009; Preacher & Hayes, 2004); the results of these tests are presented in Table 22 and Table 23, respectively.

Table 21

Standardized Effects of the structural model

	Standardized Effects								
	Total			Direct			Indirect		
	SI	MF	TF	SI	MF	TF	SI	MF	TF
MF	.78	.00	.00	.78	.00	.00	.00	.00	.00
TF	.64	.52	.00	.23	.52	.00	.41	.00	.00
IA	.28	.23	.44	.00	.00	.44	.28	.23	.00
IB	.53	.43	.83	.00	.00	.83	.53	.43	.00
IM	.51	.41	.80	.00	.00	.80	.51	.41	.00
IS	.43	.35	.68	.00	.00	.68	.43	.35	.00
IC	.38	.31	.59	.00	.00	.59	.38	.31	.00
OB	.41	.52	.00	.00	.52	.00	.41	.00	.00
DE	.56	.72	.00	.00	.72	.00	.56	.00	.00
AA	.32	.40	.00	.00	.40	.00	.32	.00	.00
NJ_NR	.41	.52	.00	.00	.52	.00	.41	.00	.00
PMP	.88	.00	.00	.88	.00	.00	.00	.00	.00
TAW	.81	.00	.00	.81	.00	.00	.00	.00	.00
CSE	.75	.00	.00	.75	.00	.00	.00	.00	.00
CET	.88	.00	.00	.88	.00	.00	.00	.00	.00

Table 22

Mediation Test for the structural model using Baron and Kenny's (1986) Approach

Standardized Regression Weights									
with mediation					with no mediation				
			p	Estimate				*p*	Estimate
MF	<---	SI	***	.78					
TF	<---	MF	***	.52					
TF	<---	SI	.03	.23	TF	<---	SI	***	.59

*** $p < .001$

The values in Table 22 show a decrease in the standardized regression weight estimation between the independent variable (SI) and the dependent variable (TF), from .59 (with no mediation) to .23 (with mediation), while remaining significant. The direct path of the model (SI to MF and MF to TF) were also significant, suggesting a partial mediation. This conclusion was confirmed by the bootstrapping technique (Hayes, 2009; Preacher &

Hayes, 2004) presented in Table 23, which shows a significant standardized indirect effect of the independent variable on the dependent variable.

Table 23

Mediation Test for the structural model using Bootstrapping (Hayes, 2009; Preacher & Hayes, 2004)

	Standardized Indirect Effects					
	Estimate			Two-Tailed Significance		
	SI	MF	TF	SI	MF	TF
MF	0	0	0	...	...	...
TF	.41	0	0	0.004	...	...

Applying a competing model strategy and using a model trimming approach (Kline, 2011, p. 214), the study proceeded comparing the estimated proposed structural model with two alternative nested models (Byrne, 2010; Hair et al., 2010; Kline, 2011), built by constraining different paths on the proposed structural model: (a) Nested Model 1: where the direct path from SI to MF was constrained to cero, and (b) Nested Model 2: where the direct path from SI to TF was constrained to cero. The study considered that the Nested Model 1 didn't have a solid theoretical support, because the literature review presented enough support to suggest an important association between the constructs of spiritual intelligence and mindfulness. Additionally, the Nested Model 1 basically proposes that there is no statistical association between spiritual intelligence and mindfulness, contradicting the Spearman correlations between all three constructs (computed using SPSS v21), averaging .418 and .411 between spiritual intelligence and mindfulness, significant at .01 level (two-tailed). The associations found during the diagnosis of the measurement model also contradict this alternative model. Nevertheless, the study proceeded with the comparative test to add ground to the analysis. Using AMOS' model comparison features, the Nested Model 1 computed several unacceptable statistically insignificant paths and residuals, and a great

amount of residual covariances that were larger than the cutoff value of |4|, invalidating this alternative model and aborting a chi-square difference test.

The Nested Model 2, formed by constraining the direct path from SI to TF to cero, actually represents a full mediation structure. This relationship is theoretically plausible; however, it was previously rejected by the mediation test that suggested a partial mediation role for mindfulness. However, the study proceeded comparing the model to add more information to the analysis. Using the same AMOS' model comparison feature, the Nested Model 2 computed acceptable statistical values and coefficients, very close to the values and fitting indices of the original structural model; specifically the Nested Model 2 presented a chi-square index of 210.21 and 59 degrees of freedom ($p < .001$). Running a chi-square difference test, by comparing these results with the values of the original model, they represented increases of chi-square of 3.002 and one degree of freedom with a *p*-value of .083, meaning that this difference is not significant at .05 level. The original model presented slightly better fitting indices than this alternative model. This result concurred with the mediation test, rejecting also the Nested Model 2 and retaining the original model.

At this point is valid to question a possible alternative model where spiritual intelligence mediates the effect of mindfulness over transformational leadership. The study considered that this alternative model does not have a theoretical support within the population of interest. This argument is suggested in the literature, because currently in the occidental cultures the great majority of individuals develop the spiritual intelligence first, and just a small amount of individuals practice and develop mindfulness at a meaningful level later in their adult life; therefore, theoretically rejecting that particular alternative model. However, once mindfulness is developed, the literature suggests that there is a feedback loop, presenting also a positive effect of mindfulness on spiritual intelligence. This phenomenon represents a nonrecursive model, and its test is best performed with longitudinal research

designs (Hair et al., 2010; Kline, 2011); a nonrecursive analysis is outside the scope of the present study and forms part of the suggestions for future research. Consequently, the original structural model has been tested and accepted.

The study continued controlling the original model for several relevant variables taken from the demographic data, testing their effect on the model. The selection of demographic data to use as control variables was based on the theory and previous research. The model was controlled following the recommendations of Becker (2005). Previous research on the relationships between spiritual intelligence and transformational leadership controlled for gender, age, supervisory experience, professional experience and education (Christ-Lakin, 2010). King (2008, 2009) and Emmons (2000a) argued that spiritual intelligence tends to increase with age. During the development of FFMQ and its validation, Baer et al. (2008) controlled for sex, age, education, and meditation experience. Similarly, several studies related to transformational leadership have controlled for gender, age, working experience, profession, and education (Christ-Lakin, 2010; D'Alessio, 2008; King, 2008) There is theoretical support for questioning whether variables such as religious family education, present religious practice and present prayer practice may have a confounding effect on spiritual intelligence; and whether present meditation practice and cumulative meditation practice have a confounding effect on mindfulness. Taking the above into consideration, the present study controlled for age (PD1), sex (PD2), formal education (PD5), supervisory experience (PD10), religious family education (PD11), present religious practice (PD13), present praying practice (PD14), cumulative meditation practice (PD16), and present meditation practice (PD17). In this data set, PD13 had a reversed coding. Social desirability (SDS) was also included as control variable for this analysis. Based on the theory and previous research, the control variables were allowed only to load to and covariate with the relevant constructs, as indicated in Table 35 in Appendix H.

Before introducing the selected demographic data into the original model as control variables, they were converted into dichotomous values (dummy variables) by forming two groups for each variable and assigning each group a value of zero or one. The grouping was done by analyzing the frequency distribution for each variable to approximate an even distribution between groups; this was done to improve the statistical significance of the control variable. For instance, in the demographic questionnaire, PD10 (supervision experience) had possible answers ranging from zero to four (more than fifteen years); the recoded value of zero included the original answers zero and one (grouping 52% of the answers and representing the individuals with less than six years of supervisory experience), and the recoded value of one included the original answers two, three and four (grouping 48% of the answers and representing the individuals with more than six years of supervisory experience), as indicated in Table 34 (Appendix H). Age and the social desirability score were treated as continuous variables.

Finally, these ten control variables were introduced into the original model and allowed to covariate with one another. As mentioned in the previous paragraphs, based on theory and previous research, the control variables loaded the relevant endogenous variables and with covariance along with the relevant exogenous variable, as indicated in Table 35 (Appendix H), resulting in the Controlled Model (Figure 11). The Controlled Model was run using the complete data set, and it was found over-identified, with 167 degrees of freedom and 109 parameters to be estimated, presenting adequate coefficients. It was univariate normal and had a sample distribution close to multivariate normality, with a Mardia's normalized estimate of multivariate kurtosis of 17.86 and a critical ratio of 6.03. Once the model was run, a quick review of the results drew attention to two control variables that gave unexpected, counter-intuitive results: cumulated meditation (PD16) and present meditation

(PD17) had non-significant loads to mindfulness and positive significant correlations with spiritual intelligence.

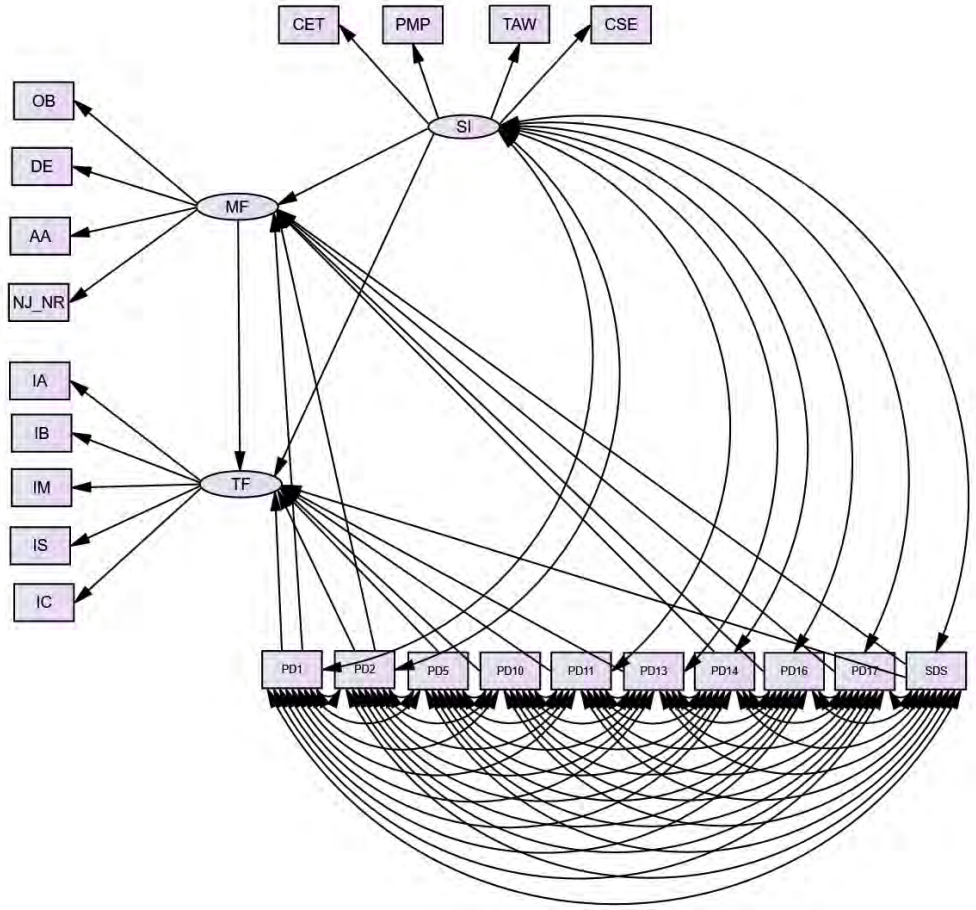

Figure 11. Simplified diagram of the Controlled Model.

Theory and previous studies have shown meditation practice to be the cornerstone of mindfulness. Bearing in mind that the sample included only a small proportion of participants with meditation experience, I had reservations about these correlations, questioning whether the participants had wrongly assumed that praying and meditation practice were similar activities. Consequently, it was decided to remove the covariance of PD16 and PD17 with spiritual intelligence to avoid misleading confounding covariance, and the model was re-run.

The regression weights, variances, covariance, fitting indices, and effects between constructs computed with the generalized least squares (GLS) estimator are shown in Tables 24, 25, 26, 27 and 28, respectively. The model fitting indices showed adequate values,

considering that for the same data and model, CFI is anticipated to have a much lower value when estimated with GLS than with ML. It was therefore expected that CFI values will be much lower than the .9 cutoff (Rigdon, 2016).

Table 24

Regression Weights of the Controlled Model

Variables			Estimate	S.E.	C.R.	*p*	Standardized Estimate
MF	<---	SI	0.35	0.05	6.54	***	.71
TF	<---	MF	0.51	0.13	3.99	***	.47
TF	<---	SI	0.12	0.05	2.58	.01	.23
IA	<---	TF	1.00				.46
IB	<---	TF	1.61	0.17	9.36	***	.83
IM	<---	TF	1.46	0.16	9.42	***	.82
IS	<---	TF	1.38	0.16	8.81	***	.69
IC	<---	TF	1.10	0.13	8.34	***	.58
OB	<---	MF	1.00				.42
DE	<---	MF	1.85	0.27	6.83	***	.74
AA	<---	MF	1.36	0.25	5.34	***	.56
NJ_NR	<---	MF	0.97	0.16	6.04	***	.60
PMP	<---	SI	1.05	0.06	16.52	***	.88
TAW	<---	SI	0.90	0.05	17.51	***	.79
CET	<---	SI	1.00				.84
CSE	<---	SI	1.18	0.07	15.89	***	.73
MF	<---	SDS	0.01	0.00	1.76	.08	.09
TF	<---	SDS	0.01	0.00	3.40	***	.16
MF	<---	PD14	0.00	0.03	-0.14	.89	-.01
MF	<---	PD16	-0.03	0.04	-0.56	.58	-.04
MF	<---	PD17	0.09	0.06	1.55	.12	.11
MF	<---	PD2	0.02	0.03	0.81	.42	.04
MF	<---	PD1	0.00	0.00	0.50	.62	.02
TF	<---	PD2	-0.07	0.03	-2.74	.01	-.12
TF	<---	PD1	0.00	0.00	-1.85	.07	-.09
TF	<---	PD5	0.04	0.02	1.87	.06	.07
TF	<---	PD10	0.06	0.03	2.07	.04	.10
TF	<---	PD11	-0.01	0.03	-0.43	.67	-.02
TF	<---	PD13	-0.02	0.03	-0.74	.46	-.03

*** $p < .001$

Table 25

Variances of the Controlled Model

Variable	Estimate	S.E.	C.R.	*p*
SI	0.27	0.03	8.43	***
res16	0.03	0.01	3.52	***
res15	0.04	0.01	4.33	***
e1	0.30	0.02	14.43	***
e2	0.09	0.01	10.02	***
e3	0.08	0.01	9.89	***
e4	0.17	0.01	13.26	***
e5	0.18	0.01	13.64	***
e6	0.32	0.03	12.83	***
e7	0.19	0.02	10.15	***
e8	0.27	0.02	12.09	***
e9	0.12	0.01	12.56	***
e11	0.12	0.01	8.37	***
e12	0.09	0.01	7.34	***
e13	0.14	0.01	12.07	***
e14	0.34	0.03	13.01	***
SDS	25.05	1.76	14.23	***
PD2	0.21	0.01	15.40	***
PD1	74.99	4.93	15.21	***
PD5	0.21	0.01	15.70	***
PD10	0.23	0.02	15.45	***
PD11	0.17	0.01	15.94	***
PD13	0.20	0.01	15.35	***
PD14	0.23	0.02	15.69	***
PD16	0.15	0.01	15.49	***
PD17	0.11	0.01	15.12	***

*** $p < .001$

As expected, the cumulative effect of the control variables slightly reduced the effects of the main exogenous and mediating variables in the Controlled Model. Nevertheless they remaining fairly close to the previous results of the original model: the total effect of spiritual intelligence on mindfulness went from .78 ($p < .001$) to .71 ($p < .001$), the effect of spiritual intelligence on transformational leadership changed from .64 ($p < .03$) to .57 ($p < .01$), and

the effect of mindfulness on transformational leadership went from .52 ($p < .001$) to .47 ($p < .001$).

Table 26

Covariance and Correlations of the Controlled Model

Variables			Covariance Estimate	S.E.	C.R.	*p*	Correlations Estimate
SI	<-->	PD2	0.01	0.01	0.71	.48	.04
SI	<-->	PD1	0.37	0.19	1.97	.05	.08
SI	<-->	PD11	0.02	0.01	2.01	.05	.10
SI	<-->	PD13	0.03	0.01	2.28	.02	.12
SI	<-->	PD14	0.06	0.01	4.41	***	.23
SI	<-->	SDS	0.98	0.15	6.72	***	.37
PD11	<-->	SDS	0.04	0.10	0.37	.71	.02
PD10	<-->	SDS	0.10	0.11	0.95	.34	.04
PD5	<-->	SDS	0.15	0.10	1.43	.15	.06
PD14	<-->	SDS	0.20	0.11	1.81	.07	.09
PD16	<-->	SDS	0.06	0.09	0.67	.50	.03
PD13	<-->	SDS	0.25	0.11	2.29	.02	.11
PD2	<-->	SDS	-0.18	0.11	-1.63	.10	-.08
PD17	<-->	SDS	0.01	0.08	0.11	.91	.01
PD1	<-->	SDS	5.72	2.05	2.79	.01	.13
e11	<-->	e12	-0.03	0.01	-3.25	.00	-.31
e6	<-->	e8	-0.06	0.02	-3.45	***	-.20
PD10	<-->	PD11	0.00	0.01	0.15	.88	.01
PD5	<-->	PD11	0.01	0.01	0.68	.50	.03
PD11	<-->	PD13	0.04	0.01	4.04	***	.19
PD11	<-->	PD14	0.05	0.01	5.73	***	.27
PD11	<-->	PD16	-0.01	0.01	-0.76	.45	-.03
PD2	<-->	PD11	0.02	0.01	2.17	.03	.10
PD11	<-->	PD17	0.00	0.01	-0.22	.82	-.01
PD1	<-->	PD11	-0.02	0.16	-0.10	.92	-.01
PD5	<-->	PD10	0.01	0.01	1.16	.25	.05
PD10	<-->	PD13	0.02	0.01	1.71	.09	.08
PD10	<-->	PD14	0.02	0.01	1.92	.06	.09
PD10	<-->	PD16	0.00	0.01	0.52	.61	.02
PD2	<-->	PD10	-0.04	0.01	-4.40	***	-.21
PD10	<-->	PD17	0.00	0.01	0.39	.70	.02
PD1	<-->	PD10	2.36	0.22	10.72	***	.57
PD5	<-->	PD13	-0.01	0.01	-0.62	.54	-.03

Table 26 (cont.)

Covariance and Correlations of the Controlled Model

Variables			Covariance Estimate	S.E.	C.R.	*p*	Correlations Estimate
PD5	<-->	PD14	-0.01	0.01	-0.62	.53	-.03
PD5	<-->	PD16	0.00	0.01	-0.51	.61	-.02
PD2	<-->	PD5	0.00	0.01	-0.43	.67	-.02
PD5	<-->	PD17	-0.01	0.01	-0.89	.38	-.04
PD1	<-->	PD5	-0.25	0.18	-1.38	.17	-.06
PD13	<-->	PD14	0.07	0.01	7.05	***	.34
PD13	<-->	PD16	0.01	0.01	0.79	.43	.04
PD2	<-->	PD13	0.00	0.01	0.41	.68	.02
PD13	<-->	PD17	0.01	0.01	1.07	.29	.05
PD1	<-->	PD13	0.34	0.18	1.90	.06	.09
PD14	<-->	PD16	0.01	0.01	1.47	.14	.07
PD2	<-->	PD14	0.02	0.01	1.83	.07	.08
PD14	<-->	PD17	0.01	0.01	1.97	.05	.09
PD1	<-->	PD14	0.28	0.19	1.50	.13	.07
PD2	<-->	PD16	0.02	0.01	1.91	.06	.09
PD16	<-->	PD17	0.10	0.01	13.00	***	.75
PD1	<-->	PD16	0.07	0.15	0.42	.67	.02
PD2	<-->	PD17	0.02	0.01	2.61	.01	.12
PD2	<-->	PD1	-0.89	0.19	-4.79	***	-.23
PD1	<-->	PD17	0.02	0.13	0.12	.91	.01

*** $p < .001$

Table 27

Fitting Indices of the Controlled Model

Indices	Estimate	Cutoff
χ^2 *	412.68	$p > .05$
RMSEA	.05	< .08
LCL	.05	-
UCL	.06	-
GFI	.93	> .9
AGFI	.89	> .9
CFI	.74	> .9
df	171.00	-
χ^2/df	2.41	< 3

Note. LCL = RMSEA Lower Confidence Limit; UCL = RMSEA Upper Confidence Limit.
* $p < .001$

Table 28

Standardized Effects of the Controlled Model

Standardized Total Effects						
Variables	SI	MF	TF	SDS	PD10	PD2
MF	.71	-	-	.09	-	.04
TF	.57	.47	-	.21	.10	-.10
IA	.26	.22	.46	.09	.05	-.05
IB	.47	.39	.83	.17	.08	-.08
IM	.47	.39	.82	.17	.08	-.08
IS	.39	.33	.69	.14	.07	-.07
IC	.33	.28	.58	.12	.06	-.06
OB	.30	.42	-	.04	-	.02
DE	.52	.74	-	.07	-	.03
AA	.40	.56	-	.05	-	.02
NJ_NR	.42	.60	-	.06	-	.02
PMP	.88	-	-	-	-	-
TAW	.79	-	-	-	-	-
CSE	.73	-	-	-	-	-
CET	.84	-	-	-	-	-

Standardized Direct Effects						
Variables	SI	MF	TF	SDS	PD10	PD2
MF	.71	-	-	.09	-	.04
TF	.23	.47	-	.16	.10	-.12
IA	-	-	.46	-	-	-
IB	-	-	.83	-	-	-
IM	-	-	.82	-	-	-
IS	-	-	.69	-	-	-
IC	-	-	.58	-	-	-
OB	-	.42	-	-	-	-
DE	-	.74	-	-	-	-
AA	-	.56	-	-	-	-
NJ_NR	-	.60	-	-	-	-
PMP	.88	-	-	-	-	-
TAW	.79	-	-	-	-	-
CSE	.73	-	-	-	-	-
CET	.84	-	-	-	-	-

Table 28 (cont.)

Standardized Effects of the Controlled Model

Standardized Indirect Effects						
Variables	SI	MF	TF	SDS	PD10	PD2
MF	-	-	-	-	-	-
TF	.33	-	-	.04	-	.02
IA	.26	.22	-	.09	.05	-.05
IB	.47	.39	-	.17	.08	-.08
IM	.47	.39	-	.17	.08	-.08
IS	.39	.33	-	.14	.07	-.07
IC	.33	.28	-	.12	.06	-.06
OB	.30	-	-	.04	-	.02
DE	.52	-	-	.07	-	.03
AA	.40	-	-	.05	-	.02
NJ_NR	.42	-	-	.06	-	.02
PMP	-	-	-	-	-	-
TAW	-	-	-	-	-	-
CSE	-	-	-	-	-	-
CET	-	-	-	-	-	-

The standardized regression weight (and direct effect) of spiritual intelligence on transformational leadership remained the same, with a slight improvement in statistical significance (from .03 to .01). The mediation tests (Tables 29 and 30) confirmed that the condition of partial mediation was preserved in the model.

Table 29

Mediation Test of the Controlled Model using Baron and Kenny's (1986) Approach

Standardized Regression Weights									
with mediation					with no mediation				
			p	Estimate				*p*	Estimate
MF	<---	SI	***	.71					
TF	<---	MF	***	.47					
TF	<---	SI	.01	.23	TF	<---	SI	***	.55

*** $p < .001$

Table 30

Mediation Test of the Controlled Model using Bootstrapping (Hayes, 2009; Preacher & Hayes, 2004)

	Standardized Indirect Effects			Standardized Indirect Effects		
				Two Tailed Significance		
	SI	MF	TF	SI	MF	TF
MF	0	0	0	...	...	...
TF	.33	0	0	.001	...	...

Answers to Research Questions and Hypothesis Tests

This section addresses each research question and hypothesis of the study and it is organized according to the hypotheses.

The first null hypothesis (spiritual intelligence has no effect on transformational leadership behavior) is directly related to the first research question that asks: Does spiritual intelligence influence transformational leadership behavior? The models had significant regression weights and direct effects of spiritual intelligence on transformational leadership, therefore rejecting the first null hypothesis. The final Controlled Model had a significant standardized regression weight (.23, $p < .01$) mirrored in its standardized direct effect, which, with the addition of the standardized indirect effect of .33, resulted in a standardized total effect of .57. Spiritual intelligence had a major total effect on *inspirational motivation* and *idealized influence behaviors* (.47), which were followed by *intellectual stimulation* (.39), *individualized consideration* (.33), and *idealized influence attributes* (.26).

The second null hypothesis (mindfulness has no effect on transformational leadership behavior) is directly related to the second research question that asks: Does mindfulness influence transformational leadership behavior? The models had significant regression weights and direct effects of mindfulness on transformational leadership, consequently allowing us to reject the second null hypothesis. The final Controlled Model had a significant

standardized regression weight (.47, $p < .001$) mirrored in its standardized direct and total effects. Mindfulness had its biggest total effect on *inspirational motivation* and *idealized influence behaviors* (.39), followed by *intellectual stimulation* (.33), *individualized consideration* (.28), and *idealized influence attributes* (.22).

The third null hypothesis (mindfulness does not mediate the effect of spiritual intelligence on transformational leadership behavior) is directly related to the third research question that asks: Does mindfulness mediate the effect of spiritual intelligence on transformational leadership behavior? The mediating analysis was performed using Baron and Kenny's (1986) approach and the bootstrapping technique (Hayes, 2009; Preacher & Hayes, 2004), for the original structural model and for the final Controlled Model. The results suggested that mindfulness has a partial mediating function that is characterized by an important indirect effect of spiritual intelligence on transformational leadership (.33), leading us to reject the third null hypothesis.

The fourth null hypothesis (relevant demographic data and social desirability do not influence the relationships between spiritual intelligence, mindfulness and transformational leadership) is directly related to the fourth research question that asks: Does relevant demographic data and social desirability influence the effects of spiritual intelligence and mindfulness on transformational leadership? To test this hypothesis, relevant demographic data and social desirability scores were introduced into the original structural model to analyze the loads and correlations between these control variables and the second-order latent variables (spiritual intelligence, mindfulness and transformational leadership), and their influence over these constructs. The analysis of the resulting Controlled Model suggested that the combined effects of the control variables had a minor influence on the relationships between spiritual intelligence, mindfulness and transformational leadership. This was enough to reject the fourth null hypothesis. However, the individual effects of the control variables

were small and their combined effects did not change the partial mediating role of mindfulness in the model.

Summary

The SISRI-24 questionnaire was translated into Spanish following best practices. The validity and reliability of the Spanish versions of the SISRI-24, MLQ-5X and FFMQ questionnaires were tested. The issues of normality and sample size were addressed and properly managed using the most adequate statistical techniques. As indicated in Chapter 2, Choi and Leroy (2015, p. 77) stated: "Individuals unaware of their stream of consciousness may not be able to estimate their mind-wandering patterns," exposing this research methodology "to greater vulnerability: discrepancies between actual and reported mindfulness; item miscomprehension; biased ratings from variable levels of respondent experience; scale construction; and inconsistencies from interrelationships among scales meant to distinguish the multiple facets of mindfulness." Some such complexities were found during the FFMQ validation. The limited sample size was managed during the structural model analysis using proper parceling techniques. Finally, all scales were validated and the measurement model properly tested using parceling techniques, showing enough covariance but without excessive nulticollinearity to support the proposal of a mediated association, allowing to proceed with the analysis of the structural model.

The original structural model showed acceptable statistical values in general and important effects on the different variables, specifically on transformational leadership. The partial mediating role of mindfulness was tested, followed by a model trimming strategy to build two competing nested models, retaining the original model after adequate theoretical and statistical comparisons and analysis.

Relevant demographic variables and social desirability were introduced into the original model, confirming the partial mediating effect of mindfulness, answering all the

research questions and testing all the null hypotheses. Some interesting conclusions, implications and recommendations of this research are presented in Chapter 5.

Chapter 5: Conclusions and Recommendations

The purpose of this quantitative, survey-based, cross-sectional research was to evaluate the effects of spiritual intelligence and mindfulness on transformational leadership behavior patterns among leaders in Peru. It was hoped that this study could contribute to an improved transfer of knowledge from transformational leadership training into practice, as a proposal for coping with broader problems related to the integrity of leaders in general and the sustainability of the global system, as stated in Chapter 1. The study employed a mixed sampling technique, using in-person and online surveys to target active managers pursuing MBA degrees ($N = 384$, 70% of the total sample) and managers from companies and institutions around Peru ($N = 162$, 30% of the total sample).

To account for possible bias inherent to all survey-based self-report methodologies, the study controlled the model for participants' social desirability (Crowne & Marlow, 1960). Three reliable self-report scales were used and properly validated in this research. The proposed structural model was tested, analyzed and compared with two competing nested models, guiding the hypothesis tests and answering the research questions, as described in detail in the final section of Chapter 4.

Chapter 5 presents interpretations and inferences drawn from the literature review and the analysis of the data. The final section presents recommendations based on the study findings.

Conclusions

The results of the study concurred with the theory found in the review of the literature, suggesting that spiritual intelligence influences transformational leadership behavior, an effect that is partially mediated by mindfulness. In other words, there is an association between spiritual intelligence and transformational leadership, with mindfulness accounting in part for that association. All research questions were answered: (a) Spiritual intelligence

has a positive influence on transformational leadership behavior; (b) mindfulness has a positive influence on transformational leadership behavior; (c) mindfulness partially mediate the effect of spiritual intelligence on transformational leadership behavior; and (d) relevant demographic data and social desirability have a small influence on the effects of spiritual intelligence and mindfulness over transformational leadership behavior, however, these minor effects didn't change the overall behavior of the model neither the partial mediation role of mindfulness.

The study suggests that spiritual intelligence and mindfulness had important effects on transformational leadership, concurring with the correlations found in previous studies (Christ-Lakin, 2010; Gieseke, 2014). Spiritual intelligence showed an important effect on mindfulness (.71), also in line with theory and with Gieseke's (2014) findings. The mediation of mindfulness added an interesting indirect effect on transformational leadership, raising the total effect of spiritual intelligence on transformational leadership to from .23 to .57.

Spiritual intelligence had the greatest effect on the transformational facets of *idealized influence behavior* and *inspirational motivation* (.47), and to a lesser extent on *intellectual stimulation* (.39) and *individualized consideration* (.33), in line with theory and corresponding closely to Gieseke's (2014) findings. *Inspirational motivation* provides meaning and relevance to followers' activities, based on a set of values and ideals. *Idealized influence* provides leaders with high standards for moral and ethical behavior, incorporating the leader's influence over followers' values, beliefs, mental models, ideals and general issues that transcend daily experiences. These are some of the most relevant traits that differentiate transformational theories in general (van Maurik, 2001), and transformational leadership in particular, from most other leadership theories. Spiritual intelligence's domains of *critical existential thinking*, *personal meaning production* and *transcendental awareness*

are related to such traits, and explain the effects of spiritual intelligence on transformational leadership.

Critical existential thinking involves applying critical thinking in observing and questioning the nature of fundamental concepts such as existence, reality, cosmos, and death, among others; it "involves the capacity to critically contemplate meaning, purpose, and other existential or metaphysical issues (e.g., reality, the universe, space, time, death)" (King, 2008, p. 70), thus integrating critical thinking with scientific knowledge and personal experience. *Existential intelligence* is incorporated within the construct of spiritual intelligence (Halama & Strizenec, 2004; King, 2008) and it involves the ability to assign adequate value and meaning to daily experiences, to develop proper hierarchies of values and goals, to deal correctly with success through clear evaluation, and to influence and help others in the search for purpose and meaning in life. These abilities of *existential intelligence* also help explain the effects of spiritual intelligence on transformational leadership.

Personal meaning production is the capacity to develop personal meaning and purpose in all daily experiences, keeping a clear sense of direction in life. *Transcendental awareness* involves developing an awareness of waking experiences that transcends the material realm, extending to the environment as a whole, but not entering into the domain of altered states of consciousness.

As stated previously, these domains of spiritual intelligence have strong theoretical associations with transformational leadership's domains of *inspirational motivation* and *idealized influence behaviors*, and would explain the effects of spiritual intelligence on transformational leadership.

Interestingly, spiritual intelligence had its smallest effect on *idealized influence attributed*, which could be explained by a possible perceived self-centered connotation on three of its four items: (a) I instill pride in others for being associated with me, (b) I act in

ways that build others' respect for me, and (c) I display a sense of power and confidence. These three items do not have a strong theoretical correlation with either spiritual intelligence or mindfulness, leading to lower effect of spiritual intelligence and mindfulness on this domain.

Similarly, the results of the study presented important effects of spiritual intelligence on the mindfulness-related capacities for *describing*, *nonjudging_nonreacting to inner experience*, *acting with awareness* and *observing*, in that order. The facets of spiritual intelligence that have major theoretical associations with mindfulness are *transcendental awareness* and *conscious state expansion*. Those facets have important spiritual connotations but involve capacities such as observation, description and awareness, which are basic elements of *observing*, *describing* and *acting with awareness*. Additionally, *critical existential thinking* implies the practice of contemplation and critical thinking, elaborating on mindfulness' *observing* and *description* capabilities.

The mindfulness facet most influenced by spiritual intelligence was *describing* (.52), followed by *nonjudging_nonreacting* (.42) and *acting with awareness* (.40), with a lesser effect seen on *observing* (.30). This result was slightly counter intuitive because the theory suggests that one of the strongest relationships of mindfulness should be with *acting with awareness*. Once again, counter intuitive results that diverge slightly from theory could be explained by the low proportion of participants in the sample with adequate knowledge of, and experience in, mindfulness (Baer et al. 2006). As mentioned in Chapter 2, Choi and Leroy (2015, p.77) warned that when studying mindfulness, "individuals unaware of their stream of consciousness may not be able to estimate their mind-wandering patterns," exposing research methodologies based on self-rated questionnaires "to greater vulnerability: discrepancies between actual and reported mindfulness; item miscomprehension; biased ratings from variable levels of respondent experience; scale construction; and inconsistencies

from interrelationships among scales meant to distinguish the multiple facets of mindfulness." The facet of transcendental awareness of spiritual intelligence has to do with the awareness of the nonmaterial and spiritual aspects of daily experience. One of the basic abilities of *transcendental awareness* is to be mindful of the internal and external world, which is one of the basic conditions of mindfulness as a construct.

Mindfulness also presented an important effect on transformational leadership, following the same trend than spiritual intelligence's effects, with the major effect on the domains of *inspirational motivation* and *idealized influence behaviors*, followed in descending order by its effects on *intellectual stimulation, individualized consideration* and *idealized influence attributed*, concurring with theory. These results differed to some degree with Gieseke's (2014) results, where the highest correlation of mindfulness was with *individualized consideration*, followed by *inspirational motivation*, *intellectual stimulation*, *idealized influence attributed,* and lastly, *idealized influence behavior*. However, it is important to highlight that Gieseke (2014) used a correlational analysis while the present study used a more robust technique (structural equation modeling), providing stronger statistical results that are focused on the effects and include the contributions of indirect effects.

Self-awareness (*acting with awareness*) appears to have important correlations of well-developed self-confidence and self-efficacy with transformational leadership's domains of *idealized influence attributed* and *inspirational motivation* (Sosik & Megerian, 1999). This capacity, together with *observing*, *nonjudging of inner experiences* and *nonreactivity to inner experiences,* facilitates in great measure the development of emotional intelligence (Goleman, 2013), which is also theoretically associated with *idealized influence attributed*, and to a lesser degree, *individualized consideration*.

The practice of mindfulness appears to assist leaders in developing crucial talents, such as simplicity, poise, respect, courage, confidence, enthusiasm, patience, awareness, skillfulness, and humility (Carroll, 2007). Mindfulness also seems to increase creativity (Colzato, Ozturk, & Hommel, 2012; Scharmer, 2009), which is one of the characteristics of *intellectual stimulation*.

Mindfulness has no inherent ethical and moral guidelines in its practice. Its dimension of *nonjudging of inner experience* involves a non-evaluative stance and acceptance towards all thoughts and feelings, trying to move the focus away from presumptions and previously programed conceptions of what is good or bad, virtuous or vicious, pleasant or unpleasant, desirous or aversive; allowing a fresh observation of the inner process of the self, un limited by mental models. Being aware of our own judgments permits a new stance on any issue, allowing us to move away from dichotomous thinking.

The conceptualization of mindfulness in the Western world, and the methods for developing it, are derived from Far Eastern spiritual traditions (Baer et al., 2006; Gunaratana, 2011). It is important to consider that ethics, morality, and virtue play central roles in those spiritual traditions. For obvious reasons, the Western culture has incorporated mindfulness in isolation from those spiritual traditions, at least in the context and within the models investigated in this research. Mindfulness development is based on meditation and awareness, involving dedicated and specific mental training, with no spiritual, moral or ethical connotation. However, increase in awareness arises through practice, together with insight, wisdom, compassion, and equanimity (Goldstein, 2002; Gunaratana, 2011), facilitating an increase in spirituality and consequently, spiritual intelligence (Crescentini & Capurso, 2015). Gunaratana (2011, p. 17) stated that morality, concentration and wisdom are integral parts of mindfulness, which grow simultaneously and reinforce one another through practice. Gunaratana further argued that compassion is a direct outcome of wisdom, inhibiting any

thought, word or action that might harm the meditator or others, and becoming the basis of moral behavior.

Once mindfulness is developed, it regulates our thoughts to behave according to what society considers the most fundamental and general principles of moral and ethical behavior; this does not occur because some predefined norms, but does so naturally (Gunaratana, 2011). Outcomes such awareness, generosity, insight, wisdom, compassion, equanimity, etc., do not flourish immediately, but after continuous practice. Therefore, associations between the constructs of mindfulness and transformational leadership in Western cultures seem to require an additional construct that includes the moral and ethical dimensions. In the present study, the construct of spiritual intelligence provided that source. This idea reinforces the proposal that in contemporary Western cultures, mindfulness seems to result from spiritual intelligence, suggesting that spiritual intelligence is the source mindfulness, a relationship that was expressed in the original structural model.

This relationship would explain the non-significant effect of mindfulness on transformational leadership when the path with spiritual intelligence is constrained to cero (Nested Model 1). This finding shows that within the present sample, mindfulness with no association with spiritual intelligence did not have a statistically significant relationship with transformational leadership. On the other hand, when mindfulness was associated in different ways with spiritual intelligence, its effects on transformational leadership were significant and large. This phenomenon could have been amplified by the sensitivity of the FFMQ questionnaire to the ratio of meditators to non-meditators in the sample, with 85% that presently do not meditate, and 80% that have never practiced meditation.

Several studies have suggested that the constructs of general intelligence, emotional intelligence and personality are good predictors of transformational leadership. The capacities of general intelligence and emotional intelligence can be developed, but they do not

adequately explain transformational leadership's facets of *inspirational motivation* and *idealized influence*. The construct of personality, specifically the NEO PI-R model (Costa & McCrae, 1995), has domains that cover relationships with those facets, explicitly *agreeableness* and *openness to experience*. Traditional consensus has generally indicated that personality is innate and shaped by early life experiences; however, severe emotional trauma, life changing episodes or peak experiences can change personality in adulthood. The possibility of changing personality in adulthood through training is controversial (Hudson & Fraley, 2015; Boyce, Wood, & Powdthavee, 2013), but it appears that a general consensus exists that modifying the personality at will is, at the very least, not an easy task.

The latest developments in neuroscience are opening a window of opportunity to further investigate the occurrence of at-will personality change. Kabat-Zin (2003) defined mindfulness as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment." This definition seems to describe the functions of the mind of a newborn individual, who is developing his or her mind during what is called the *critical period* (Vincent & Lledo, 2014); afterwards, life experiences, education and social interactions through the early years seems to block and degrade that capacity, allowing for the required stability and continuity of the self, but causing the person to lose most of the remarkable brain plasticity. Vincent and Lledo argued that between late childhood and death, the individual retains *adult neuroplasticity*, which allows the more limited reconfiguration of adult neural networks; where personality, aptitude and behavior depend in large part on those networks. Neuroimaging studies have suggested that mindfulness practice is related to changes in gray matter density in areas related to learning, memory, emotional regulation, self-referential processing, and perspective taking (Hölzel et al., 2011). Recent studies have suggested positive effects of mindfulness on

at-will personality modification (Campanella, Crescentini, Urgesi, & Fabbro, 2014; Crescentini & Capurso, 2015).

Most of the selected control variables had non-significant ($p > .05$) regression weights or covariance with the latent variables, with very small confounding effect on the model; almost all of the control variables that did have significant associations showed small individual contributions toward the variances in the model. Social desirability (SDS) had a significant correlation with spiritual intelligence (.37, $p < .001$), an insignificant load to mindfulness (.09, $p > .05$), and a significant small load to transformational leadership (.16, $p < .001$). The correlation coefficient (r) between SDS and spiritual intelligence represents a coefficient of determination (r^2) of .14, denoting a weak correlation; it is thus fair to conclude that social desirability had a negligible influence on the responses of the participants. Several control variables showed significant correlations, as expected, with spiritual intelligence, such as religious family education (.10, $p < .05$), present religious practice (.12, $p < .05$), and present prayer practice (.23, $p < .001$), but have small individual confounding effects.

As expected, supervisory experience (PD10) had a very small but significant effect on transformational leadership (.10, $p < .04$). More interesting was the role of sex (PD2), with a very small negative load (-.12, $p < .01$) on transformational leadership, suggesting that males could have a slightly higher tendency to behave in a transformational manner; however correlations between other control variables could have confounded this result. Males had longer supervisory experience (.21, $p < .001$), which, as mentioned before, increases the tendency to behave in a transformational manner, consequently providing a possible explanation for the higher tendency of males to behave as such. Therefore, in this case, the main factor that contributes to behaving in a transformational manner appears to be supervisory experience and not the person's sex. Conversely, females showed a higher affinity toward spiritual matters, such as a higher perception of religious/spiritual family

education, cumulative meditation practice, and present meditation practice. As expected, family education with religious/spiritual content (PD11) correlated positively with present religious practice and prayer practice (.19 and .27, $p < .001$ respectively), and present religious practice correlated with prayer practice (.34, $p < .001$). Females correlated positively with family education with religious/spiritual content (.1, $p < .03$). In addition, as expected and concurring with previous studies, age had a very small but significant correlation with spiritual intelligence (.1, $p < .05$). The individual effects of these control variables were very small, but combined they explain the small variation of effects between the main constructs.

Additionally, there were positive correlations between prayer practice and present meditation practice (.09, $p = .05$), cumulative meditation and present meditation (.75, $p < .001$), and females with present meditation practice (.12, $p < .01$). Female individuals showed a negative correlation with age (-.23, $p < .001$), indicating that in this sample, the females were younger than males on average.

To summarize, spiritual intelligence aids in developing or strengthening solid sets of values, principles, beliefs, new perspectives, meaning, purpose, a sense of direction in life, and awareness of the environment and all humankind. Mindfulness reinforces the previous components and appears to strengthen the capacity for observation, awareness (including self-awareness), self-confidence, self-efficacy, emotional intelligence, simplicity, respect, courage, patience, humility and creativity. Mindfulness practice also appears to confer the ability to facilitate personality adjustment at will, which is critical for developing leaders. Additionally, spiritual intelligence and mindfulness appear to have a non-recursive association, by which they reinforce one another through practice.

Spiritual intelligence and mindfulness constitute a set of capabilities that can be developed through training, and the results of this study suggest they have important effects

on transformational leadership behavior. Studies have proposed that mindfulness can increase emotional intelligence, and can facilitate a certain level of personality modification at will. Therefore, we propose that by including spiritual intelligence and mindfulness training as part of transformational leadership training programs, a new and enduring set of values, principles, beliefs, perspectives and mental models can be developed in leaders, improving the transfer of knowledge from training into practice. These new mental models could create the change of direction that Senge et al. (2008) claim is needed to deal with the sustainability problem.

The generalizability of the results was weakened by the non-probabilistic nature of the sample technique, due to normal resource limitations of doctoral studies. As stated by Polit and Beck (2010, p. 1451) "Generalization is an act of reasoning that involves drawing broad conclusions from particular instances—that is, making an inference about the unobserved based on the observed.", adding that it "is an ideal—a goal to be achieved, rather than an accurate depiction of what transpires in real-world research." (p. 1452). Generalization is never a definite condition but a working hypothesis (Cronbach, 1975; Kerlinger & Lee, 2000; Polit & Beck, 2010). Kerlinger and Lee (2000) proposed that generalizability is not a discrete dichotomous feature but a continuum. An important way to increase generalizability and statistical power is by increasing sample size, which was one of the objectives of the present research design. "Even when samples are not drawn at random, the more replicates there are, the greater the likelihood that unusual cases will cancel each other out, which in turn can contribute to the sample's representativeness" (Polit & Beck, 2010, p. 1454). Therefore, we conclude that the results present a high potential of generalizability with an acceptable degree of certainty within the population of the present study: supervisors and managers in Peru. Considering that 80% of the samples consisted in individuals that were pursing or held an MBA degree, the greatest level of generalizability will belong to that population, and with

lower level within the supervisors and managers that share similar demographic characteristics in different geographical locations, such is the case of most Latin American countries that share similar culture patterns and demographic characteristics related to the relevant variables under study. Additionally, considering the correlation with the results of the study performed by Giesek (2014), we could argue that the results could also be applied to United States, however the author strongly suggest the replication of this study in different geographies.

Implications

This study tested spiritual intelligence and mindfulness as sources of transformational leadership; the results support the proposal that these constructs explain some of the domains of transformational leadership that traditional predictors fail to clearly explain, filling those gaps. Going further, the results suggest that spiritual intelligence and mindfulness are sources of the internal forces that drive an individual to behave in a transformational manner.

The literature suggests that both spiritual intelligence and mindfulness could help in reinforcing or modifying the set of values and beliefs of individuals, allowing a possible change in their mental models and the way they react to internal and external forces in daily life, in accord with the transformational leadership model. New research has also opened a window of opportunity for adjusting at will personality domains that influence leadership behavior. Spiritual intelligence and mindfulness seem to lead to a holistic perspective about individuals' experiences, where openness, clarity, understanding, kindness, long-term thinking, selflessness and other qualities can be nurtured. These qualities, among others, differentiate transformational theories (van Maurik, 2001), and particularly the transformational leadership model from other models. The literature suggests that spiritual intelligence and mindfulness are abilities that can be learned (King, 2013; Zohar & Marshall, 2000; Kabat-Zinn, 2003), denoting interesting implications for the problem at hand.

Management education normally focuses on sharpening students' skills to manage externalities, but tends to leave students alone to manage the internal forces that finally lead their behavior (Hunter, 2015).

This study is relevant to the problem of the transfer of knowledge after training in transformational leadership described in Chapter 1. Similarly, it has implications to mitigate the problem of sustainability described in the same chapter. Important constructs that influence leadership in general, such as emotional intelligence and cognitive intelligence, already form part of current academic curricula. The results of this study suggest that introducing spiritual intelligence and mindfulness training as part of the curricula for transformational leadership training could improve the transfer of knowledge into practice. This proposal would also apply to several leadership styles grouped as transformational theories (van Maurik, 2001), such as servant leadership, authentic leadership, transcendental leadership, and spiritual leadership, among others.

These implications are relevant and important for contemporary leaders, corporations, academia, institutions and society in general. The results and conclusions are significant in that they stretch the frontiers of our knowledge about the relationships between spiritual intelligence, mindfulness and transformational leadership behaviors, with theoretical and practical implications for different contexts. The next section will describe opportunities and recommendations for future research.

Recommendations

The results showed that social desirability had a small influence on the responses to the SISRI-24 and MLQ-5X questionnaires. Future research could increase the efforts to explain the phenomenon of social desirability to the participants before the survey, stressing the total anonymity and insisting on the importance of honest and unbiased answers.

In this study, some of the in-person surveys were conducted during the regular part-time MBA classes at the end of a working day, implying possible mental fatigue of participants; this circumstance, together with the length of the survey and the complexity of the constructs under study, could have affected the accuracy of the answers. It is advisable that such a scenario be avoided in future research.

A bigger sample size could improve statistical strength when testing the structural models. The study used several techniques, supported by best statistical practices, to cope with this limitation, such as adequate alternative estimating techniques (ADF and GLS), and bootstrapping and parcelling methodologies.

The study's findings suggest that additional validations of the SISRI-24 and FFMQ scales be done. Forthcoming research using the FFMQ scale should include a sample with a close to even ratio of meditators and non-meditators, with special attention given to the need for possible minor re-specifications.

Future studies using MLQ-5X could initially question whether the self-report measurement instrument (leader form) should be avoided, instead relying only on the followers, colleagues and supervisors survey (rater form) to reduce further possible bias.

Due the implications and importance of the findings, repetition of this study with the implementation of some of the previous suggestions is highly recommended. New research could also study moderation and moderated mediation in the final model.

Additionally, a longitudinal or experimental study would strengthen or weaken the conceived causal relationship; in that case, the precedence of each construct is of critical importance and could be one of the hypotheses in such research.

A strong proposal is that mindfulness helps increase spiritual intelligence; a longitudinal study with test and retest, before and after mindfulness training, would help confirm that proposal. Such a scenario could even support the introduction of feedback loops

between spiritual intelligence and mindfulness. This is, the more spiritually intelligent an individual becomes (cause), the more mindful he or she tends to become (effect), although after a period of time the same relationship could occur in reverse: the more mindful the individual becomes (cause), the more spiritually intelligent he or she becomes (effect). This would be the non-recursive model.

Further studies could include experimental and longitudinal researches testing the effects of mindfulness on the development of emotional intelligence and on the modification of personality at will.

Finally, a more comprehensive model could include the constructs of general cognitive intelligence, emotional intelligence, spiritual intelligence, mindfulness and personality in a causal relationship to explain transformational leadership behavior, with mindfulness and personality partially mediating the effects of emotional intelligence and spiritual intelligence on transformational leadership; this would be a much more comprehensive model but would also impose a higher level of complexity.

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Appendix A

The Spiritual Intelligence Self-Report Inventory (King, 2008) SISRI-24

The following statements are designed to measure various behaviours, thought processes, and mental characteristics. Read each statement carefully and choose which **one** of the five possible responses best reflects you by circling the corresponding number. If you are not sure, or if a statement does not seem to apply to you, choose the answer that seems the best. Please answer honestly and make responses based on how you actually are rather than how you would like to be. The five possible responses are:

0 - Not at all true of me | 1 - Not very true of me | 2 - Somewhat true of me | 3 - Very true of me | 4 - Completely true of me

For each item, circle the **one** response that most accurately describes **you**.

1.	I have often questioned or pondered the nature of reality.	0	1	2	3	4
2.	I recognize aspects of myself that are deeper than my physical body.	0	1	2	3	4
3.	I have spent time contemplating the purpose or reason for my existence.	0	1	2	3	4
4.	I am able to enter higher states of consciousness or awareness.	0	1	2	3	4
5.	I am able to deeply contemplate what happens after death.	0	1	2	3	4
6.	It is *difficult* for me to sense anything other than the physical and material.	0	1	2	3	4
7.	My ability to find meaning and purpose in life helps me adapt to stressful situations.	0	1	2	3	4
8.	I can control when I enter higher states of consciousness or awareness.	0	1	2	3	4
9.	I have developed my own theories about such things as life, death, reality, and existence.	0	1	2	3	4
10.	I am aware of a deeper connection between myself and other people.	0	1	2	3	4
11.	I am able to define a purpose or reason for my life.	0	1	2	3	4
12.	I am able to move freely between levels of consciousness or awareness.	0	1	2	3	4
13.	I frequently contemplate the meaning of events in my life.	0	1	2	3	4
14.	I define myself by my deeper, non-physical self.	0	1	2	3	4
15.	When I experience a failure, I am still able to find meaning in it.	0	1	2	3	4
16.	I often see issues and choices more clearly while in higher states of consciousness/awareness.	0	1	2	3	4
17.	I have often contemplated the relationship between human beings and the rest of the universe.	0	1	2	3	4
18.	I am highly aware of the nonmaterial aspects of life.	0	1	2	3	4
19.	I am able to make decisions according to my purpose in life.	0	1	2	3	4
20.	I recognize qualities in people which are more meaningful than their body, personality, or emotions.	0	1	2	3	4
21.	I have deeply contemplated whether or not there is some greater power or force (e.g., god, goddess, divine being, higher energy, etc.).	0	1	2	3	4
22.	Recognizing the nonmaterial aspects of life helps me feel centered.	0	1	2	3	4
23.	I am able to find meaning and purpose in my everyday experiences.	0	1	2	3	4
24.	I have developed my own techniques for entering higher states of consciousness or awareness.	0	1	2	3	4

Appendix B

Five Factor Mindfulness Questionnaire (Baer et al., 2008) FFMQ

Please rate each of the following statements using the scale provided. Mark with an X the frequency that best describe your opinion of how certain is that statement for you.

1 never or very rarely true	2 rarely true	3 sometimes true	4 often true	5 very often or always true

1.	When I'm walking, I deliberately notice the sensations of my body moving.	1	2	3	4	5
2.	I'm good at finding words to describe my feelings.	1	2	3	4	5
3.	I criticize myself for having irrational or inappropriate emotions.	1	2	3	4	5
4.	I perceive my feelings and emotions without having to react to them.	1	2	3	4	5
5.	When I do things, my mind wanders off and I'm easily distracted.	1	2	3	4	5
6.	When I take a shower or bath, I stay alert to the sensations of water on my body.	1	2	3	4	5
7.	I can easily put my beliefs, opinions, and expectations into words.	1	2	3	4	5
8.	I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.	1	2	3	4	5
9.	I watch my feelings without getting lost in them.	1	2	3	4	5
10.	I tell myself I shouldn't be feeling the way I'm feeling.	1	2	3	4	5
11.	I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	1	2	3	4	5
12.	It's hard for me to find the words to describe what I'm thinking.	1	2	3	4	5
13.	I am easily distracted.	1	2	3	4	5
14.	I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	1	2	3	4	5
15.	I pay attention to sensations, such as the wind in my hair or sun on my face.	1	2	3	4	5
16.	I have trouble thinking of the right words to express how I feel about things	1	2	3	4	5
17.	I make judgments about whether my thoughts are good or bad.	1	2	3	4	5
18.	I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5
19.	When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.	1	2	3	4	5
20.	I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	1	2	3	4	5
21.	In difficult situations, I can pause without immediately reacting.	1	2	3	4	5
22.	When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	1	2	3	4	5
23.	It seems I am "running on automatic" without much awareness of what I'm doing.	1	2	3	4	5
24.	When I have distressing thoughts or images, I feel calm soon after.	1	2	3	4	5
25.	I tell myself that I shouldn't be thinking the way I'm thinking.	1	2	3	4	5
26.	I notice the smells and aromas of things.	1	2	3	4	5
27.	Even when I'm feeling terribly upset, I can find a w	1	2	3	4	5
28.	I rush through activities without being really attentive to them.	1	2	3	4	5

29.	When I have distressing thoughts or images I am able just to notice them without reacting.	1	2	3	4	5
30.	I think some of my emotions are bad or inappropriate and I shouldn't feel them.	1	2	3	4	5
31.	I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	1	2	3	4	5
32.	My natural tendency is to put my experiences into words.	1	2	3	4	5
33.	When I have distressing thoughts or images, I just notice them and let them go.	1	2	3	4	5
34.	I do jobs or tasks automatically without being aware of what I'm doing.	1	2	3	4	5
35.	When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.	1	2	3	4	5
36.	I pay attention to how my emotions affect my thoughts and behavior.	1	2	3	4	5
37.	I can usually describe how I feel at the moment in considerable detail.	1	2	3	4	5
38.	I find myself doing things without paying attention.	1	2	3	4	5
39.	I disapprove of myself when I have irrational ideas.	1	2	3	4	5

Appendix C

Social Desirability Scale (Crowne & Marlowe, 1960) SDS

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is *true* or *false* as it pertains to you personally.

1.	Before voting I thoroughly investigate the qualifications of all the candidates.	T	F
2.	I never hesitate to go out of my way to help someone in trouble.	T	F
3.	It is sometimes hard for me to go on with my work if I am not encouraged.	T	F
4.	I have never intensely disliked anyone.	T	F
5.	On occasion I have had doubts about my ability to succeed in life.	T	F
6.	I sometimes feel resentful when I don't get my way.	T	F
7.	I am always careful about my manner of dress.	T	F
8.	My table manners at home are as good as when I eat out in a restaurant.	T	F
9.	If I could get into a movie without paying and be sure I was not seen I would probably do it.	T	F
10.	On a few occasions, I have given up doing something because I thought too little of my ability.	T	F
11.	I like to gossip at times.	T	F
12.	There have been times when I felt like rebelling against people in authority even though I knew they were right.	T	F
13.	No matter who I'm talking to, I'm always a good listener.	T	F
14.	I can remember "playing sick" to get out of something.	T	F
15.	There have been occasions when I took advantage of someone.	T	F
16.	I'm always willing to admit it when I make a mistake.	T	F
17.	I always try to practice what I preach.	T	F
18.	I don't find it particularly difficult to get along with loud mouthed, obnoxious people.	T	F
19.	I sometimes try to get even rather than forgive and forget.	T	F
20.	When I don't know something I don't at all mind admitting it.	T	F
21.	I am always courteous, even to people who are disagreeable.	T	F
22.	At times I have really insisted on having things my own way.	T	F
23.	There have been occasions when I felt like smashing things.	T	F
24.	I would never think of letting someone else be punished for my wrongdoings.	T	F
25.	I never resent being asked to return a favor.	T	F
26.	I have never been irked when people expressed ideas very different from my own.	T	F
27.	I never make a long trip without checking the safety of my car.	T	F
28.	There have been times when I was quite jealous of the good fortune of others.	T	F
29.	I have almost never felt the urge to tell someone off.	T	F
30.	I am sometimes irritated by people who ask favors of me.	T	F
31.	I have never felt that I was punished without cause.	T	F
32.	I sometimes think when people have a misfortune they only got what they deserved.	T	F
33.	I have never deliberately said something that hurt someone's feelings.	T	F

Appendix D

Demographic Questionnaire

1. Age: _____

2. Sex: male __ female __

3. Marital Status: single __ married __ separated/divorced __ widow __

4. Bachelor degrees _____

5. Postgraduate degrees

None __ Diploma __ Master on Science __ MBA __ Master on Arts __ Doctoral __

6. Number of employees in the company you work for

Less than 50 __ between 50 and 250 __ between 251 and 1000 __ more than 1000 __

7. What business sector the Company that you work for does it belongs?

government __ non-profit organization __ international NGO __ private national __ private transnational __

8. Position at the company that you work for _____

9. Maximum number of employees you have been in charge of

Less than 5__ between 5 and 20 __ between 21 and 50 __ between 51 and 100 __ more than 100 __

10. ¿How many years have you had supervising positions?

Less than 1 __ between 1 and 5 __ between 6 and 10 __ between 11and 15 __ more than 15 __

11. I have received a religious/spiritual education in my family

Not at all true __ not very true __ somewhat true __ very true __ completely true __

12. I have received a religious/ spiritual education at school

Not at all true __ not very true __ somewhat true __ very true __ completely true __

13. How often do you go to church or religious cult?

More than 4 times a month __ between 1 and 3 times a month __ almost never __ never __

14. How often do you pray or talk with some form of superior power or entity (e.g. Good, deity, etc.)

never __ less than 2 times a week __ daily less than 15 min __ daily less than 30 min __ daily more than 30 min __

15. How often do you go to some kind of spiritual, metaphysical or philosophical study?

More than 4 times a month __ between 1 and 3 times a month __ almost never __ never __

16. How much cumulative practice on some kind of oriental meditation (yoga, tai-chi, etc.) have you?

never __ less than 2 months __ between 2 and 12 months __ between 1 and 5 years __ more than 5 years _

17. How often do you practice some kind of oriental meditation (yoga, taichi, etc.)

never __ less than 2 times a week __ daily less than 15 min __ daily less than 30 min __ daily more than 30 min __

Appendix E

Letter of Consent

INFORMED CONSENT DOCUMENT (in-person survey)

You have been invited to participate in the study carried out by Mr. Jorge D'Brot, as part of his doctoral dissertation under the supervision of CENTRUM and Maastricht School of Management. The objective of this document is to inform you about this study before you confirm your disposition to collaborate with the investigation.

The purpose of this study is to investigate possible relationships between the constructs of spiritual intelligence, mindfulness and transformational leadership within leaders in Peru. To participate in this research you will need to answer several questions grouped into four questionnaires, and to additionally provide some demographic data. It is estimated that your participation will take between 20 to 30 minutes.

It is important to inform you that your anonymity will be granted because the research does not capture your name or personal identification number. The data will be used exclusively for this research and only aggregated data will be analyzed, i.e. the study will not do any analysis at the individual level.

Your participation is totally voluntary and you are not obligated to take part in this research. If you agree to participate, you can stop at any time without providing any explanation.

Your participation in this research does not involve any risk. However, if you have any questions during your participation, you can approach the person administering the survey to clarify your doubts in private. Similarly, if you have any additional doubts after your participation, please do not hesitate to contact Mr. Jorge D'Brot (phone: 440-0391, email: jorge.dbrot@pucp.pe).

BY DATING AND ANSWERING THE QUESTIONNAIRES OF THIS RESEARCH, I DECLARE THAT I HAVE HAD THE OPPORTUNITY TO READ THIS INFORMED CONSENT DOCUMENT AND TO ASK ANY QUESTIONS RELATED TO THIS RESEARCH, AND I ACCEPT MY PARTICIPATION IN THIS STUDY.

DATE: _____

INFORMED CONSENT DOCUMENT (online survey)

You have been invited to participate in the study carried out by Mr. Jorge D'Brot, as part of his doctoral dissertation under the supervision of CENTRUM and Maastricht School of Management. The objective of this document is to inform you about this study before you confirm your disposition to collaborate with the investigation.

The purpose of this study is to investigate possible relationships between the constructs of spiritual intelligence, mindfulness and transformational leadership within leaders in Peru. To participate in this research you will need to answer several questions grouped into four questionnaires, and to additionally provide some demographic data. It is estimated that your participation will take between 20 to 30 minutes.

While the most important motivator for your participation in this study would be to contribute to the development of general research in Peru, and specifically to this particular effort to explain several aspects related to the relationship between the constructs under study, the author of this study is offering certain benefits to those who want them.

Your participation may be anonymous or not. It is important that you know that either way, the anonymity of your participation will be guaranteed. You would fill in the fields with your name and email address only if you want to receive the summary of the research findings and be given the opportunity to attend the Master Conference at not cost, where theories relevant to this research will be presented and where there will be a drawing among attendees to win an IPad. Otherwise, simply leave these fields blank.

The data will be used exclusively for this research and only aggregated data will by analyzed, i.e. the study will not do any analysis at the individual level. The database of this research will be kept in the Google Drive of the researcher, with the data security that Google offers. During the statistical analysis, the Excel sheet will only have the data and a correlative numbering of participation. The investigator will maintain complete confidentiality with respect to any individual information obtained in this study.

Your participation is totally voluntary and you are not obligated to take part in this research. If you agree to participate, you can stop at any time without providing any explanation.

Your participation in this research does not involve any risk. If you have any question before or after your participation, you can contact Mr. Jorge D'Brot (phone: 440-0391, email: jorge.dbrot@pucp.pe).

BY DATING AND ANSWERING THE QUESTIONNAIRES OF THIS RESEARCH, I DECLARE THAT I HAVE HAD THE OPPORTUNITY TO READ THIS INFORMED CONSENT DOCUMENT AND TO ASK POSSIBLE QUESTIONS RELATED TO THIS RESEARCH, AND I ACCEPT MY PARTICIPATION IN THIS STUDY.

Name: _____

Email : _____

Appendix F

Permissions of authors of SISRI-24 and FFMQ questionnaires, and MLQ-5X license

Jorge D´Brot
Los Robles 505, Apt. 401, San Isidro, Lima. Peru
Email: jorge.dbrot@pucp.pe

December 15, 2015

Dr. David King
Email: davidking2311@gmail.com

Dear Dr. King:

This letter will confirm our recent email communication. I am completing a doctoral dissertation at CENTRUM Graduated Business School – Universidad Católica del Perú, entitled "Spiritual Intelligence and Mindfulness as Sources of Transformational Leadership". I would like your permission to translate to Spanish, validate and use in my dissertation the questionnaire SISRI-24 developed in your dissertation:

King, D. (2008). *Rethinking claims of spiritual intelligence: A definition, model, and measure* (Master Thesis). Available from ProQuest Dissertations and Thesis data base. (ATT MR43187)

, and further validated in your paper:

King, D., & DeCicco, T. L. (2009). A viable model and self-report measure of spiritual intelligence. *International Journal of Transpersonal Studies, 28*, 68-85.

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Sincerely,
Jorge D'Brot

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

_____

Dr. David King
Date Signed: December 20, 2015

Jorge D´Brot
Los Robles 505, Apt. 401, San Isidro, Lima. Peru
Email: jorge.dbrot@pucp.pe

January 30, 2016

Dr. Baer
Email: rbaer@email.uky.edu

Dear Dr. Baer,

This letter will confirm our recent conversation. I am completing a doctoral dissertation at CENTRUM Graduated Business School – Universidad Católica del Perú, entitled "Spiritual Intelligence and Mindfulness as Sources of Transformational Leadership". I would like your permission to use in my dissertation the questionnaire FFMQ developed in your studies:

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*, 27-45.

Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., Walsh, E., Dugan, D., & Williams, J. M. G. (2008). Construct validity of the five-facet mindfulness questionnaire in meditating and non-meditating samples. *Assessment, 15*(3), 329–342.

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If these arrangements meet with your approval, please sign this letter where indicated below and return it to me in the enclosed return envelope. Thank you very much.

Sincerely,

Jorge D´Brot

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

Ruth A Baer

Dr. Ruth Baer

Date Signed: 1 Feb 2016

Date Scanned: 1 Feb 2016

Jorge D´Brot
Los Robles 505, Apt. 401, San Isidro, Lima. Peru
Email: jorge.dbrot@pucp.pe

January 23, 2016

Sra. Ana Loret de Mola
Email: ana@mindfulnessperu.com.pe

Dear Mrs. Loret de Mola:

This letter will confirm our recent conversation. I am completing a doctoral dissertation at CENTRUM Graduated Business School – Universidad Católica del Perú, entitled "Spiritual Intelligence and Mindfulness as Sources of Transformational Leadership". I would like your permission to use in my dissertation the translated questionnaire FFMQ developed in your dissertation:

Loret de Mola, A. M. (2009). *Confiabilidad y validez de constructo del FFMQ en un grupo de meditadores y no meditadores* (Bachelor Thesis, Pontificia Universidad Católica del Perú). Retrieved from: http://tesis.pucp.edu.pe/repositorio/bitstream/handle/123456789/413/LORET_DE_MOLA_GUBBINS_ANA_CONFIABILIDAD_Y_VALIDEZ_FFMQ.pdf?sequence=1

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Thank you very much.

Sincerely,

Jorge D´Brot
PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

_____
Mrs. Ana María Loret de Mola
Date Signed: 02---03---16
Date Scanned: 02---03---16

Jorge D´Brot
Los Robles 505, Apt. 401, San Isidro, Lima. Peru
Email: jorge.dbrot@pucp.pe

February 23, 2016

Mr. Alejandro César Cosentino
email: alejandrocosentino@yahoo.com.ar

Mr. Alejandro Castro Solano
email: alejandro.castrosolano@gmail.com

Dear Mr. Alejandro Cosentino and Mr. Alejandro Castro,

This letter confirms our recent conversation. I am completing a doctoral dissertation at CENTRUM Graduated Business School – Universidad Católica del Perú, entitled "Spiritual Intelligence and Mindfulness as Sources of Transformational Leadership". I would like your permission to use in my dissertation the translated questionnaire SDS developed in your dissertation:

Cosentino, A. C., & Castro, A. (2008). Adaptación y validación Argentina de la marlowe-crowne social desirability scale. *Interdisciplinaria, 25*(2), 197-216. Retrieved from: http://www.redalyc.org/articulo.oa?id=18025203

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Thank you very much.

Sincerely,

Jorge D´Brot
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Mr. Alejandro Cosentino
Date Signed: 5/3/2016
Date Scanned: 5/3/2016

Mr. Alejandro Castro
Date Signed: 5/3/2016
Date Scanned: 5/3/2016

Hi, Jorge D'Brot

Thank you for shopping with Mind Garden!

ORDER DETAILS - PAYMENT COMPLETE

Order: GECAXURAS
Completed on: 03/09/2016 15:54:17
Payment: Credit Card

Product	**Unit price**	**Quantity**	**Total price**
Multifactor Leadership Questionnaire - Remote Online Survey License - Translation : Spanish	$0.72	400	$288.00
Shipping			$0.00
Total Tax			$0.00
Total			**$288.00**

Appendix G

Comparison of standardized regression weights for SISRI-24 (King, 2008) and findings from the present study

Table 31

Comparison of Standardized Regression Weights for SISRI-24 with King (2008)

			King (2008)	Estimation
CET	<---	SI	-	.95
PMP	<---	SI	-	.84
TAW	<---	SI	-	.95
CSE	<---	SI	-	.83
SISRI1	<---	CET	.50	.45
SISRI3	<---	CET	.55	.61
SISRI5	<---	CET	.53	.62
SISRI9	<---	CET	.59	.59
SISRI13	<---	CET	.69	.70
SISRI17	<---	CET	.68	.78
SISRI21	<---	CET	.50	.57
SISRI7	<---	PMP	.76	.67
SISRI11	<---	PMP	.59	.65
SISRI15	<---	PMP	.54	.65
SISRI19	<---	PMP	.71	.67
SISRI23	<---	PMP	.62	.80
SISRI2	<---	TAW	.74	.59
SISRI6r	<---	TAW	.57	.22
SISRI10	<---	TAW	.75	.65
SISRI14	<---	TAW	.72	.72
SISRI18	<---	TAW	.68	.71
SISRI20	<---	TAW	.72	.62
SISRI22	<---	TAW	.73	.72
SISRI4	<---	CSE	.85	.78
SISRI8	<---	CSE	.91	.82
SISRI12	<---	CSE	.86	.82
SISRI16	<---	CSE	.78	.78
SISRI24	<---	CSE	.72	.81

Appendix H

Descriptive Statistics

Table 32

Descriptive Statistics for Major Instruments (Second-order Latent Variables)

Variable		Min.	Max.	*Mdn*	*M*	*SD*	*CV*
Spiritual Intelligence	SI	15	96	60	58.78	16.08	.27
Critical Existential Thinking	CET	1	28	16	15.65	5.51	.35
Personal Meaning Production	PMP	4	20	15	14.62	3.31	.23
Transcendental Awareness	TAW	2	28	19	18.69	4.85	.26
Conscious State Expansion	CSE	0	20	10	9.82	4.93	.50
Mindfulness	MF	92	181	134	135.25	15.91	.12
Observing	OB	9	39	26	25.56	5.94	.23
Describing	DE	16	40	30	29.69	5.36	.18
Active Awareness	AA	9	40	31	30.51	5.99	.20
Non Judging of Inner Experience	NJ	10	40	27	26.65	6.30	.24
Non Reactivity to Inner Experience	NR	10	35	23	22.84	4.39	.19
Transformational Leadership	TF	1.4	4	3.10	3.07	0.43	.14
Idealized Influence Attributed	IA	0	4	2.75	2.59	0.66	.25
Idealized Influence Behavior	IB	1	4	3.25	3.24	0.56	.17
Inspirational Motivation	IM	1.25	4	3.50	3.46	0.52	.15
Intellectual Stimulation	IS	0.75	4	3.00	3.05	0.58	.19
Individualized Consideration	IC	1.25	4	3.00	3.00	0.57	.19

Note. $N = 525$ valid cases. *CV* = Coefficient of variation

Table 33

Skewness and Kurtosis for Major Instruments (Second-order Latent Variables)

Variable		Skewness	Kurtosis
Spiritual Intelligence	SI	-0.18	-0.44
Critical Existential Thinking	CET	-0.07	-0.58
Personal Meaning Production	PMP	-0.52	0.15
Transcendental Awareness	TAW	-0.47	-0.07
Conscious State Expansion	CSE	-0.10	-0.77
Mindfulness	MF	0.37	-0.01
Observing	OB	-0.13	-0.33
Describing	DE	-0.15	-0.47
Active Awareness	AA	-0.45	-0.18
Non Judging of Inner Experience	NJ	-0.12	-0.31
Non Reactivity to Inner Experience	NR	-0.04	-0.07
Transformational Leadership	TF	-0.47	0.07
Idealized Influence Attributed	IA	-0.45	0.66
Idealized Influence Behavior	IB	-0.74	0.57
Inspirational Motivation	IM	-0.99	0.74
Intellectual Stimulation	IS	-0.48	0.10
Individualized Consideration	IC	-0.20	-0.24

Note. $N = 525$ valid cases

Table 34

Descriptive Statistics for Selected Demographic Data

PD1 = Age		
Age interval	*n*	%
24-30	127	24.2
31-35	132	25.1
36-42	127	24.2
43-55	106	20.2
56-69	33	6.3

PD2 = Sex			
Sex	Value	n	%
Male	0	341	65
Female	1	184	35

Table 34 (cont.)

Descriptive Statistics for Selected Demographic Data

PD3 = Marital Status

Status	Value	n	%
Single	0	232	44.2
Married	1	246	46.9
Divorced/Separated	2	44	8.4
Widow	3	3	0.6

PD5 = Post Graduate Education

Post Graduate	Value	Recoded value	n	%
None	0	0	184	35.0
Specialization	1	1	190	36.2
Master in Science	2	1	42	8.0
MBA	3	1	103	19.6
Master in Arts	4	1	2	0.4
Doctor	5	1	4	0.8

PD6 = Company Size (by amount of employees)

Amount of Employees	Value	Recoded value	n	%
less than 50	0	0	84	16.0
50 – 250	1	0	107	20.4
251 - 1000	2	1	130	24.8
More than 1000	3	1	204	38.9

PD9 = Span of Control

Span of Control	Value	Recoded value	n	%
Less than 5	0	0	147	28.0
5 – 20	1	0	171	32.6
21 – 50	2	1	80	15.2
51 - 100	3	1	49	9.3
More than 100	4	1	78	14.9

PD10 = Supervision Experience

Amount of Years	Value	Recoded value	n	%
Less than 1	0	0	47	9.0
1 – 5	1	0	226	43.0
6 – 10	2	1	115	21.9
11 - 15	3	1	54	10.3
More than 15	4	1	83	15.8

Table 34 (cont.)

Descriptive Statistics for Selected Demographic Data

PD11 = Religious Family Education

Classification	Value	Recoded value	n	%
Definitely not true	0	0	6	1.1
Not true	1	0	17	3.2
Relatively true	2	0	99	18.9
True	3	1	228	43.4
Definitely true	4	1	175	33.3

PD12 = Religious School Education

Classification	Value	Recoded value	n	%
Definitely not true	0	0	4	0.8
Not true	1	0	27	5.1
Relatively true	2	0	113	21.5
True	3	1	209	39.8
Definitely true	4	1	172	32.8

PD13 = Present Religious Practice

Frequency	Value	Recoded value	n	%
More than 4 times per month	0	1	40	7.6
1 - 3 times per month	1	1	141	26.9
Almost never	2	0	294	56.0
Never	3	0	50	9.5

PD14 = Present Praying Practice

Frequency	Value	Recoded value	n	%
Never	0	0	82	15.6
Less than 2 times per week	1	0	228	43.4
Less than 15 min each day	2	1	159	30.3
Less than 30 min each day	3	1	46	8.8
More than 30 min each day	4	1	10	1.9

PD15 = Present Spiritual Studies

Frequency	Value	Recoded value	n	%
More than 4 times per month	0	1	17	3.2
1 - 3 times per month	1	1	47	9.0
Almost never	2	1	143	27.2
Never	3	0	318	60.6

Table 34 (cont.)

Descriptive Statistics for Selected Demographic Data

PD16 = Cumulative Meditation Practice

Frequency	Value	Recoded value	n	%
None	0	0	413	78.7
Less than 2 months	1	1	55	10.5
2 - 12 months	2	1	22	4.2
1 - 5 years	3	1	23	4.4
More than 5 years	4	1	12	2.3

PD17 = Present Meditation Practice

Frequency	Value	Recoded value	n	%
Never	0	0	445	84.8
Less than 2 times per week	1	1	53	10.1
Less than 15 min each day	2	1	12	2.3
Less than 30 min each day	3	1	11	2.1
More than 30 min each day	4	1	4	0.8

Table 35

Associations between selected control variables and major constructs.

	PD1	PD2	PD5	PD10	PD11	PD13	PD14	PD16	PD17	SDS
SI	x	x	-	-	x	x	x	x	x	x
MF	x	x	-	-	-	-	x	x	x	x
TF	x	x	x	x	x	x	-	-	-	x

Appendix I

Fit Indices

Throughout this study, the guidelines for model fit indices suggested by Byrne (2010), Cangur and Ercan (2015), Garson (2012), Hair et al. (2010), Hu and Bentler (1999) and Kline (2011) were used. Table 36 presents a summary of the fit indices used in this study and their suggested cutoff values. RMSEA lower and upper confidence limits are also presented; a good model fit normally has a lower 90% confidence limit close to zero, while the upper confidence limit is below than .08 (Garson, 2012).

Table 36

Fit Indices and Suggested Cut-offs

Index	Acronym	Cutoff	Reference
Chi-square goodness of fit	χ^2	$p > .05$	Kline (2011)
Root mean square error of approximation	RMSEA	< .08	Garson (2012)
Goodness of fit index	GFI	> .9	Hu & Bentler (1999)
Adjusted goodness of fit index	AGFI	> .9	Garson (2012)
Comparative fit index	CFI	> .9	Hair et al. (2010)
Normed chi-square *	χ^2/df	< 3	Kline (2011)

* Schumacker and Lomax (2004) suggested a more relaxed cutoff value of 5.