

Development and Validation of the Inspirational Leaders Survey (ILS)

Pates, John; Kotera, Yasuhiro ; Clancy, David

Published in:
International Journal of Work Innovation

Publication date:
2018

The re-use license for this item is:
CC BY-NC-ND

This document version is the:
Peer reviewed version

The final published version is available direct from the publisher website at:
[10.1504/IJWI.2017.091424](https://doi.org/10.1504/IJWI.2017.091424)

[Find this output at Hartpury Pure](#)

Citation for published version (APA):
Pates, J., Kotera, Y., & Clancy, D. (2018). Development and Validation of the Inspirational Leaders Survey (ILS). *International Journal of Work Innovation*, 2(2-3). <https://doi.org/10.1504/IJWI.2017.091424>

Development and Validation of the Inspirational Leaders Survey

John Pates

HE Sport, Hartpury College, Hartpury House, Hartpury, Gloucester GL19 3BE, UK

Email: j.pates@btinternet.com

Yasuhiro Kotera*

Online Learning, University of Derby, Kedleston Road, Derby DE22 1GB, UK Email:

y.kotera@derby.ac.uk *Corresponding author

David Clancy

Business Education Research Group, University of Huddersfield, Queensgate,

Huddersfield, HD1 3DH, UK Email: D.M.Clancy@hud.ac.uk

The final version of this article was published in the International Journal of Work Innovation and can be accessed at <https://doi.org/10.1504/IJWI.2017.091424>

Biographical notes: John Pates has been involved in performance coaching and education for the past 20 years. As a qualified sports psychologist, he has worked internationally including the European PGA golf tour. His list of clients consists of 50 Tour players including seven Ryder Cup stars, two World Cup champions and 15 tournament winners. He writes and delivers sports psychology programmes for the English Golf Union as well as the British and Swiss Professional Golf Associations.

Yasuhiro Kotera is an Academic Lead and the Chair of Research Ethics Committee at the University of Derby Online Learning, teaching in and leading counselling psychology programs, and considering the research ethics in the department. He is a certified neuro-linguistic programming (NLP) trainer and a registered counsellor/psychotherapist by the British Association for Counselling and Psychotherapy, working with people from diverse backgrounds internationally. His research areas include NLP, peak performance, cross-cultural psychology, and occupational mental health.

David Clancy is a Research Assistant at the University of Huddersfield. He has been exploring the influence personal epistemology has on teaching and learning in a higher education context. He has previously, also been instrumental in establishing a research institute into post-compulsory education, and a variety of research, evaluation and development programs.

Abstract

The inspirational leaders survey (ILS) was developed to identify the behaviours and characteristics of inspirational leaders. The ILS aims to help businesses recruit inspirational leaders. Our literature review identified 75 inspiring behaviours. The items were examined through the exploratory factor analysis of 212 workers; and a confirmatory factor analysis of 248 workers in various industries. Two factors with nine items emerged as the best approximation of the population covariance matrix of the three models tested from the results. The factors were called 'individual behaviours (five items: desire to achieve success, determined to achieve goals, passionate about work, committed to achieve success, and hardworking)' and 'relationship behaviours (four items: ability to instil confidence in people, inspire others, offer hope to others, and offer stability and direction to others)'. The ILS can be used, especially by human resources in organisations, to identify and recruit inspirational leaders into their workforce.

Keywords: inspiration; leadership; management; recruitment; management behaviours; human resources; characteristics; recruiting survey; leaders survey; goal achievement; relationship behaviours; workplace enhancement.

Introduction

In the corporate world it is evident the leadership style of our managers is a major factor that determines the quality and success of an organisation (Weymes, 2002). The quest to uncover a leadership style that brings about the greatest corporate accomplishment has led academics to propose a number of conflicting theories. The most notable are trait theories (e.g., Stogdill, 1974), situational theories (e.g., Hersey and Blanchard, 1977), behavioural theories (see McGregor, 1960), contingency theories (e.g., Fiedler, 1967), transactional theories (Downton, 1973), and transformational theories (e.g., Bass, 1985).

Currently Bass's (1985) transformational theory dominates the scholarly landscape. Its popularity is fuelled by a large body of research that clearly shows transformational leaders have a positive effect on a number of key performance outcomes. For example, transformational leadership has been linked to confidence (Price and Weiss, 2013), effort (Arthur et al., 2011; Rowold, 2006), perceived competence (Price and Weiss, 2013), task and team cohesion (Price and Weiss, 2013; Callow et al., 2009; Smith et al., 2013), aggressive behaviours (Tucker et al., 2010), enjoyment (Price and Weiss, 2013), organisational citizen behaviours (Lee et al., 2013), satisfaction (Kao and Tsai, 2016), intrinsic motivation (Price and Weiss, 2013), and performance (Charbonneau et al., 2001).

To explain these findings leadership scholars have suggested leaders who use a transformational style of leadership influence their followers by inducing the mechanisms associated with intrinsic motivation, commitment, psychological empowerment, sacrifice, and needs satisfaction (Rowold, 2006; Zacharatos et al., 2000).

Bass's (1985) transformational theory was influenced by the early work of Burns (1978) and House's (1976) theory of charismatic leadership; and describes a style of leadership that is inspiring, developmental, values based, and intellectually stimulating (Bass and Bass, 2008). This is in stark contrast to other forms of leadership, which are based on the

use of rewards and sanctions or quid pro quo.

Mahatma Gandhi, Winston Churchill, John F. Kennedy, and Martin Luther King Jr. are classic examples of leaders that were transformational. These leaders of political life were charismatic and inspired people all over the world to do more and to be more. In its basic form transformational leadership can be divided into behaviours that can be described as charismatic and behaviours that can be described as inspirational (Bass and Bass, 2008). Bass (1985) suggests the charismatic leader is a role model who instils high ethical behaviour, and pride, whilst also gaining respect and trust. In contrast, inspirational leadership involves inspiring and motivating followers to reach ambitious goals that may have previously seemed unachievable.

Transformational theory has proved popular amongst leadership scholars because it has been operationalised and can be reliably measured by the multifactor leadership questionnaire (MLQ) (see Avolio et al., 1995; Bass, 1990; Bass and Avolio, 1993). Specifically, the MLQ measures behaviours that are associated with individualized consideration, intellectual stimulation, idealized influence (charisma), and inspirational motivation. Although the MLQ has received worldwide acclaim, it has been criticised for its ambiguity by Yukl (1999). For example, idealised influence (charisma) is not clearly differentiated from inspirational motivation, and there appears to be considerable overlap between these two behavioural constructs (Yukl, 1999). This casts doubt on the construct validity of this questionnaire and its utility for measuring the constructs it claims to measure. Clearly the development of a new psychometric instrument for measuring both charismatic and inspirational leadership behaviours is required.

Inspirational leadership has been recognised by many researchers (such as Weymes, 2002) as an important management competency, therefore this paper intends to develop a psychometric instrument that measures inspirational leadership. There is also a scarcity of empirical knowledge in this field. Indeed, whilst charismatic leadership has received considerable attention from the corporate community, inspirational leadership has

received far less. This is surprising as a number of studies from the corporate world clearly show inspiration rather than charisma to be the most important leadership quality. For example, in a study by International Business Machines Corporation (2012), 1,700 CEOs in 64 countries were asked what were the most important behaviours their leaders should exhibit. Their results showed the three leadership behaviours that mattered most were the ability to focus intensely on customer needs, the ability to collaborate with colleagues, and the ability to inspire. Similar results were found in a study by Zenger et al. (2012). Using extensive 360° feedback data, gathered from 50,000 leaders who were assessed by approximately a half-million colleagues, these researchers found the ability to inspire was the most important leadership quality.

One of the first groups of researchers to investigate the behaviours of inspirational leaders was Thrash and Elliot (2003). In their pioneering study, Thrash and Elliot (2003) found inspiration to be an empirically valid independent construct that correlates positively with the behavioural activation system (BAS), extraversion, positive emotionality, positive affect, work-mastery component of need for achievement, intrinsic motivation, openness to experience, absorption (in which attention is directed toward beauty or other object qualities), creativity, perceived competence, self-esteem, and optimism. Using time-lagged antecedent and consequence analyses, Thrash and Elliot (2003) found openness to experience and work-mastery functioned as antecedents, whilst the other variables emerged as consequences. In summary, their study suggests openness and work-mastery facilitates inspiration, and inspiring leaders embrace these behaviours.

The instrument used by Thrash and Elliot (2003) to measure the traits of an inspirational leader is known as the Inspirational Scale (IS). Although the IS has excellent convergent, construct and predictive validity (see Thrash and Elliot, 2003) it was forged from a student population and may not capture the full experience of inspiration in corporate businesses. We suggest a more business specific measure is therefore required. Our research focuses on achieving this objective. A dearth of scholarly knowledge on inspirational leadership in the corporate literature led us to incorporate research from both

the corporate and sport scholarly domains to develop our knowledge. Although Spitzer and Evans (1997) discussed the futility of comparing leadership in sport and business, Jones (2002) argued the behaviours of leaders in both domains are transferable. Thus the notion of using knowledge from both sport and business is appropriate (Jones, 2002).

The corporate world is perhaps best known for illuminating the behaviours of inspirational leaders. Warrilow (2012), for example, suggested inspirational leaders can create positive change in motivation, morale, and performance if they proactively engage in behaviours deemed as intellectually stimulating, which consider others. Other researchers namely Kouzes and Posner (2002) have suggested inspirational leaders make a difference by creating a vision and a positive, hopeful outlook. Inspirational leaders are also described by these researchers as energetic, creative, enthusiastic, exciting, passionate, good communicators and mediators of positive emotions.

In addition, Weymes (2002) describes inspirational leaders as hardworking, confident, reflective thinkers with a fearsome intellect. They are according to Weymes (2002) idea catalysts, energetic, tenacious, with a passion for work. They offer stability and direction and they can mobilise people. They coach and mentor rather than dictate and they are emotionally involved with the industry. Inspirational leaders can get the best from everybody; they are people orientated, and have time for everyone. They are problem solvers and focused, yet fun loving and jovial.

Unfortunately, Weymes (2002) did not provide any empirical support for his work, however, his study provided valuable insights into the possibility that the behaviours and practices of inspirational leaders may be shaped, modified, and even coached.

Another criticism of Weymes's (2002) is that he ignores the literature on successful performance from other academic sources such as sport. For example, researchers in the field of performance psychology are aware successful performance is a consequence of a person's ability to demonstrate a variety of behaviours and characteristics that are often referred to as mental toughness or the successful mind-set (Asken et al., 2010; Jones and

Moorhouse, 2008; Weinberg, 2010; Gordon and Gucciardi, 2011). According to Gucciardi et al. (2014), mental toughness is the personal capacity to produce consistently high levels of subjective (e.g., personal goals or strivings) or objective performance (e.g., productivity) despite everyday challenges and stressors as well as significant adversities.

Mental toughness has a number of key elements:

1 affective Intelligence (the ability to regulate one's emotions and moods in any circumstance to facilitate performance)

2 desire to achieve success (an internalized, insatiable desire and commitment to consistently improve one's performance levels and achieve success)

3 resilience (the ability to withstand and bounce back from situations in which negative outcomes are experienced)

4 attention control (the ability to manage one's attention and focus over extended periods)

5 self-belief (an unshakeable self-belief in your physical ability to perform in any circumstance)

6 optimistic thinking (the tendency to expect positive outcomes in the future and to perceive oneself in a positive manner)

7 context intelligence (an awareness and understanding of the performance environment and how to apply this knowledge to the performance environment)

8 handling challenge (thriving when challenged to execute the required skill and procedures effectively)

9 obsessive passion (an intense feeling of love, enthusiasm and energy for one's occupation)

10 hardworking (someone who works hard in all activities)

11 committed to achieve success (committed to a goal and making it happen) (see Gordon and Gucciardi, 2011; Gucciardi et al., 2014; Jones et al., 2002; Mattie and Munroe-Chandler, 2012; Middleton et al., 2004; Weinberg et al., 2011).

These key facets may be related to inspirational leadership and are included in our exploratory study.

To summarise, it appears the characteristics of inspirational leaders have received only limited empirical research. The aim of this paper is to explore the perceived behaviours and characteristics by developing and evaluating the psychometric properties of a self-report questionnaire. We have named the psychometric measure the inspirational leaders survey (ILS), which is based on the work of Warrilow (2012), Weymes's (2002), Kouzes and Posner (2002), Gucciardi et al. (2014) and Thrash and Elliot (2003).

Method

When Goldberg and Digman (1994) discussed item selection in the development of questionnaires, they argued the selection of items ‘is by far the single most important decision to be made in any investigation, and it should be guided by theory and/or findings from past research’ (p.218). It is for this reason the authors utilised the Delphi method (Linstone and Turoff, 1975) to aid the process of developing the ILS.

The Delphi method involves using a small group of experts who design a questionnaire, which is then sent to a larger respondent group. After the questionnaire is returned, the expert panel summarises the results and develops a new questionnaire for the respondent group to assess. The respondent group then re-evaluates its original answers and provides a final summary and report. Ethical approval was granted by the research committee of the University of Derby.

In this study the Delphi method resulted in the authors generating a 100-item questionnaire. The items were newly crafted and targeted to measure the frequency with which the responders use inspirational practices and behaviours. The classification of inspirational leaders described by Weymes (2002) and the related literature on emotional intelligence (Goleman, 1996), mental toughness (Gucciardi et al., 2014), and transformational leadership (Kouzes and Posner, 2002) dictated the construction of the items. The authors were mindful of the advantages of an ‘over inclusive item pool’ for two reasons:

subsequent factor analysis provides evidence of which item belongs in a particular construct or else where with regard to *facets* (Reise et al., 2000), item sets with similar content that tap into narrow-band constructs are expected to display high item correlations. The process of arriving at the initial 100-item questionnaire for distribution and testing is described below and involved what can be described as ‘overcompensating’ in the initial stages of development when deciding the number of items required to

encapsulate the theories on which the questionnaire was based. First, three psychology consultants rated the items content relevance. The psychology consultants were considered experts because they had a combined total of 66 years of experience within the field of psychology, had experience in questionnaire development, and were familiar with the literature on which the questionnaire drew. The panel of responders ($n = 20$) participated in an initial meeting where they were informed by the authors about the construction of the questionnaire and the population to be recruited in the validation process. Members of the panel were then sent a draft of the questionnaire to independently evaluate. After receiving the feedback from members of the panel, the authors amended the questionnaire accordingly. The questionnaire was then sent out to members of the panel to independently evaluate the questionnaire for a second time. After a period of two weeks the members of the panel and the authors met to discuss the suitability of items for inclusion in the ILS, and a consensus was reached about the inclusion, rejection, or revision of each item. This delayed two-week period permitted time for reflection whereby any further ideas could be discussed in the subsequent meeting. After this phase was complete, two heads of major institutions completed the revised questionnaire. In addition, twenty managers from various institutions including education, sport, hospitality, and tourism volunteered to participate as judges, completed the questionnaire. Subsequently, some minor revisions were made according to suggestions. Following this rigorous process, an initial version of the ILS consisted of 75 items with a five-point Likert-type format (see Sarason et al., 1987, for related constructs). This version of the questionnaire was then completed by a sample of 212 respondents and an exploratory factor analysis (EFA) was conducted on the data collected. Following this procedure a confirmatory factor analysis (CFA) with data collected from a further sample of 248 respondents who also completed the same version of the ILS to test the three alternative models that emerged from the EFA. 2.1

Participants In total 460 participants (age range 25-55, $M = 39.40$, $SD = 8.69$ years), who were located in the UK, completed the inventory: 212 for the EFA and 248 for the

CFA. The sample was drawn from individuals who were managers in large business organisations, with at least one year of managerial experience. The gender split for the total sample was 232 (50.43%) female and 228 (49.57%) male participants. There were no non-respondents.

Procedure

Participants were informed of the nature of the study being undertaken and that their involvement in the research was voluntary. No obligations were placed upon potential respondents nor were any inducements employed to recruit the sample. All participants gave written consent before any data was collected.

The ILS was then distributed personally to the participants. When fully completed the ILS was handed back to one of the authors who was present at all times. This ensured no conferring between participants took place whilst completing the questionnaire.

Exploratory factor analysis

The protocol adopted for the EFA was maximum likelihood and rotation of the matrix of loadings via oblique rotation using the direct oblimin rotation technique with the conventionally accepted cut-off of 0.40 as the threshold required for inclusion in the matrix (Stevens, 1992). A scree plot was used to determine the number of factors emerging from the data. The scree test is the suggested and preferred method of deciding the number of factors suggested by the data. It is, apart from exceptions, a relatively simple and quick way of representing factors within data in a visual format. The scree test provides a number of data points above a 'break', which are the number of factors it is suggested are retained. If a number of data points are clustered around the break (elbow shape), multiple factor analyses are required; this may involve setting the number of factors to retain (Costello and Osborne, 2005).

To confirm and supplement the decision from the scree plot, multiple test runs were

conducted to establish the number of factors in the data set. This is regarded as the best methodology for the process for 'pure' factor analysis as opposed to using the default SPSS setting of principal components analysis (PCA), and rotating the matrix of loadings via orthogonal, varimax rotation.

The decision to select the protocol used for the EFA in this paper and not the default settings, which are widely used, has solid foundations. The default settings in SPSS (PCA, eigenvalue above 1, and varimax rotation) can lead to the belief the researcher has undertaken a factor analytic approach. However, this is not the case as PCA and pure factor analysis differ in important ways. For example, components analysis tends to overestimate factor loadings and therefore yields correlations that are negatively biased (Borgotta et al., 1986; Reise, et al., 2000). In addition, PCA creates summaries of observed variables that are effects rather than the actual causes of the variable correlations (Reise et al., 2000). Conversely, factor analytic procedures result in a correlation matrix with estimated communalities, the goal of which is to extract the optimum number of latent variables to explain correlation among the items (Reise et al., 2000). As Gorsuch (1997) states 'the default procedures of many statistical packages ... is no longer adequate for exploratory factor analysis' (p.532).

Moreover, using the eigenvalue above 1 criteria based on PCA consistently leads to the retention of too many factors (Zwick and Velicer, 1986). Costello and Osborne (2005) cited Velicer and Jackson (1990) who stated eigenvalue above 1 is among the least accurate methods for selecting the number of factors to retain. In fact, eigenvalue has nothing at all to do with the reliability of a factor (Cliff, 1988). For a more comprehensive discussion about the problems with using eigenvalue above 1 for factor extraction, see Lee and Comrey (1979).

Reise et al. (2000) cite a number of 'compelling reasons to consider oblique rotations' (p.292). Amongst these are oblique rotation methods produce orthogonal solutions if appropriate oblique rotations meet simple structure criterion better than orthogonal

rotations oblique rotation is superior in terms of factor replicability (Dielman et al., 1972; Gorsuch, 1970) it is unreasonable to assume variables are uncorrelated; thus oblique rotation represents more realistic modelling of psychological constructs. In essence, if factors are truly uncorrelated, orthogonal and oblique rotations produce nearly identical results (Costello and Osborne, 2005). However, as stated previously, oblique rotation subsumes orthogonal rotation in that as stated above it produces orthogonal solutions if appropriate. Orthogonal solutions, on the other hand, do not produce oblique solutions. The view of the authors, which is based on the literature, is therefore the preferred protocol should be oblique rotation.

EFA results

The scree plot suggested four factors (latent variables) would be a suitable representation of the data. However, as recommended by Costello and Osborne (2005), multiple test runs were conducted to establish the number of factors in a data set.

A number of iterations were required to arrive at an acceptable solution due to items cross-loading on more than one factor, not having a sufficient loading or not loading at all in the rotated factor solutions.

This resulted in three suitable models. Model 1 (Tables 1 and 2) contains two latent variables (factors) totalling nine items (all above 0.523). Model 2 (Tables 3 and 4) contains three latent variables totalling ten items (all above 0.471). Model 3 (Tables 5 and 6) contains four latent variables (factors) totalling ten items (both above 0.496).

In Model 1, a two-factor model, four items loaded onto Factor 1 and five items onto Factor 2. It is clear from Table 2 that the items for Factor 1 relate to individual diligence, determination and motivation. This factor was labelled 'Individual.' Items for Factor 2 suggest someone who is prepared to motivate and mentor the development of others, and this factor was labelled 'Relational.'

In Model 2, a three-factor model, two items loaded onto Factor 1, three items onto Factor 2 and five items onto Factor 3. It is clear from Table 4 that the items for Factor 1 relate to creative problem solving. This factor was labelled ‘Creativity.’ Items for Factor 2 suggest again, an individual who is determined and diligent; this factor was labelled ‘Individual.’ Items for Factor 3 suggest someone who is willing to mentor the development of others, and this factor was labelled ‘Relational.’

In Model 3, a four-factor model, two items loaded onto Factor 1, two items onto Factor 2, three items onto Factor 3, and three items onto Factor 4. It is clear from Table 6 that the items for Factor 1 relate to a determined, diligent individual. This factor was labelled ‘Individual’. Items for Factor 2 suggest emotional awareness or intelligence; this factor was labelled ‘Emotionality’. Items for Factor 3 suggest creative problem solving, and this factor was labelled ‘Creativity’. Items for Factor 4 suggest someone who is prepared to mentor the development of others, and this factor was labelled ‘Relational’.

EFA is a method that allows for the reduction of a large body of data; however, it does not allow for the falsification of a particular model. There are no objective statistical criteria to determine the solution with the optimal number of factors (Hyland et al., 2013).

Hyland et al. (2013) point out that CFA on the other hand, is a theoretical plausible model deemed to describe the underlying structure of a particular measure [see Bollen (1989) for discussion on the relative strengths and benefits of EFA and CFA].

Tables 1–4 show development and validation of the ILS.

Table 1

Factor

Factor eigenvalues and variance percentages

Eigenvalue

Model 1 Variance contribution of factor

33.532 22.971

Cumulative variance

33.532 56.502

Factor 12

.839 .736 .650 .629

.791 .624 .604 .541 .523

Cumulative variance

32.291 49.633 61.269

1 3.018 2 2.067

Table 2 Factor pattern matrix – model 1 *Item number*

48. You have the ability to bring out the best in people 68. You give hope to others around you 47. You inspire others 23. You have the ability to instil confidence within people 40. You are determined to achieve your goals

44. You are passionate about your work 43. When you set out to achieve something you are 100% committed 72. You have the desire to achieve success 38. You are hardworking

Table 3

Factor

1 2 3

Model 2 factor eigenvalues and variance percentages

Eigenvalue

3.229 1.734 1.164

Model 2 Variance contribution of factor

32.291 17.341 11.636

Development and validation of the inspirational leaders survey

181

Table 4 Factor pattern matrix – model 2 *Item number*

63. You have a constant stream of ideas 64. You find it easy to find creative/innovative solutions to problems 40. You are determined to achieve your goals 72. You have the desire to achieve success 44. You are passionate about your work 68. You give hope to others around you 23. You have the ability to instil confidence within people 20. You enjoy the ‘cut and thrust’ of the business environment 18. You are seen as someone who offers stability and direction 47. You inspire others

2.4 Confirmatory factor analysis

Factor 123

1.027 .541

1.023 .521 .471

.739 .703 .603 .580 .579

To further develop, test and corroborate the findings from the initial EFA and to clarify the results, CFA was undertaken to establish the most appropriate model from the two, three, and four factor solutions. The same data collection procedure as the EFA was followed.

CFA results

The overall fit of each model was undertaken using the maximum likelihood method to establish the relative fit between models using a range of goodness-of-fit statistics and assessment of the appropriateness of the model parameters. The χ^2 statistic assessed the sample and implied covariance matrix, and a good fitting model is indicated by a non-significant result. However, the χ^2 statistic is strongly associated with sample size, and as such good models tend to be over-rejected. Therefore, Tanaka (1987) suggested that a model should not be rejected simply on the basis of a significant χ^2 result. Accordingly, it

is recommended that researchers examine the ratio of the X^2 value to the degrees of freedom (df), and according to Kline (1994), any model with a X^2 -to-df ratio of less than 3:1 indicates a good fitting model. The comparative fit index (CFI; Bentler, 1990) and the Tucker Lewis Index (TLI; Tucker and Lewis, 1973) are measures of how a model fits the data compared to a baseline model where all variables are uncorrelated. For these indices, values above .90 indicate a reasonable fit while values above .95 indicated a good model fit (Bentler, 1990; Hu and Bentler, 1999). In addition, one more absolute index is presented the root mean-square error of approximation (RMSEA; Steiger, 1990). Ideally this index should be less than .05, however, values less than .08 also suggest an adequate fit (Bentler, 1990; Hu and Bentler, 1999; Jöreskog and Sörbom, 1993). Furthermore, the Akaike information criterion (AIC; Akaike, 1974) was used to evaluate the alternative models, with the smaller value indicating the best fitting model. The CFI, RMSEA, and the AIC all have explicit penalties for model complexity.

In order to test the dimensionality of the ILS, the authors investigated the three specified alternate models using standard CFA techniques. Tables 7 and 8 report the fit indices and CFIs of the three models. All three models produced statistically significant results. However, the two-factor solution displayed overall, the best model fit. It had the lowest overall AIC value, and the CFI and TLI values were better or comparable with the other models, with a good x^2 -to-df-ratio, and RMSEA result also evident.

Figure 1 ILSModel for 2 factors: individual (I) and relational (R) (see online version for colours)

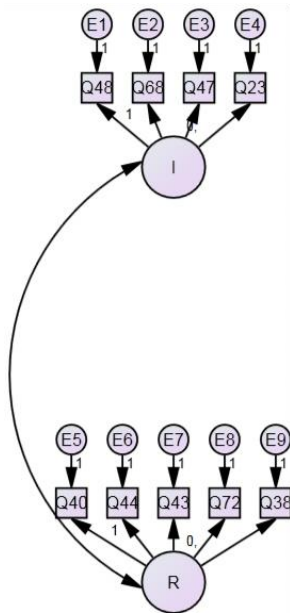
Notes: 28 parameters; $x^2(26) = 41.564$, $p < 0.027$; $df = 26$; CFI = 0.971; RMSEA = 0.010 (confidence interval from 0.003 to 0.015).

All these results suggest a good model fit. The majority of the indicators exceeded Hair et al.'s (1998) strict cut off criteria of 0.60, and the two that did not still exhibit statistically significant factor loadings above 0.50. These results therefore support the construct validity of the ILS.

Discussion

The current study describes the development of a quantitative measure of inspirational leadership that has been psychometrically validated. In order to ascertain the appropriate factor structure of the measure, a series of different factor structures were devised. The results suggest a two-factor model with nine items was the best approximation of the population covariance matrix of the models tested.

The two-factor, nine-item model produced the lowest χ^2 result, and its χ^2 -to-df ratio was less than 3:1 (i.e., 1.599, $p < .027$), suggesting an acceptable model according to Kline's (1994) indications. The RMSEA result also suggests an adequate fit, with the CFI and TLI results suggesting a good model fit. On the basis of the χ^2 -to-df ratio, RMSEA,



Development and validation of the inspirational leaders survey 183

CFI, TLI, and AIC results, the two-factor model could be said to represent the most appropriate model. The majority of the indicators exceeded Hair et al.'s (1998) strict cut off criteria of 0.60, and those few indicators that did not still exhibit statistically significant factor loading above 0.50. In addition, the Cronbach's alpha statistics for internal consistency revealed an acceptable level for the *relational* factor (0.75) overall,

and the *individual* factor (0.76) overall (see DeVellis, 2003).

The primary loadings on the first factor of the ILS represent the behaviours or actions normally associated with motivation and mental toughness, namely, desire to achieve success, determined to achieve goals, passionate about work, committed to achieve success, and hardworking; thus the authors have labelled Factor 1 ‘individual behaviours’ (IB).

The primary loadings on the second factor of the ILS appear to represent behaviours that evoke positive emotions and guide followers into transcending themselves from their current preoccupations, namely, stability and direction, confidence, inspiration (positive energy) and hope: thus the authors have labelled Factor 2 ‘Relationship Behaviours’ (RB). Taken together the results support Thrash and Elliot’s (2003) finding that inspiration is characterised by evocation, motivation, and transcendence.

Implications for theory

The behaviours identified may be linked to a number of theoretical frameworks that are well established in the narrative of psychology. For example, the five behaviours associated with IB (desire to achieve success, determined to achieve goals, passionate about work, committed to achieve success, and hardworking) are central to theories and models scholars describe as mental toughness (see Gucciardi et al., 2014). The idea that inspirational leadership is linked to mental toughness is an important new finding and justifies our utility of mental toughness theory in the creation of the ILS. Mental toughness researchers (e.g., Mahoney et al. 2014), have suggested motivation lies at the heart of mental toughness and therefore should be examined from a motivational theory perspective. The link between mental toughness and IB make us propose leadership should also be examined using motivation theory. Contemporary researchers investigating the leadership and follower relationship support this notion (e.g., Kovjanic et al., 2012; Breevaart et al., 2014).

A theory of motivation that perhaps best fits our results is self-determination theory proposed by Deci and Ryan (1985). It does this in several ways. First our study suggests inspirational leaders engage in behaviours that develop the self. Second our study suggests inspirational leaders behave with autonomous motivation, which means leaders engage in behaviour that reflect personal interests and values rather than something one feels compelled to do by external or internal pressures (see Stone et al., 2009; Sheldon and Elliot, 1999; Sheldon and Houser-Marko, 2001; Sheldon and Kasser, 1998). Interestingly, Thrash and Elliot (2003) have shown there is a positive relationship between inspiration and self-determination.

The underlying assumption of self-determination theory (Deci and Ryan, 1985) is that people are inherently and proactively motivated to master their social environment and they are motivated to satisfy the innate psychological needs for autonomy, competence and relatedness (Deci and Ryan, 2000). Autonomy refers to the need to act with a sense of volition, choice and self-determination (Stone et al., 2009). Competence is the need to interact with one's social environment and influence important outcomes (Stone et al., 2009). And relatedness is the need to experience satisfying and supportive social relations (Stone et al., 2009). Taken together these needs promote autonomous motivation.

We propose self-determination theory may help explain the behaviours of inspirational leaders described in our study. For example, the 'desire to achieve success' may be explained by the leaders need for autonomy and competence. Moreover, the motivation behind the behaviour we described as 'stability and direction' may be explained by the leaders need for relatedness.

Self-determination theory may also explain how inspirational leaders influence their followers. For example, leaders may inspire their followers by creating consciously or unconsciously autonomy-supportive environments (Deci and Ryan, 2012). Essentially, these are environments that nurture individuals' needs for autonomy, competence, and

relatedness. It is likely inspirational leaders enhance perceptions of these fundamental psychological needs and, consequently, promote growth and development in their followers. Leaders may facilitate this process by helping followers set autonomous goals that are aligned with individuals developing interests and deep-seated values.

The finding that inspirational leaders provide stability and direction indicates inspirational leaders are not only interested in developing themselves: they are also interested in developing their followers. In other words, inspirational leaders are essentially altruistic (see Avolio and Locke, 2002; Block, 1996) and people-orientated (Weymes, 2002), and they create the conditions where followers are allowed to flourish and self-actualise [i.e., fulfil one's potential (Maslow, 1943)]. In sum, the behaviours of inspirational leaders appear to accentuate self-actualisation in their followers.

Another important finding from our study is the discovery that inspirational leaders evoke positive emotions. More specifically, our study suggests inspiring leaders awaken inspiration, confidence and hopeful thinking. The impact of these variables on the positive development of followers within corporate settings is well documented (Luthans, 2002; Luthans and Avolio, 2003). For example, research in positive psychology, positive organisational behaviour, and positive psychological capital (Luthans et al., 2004), suggests confidence and hope play a crucial role in developing individuals, teams, organisations, and communities (e.g., see Luthans, 2002; Luthans and Avolio, 2003; Seligman, 2002; Seligman and Csikszentmihalyi, 2000; Snyder and Lopez, 2002).

Given the importance of positive emotions for employee and organisational outcomes such as motivation (Erez and Isen, 2002), creativity, (e.g., George, 1991, 1995, 1996; Spector and Fox, 2002), task performance (e.g., Ashby et al., 1999), and subjective well-being (e.g., Diener et al., 2003), the current findings appear significant and support Weymes (2002) proposition that the primary purpose of an inspirational leader is to influence the feelings and emotions of their followers.

According to Weymes (2002) inspirational leaders evoke positive emotions through the

communication and the exchange of ideas he called the inspirational dream. This led Weymes to believe inspirational leaders are idea catalysts. However, this prediction was not supported by the current study. Our findings are also inconsistent with the work of Kouzes and Posner (2002) who indicated inspirational people are sources of creative ideas, cognitions and behaviour. The results of the current study suggest inspirational leaders do not need to generate creative ideas in order to be inspirational. To explain our findings we propose leaders who generate creative ideas maybe more synonymous with charismatic styles rather than inspirational styles of leadership. Several researchers allude to this proposition. For example, Day and Antonakis (2012) suggested charismatic leaders rather than the inspirational leaders create inspiring visions and ideas. The results may indicate important differences between the patterns of behaviours associated with charismatic and inspirational styles of leadership and requires further investigation. The authors agree that the current study may have helped reduce some of the ambiguity between different styles of leadership that Yukl (1999) suggests is widespread in the research literature.

Limitations

As is the case with any study, there are limitations that need to be highlighted. For example, future studies should preferably retest the factor structure of both the 75-item and nine-item abbreviated version presented herein. Future analysis should ideally utilise a bi-factor modelling approach to control for the effects of contextual factors, as present results indicate that such bi-factor models improve a model fit. In addition, construct validation studies are required and larger samples are needed for investigations that account for factorial invariance such as differences between genders and different cultures. More specifically, construct validity should be tested by examining the ILS's nomological network and by conducting a known-groups analysis. The predictive validity of the ILS should be examined using an experience-sampling methodology to examine predictive validity, within-person correlates, antecedents and consequences, and incremental validity.

Although it appears some of the behaviour characteristics of inspirational leaders have been uncovered, our questionnaire-based study does not provide sufficient information about the causal effects of different inspirational behaviours. In addition, the study does not offer the reader with information about what an inspirational leader says or does to influence follower attitudes, satisfaction and performance. Nor does it provide the reader with information about the influences of mediating and situational variables. In order to obtain this information a combination of both qualitative, quantitative, and field based research is required.

Implication for practice

The ILS may have a variety of practical applications. In recent years, research on recruiting behaviours has focused on the importance of assessing job applicant psychological behaviours instead of technical knowledge (Schneider, 1987; Chatman, 1991; Motowidlo et al., 2013). Recruiters in the human resources may use the ILS to recruit inspiring managers and employees or to measure a job applicant's inspirational ability. The ILS may also be used in leadership and management training. For example, managers of teams may use the ILS to inform them of the skills they need to lead their team inspirationally. In other situations the ILS may be used to recruit managers in organisations that require change.

The authors are not suggesting the ILS be used as a definitive stand-alone measure of inspirational people. Rather, it should be used as an indicator; as part of a system of profiling in the selection of people under consideration for leadership positions, or who are applying for graduate fast-track management course with employers. Thus, the ILS is complementary and supplementary, and can therefore be seen as the initial stage of a rigorous selection and profiling process whereby large numbers of candidates can be selected or filtered out by selection panels; thus ensuring a more streamlined efficient process, one that eases the pressure somewhat on the people involved.

However, there are some unanswered questions in this study. For example, are the behaviours of inspirational leaders the same in every culture? For example, Japanese successful leadership models did not lead to successful outcomes in American organisations largely because of the cultural difference: Collective Japanese workers are more lenient with their leader forcing long working hours than individualistic American workers (Young, 1992). This means management styles and behaviours may need to be very different (Hofstede, 1984; He and Liu, 2010). Numerous studies on cross-cultural leadership (e.g., Ayman, 2004; Bass, 1997; Dorfman, 2004; Gelfand et al., 2007; House et al., 1997) have demonstrated that leadership is conceptualized differently in different cultures. Simply put, an understanding of cultural forces is important to fully comprehend the leadership processes and cross cultural studies need to be carried out in order to examine whether the ILS is a useful tool for companies that operate outside the western culture.

Conclusions

The results of this study suggest inspirational leaders are passionate, hardworking with a desire and commitment to be successful. The results also suggest inspirational leaders provide their followers with stability and direction, giving them the confidence and faith to be upbeat about their future. They also evoke the positive energy, confidence and hope that motivates followers to achieve their goals and fulfil their potential. In essence inspirational leaders are motivating and stimulate followers to develop themselves.

The factor analysis results provide initial evidence of the validity and reliability of a nine-item scale for measuring the behaviours of inspiring people. The findings suggest that the ILS is a psychometrically sound measure for further studies of inspiration. It should be noted the authors have linked inspiration to a number of theoretical frameworks that are well-established in the narrative of psychology. For example, explaining the behaviour of inspirational leaders using a motivational theory perspective. More specifically, we have used self-determination theory (Deci and Ryan, 1985) to explain the results of our

findings. The idea that inspiration is linked to self-determination is not new. For example, in their study, Thrash and Elliot (2003) found self-determination to be positively related to inspiration. However, the idea inspiration leadership is linked to mental toughness is a new concept for leadership scholars. In light of our findings we suggest further inspirational leadership development should consider established theory and research from broader areas of psychological enquiry.

Finally, the authors propose the ILS nine-item scale may be used by the business community to identify inspirational leaders in the workforce and may be used as a recruitment tool increasing the probability of having more inspirational leaders in our organisations with management systems. Our future aim is to use our discoveries to provide a framework to train and develop people to become inspirational leaders.

References

- Akaike, H. (1974) 'A new look at the statistical model identification', *IEEE Transactions on Automatic Control*, Vol. 19, No. 4, pp.716–723.
- Arthur, C.A., Woodman, T., Ong, C.W., Hardy, L. and Ntoumanis, N. (2011) 'The role of athlete narcissism in moderating the relationship between coaches' transformational leader behaviours and athlete motivation', *Journal of Sport and Exercise Psychology*, Vol. 33, No. 1, pp.3–19.
- Ashby, F.G., Isen, A.M. and Turken, A.U. (1999) 'A neuropsychological theory of positive affect and its influence on cognition', *Psychological Review*, Vol. 106, No. 3, pp.529–550.
- Asken, M.J., Grossman, D. and Christensen, L.W. (2010) *Warrior Mindset: Mental Toughness Skills for a Nation's Peacekeepers*, Human Factor Research Group, Millstadt, IL.
- Avolio, B.J., Bass, B.M. and Jung, D.I. (1995) *Multifactor Leadership Questionnaire Technical Report*, Mind Garden, Redwood City, CA.
- Avolio, J. and Locke, E. (2002) 'Contrasting different philosophies of leader motivation: altruism versus egoism', *The Leadership Quarterly*, Vol. 13, No. 2, pp.169–191.
- Ayman, R. (2004) 'Situational and contingency approaches to leadership', in Antonakis, J., Cianciolo, A.T. and Sternberg, R.J. (Eds.): *The Nature of Leadership*, pp.148–170, Sage, Thousand Oaks, CA.
- Bass, B.M. (1985) *Leadership and Performance Beyond Expectations*, Free Press, New York. Bass, B.M. (1990) *Bass & Stogdill's Handbook of Leadership: Theory, Research, and Managerial Applications*, 3rd ed., Free Press, New York, NY. Bass, B.M. (1997) 'Does the transactional-transformational leadership paradigm transcend organizational and national boundaries?', *American Psychologist*, Vol. 52, No. 2, pp.130–139.
- Bass, B.M. and Avolio, B.J. (1993) *Improving Organizational Effectiveness Through*

Transformational Leadership, Sage Publications, Thousand Oaks, CA. Bass, B.M. and Bass, R. (2008) *The Bass Handbook of Leadership: Theory, Research, and*

Managerial Applications, 4th ed., Free Press, New York, NY. Bentler, P.M. (1990)

‘Comparative fit indices in structural models’, *Psychological Bulletin*,

Vol. 107, No. 2, pp.238–246.

Block, P. (1996) *Stewardship: Choosing Service over Self-interest*, Berrett-Koehler, San Francisco, CA.

Bollen, K.A. (1989) *Structural Equations with Latent Variables*, John Wiley & Sons, New York, NY.

Borgotta, E.F., Kercher, K. and Stull, D.E. (1986) ‘A cautionary note on the use of principal components analysis’, *Sociological Methods and Research*, Vol. 15, Nos. 1–2, pp.160–168.

Breevaart, K., Bakker, A.B., Demerouti, E., Sleebos, D.M. and Maduro, V. (2014) ‘Uncovering the underlying relationship between transformational leaders and followers, task performance’, *Journal of Personnel Psychology*, Vol. 13, No. 4, pp.194–203.

Burns, J.M. (1978) *Leadership*, Harper and Row Publishers, New York.

Callow, N., Smith, M.J., Hardy, L., Arthur, C.A. and Hardy, J. (2009) ‘Measurement of transformational leadership and its relationship with team cohesion and performance level’, *Journal of Applied Sport Psychology*, Vol. 21, No. 4, pp.395–412.

Charbonneau, D., Barling, J. and Kelloway, K. (2001) ‘Transformational leadership and sports performance: the mediating role of intrinsic motivation’, *Journal of Applied Social Psychology*, Vol. 31, No. 7, pp.1521–1534.

Chatman, J.A. (1991) ‘Matching people and organizations: selection and socialization in public accounting firms’, *Administrative Science Quarterly*, Vol. 36, No. 3, pp.459–484.

Cliff, N. (1988) ‘The eigenvalues-greater-than-one rule and the reliability of components’, *Psychological Bulletin*, Vol. 103, No. 2, pp.276–279.

- Costello, A.B. and Osborne, J.W. (2005) 'Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis', *Practical Assessment, Research & Evaluation*, Vol. 10 No. 7, pp.1–9.
- Day, D.V. and Antonakis, J. (Eds.). (2012) *The Nature of Leadership*, 2nd ed., Sage, Los Angeles, CA.
- Deci, E.L. and Ryan, R.M. (1985) *Intrinsic Motivation and Self- Determination in Human Behavior*, Plenum, New York.
- Deci, E.L. and Ryan, R.M. (2000) 'The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior', *Psychological Inquiry*, Vol. 11, pp.227–268, doi:10.1207/S15327965PLI1104_01
- Deci, E.L. and Ryan, R.M. (2012) 'Self-determination theory in health care and its relations to motivational interviewing: a few comments', *International Journal of Behavioral Nutrition and Physical Activity*, Vol. 9, No. 1, p.24, doi:10.1186/1479-5868-9-24.
- DeVellis, R.F. (2003) *Scale Development: Theory and Applications*, 2nd ed., Sage Publications, Thousand Oaks, CA.
- Dielman, T.E., Cattell, R.B. and Wagner, A. (1972) 'Evidence on the simple structure and factor invariance achieved by five rotational methods on four types of data', *Multivariate Behavioral Research*, Vol. 7, No. 2, pp.223–242.
- Diener, E., Oishi, S. and Lucas, R.E. (2003) 'Personality, culture, and subjective well-being: emotional and cognitive evaluations of life', *Annual Review of Psychology*, Vol. 54, pp.403–425.
- Dorfman, P.W. (2004) 'International and cross-cultural leadership research', in Punnett, B.J. and Shenkar, O. (Eds.): *Handbook for International Management Research*, 2nd ed., pp.265–355, University of Michigan, Ann Arbor, MI.
- Downton, J.V. (1973) *Rebel Leadership: Commitment and Charisma in the Revolutionary Process*, Free Press, New York.

Erez, A., and Isen, A.M. (2002) 'The influence of positive affect on the components of expectancy motivation', *Journal of Applied Psychology*, Vol. 87, No. 6, pp.1055–1067.

Fiedler, F.E. (1967) *A Theory of Leadership Effectiveness*, McGraw-Hill, New York. Gelfand,

M.J., Erez, M. and Aycan, Z. (2007) 'Cross-cultural organizational behavior', *Annual*

Review of Psychology, Vol. 58, pp.479–514. George, J.M. (1991) 'State or trait: effects of positive mood on prosocial behaviors at work',

Journal of Applied Psychology, Vol. 76, No. 2, pp.299–307. George, J.M. (1995) 'Leader positive mood and group performance: the case of customer service',

Journal of Applied Social Psychology, Vol. 25, No. 9, pp.778–794. George, J.M. (1996) 'Group affective tone', in West, M. (Ed.): *Handbook of Work Group*

Psychology, pp.77–93, Wiley, Sussex, England.

Goldberg, L.R. and Digman, J.M. (1994) 'Revealing structure in the data: principles of exploratory factor analysis', in Strack, S. and Lorr, M. (Eds.): *Differentiating Normal and Abnormal Personality*, pp.216–242, Springer, New York, NY.

Goleman, D. (1996) *Emotional Intelligence: Why it Can Matter more than IQ*, Bloomsbury Publishing, New York, NY.

Gordon, S. and Gucciardi, D.F. (2011) 'Strengths-based approach to coaching mental toughness', *Journal of Sport Psychology in Action*, Vol. 2, No. 3, pp.143–155.

Gorsuch, R.L. (1970) 'Rokeach's approach to value systems and social compassion', *Review of Religious Research*, Vol. 11, No. 2, pp.139–143.

Gorsuch, R.L. (1997) 'Exploratory factor analysis: Its role in item analysis', *Journal of Personality Assessment*, Vol. 68, No. 3, pp.532–560.

Gucciardi, D.F., Hanton, S., Gordon, S., Mallett, C.J. and Temby, P. (2014) 'The concept of mental toughness: Tests of dimensionality, nomological network, and traitness', *Journal of*

Personality. Vol. 83 No. 1, pp.26–44.

Development and validation of the inspirational leaders survey 189 Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998) *Multivariate Data Analysis with Readings*, 5th ed., Prentice Hall, Englewood Cliffs, NJ.

He, R. and Liu, J. (2010) ‘Barriers of cross cultural communication in multinational firms: a case study of Swedish company and its subsidiary in China’, *Halmstad School of Business and Engineering* [online] <http://hh.diva-portal.org/smash/get/diva2:344618/FULLTEXT01> (accessed 5 April 2015).

Hersey, P. and Blanchard, K.H. (1977) *Management of Organizational Behaviour*, Prentice Hall, Englewood Cliffs NJ.

Hofstede, G. (1984) *Culture’s Consequences: International Differences in Work-Related Values*, Sage Publications, Beverly Hills, CA.

House, R.J. (1976) ‘Theory of charismatic leadership effectiveness’, in Hunt, J. and Larson, L. (Eds.): *Leadership: The Cutting Edge*, pp.189–207, Southern Illinois University Press, Carbondale.

House, R.J., Wright, N.S. and Aditya, R.N. (1997) ‘Cross-cultural research on organizational leadership: A critical analysis and a proposed theory’, in Earley, P.C. and Erez, M. (Eds.): *New Perspectives in International Industrial/Organizational Psychology*, pp.535–625, New Lexington Press, San Francisco.

Hu, L. and Bentler, P.M. (1999) ‘Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives’, *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 6, No. 1, pp.1–55.

Hyland, P., Shevlin, M., Adamson, G. and Boduszek, D. (2013) ‘Modeling the structure of the attitudes and belief scale 2 using CFA and bifactor approaches: towards the development of an abbreviated version’, *Cognitive Behaviour Therapy*, Vol. 43, No. 1, pp.60–71.

International Business Machines Corporation (2012) *2012 IBM Annual Report*, International Business Machines Corporation, Armonk, NY.

Jones, G. (2002) 'Performance excellence: a personal perspective on the link between sport and business', *Journal of Applied Sport Psychology*, Vol. 14, No. 4, pp.268–281.

Jones, G. and Moorhouse, A. (2008) *Developing Mental Toughness: Gold Medal Strategies for Transforming your Business Performance*, 2nd ed., Spring Hill, Oxford, England.

Jones, G., Hanton, S. and Connaughton, D. (2002) 'What is this thing called mental toughness? An investigation of elite sport performers', *Journal of Applied Sport Psychology*, Vol. 14, pp.205–218, doi:10.1080/10413200290103509.

Jöreskog, K.G. and Sörbom, D. (1993) *LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language*, Scientific Software International, Chicago, IL.

Kao, S-F. and Tsai, C-Y. (2016) 'Transformational leadership and athlete satisfaction: the mediating role of coaching competency', *Journal of Applied Sport Psychology*, Vol. 28, No. 4, pp.469–482.

Kline, P. (1994) *An Easy Guide to Factor Analysis*, Routledge, Oxon, England. Kouzes, J.M. and Posner, B.Z. (2002) *The Leadership Challenge*, 3rd ed., Jossey-Bass, San Francisco, CA.

Kovjanic, S., Schuh, S.C., Jonas, K., van Quaquebeke, N. and van Dick, R. (2012) 'How do transformational leaders foster positive employee outcomes? A self-determination-based analysis of employees' needs as mediating links', *Journal of Organizational Behavior*, Vol. 33, pp.1031–1052, doi: 10.1002/job.1771.

Lee, H.B. and Comrey, A.L. (1979) 'Distortions in commonly used factor analytic procedure', *Multivariate Behavioral Research*, Vol. 14, No. 3, pp.301–321.

Lee, W.J., Lin, M.C. and Chu, C.J. (2013) 'The relationships among burnout, social support and intention to stay among caregivers in service agencies for the disabled', *Journal of Health Care*

Management, Vol. 14, No. 1, pp.38–54.

Linstone, H.A. and Turoff, M. (1975) *Delphi Method: Techniques and Applications*, Addison-Wesley Educational Publishers, Boston, MA.

190 J. Pates et al. Luthans, F. (2002) ‘The need for and meaning of positive organizational behavior’, *Journal of*

Organizational Behavior, Vol. 23, No. 6, pp.695–706.

Luthans, F. and Avolio, B.J. (2003) ‘Authentic leadership development’, in Cameron, K.S., Dutton, J.E. and Quinn, R.E. (Eds.): *Positive Organizational Scholarship*, pp.241–258, Berrett-Koehler, San Francisco.

Luthans, F., Luthans, K. and Luthans, B. (2004) ‘Positive psychological capital: going beyond human and social capital’, *Business Horizons*, Vol. 47, No. 1, pp.45–50.

Mahoney, J., Ntoumanis, N., Mallett, C. and Gucciardi, D. (2014) ‘The motivational antecedents of the development of mental toughness: a self-determination theory perspective’, *International Review of Sport and Exercise Psychology*, Vol. 7, No. 1, pp.184–197, doi:

10.1080/1750984X.2014.925951.

Maslow, A. (1943) ‘A theory of human motivation’, *Psychological Review*, Vol. 50, pp.370–396. doi:10.1037/h0054346.

Mattie, P. and Munroe-Chandler, K. (2012) ‘Examining the relationship between mental toughness and imagery use’, *Journal of Applied Sport Psychology*, Vol. 24, No. 2, pp.144–156.

McGregor, D. (1960) *The Human Side of Enterprise*, McGraw Hill, New York.

Middleton, S.C., March, H.W., Martin, A.J., Richards, G.E. and Perry, C. (2004) Proceedings from

the 3rd International Biennial SELF Research Conference: Discovering Mental Toughness: A Qualitative Study of Mental Toughness in Elite Athletes, Berlin.

Motowidlo, S.J., Martin, M.P. and Crook, A.E. (2013) 'Relations between personality, knowledge, and behavior in professional service encounters', *Journal of Applied Social Psychology*, Vol. 43, No. 9, pp.1851–1861.

Price, M.S. and Weiss, M.R. (2013) 'Relationships among coach leadership, peer leadership, and adolescent athletes' psychosocial and team outcomes: a test of transformational leadership theory', *Journal of Applied Sport Psychology*, Vol. 25, No. 2, pp.265–279.

Reise, S.P., Waller, N.G. and Comrey, A.L. (2000) 'Factor analysis and scale revision', *Psychological Assessment*, Vol. 12, No. 3, pp.287–297.

Rowold, J. (2006) 'Transformational and transactional leadership in martial arts', *Journal of Applied Sport Psychology*, Vol. 18, No. 4, pp.312–325.

Sarason, B.R., Shearin, E.N., Peirce, G.R. and Sraon, I.G. (1987) 'Interrelationships of social support measures: theoretical and practical implications', *Journal of Personality and Social Psychology*, Vol. 52, No. 4, pp.813–832.

Schneider, B. (1987) 'The people make the place', *Personnel Psychology*, Vol. 40, No. 3, pp.437–453.

Seligman, M.E.P. (2002) *Authentic Happiness*, Free Press, New York. Seligman, M.E.P. and Csikszentmihalyi, M. (2000) 'Positive psychology', *American Psychologist*, Vol. 55, No. 1, pp.5–14.

Sheldon, K.M. and Elliot, A.J. (1998) 'Goal striving, need satisfaction, and longitudinal well-being: the self-concordance model', *Journal of Personality and Social Psychology*, Vol. 76, pp.482–297, doi:10.1037/0022-3514.76.3.482.

Sheldon, K.M. and Houser-Marko, L. (2001) 'Self-concordance, goal attainment, and the pursuit of happiness: can there be an upward spiral?', *Journal of Personality and Social Psychology*, Vol. 80, No. 1, pp.152–165.

Sheldon, K.M. and Kasser, T. (1998) 'Pursuing personal goals: Skills enable progress but not all

progress is beneficial', *Personality and Social Psychology Bulletin*, Vol. 24, No. 12, pp.1319–1331.

Smith, M.J., Arthur, C.A., Hardy, J., Callow, N. and Williams, D. (2013) 'Transformational leadership and task cohesion in sport: the mediating role of intrateam communication', *Psychology of Sport and Exercise*, Vol. 14, No. 2, pp.249–257.

Snyder, C.R. and Lopez, S.J. (Eds.) (2002) *Handbook of Positive Psychology*, Oxford University Press, Oxford, UK.

Development and validation of the inspirational leaders survey 191

Spector, P.E. and Fox, S. (2002) 'An emotion-centered model of voluntary work behavior: some parallels between counterproductive work behavior and organizational citizenship behavior', *Human Resource Management Review*, Vol. 12, No. 2, pp.269–292.

Spitzer, Q. and Evans, R. (1997) *Heads, You Win!: How the Best Companies Think*, Simon & Schuster, New York.

Steiger, J.H. (1990) 'Structural model evaluation and modification: an interval estimation approach', *Multivariate Behavioral Research*, Vol. 25, No. 2, pp.173–180.

Stevens, J.P. (1992) *Applied Multivariate Statistics for the Social Sciences*, 2nd ed., Lawrence Erlbaum, Hillsdale, NJ.

Stogdill, R. (1974) *Handbook of Leadership*, 1st ed., Free Press, New York.

Stone, D.N., Deci, E.L. and Ryan, R.M. (2009) 'Beyond talk: creating autonomous motivation through self-determination theory', *Journal of General Management*, Vol. 34, No. 3, pp.75–91.

Tanaka, J.S. (1987) 'How big is big enough?' Sample size and goodness of fit in structural equation models with latent variables', *Child Development*, Vol. 58, No. 1, pp.134–146.

Thrash, T.M. and Elliot, A.J. (2003) 'Inspiration as a psychological construct', *Journal of Personality and Social Psychology*, Vol. 84 No. 4, pp.871–889.

- Tucker, L.R. and Lewis, C. (1973) 'A reliability coefficient for maximum likelihood factor analysis', *Psychometrika*, Vol. 38, No. 1, pp.1–10.
- Tucker, S., Tucker, N., Barling, J. and McEvoy, M. (2010) 'Transformational leadership and childrens' aggression in team settings: A short-term longitudinal study', *The Leadership Quarterly*, Vol. 21, No. 3, pp.389–399.
- Velicer, W.F. and Jackson, D.N. (1990) 'Component analysis versus common factor analysis: Some issues in selecting an appropriate procedure', *Multivariate Behavioral Research*, Vol. 25, No. 1, pp.1–28.
- Warrilow, S. (2012) *Transformational Leadership Theory – The 4 Key Components in Leading Change & Managing Change* [online] http://EzineArticles.com/?expert=Stephen_Warrilow (accessed 15 March 2013).
- Weinberg, R. (2010) *Mental Toughness in Sport, Business and Life*, AuthorHouse, Bloomington, IN.
- Weinberg, R., Butt, J. and Culp, B. (2011) 'Coaches' views of mental toughness and how it is built', *International Journal of Sport and Exercise Psychology*, Vol. 9, pp.156–172, doi:10.1080/1612197X.2011.567106.
- Weymes, E. (2002) 'Relationships not leadership sustain successful organisations', *Journal of Change Management*, Vol. 3, No. 4, pp.319–331.
- Young, M.S. (1992) 'A framework for successful adoption and performance of Japanese manufacturing practices in the United States', *The Academy of Management Review*, Vol. 17, No. 4, pp.677–700.
- Yukl, G. (1999) 'An evaluation of the conceptual weaknesses in transformational and charismatic leadership theories', *Leadership Quarterly*, Vol. 10, No. 2, pp.285–305.
- Zacharatos, A., Barling, J. and Kelloway, E.K. (2000) 'Development and effects of transformational leadership in adolescents', *The Leadership Quarterly*, Vol. 11, No. 2, pp.211–226.

Zenger, J.H., Folkman, J.R., Sherwin Jr., R.H. and Steel, B.A. (2012) *How to be Exceptional: Drive Leadership Success by Magnifying your Strengths*, McGraw-Hill, New York, NY.

Zwick, W.R. and Velicer, W.F. (1986) 'Comparison of five rules for determining the number of components to retain', *Psychological Bulletin*, Vol. 99, No. 3, pp.432–442.

Appendix

The ILS

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who is ambitious? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

Disagree	Disagree a little	Neither agree or disagree	Agree a little	Agree
1	2	3	4	5

I see myself as someone who...

- 1 Has the desire to achieve success
- 2 Is determined to achieve a goal
- 3 Is passionate about work
- 4 Is committed to achieving a goal
- 5 Is hardworking
- 6 Offers stability and direction to your team
- 7 Provides your team with hope for a better future

8 Provides your team with inspiration and positive energy

9 Evokes confidence in your team