



An Empirical Analysis of Leader Personality and Servant Leadership

Yu Sun^{1*}, Esther Gergen¹, Phyllis Duncan¹, Barbara Hinojosa¹ and Mark Green¹

¹Department of Leadership Studies, Our Lady of the Lake University, San Antonio, TX 78207

*Email: ysun@ollusa.edu

Received on May 20, 2017; revised on August 23, 2017; published on August 27, 2017

Abstract

Although servant leadership has been a popular philosophy for almost 50 years, it is only recently that peer-reviewed instruments with evidence of validity and reliability have emerged. A question related to the measurement of servant leadership is to what degree the instrument(s) are measuring constructs similar to leader personality. In this study 116 working adults completed a self-assessment of the big-five personality dimensions and their self-assessment of servant leadership using the *Servant Leadership Survey*. An exploratory factor analysis found that four of the nine scales of the *Servant Leadership Survey* appear to be measuring a construct similar to the personality dimension of agreeableness, but different from the other big-five dimensions of personality.

Keywords: Leader Personality, Servant Leadership, Factor Analysis

1 Introduction

Up until the mid-2000's, servant leadership was a popular philosophy but generally lacked a testable set of constructs. A step toward a more concrete definition occurred in 1995 with Spears' 10 aspects of servant leadership (1995). Barbuto and Wheeler (2006); Liden, Wayne, Zhao and Henderson (2008); Sendjaya, Sarros and Santora (2008); and van Dierendonck and Nuijten (2011) have each developed instruments to measure servant leadership. Each instrument has an associated peer-reviewed article that describes the development, reliability and validity of the instrument. The instrument used in this study was the *Servant Leadership Survey* by van Dierendonck and Nuijten (2011). Table 1 provides the dimensions measured by the instrument.

As theories progress and instruments are developed to measure those theories, two of the psychometric properties that gradually become clearer with increased reporting on an instrument are convergent and discriminant validity. Convergent and discriminant validity are considered subcategories of construct validity. To establish construct validity, we need to show that both convergent and discriminant validity are demonstrated. Convergent validity means two measures of constructs that theoretically should be related, are in fact related. Convergent validity can be established if two similar measures of a construct correspond with one another by calculating correlation coefficient. Correlations between theoretically similar

measures should be high, while correlations between theoretically dissimilar measures should be low.

Table 1. Dimensions of the servant leadership survey

Empowerment	Is a motivational concept focused on enabling people and encouraging personal development
Accountability	Is holding people accountable for performance they can control
Standing Back	Is about the extent to which a leader gives priority to the interests of others first and gives them the necessary support and credits.
Humility	Is the ability to put one's own accomplishments and talents in a proper perspective
Authenticity	Is closely related to expressing the "true self," expressing oneself in ways that are consistent with inner thoughts and feelings
Courage	Is daring to take risks and trying out new approaches to old problems
Interpersonal Acceptance	Is the ability to understand and experience the feelings of others, understand where people come from and the ability to let go of perceived wrongdoings and not carry a grudge into other situations
Stewardship	Is the willingness to take responsibility for the larger institution and go for service instead of control and self-interest

Discriminant validity tests whether measures of constructs that theoretically should not be related to each other are, in fact not related. Discriminant validity applies to two dissimilar constructs that are easily differentiated. A successful evaluation of discriminant validity shows that a test of a concept is not highly correlated with other tests designed to measure theoretically different constructs.

Of the constructs for which there may be insufficient discriminant validity for the *Servant Leadership Survey*, personality is a logical possibility. While there are multiple models of personality, a frequently used model is the Big-Five model. This model conceptualizes personality as a combination of openness to new experiences, conscientiousness, extraversion, agreeableness, and neuroticism. As theories progress and instruments are developed to measure those theories, two of the psychometric properties that gradually become clearer with increased reporting on an instrument are convergent and discriminant validity. Convergent and discriminant validity are considered subcategories of construct validity. To establish construct validity, we need to show that both convergent and discriminant validity are demonstrated. Convergent validity means two measures of constructs that theoretically should be related, are in fact related. Convergent validity can be established if two similar measures of a construct correspond with one another by calculating correlation coefficient. Correlations between theoretically similar measures should be high, while correlations between theoretically dissimilar measures should be low.

Table 2. Dimensions of personality

Domain	Higher	Lower
Extraversion	Like People Prefer Large Groups and Gatherings Assertive, Active, and Talkative	Reserved but Not Necessarily Unfriendly Independent Rather Than a Follower
Openness	Curious about Both Inner and Outer Worlds	Prefer Familiar to the Novel
Agreeableness	Fundamentally Altruistic Sympathetic to Others and Eager to Help Them	Disagreeable or Antagonistic Toward People Skeptical of Others' Intentions
Conscientiousness	High Degree of Organization, Persistence, Control and Motivation in Goal Directed Behavior	More Lackadaisical in Working Toward Goals
Neuroticism	Identifies Individuals Who Are Prone to Psychological Distress	Emotionally Stable Usually Calm, Even-Tempered and Relaxed

The explanations for each of the big five personality types are based on: McCrae, R. R. and Costa, P. T., Psychological Assessment Resources, Inc. (2010). NEO inventories for the NEO Personality Inventory-3 (NEO-PI-3), NEO Five-Factor Inventory-3 (NEO-FFI-3), NEO Personality Inventory-Revised (NEO PI-R): Professional manual. Lutz, FL: PAR.

2 Purpose of the Study

Discriminant validity tests whether measures of constructs that theoretically should not be related to each other are, in fact not related. Discriminant validity applies to two dissimilar constructs that are easily differentiated. A successful evaluation of discriminant validity shows that a test of a concept is not highly correlated with other tests designed to measure theoretically different constructs.

Of the constructs for which there may be insufficient discriminant validity for the *Servant Leadership Survey*, personality is a logical possibility. While there are multiple models of personality, a frequently used model is the Big-Five model. This model conceptualizes personality as a combination of openness to new experiences, conscientiousness, extraversion, agreeableness, and neuroticism.

The purpose of this study was to analyze the degree to which scales of the *Servant Leadership Scale* (SLS) discriminate from the scales of the big-five personality model. Put simply, to what degree do the scales of the SLS measure something different than leader personality.

3 Previous Research

3.1 Leader Personality and Ratings of Servant Leadership

Two empirical studies were found in the peer-reviewed literature related to leader personality and ratings of servant leadership. Politis and Politis (2012) administered an abbreviated version of Page and Wong’s (2000) *Servant Leadership Profile*. In this study, leaders self-assessed their personality and the degree to which they believed they were servant leaders. Leader openness, conscientiousness, extraversion and agreeableness were moderately to strongly positively related to all of subscales of the servant leadership instrument. Neuroticism was weakly negatively correlated with each servant leadership subscale.

3.2 Leader Personality and Other Aspects of Leadership Besides Servant Leadership

Table 4. Leader Conscientiousness and Ratings of Leadership

Leadership Dimension	k	N	Effect
Management by Exception Active*	6	1,469	-.04
Contingent Reward*	6	1,469	.03
Passive Leadership*	7	1,564	.04
Managerial Performance*	44	8,678	.10
Intellectual Stimulation*	8	1,828	.11
Individual Consideration*	8	1,828	.11
Transformational Leadership*	19	3,887	.15
Charisma*	9	1,706	.22
Leader Emergence**	20	NP	.24
Leader Effectiveness **	17	NP	.24

k is the number of effect sizes, N is the total sample size from those k studies, NP indicates the total N was not provided, effects provided are as follows: *Bono & Judge, (2004) reported the estimated population correlation; Judge, **Bono, Ilies & Gerhardt, (2002) reported the estimated corrected correlation; ***Barrick, Mount & Judge, (2001) reported the estimated true correlation.

Washington, Sutton and Feild (2006) administered Dennis and Winston’s (2003) 23-item servant leadership scale to 283 followers of

155 supervisors. Supervisors reported their own personal agreeableness using 12 items from Costa and McCrae's (1998) NEO Five-Factor Inventory. A moderate positive correlation was found between the leaders' personality facet of agreeableness and follower ratings of those leaders' use of servant leadership ($r = .38, p < .01$).

The combination of leader personality and leadership style have been studied extensively. To date, that primary body of literature has been done of the full range mode of leadership, leader emergence and leader effectiveness (Green, 2015).

Table 3 provides a summary of three meta-analyses related to leader openness and follower ratings of leadership style.

Table 4 provides a summary of three meta-analyses related to leader conscientiousness and follower ratings of leadership style. Generally, while the effect sizes are also weak to moderate, the overall conclusion from the literature is that leader conscientiousness is related to several dimensions of leadership.

Table 4. Leader Conscientiousness and Ratings of Leadership

Leadership Dimension	k	N	Effect
Passive Leadership*	7	1,564	-.11
Management by Exception Active*	6	1,469	-.02
Contingent Reward*	6	1,469	.02
Intellectual Stimulation*	8	1,828	.03
Charisma*	8	1,605	.05
Individualized Consideration*	8	1,828	.11
Leader Effectiveness**	18	NP	.11
Transformational Leadership*	18	3,516	.13
Managerial Performance***	60	11,325	.25
Leader Emergence**	17	NP	.33

k is the number of effect sizes, N is the total sample size from those k studies, NP indicates the total N was not provided, effects provided are as follows: *Bono & Judge, (2004) reported the estimated population correlation; Judge, **Bono, Ilies & Gerhardt, (2002) reported the estimated corrected correlation; ***Barrick, Mount & Judge, (2001) reported the estimated true correlation.

Table 5 provides a summary of three meta-analyses related to leader extraversion and follower ratings of leadership style. As seen with the previous two personality dimensions, while effect sizes are weak, the overall conclusion from the literature is that leader extraversion is related to dimensions of leadership.

Table 5. Leader Extraversion and Ratings of Leadership

Leadership Dimension	k	N	Effect
Passive Leadership*	6	1,310	-.09
Management by Exception Active*	5	1,215	-.03
Contingent Reward*	5	1,215	.14
Intellectual Stimulation*	7	1,574	.18
Individual Consideration*	7	1,574	.18
Managerial Performance***	67	12,602	.21
Charisma*	9	1,706	.22
Transformational Leadership*	2	3,692	.24
Leader Effectiveness**	2	NP	.24
Leader Emergence**	3	NP	.30

k is the number of effect sizes, N is the total sample size from those k studies, NP indicates the total N was not provided, effects provided are as follows: *Bono & Judge, (2004) reported the estimated population correlation; Judge, **Bono, Ilies & Gerhardt, (2002) reported the estimated corrected correlation; ***Barrick, Mount & Judge, (2001) reported the estimated true correlation.

Table 6 provides a summary of three meta-analyses related to leader agreeableness and follower ratings of leadership style. Generally, while the effect sizes are weak, the overall conclusion from the literature is that leader openness is weakly related to several dimensions of leadership.

Table 6. Leader Agreeableness and Ratings of Leadership

Leadership Dimension	k	N	Effect
Passive Leadership*	7	1,564	-.12
Management by Exception Active*	6	1,469	-.11
Managerial Performance***	5	9,864	.10
Transformational Leadership*	2	3,916	.14
Intellectual Stimulation*	8	1,828	.14
Individual Consideration*	8	1,828	.17
Contingent Reward*	7	1,622	.17
Charisma*	9	1,706	.21
Leader Effectiveness**	1	NP	.21

k is the number of effect sizes, N is the total sample size from those k studies, NP indicates the total N was not provided, effects provided are as follows: *Bono & Judge, (2004) reported the estimated population correlation; Judge, **Bono, Ilies & Gerhardt, (2002) reported the estimated corrected correlation; ***Barrick, Mount & Judge, (2001) reported the estimated true correlation.

Table 7 provides a summary of three meta-analyses related to leader neuroticism and follower ratings of leadership style. Generally, while the effect sizes are weak, the overall conclusion from the literature is that leader neuroticism is weakly and negatively related to several dimensions of leadership, with the exception of weak positive relationships with Management by Exception Active and Passive Leadership.

Table 7. Leader Neuroticism and Ratings of Leadership

Leadership Dimension	k	N	Effect
Managerial Performance***	63	11,591	-.09
Individual Consideration*	9	1,772	-.10
Contingent Reward*	7	1,532	-.10
Intellectual Stimulation*	9	1,772	-.12
Transformational Leadership*	18	3,380	-.17
Charisma*	10	1,650	-.17
Leader Effectiveness**	18	NP	-.24
Leader Emergence**	30	NP	-.22
Management by Exception Active*	7	1,532	.02
Passive Leadership*	8	1,627	.05

k is the number of effect sizes, N is the total sample size from those k studies, NP indicates the total N was not provided, effects provided are as follows: Bono & Judge, (2004) reported the estimated population correlation; Judge, Bono, Ilies & Gerhardt, (2002) reported the estimated corrected correlation; Barrick, Mount & Judge, (2001) reported the estimated true correlation.

Table 8. Comparison of Leader Personality, Relationships Between Transformational and Servant Leadership

	O	C	E	A	N
Transformational Leadership <i>k</i> = 18 to 20	<i>P</i> = .15 FR	<i>P</i> = .13 FR	<i>P</i> = .24 FR	<i>P</i> = .14 FR	<i>P</i> = -.17 FR
Servant Leadership <i>k</i> = 2	Mod to Strong LR	Mod to Strong LR	Mod to Strong LR	<i>r</i> = .38 FR Mod to Strong LR	Mod to Strong LR

FR indicates Leaders Rated Themselves on Personality and Followers Rated the Leader on Leadership. LR indicates Leaders Rated Themselves on both Personality and Leadership. Columns are for Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism

4 Sample

The sample from this study consisted of 116 working adults from Houston, San Antonio, Laredo and smaller cities throughout south Texas. The working adults came from a wide mix of small, medium and large organizations, both for and non-profit. Participant ages ranged from 29 to 71 with concomitant years of work experience. Seventy-three percent of the participants were female, and 27% were male. The sample ethnicity composition consisted of 67% Hispanic, 21% White, 9% Black and 3% “other” ethnicities such as Asian and American Indian.

All participants held master’s degrees and had professional work experience. The areas of master’s preparation, however, was typically in a discipline other than leadership. Typical master’s degrees included business, education, sociology/social work, psychology and counseling, and various computer information systems areas. Each participant had been selected for admission as a part-time student in a doctoral program in leadership studies. As part of the orientation to the program, the students self-assessed their personality using the *Mini-International Personality Item Pool* and the *Servant Leadership Survey*. The self-assessments occurred prior to the beginning of training/education in theories of personality and servant leadership.

5 Instruments

5.1 Mini-International Personality Inventory Pool

Donnellan et al. (2006) created the *Mini-International Personality Item Pool* (Mini-IPIP) (2006) with consideration of the need to assess each personality domain, while retaining desirable psychometric properties of validity and reliability (Baldasaro et al., 2013). Donnellan et al. (2006) noted the Mini-IPIP (2006) was based on the *50-item International Personality Item Pool Five-Factor Model* (IPIP-BF) measure (Goldberg, 1999) and was “developed and validated across five studies.” The Mini-IPIP is a 20-item instrument which covers all five traits, with only four questions per trait, measured on a five-point Likert scale (Baldasaro et al. 2013).

The instrument was developed and validated through five studies. According to Donnellan et al. (2006), the first study administered the instrument to a large sample (*N* = 2,663) of students from multiple colleges and universities. The second study had a smaller sample (*N* = 329) and was used to examine how well the Mini-IPIP related to the Big Five, the

IPIP FFM, and the TIPI. Study three examined relativity to another Big-Five measure and criterion measures. Studies four and five focused on the test-retest reliability for both short-term and long-term scales and criterion levels. The five studies revealed internal consistencies which were consistent, and were at, or above, ($\alpha = .60$) (Donnellan et al. 2006).

Researchers have continued to assess reliability and validity of this instrument since its creation in 2006. Cooper, Millie, and Corer (2010) conducted a confirmatory factor analysis on the Mini-IPIP. Participants (*N* = 1,481) took the assessment online. The mean scores for each scale were broadly consistent with the previous data of Donnellan et al. (2006). Cronbach’s alpha scores were also found to be acceptable. Cooper et al. (2010) concluded that the Mini-IPIP is a good instrument to be used in situations with time constraints with Cronbach’s alpha scales for each at: Conscientiousness ($\alpha = .65$), Extraversion ($\alpha = .71$), Agreeableness, ($\alpha = .70$), Openness (Intellect/Imagination) ($\alpha = .65$), and Neuroticism ($\alpha = .62$) (Baldasaro et al., 2013).

5.2 Servant Leadership Survey

The instrument underwent three stages in its development. In the first stage, 688 volunteers completed an early version of the survey that had 99 items. Based on those data, the authors conducted an exploratory factor analysis (EFA) that found fourteen factors with eigenvalues greater than 1. An iterative set of exploratory factor analyses using *Varimax* and *Oblimin* rotation eventually produced a six-factor model based on 28 items. At this stage of development, neither *Humility* nor *Stewardship* loaded on a unique single component. The authors added 11 additional questions designed to measure those hypothesized dimensions. This resulted in 39 possible questions.

The authors next asked an additional 263 individuals to complete the 39-question instrument. Based on those responses, the authors conducted a confirmatory factor analysis (CFA). Following the initial CFA, nine questions were removed. The reduced 30-question model produced a good fit for an 8-factor model ($\chi^2 = 623$, *df* = 377, *CFI* = .93, *TLI* = .92, *SRMR* = .05, *AIC* = 19354, *RMSEA* = .05).

The authors next asked an additional 236 individuals to complete the 30-question survey. The authors repeated a CFA with these data and again found support for an 8-factor model ($\chi^2 = 600$, *df* = 397, *CFI* = .94, *TLI* = .93, *SRMR* = .06, *AIC* = 17148, *RMSEA* = .05).

The combined sample of all three studies demonstrated Cronbach Alpha scores of .89 for empowerment (7 items), .81 for accountability (3 items), .76 for standing back (3 items), .91 for humility (5 items), .82 for authenticity (4 items), .69 for courage (2 items), .72 for forgiveness (3 items) and .74 for stewardship (3 items).

Seven of the eight scales from the *Servant Leadership Survey* were correlated in the range of .47 to .85 with the seven scales of the *Servant Leadership Scale* (Liden, Wayne and Henderson 2008). The accountability scale of the *Servant Leadership Survey* was either uncorrelated or correlated at .20 or below for the seven scales of the *Servant Leadership Scale*.

Five of the eight scales were highly correlated with leader-member exchange *LMX-7* scores in the range of .38 to .85. Three of the *Servant Leadership Survey* scales were also highly correlated with the subscales of Rafferty and Griffin’s (2004) measure of transformational leadership. Six of the *Servant Leadership Survey* scales were also highly correlated with the *Brown Ethical Leadership Survey* (2005).

6 Results

Table 9 provides an initial analysis between participant personality scores and servant leadership scores. Scores in bold are significant. Generally, each of the nine dimensions of servant leadership were correlated with at least two dimensions of personality.

Table 9. Abridged Correlation Matrix

	O	C	E	A	N
Empower	.476**	.122	.578**	.303**	-.292**
Stand Back	.142	-.001	.094	.425**	-.161
Account	.190*	.590**	.197*	.160	-.375**
Forgive	.055	.213*	.108	.117	-.422**
Courage	.534**	-.035	.325**	.135	-.139
Humility	.143	.195*	.047	.217*	-.075
Authenticity	.087	.026	.253**	.246**	.068
Stewardship	.365**	.112	.170	.366**	-.192*

Columns are for Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. **. Correlation is significant at the 0.01 level (2-tailed).

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

Table 10 provides the results of an exploratory factor analysis using the principal components method with varimax rotation. The factor analysis identified four factors with Eigenvalues greater than one. Using a factor loading standard of > .50, the first factor seems to be measuring aspects of charismatic leadership. In his 1976 theory of charismatic leadership, House posited that, among other things, charismatic leadership includes extremely high levels of self-confidence coupled with a strong conviction in the moral righteousness of his/her beliefs. This seems to capture much for the first factor called charismatic leadership.

Table 10. Factor Analysis of Personality and Servant Leadership

	CH	SL	C	N
Courage	.78	.08	.11	-.33
Empower	.77	.32	.29	-.11
Openness	.73	.16	-.04	.13
Extroversion	.68	.05	.03	.26
Stand Back	.16	.71	.14	-.08
Authenticity	.12	.66	-.12	-.10
Humility	-.12	.62	.24	.16
Stewardship	.38	.58	.23	-.02
Agreeableness	.34	.57	-.08	.37
Account	.26	.27	.86	-.12
Conscientiousness	-.05	.02	.82	.26
Forgive	-.07	.02	.06	.87
Neuroticism	-.33	.05	-.47	-.59

CH- Charisma, SL-Servant Leadership, C – Conscientiousness, N - Neuroticism

Of the five factors of personality, agreeableness is the most likely to be associated with servant leadership. The second factor, called servant leadership

contains agreeableness and four dimensions from the *Servant Leadership Survey (SLS)*.

The third factor was labeled conscientiousness. one of the facets of conscientious is called dutifulness, which is defined as an emphasis on the importance of fulfilling moral obligations. This partially explains why the accountability scale of the SLS loaded with the personality dimension of conscientiousness.

Finally, neuroticism loaded inversely with the SLS scale of forgiveness. One of the facets of neuroticism is called angry hostility and is defined as the tendency to experience anger and related states such as frustration and bitterness. This likely explains why neuroticism loaded inversely with the SLS scale of forgiveness.

7 Summary

After forty years as a philosophy without empirical support, in the last decade instruments have been developed to measure servant leadership. To date, however, none of those instruments seems to have emerged as a dominant choice for researchers. In 2016, Hoch, Bommer, Dulebohn and Wu published a meta-analysis related to servant leadership. While the studies analyzed for 11 different outcome variables ranged from 4 to 11, the fact that a meta-analysis has now been published supports the contention that interest in empirical research related to servant leadership is increasing.

The results of this analysis indicate that standing back, authenticity, humility and stewardship may be the most likely scales to be measuring something different than leader personality. Even, however, within these four scales, two are often measured by other scales. The HEXACO-PI-R is a humility scale that some researchers argue should be considered a sixth dimension of personality (Lee, 2013). Authentic leadership (Avolio, Gardner, & Walumbwa, 2007) has been researched in dozens of peer-reviewed articles (Hoch, Bommer, Dulebohn & Wu 2016).

Given these additional, possible overlaps, perhaps the scales from the SLS that are most unique to servant leadership are the scales that measure standing back and stewardship.

References

- Avolio, B.J. et al. (2007) *The Authentic Leadership Questionnaire*. Mingarden.com.
- Baldasaro, R.E. et al. (2013) Psychometric properties of the Mini-IPIP in a large, nationally representative sample of young adults. *Journal of Personality Assessment*, **95**(1), 74-84.
- Barbuto, J.E., Jr, and Wheeler, D.W. (2006) Scale development and construct clarification of servant leadership. *Group & Organization Management*, **31**(3), 300-326.
- Barrick, M.R. et al. (2001) Personality and performance at the beginning of the new millennium: what do we know and where do we go next? *International Journal of Selection & Assessment* **9**, no. 1-2- 9.
- Bono, J.E. and Judge, T.A. (2004) Personality and transformational and transactional leadership: a meta-analysis. *Journal of Applied Psychology*, **89**(5), 901-910.
- Cooper, A.J. et al. (2010) A confirmatory factor analysis of the Mini-IPIP five-factor model personality scale. *Personality and Individual Differences*, **48**, 688-691.
- Donnellan, M.B. et al. (2006) The mini-IPIP scales: tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment*, **18**, 192-203.
- Goldberg, L.R. et al. (2006) The International Personality Item Pool and the future of public-domain personality measures. *Journal of Research in Personality*, **40**, 84-96.
- Green, M.T. (2015) *Graduate Leadership, 3rd Edition*, Vol. 2, North Charleston, SC, Leadership Press, ISBN-13: 978-0692419168.
- Hoch, J.E. et al. (2016) Do ethical, authentic, and servant leadership explain variance above and beyond transformational leadership? a meta-analysis. *Journal of Management*, **20**(10), 1-29.

An Empirical Analysis of Leader Personality and Servant Leadership

- House, R.J. (1977) A 1976 theory of charismatic leadership. In J.G. Hunt and L.L. Larson (eds.), *Leadership: the cutting edge*. Southern Illinois University Press, Carbondale, IL
- Judge, T.A. et al. (2002). Personality and leadership: a qualitative and quantitative review. *Journal of Applied Psychology*, **87**(4), 765-780.
- Lee, K. (2013) *H factor of personality: why some people are manipulative, self-entitled, materialistic, and exploitive' and why it matters for everyone*. Wilfrid Laurier University Press.
- Liden, R.C. et al. (2008). Servant leadership: development of a multidimensional measure and multi-level assessment. *Leadership Quarterly*, **19**(2), 161.
- Page, D. and Wong, P.T.P. (2000) Conceptual framework for measuring servant-leadership, in S. Adjibolosoo, ed., *The Human Factor in Shaping the Course of History and Development*. Lanham, MD: University Press of America.
- Politis, J. and Politis, N. (2012). The relationship between servant leadership and personality characteristics: The 'Big Five'. Proceedings of The European Conference On Management, Leadership & Governance, 332-339.
- Sendjaya, S. et al. (2008). Defining and measuring servant leadership behavior in organizations. *Journal of Management Studies*, **45**(2), 402-424.
- Spears, L.C. (1995) (ed.) *Reflections on leadership: How Robert K. Greenleaf's theory of servant-leadership influenced today's top management thinkers*. John Wiley & Sons, Inc., New York.
- van Dierendonck, D. and Nuijten, I. (2011) The servant leadership survey: Development and validation of a multidimensional measure. *Journal of Business and Psychology*, **26**(3), 249-267.
- Washington, R.R. et al. (2006) Individual differences in servant leadership: the roles of values and personality. *Leadership & Organization Development Journal*, **27**(8), 700-716. doi:10.1108/01437730610709309