Testing Relationships Between Servant Leadership Dimensions and Leader Member Exchange (LMX)

John E. Barbuto
Center for Leadership Studies
Department of Management
Mihaylo College of Business and Economics
SGMH 5357C
PO BOX 6848
California State University-Fullerton
Fullerton, CA 92834-6848
(657) 278-8675
jbarbuto@fullerton.edu

Robert W. Hayden
Department of Agricultural Leadership, Education and Communication
University of Nebraska-Lincoln
Lincoln, NE 68583-0709
(402) 472-2807
rhayden2@unlnotes.unl.edu

Abstract
Leader member exchange has previously been found to be a solid predictor of positive organizational outcomes. Much research has tested a variety of possible antecedents to Leader Member Exchange (LMX), but only a limited number involving leadership styles. In this study servant leadership dimensions were tested for relationship to LMX quality. Strong correlations were found, tested for collinearity, and the best predictive model identified via regression analysis. The value to leadership educators was highlighted, limitations were recognized, and suggested areas for future research discussed.

Introduction
Leadership education is a unique field. It is one that is responsible not only to keep abreast of new leadership research, but also to ground the results of such initiatives in their relationship to extant theory. This paper proposes to test one relatively new leadership style – servant leadership – for relationships to one known predictor of positive organizational outcomes – Leader Member Exchange.
Leader Member Exchange (LMX)

Leader member exchange (LMX) refers to a unique relationship quality that leaders develop with each subordinate. LMX was originally termed Vertical Dyad Linkage (Dansereau, Cashman, & Graen, 1973), but was later renamed leader member exchange (Graen, Novak, & Somerkamp, 1982). Strong LMX measures the extent to which leaders and followers have developed a trusting, autonomous,
and mutually beneficial relationship (Graen & Uhl-Bien, 1995). As shown by the variety of studies above, many different factors may affect the development and quality of LMX. It is important to research the unique qualities each member of the dyad may bring to the relationship, for these qualities of the individuals in the dyad may be antecedents of the relationship. In this study the followers’ view of the leaders’ servant leadership is tested as a predictor of the resulting LMX. Further analyses via stepwise regression determine which dimension(s) of servant leadership best predict LMX.

**Servant Leadership**

Servant leadership, first theorized four decades ago (Greenleaf, 1970), was originally described as a leadership philosophy that values service to others over self-interests. This work carried with it intuitive appeal, and subsequent popular press publications glorified the construct (e.g., Spears, 1995). Spears’ identified ten dimensions of servant leadership, but no empirical tests of these dimensions were conducted. Consequently, servant leadership was viewed primarily as a conceptual albeit rather elusive construct, lacking any consensus framework or empirical rigor (Bass, 2000). The construct was rejuvenated by a clarification and scale development procedure that operationalized a testable theory of servant leadership (Barbuto & Wheeler, 2006). This clarification and measure stimulated subsequent empirical works on servant leadership (Liden et al., 2008; Neubert et al., 2008; Searle & Barbuto, 2010; Sendjaya, Sarros, & Santora, 2008). When testing for possible gender bias characterized as agentic (masculine) and communal (feminine) Barbuto and Gifford (2010) found no significant differences among servant leaders. The Servant Leadership Questionnaire (SLQ), developed by Barbuto and Wheeler (2006), identified and confirmed five dimensions of servant leadership, which are used in this study – altruistic calling, emotional healing, wisdom, persuasive mapping, and organizational stewardship.

**Altruistic Calling**

Altruistic calling is defined as the fundamental conscious choice to serve others (Greenleaf, 1977). This desire to positively influence others through service is deemed central to servant leadership ideology (Barbuto & Wheeler, 2006). Servant leaders embrace service to followers and sacrifice self-interest for their followers’ development (Bass, 2000; Graham, 1991). Servant leaders desire positive development in individuals, organizations, communities, and societies (Liden et al., 2008). The necessity for altruism in leadership has been recognized by many scholars (Avolio & Locke, 2002; Block, 1996) as has the altruistic nature of servant leadership (Greenleaf, 1977; Sendjaya et al., 2008). Leaders demonstrating a willingness to put followers’ interests ahead of their own will
likely garner great trust and dedication from followers, leading to higher quality of exchanges.

- **H1**: Leaders’ Altruistic Calling will be positively related to LMX

### Emotional Healing

Emotional healing describes an ability to recognize when and how to facilitate the healing process. This includes a leader’s ability to foster spiritual recovery from hardship and trauma (Barbuto & Wheeler, 2006). Servant leaders are viewed as highly empathetic and are able to show sensitivity to others (Liden et al., 2008). They create an environment with their followers enabling them to voice personal and professional concerns (Barbuto & Wheeler, 2006). Scholars have recognized the need for leaders able to help followers recover hope, overcome broken dreams, and repair severed relationships (Dacher, 1999; Sturnick, 1998). Leaders capable of producing emotional healing in followers will be more likely to have strong relationships with them.

- **H2**: Leaders’ Emotional Healing will be positively related to LMX

### Wisdom

Wisdom describes an ability to pick up cues from the environment and to recognize possible consequences and implications of their observations (Barbuto & Wheeler, 2006). Servant leaders are observant and anticipatory across multiple contexts, enabling them to translate their knowledge into forward action (Bierly et al., 2000). Scholars have recognized the need for leaders with a strong sense of awareness (Sosik & Megerian, 1999) coupled with an ability to apply the knowledge gained through observation (Kant, 1978; Plato, 1945). Leaders that are keenly aware and insightful will garner followers’ respect and trust, which is necessary to develop strong dyadic relationships.

- **H3**: Leaders’ Wisdom will be positively related to LMX

### Persuasive Mapping

Persuasive mapping describes an ability to use mental models and sound reasoning to encourage lateral thinking in others (Barbuto & Wheeler, 2006). Servant leaders high in persuasive mapping are skilled at articulating issues and conceptualizing possibilities by sharing their train of thought. They possess the necessary knowledge to assist and support their followers effectively (Liden et al., 2008). Researchers have reported persuasiveness-based models to be more
productive than authority-based models on positive outcomes (Druskat & Pescosolido, 2002). Leaders capable of consistently using persuasive mapping rather than legitimization will develop stronger relationships with followers.

- **H4: Leaders’ Persuasive Mapping will be positively related to LMX**

Organizational Stewardship

Organizational stewardship describes the extent to which leaders prepare their organization to make a positive contribution to the community and society (Barbuto & Wheeler, 2006). A servant leader demonstrates a strong sense of social responsibility and encourages organizations to implement moral and ethical actions that benefit all stakeholders (Liden et al., 2008; Sendjaya et al., 2008). This emphasis is accomplished by reaching out to the community through community development programs, outreach activities, and facilitating company policies that benefit the surrounding community, society, and environment. Servant leaders’ ideology advocates that their organizations create value for the community (Liden et al., 2008). Those leaders capable of unifying an organization for greater purpose and community citizenship will garner the trust and respect that fosters strong dyadic relations.

- **H5: Leaders’ Organizational Stewardship will be positively related to LMX**

Methods

The researchers’ goal was to assess whether a measure of servant leadership can predict a strong (positive) LMX, and if so, determine which of the servant leadership measure’s subscales is the best predictor of LMX. Data were collected from elected public officials in several counties in a Midwestern state, and their raters.

Subjects

The participants were 80 community leaders (county treasurers) and 368 raters. All were from the Midwestern United States. The leaders attended a leadership development workshop for elected officials and were members of a statewide professional organization which sponsored the event. Their average age was 51. Fifty percent had earned a bachelor’s degree, 20% had earned a master’s degree or higher. Sixty-five percent of the leaders were women. Raters were colleagues or employees of the leaders and reported an average age of 46. Forty-two percent
of the raters had earned a bachelor’s degree; less than 10% had earned a master’s degree or higher. Fifty-three percent of raters were women.

In this study the follower (rater) servant leadership data were used with the follower (rater) LMX data. The rationale was that raters may be more objective in the assessment of true servant leadership qualities of their leader than the leader (participant) might be in assessing him/herself. It may be that a leader views being a servant leader as socially desirable, thus potentially injecting bias. In addition, there was a much larger $n$ for raters than participants (388 versus 80), thereby enhancing the reliability of any findings.

**Tests**

Data included rater versions of the servant leadership questionnaire (SLQ) and the LMX-7. The SLQ consisted of 23 items on a Likert-type 1-4 scale (1=strongly disagree, 2=somewhat disagree, 3=somewhat agree, 4=strongly agree) measuring five dimensions – altruistic calling (“This person puts my best interests ahead of his/her own.”); emotional healing (“This person is one I would turn to if I had a personal trauma.”); wisdom (“This person is good at anticipating the consequences of decisions.”); persuasive mapping (“This person offers compelling reasons to get me to do things.”); and, organizational stewardship (“This person believes that the organization needs to play a moral role in society.”). Reliability (Cronbach alphas) of the subscales ranged from .82 to .92. The LMX-7 was used to assess the strength of LMX. This measure is a 7-item Likert-type scale with anchors at 1 (strongly disagree) and 5 (strongly agree). The LMX-7 has been used extensively in research and seems to be regarded as the gold standard measure for LMX (Gerstner & Day, 1997).

**Procedures**

Data were collected on-site from the intact group of elected officials as part of a full-day leadership training seminar. Each participant was asked to distribute the raters’ version of the measures to all of their colleagues after the seminar. Rater instrument forms were coded in advance to protect the confidentiality of raters. Procedures were conducted in accordance with University Compliance oversight. Rater instruments were returned via the United States Postal Service. Both participants and their raters were provided letters detailing their participation and rights, which included the right to withdraw at any time during the research. None of the participants withdrew from the study. Response rate was 87%, with 80 of the eligible 92 elected officials participating.
Results

Means, standard deviations, and zero-order correlations were calculated for all variables examined in this study (see Table 1). Significant correlations were found between all five dimensions of servant leadership and LMX (see Table 1).

Table 1. Correlation Matrix Simple Statistics and Inter-correlations (N=368)

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2.76</td>
<td>0.79</td>
<td>.82</td>
<td>.91</td>
<td>.87</td>
<td>.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2.71</td>
<td>0.97</td>
<td>.71</td>
<td>.62</td>
<td>.58</td>
<td>.47</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>3.24</td>
<td>0.71</td>
<td>.51</td>
<td>.49</td>
<td>.44</td>
<td>.47</td>
<td>.61</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>2.58</td>
<td>0.80</td>
<td>.69</td>
<td>.49</td>
<td>.37</td>
<td>.62</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>3.12</td>
<td>0.73</td>
<td>.68</td>
<td>.58</td>
<td>.47</td>
<td>.67</td>
<td>.89</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>3.15</td>
<td>0.69</td>
<td>.70</td>
<td>.73</td>
<td>.55</td>
<td>.61</td>
<td>.89</td>
<td></td>
</tr>
</tbody>
</table>

Scale reliability estimates (η) along the diagonal.
All correlations significant at p<.01

Because all five dimensions of servant leadership showed such strong correlations, the researchers opted to test for collinearity among the independent variables. Table 2 shows the results.
Table 2. Collinearity Diagnostics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Eigenvalue</th>
<th>CI</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.94</td>
<td>1</td>
<td></td>
<td>--</td>
<td>.000</td>
</tr>
<tr>
<td>Emotional Healing</td>
<td>0.06</td>
<td>5.70</td>
<td>1</td>
<td>--</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>2.92</td>
<td>1</td>
<td></td>
<td>--</td>
<td>.000</td>
</tr>
<tr>
<td>Emotional Healing</td>
<td>0.06</td>
<td>6.96</td>
<td>.60</td>
<td>1.68</td>
<td>.000</td>
</tr>
<tr>
<td>Organizational Stewardship</td>
<td>0.02</td>
<td>11.76</td>
<td>.60</td>
<td>1.68</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Model 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>3.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Healing</td>
<td>0.06</td>
<td>7.95</td>
<td>.45</td>
<td>2.23</td>
<td>.000</td>
</tr>
<tr>
<td>Organizational Stewardship</td>
<td>0.03</td>
<td>12.48</td>
<td>.48</td>
<td>2.09</td>
<td>.000</td>
</tr>
<tr>
<td>Altruistic Calling</td>
<td>0.02</td>
<td>14.65</td>
<td>.39</td>
<td>2.56</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Model 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>4.90</td>
<td>1</td>
<td></td>
<td>--</td>
<td>.000</td>
</tr>
<tr>
<td>Emotional Healing</td>
<td>.07</td>
<td>8.53</td>
<td>.44</td>
<td>2.27</td>
<td>.000</td>
</tr>
<tr>
<td>Organizational Stewardship</td>
<td>.03</td>
<td>13.87</td>
<td>.41</td>
<td>2.46</td>
<td>.000</td>
</tr>
<tr>
<td>Altruistic Calling</td>
<td>.02</td>
<td>14.68</td>
<td>.39</td>
<td>2.57</td>
<td>.000</td>
</tr>
<tr>
<td>Wisdom</td>
<td>.02</td>
<td>17.41</td>
<td>.59</td>
<td>1.68</td>
<td>.005</td>
</tr>
</tbody>
</table>

These results do not indicate a collinearity problem. Overall, the Variable Inflation Factors (VIF) is low and Condition Indexes are below 15, except for the last variable.

To determine the best predictive model using these significant findings, the five SLQ variables were entered into a step-wise hierarchical regression model. The test included followers’ assessment of the leaders’ servant leadership dimensions as independent variables and LMX as the dependent variable (see Table 3). The best predictive model included all dimensions of servant leadership except *Persuasive Mapping*. The dimension *Wisdom* added less than 1% to the predictive model, and another variable (altruistic calling) less than 3%. However, the model containing four of the five dimensions of servant leadership explained more than 62% of the common variance in the data ($r = .79; r^2 = .63; \text{Adj. } r^2 = .63; SE= 2.97; F_{\text{sig change}} = .005$).
Table 3. Hierarchical Regression Analysis for Servant Leadership Dimensions Predicting Leader Member Exchange (N=368)

<table>
<thead>
<tr>
<th>Servant Leadership Dimensions</th>
<th>R</th>
<th>Adjusted R^2</th>
<th>R^2 Change</th>
<th>SE</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Healing</td>
<td>.73</td>
<td>.53</td>
<td>.53</td>
<td>3.34</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Healing Organizational Stewardship</td>
<td>.77</td>
<td>.60</td>
<td>.07</td>
<td>3.09</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Healing Organizational Stewardship Altruistic Calling</td>
<td>.79</td>
<td>.62</td>
<td>.03</td>
<td>2.99</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Healing Organizational Stewardship Altruistic Calling Wisdom</td>
<td>.80</td>
<td>.63</td>
<td>.01</td>
<td>2.97</td>
<td>.005</td>
</tr>
</tbody>
</table>

Model explains approximately 63% of the variance in Leader Member Exchange. Excluded dimension: Persuasive Mapping

Discussion

Summary of Findings

All five dimensions of servant leadership had significant relationships to LMX. The strongest predictor of LMX was the emotional healing component of servant leadership. This means those leaders who are perceived as able, and willing, to connect with colleagues on an emotional level (specifically in a healing context) build strong, positive relationships with these colleagues.

Limitations

The interpretations of the results of this study are limited by the sampling procedures used in the study – which could have created a snowball sampling effect. However, all followers were asked to participate in the study – as opposed to a sampling procedure that gave leaders the latitude to select four to six raters to participate. Inviting participation from all dyadic relationships, versus selected
dyads, reduced some of the sampling bias that would otherwise have resulted. Future studies should sample from as wide a target population as possible and continue to eliminate leaders’ discretion in the process of rater selection.

The results of this study explained approximately 63% of the total variance in the data. Single method variance seems likely to have inflated these relations. However, a test of collinearity confirmed a multi-dimensional model with unique individually contributing subscales of servant leadership. This was also evident in the stepwise regression which identified incremental increases in variance accounted for cumulatively, with four servant leadership subscales contributing significantly to the predictive model. The results of this study provide powerful and useful information about one of the possible antecedents of LMX.

**Future Research**

Future research should study other impacts of servant leadership to better quantify its value to leadership education and practice. Testing such outcomes as followers’ autonomy, wisdom development, emotional health, and propensity to exhibit servant leadership attributes will all be salient research objectives.

Future research should continue to evaluate antecedents of LMX – especially in longitudinal research designs – to evaluate the timing, intensity, and endurance of LMX. These may include person-centered variables as well as contextual influences. Researchers may also consider other dispositional variables of both leaders and followers when testing the predictors of LMX.

**Implications for Leadership Education**

Leadership is not constrained by context. Leadership happens in every area of human interaction, including industry, education, government, politics, and routine social interactions. Therefore, a better understanding of antecedents of a measure (LMX) known to enhance positive outcomes in one domain (organizational dynamics) should be carefully examined for application to other domains, but most certainly by those engaged in the task of leadership education itself.

Leadership educators should consider these results when teaching the impact of servant leadership. Servant leadership has previously been treated as folklore in the leadership classroom, since little empirical research had been completed on the construct. Now that measures have been validated and empirical research is feasible, the true impact of servant leadership can be tested. This study found that
the measure of servant leadership style is strongly related to improved quality of leader-member exchanges.

The results of this study could be considered for incorporation in curriculums teaching leader-member exchange theory. Servant leadership was found to be a strong predictor of leader-member exchange quality. If leadership educators can successfully develop future leaders to increase their use of servant leadership qualities, then improvements in the quality of exchanges with their subordinates and colleagues can be expected. When teaching servant leadership dimensions it will be helpful to examine each of the five sub-scales – altruistic calling, emotional healing, wisdom, persuasive mapping, and organizational stewardship – when planning lessons and designing leadership curriculum.

Instructors may also apply the lessons from this study to directly improve the quality of relationships with their students as well by intentionally including servant leadership characteristics. This should transcend formal classroom and professional settings to include less formal settings like academic advising, graduate student advising, mentoring graduate students, and collaborative research.

Summary

This work tested relationships between servant leadership and LMX, resulting in strong relationships across the dimensions of servant leadership. The variance accounted for was significant, even with single method sampling procedures. It is our hope that others will continue to study servant leadership and LMX, collectively, and in separate research designs, to test the dynamics of each construct.
References


Author Biographies

John E. Barbuto, Jr., Ph.D., is the Director of the Center for Leadership Studies at California State University at Fullerton. Jay earned his doctorate from the University of Rhode Island in 1997. Dr. Barbuto’s research interests include all aspects of leadership – its antecedents and outcomes.

Robert W. Hayden is a doctoral candidate at the University of Nebraska-Lincoln. He earned a B.S. in Bible/Pastoral Ministries from Grace University in 1980 and an M.A. in Management from Bellevue University in 1993. His areas of interest include autonomy, servant leadership, and cognitive decision-making models.